Epilogue

In the face of escalating environmental degradation, there is an unfolding debate about how the natural environment should be accounted for in existing management theories. In this debate, a core concern is related to performativity, denoting the idea that theories do not merely describe but also shape reality (Ghoshal & Moran, 1996; Marti & Gond, 2018; Wickert & Muzio, 2024). Especially, the existence of misplaced performativity, or counterperformativity, through which theories may have been providing justifications for exacerbating climate change (Wickert & Muzio, 2024), is at present hotly debated (Bansal, Durand, Kreutzer, Kunisch, & McGahan, 2024; Davis & DeWitt, 2024; Foss & Klein, 2024). This idea of counterperformativity, refers to situations in which the application of a theory in practice leads to unintended consequences that defeat its original purpose (Wickert & Muzio, 2024). This dissertation has explored the potential of such counterperformativity in the context of environmental entrepreneurship, a field of research focusing on why, how and when individuals simultaneously pursue economic and ecological benefits through economic activities (York, 2018). More concretely, scholars have studied how green products, services and business models are brought into existence by both new start-ups and the diversification of incumbents (Hockerts & Wüstenhagen, 2010). This field of research thus seeks to understand how business can be a solution to, rather than a cause of, environmental degradation (York, 2018). As such, environmental entrepreneurship is illustrative of a broader trend towards private governance crowding out public governance in the provision of public goods, including environmental protection (Kaplan, 2024), among other societal challenges (Reinecke & Ansari, 2016; Scherer & Palazzo, 2007, 2011). While the literature is pervaded by the taken for granted belief that environmental entrepreneurship is inherently good and beneficial, little is known about the outcomes associated with it (Vedula et al., 2022a). Rather than measuring environmental outcomes, the literature has focused on intermediate proxies such as the creation of markets for green products (Lee et al., 2017), firm entry into such ‘moral markets’ (Georgallis & Lee, 2020) and the adoption of environmental practices or products (York et al., 2017).

This dissertation has thus relaxed the taken for granted assumption that environmental entrepreneurship is inherently good and beneficial (Vedula et al., 2022a). More concretely, it has explored the potential for policy resistance, a common tendency for well-intentioned interventions to be defeated by the side effects or unintended consequences they create (Castro, 2022; Ghaffarzadegan, Lyneis, & Richardson, 2011; Sterman, 2010), in this context. Such policy resistance has been argued to result from a mismatch between the complexity of the

systems in which we intervene and the mental models we use to plan and evaluate the effects of such interventions (Sterman, 2010). Concretely, three common sources of policy resistance were explored in an attempt to understand their potential for generating counterperformative outcomes in environmental entrepreneurship. First, the neglect of delayed effects and intertemporal trade-offs was considered in Study 1. Second, an enlarged set of system boundaries was used to consider the distant effects of the imperfect substitution of green alternatives in Study 2 and Study 3. Third, feedback mechanisms in the form of rebound effects were considered in Study 3 and Study 4. In this chapter, I conclude by synthesizing the most important contributions this dissertation makes to theory and practice by doing so, and outline a number of recommendations for future research before offering a brief conclusion.

1. Contributions

The first set of contributions following from this dissertation relate to the literature on the outcomes of environmental entrepreneurship. More specifically, the focus on intermediate proxies such as market creation, firm entry and product adoption (Cainelli, D'Amato, & Mazzanti, 2020; Georgallis & Lee, 2020; Lee et al., 2017) is extended by this dissertation in a number of ways. For example, Study 1 hones in on the possibility of delayed effects associated with environmental entrepreneurship. In particular, we study the possibility of an increased propensity towards mission drift and bankruptcy that could destabilize organizations simultaneously pursuing economic and environmental goals. Indeed, prior research shows that firms may face additional governance challenges when pursuing such competing demands (Besharov & Smith, 2014; Cossey, Billiet, Dufays, & Bruneel, 2023; Pache & Santos, 2013). Yet, the literature has so far focused on explaining the drivers of firm entry (Georgallis & Lee, 2020; Meek, Pacheco, & York, 2010; Sine & Lee, 2009), and has paid less attention to firm survival (Vedula, York, Conger, & Embry, 2022b). We study this question in the context of the sharing economy, where these tensions and the organizational instability to which it can lead have been noted before (Acquier, Daudigeos, & Pinkse, 2017). Building on an extensive geographic mapping of the phenomenon in Brussels, however, our quantitative analysis does not find evidence for this increased instability. By contrast, we find evidence of an increased ability to scale while retaining a social or environmental objective, which seemingly contradicts existing theory. Through the adoption of a mixed-method research design, we then explain the distinct scaling strategies that allow digital platforms to do so. In a similar vein, study 2 complements the existing focus in the literature on the adoption of green alternatives (Cainelli et al., 2020; Olson, 2013b; York et al., 2017), which are assumed to displace environmentally

inferior products on a 1:1 ratio (Vedula et al., 2022a). However, environmental savings will be achieved only to the extent that the adoption of clean technologies and products brings about such displacement (Drake & York, 2021). In contrast to the assumed 1:1 ratio, substitution can be highly imperfect in practice (Cottrell et al., 2021; Vadenbo, Hellweg, & Astrup, 2017; York, 2012). Explicitly considering imperfect substitution, as done in Study 2, can improve the understanding of outcomes in environmental entrepreneurship in three ways (Hall, Daneke, & Lenox, 2010; Vedula et al., 2022a; York, 2018). First, understanding the average substitution ratio of a firm's green products avoids overestimating its environmental savings. Second, understanding the factors underlying substitution decisions for different green alternatives could greatly improve the effectiveness of environmental entrepreneurship. Last, it highlights a potential risk associated with the existing focus on targeting green consumers in the literature (White, Hardisty, & Habib, 2019). For example, if individuals with high environmental motivations already lead low-impact lifestyles, the introduction of green product alternatives, would lead to a low substitution effect among green consumers and may lead to increased consumption and impact rather than decreasing it. In addition, Study 3 extends the literature on outcomes associated with environmental entrepreneurship with explicit estimates of environmental impacts. While this field of research is focused on understanding why, how and when individuals simultaneously pursue economic and ecological benefits (York, 2018), recent literature reviews have found actual measurements of environmental outcomes to be rare (Anand, Argade, Barkemeyer, & Salignac, 2021; Vedula et al., 2022a). Similar concerns over the absence of physical data and collaborations across disciplinary boundaries have been raised in the corporate sustainability literature more broadly (Baudoin, Carmine, Nava, Poggioli, & van den Broek, 2022; Carmine & De Marchi, 2023; Whiteman, Walker, & Perego, 2013). Within the environmental entrepreneurship literature, the inability to evaluate the effectiveness of initiatives has been argued to open up the field up to symbolism (Anand et al., 2021). In this context, Study 3 contributes to the literature by presenting a technique to evaluate whether the environmental savings of green products are robust to a re-spending of the cost savings they generate. Moreover, our granular estimation technique accounts for the heterogeneity in environmental savings that different substitution patterns can generate across consumer segments.

A second set of contributions that can be derived from this dissertation, relates to the way in which it complements existing explanations for a lack of progress towards environmental goals in the broader corporate sustainability literature. More concretely, these discussions have

focused on the rationales for both firm engagement and inaction on environmental issues (Ambec & Lanoie, 2008; Bansal, 2003; Bansal & Roth, 2000), and distinguished symbolic actions from substantive ones (also known as greenwashing) (Kim & Lyon, 2015; Lyon & Maxwell, 2011; Lyon & Montgomery, 2015). Yet, at present, it is challenging to evaluate the effectiveness of corporate sustainability research, and it is becoming ever more so due to the decreasing environmental focus in the literature and its increasing conflation with corporate social responsibility (Bansal & Song, 2016; Burbano et al., 2023; Russo et al., 2024). Moreover, this lack of explicit measurement is often complemented by bold assumptions regarding the effectiveness of firms actions to improve environmental outcomes (Halme, Rintamäki, Knudsen, Lankoski, & Kuisma, 2018; Vedula et al., 2022a; Wickert & Muzio, 2024). This is nicely illustrated by the taken for granted belief that environmental entrepreneurship, as the introduction of green products, services and business models by either start-ups or incumbents, is inherently good and beneficial (Vedula et al., 2022a). Yet, this dissertation has explored how such well-intentioned interventions can be defeated by the side effects or unintended consequences they create (Castro, 2022; Ghaffarzadegan et al., 2011; Sterman, 2010). As such, it complements existing explanations for a lack of progress towards environmental goals that is, corporate inaction (Bansal & Roth, 2000) and greenwashing (Lyon & Montgomery, 2015), with the concept of policy resistance. For example, Study 2 highlights how narrow system boundaries, complemented with the assumption of perfect substitution, can lead to an overestimation of the effectiveness of environmental entrepreneurship. In addition, Study 2 illustrates how this tendency may be especially problematic amongst green consumers (White et al., 2019). Indeed, the introduction of green product alternatives, if subject to especially low substitution effects among green consumers, may lead to increased consumption and environmental impact rather than decreasing it. In a similar vein, Study 3 and Study 4 highlight the potential of feedback mechanisms to offset the potential environmental savings of environmental entrepreneurship. Rebound effects refer to a discrepancy between expected and realized environmental savings as a result of overlooking such feedback mechanisms. A classic example is the improvement of fuel efficiency in private cars, which is widely expected to save energy and reduce emissions (see, for example, Foss & Klein, 2024). However, rebound studies seek to account for the actual environmental savings remaining after accounting for the way in which more efficient cars increase energy demand through more driving (Chai, Yang, Wang, & Lai, 2016), bigger and more powerful cars (Olson, 2013a) and cost savings that increase demand for other goods and services (Font Vivanco, Kemp, & van der Voet, 2015). While Study 4 documents just how disconnected this literature is from management research at

present, this dissertation provides a number of insights that could facilitate its integration in future research. First, Study 3 introduces a technique to produce micro-level rebound estimates that account for imperfect substitution. In doing so, we highlight the importance of assumptions regarding substitution patterns in explaining the actual environmental savings, the magnitude of the rebound effect, and heterogeneity across consumer segments. By accounting for this imperfect substitution in our study, we are able to capture heterogeneity in rebound effects, enabling targeted mitigation strategies and improving the actionability of rebound studies for decision-making. More broadly, Study 4 proposes three conceptual shifts to enhance the managerial relevance of rebound effects more broadly. First, we propose a broad understanding of rebound mechanisms relevant for management scholars as those connecting firm actions with system-level outcomes. Second, we identify three avenues for future research that enable the development of a managerial perspective on rebound effects through studies focused on measurement, perception and intervention. While our review documents a focus on measurement and quantification in the existing literature, we know much less about the way in which they are perceived and made sense of by firms and their stakeholders. This is surprising since there is substantial agreement on and evidence of the phenomenon's existence, yet its impact on decision-making has been limited (Font Vivanco, Kemp, & van der Voet, 2016). A constructivist perspective on rebound effects could thus shed light on whether, how, or to what extent firms can or should bear responsibility for these unintended outcomes. This line of research could build on the existing work studying framing contests and legitimacy struggles around the social construction of political responsibility in the context of complex problems (Nardella, Brammer, & Surdu, 2020; Reinecke & Ansari, 2016; Reinecke & Ansari, 2021). Related to this, we identify a potential for methodological diversification in the literature, particularly through the application of qualitative research methods, simulation models and action research.

Third, the dissertation contributes to the literature on systems thinking and the development of system thinking capabilities. As the traditional separation between private and public governance breaks down, firms are increasingly held responsible for complex societal problems and the provision of public goods (Lindgreen & Swaen, 2010; Reinecke & Ansari, 2016; Scherer & Palazzo, 2011). These activities have come to involve outcomes that lie beyond the traditional scope of management studies, whose integration has been dealt with in two ways. The first approach embraces and attempts to explicitly account for this complexity and calls upon scholars to study outcomes through multi-level analyses and by using systems thinking

approaches (Brown et al., 2022; Burbano et al., 2023; Carmine & De Marchi, 2023). However, it is typically unclear whether such systems thinking should be used as a theory, paradigm, belief system, perspective or method (Grewatsch, Kennedy, & Bansal, 2023). Moreover, at a practical level, it typically remains unclear what the appropriate boundaries for analysis are, let alone how this decision should be made. Consequently, it has proven challenging to move beyond slogans such as "everything is connected with everything else" (Sterman, 1994, p. 292). The second approach is more pragmatic and uses simplifying assumptions to abstract away some complexity. In doing so, it makes phenomena amenable to theorization and study. The literature on environmental entrepreneurship, by focusing on intermediate proxies complemented with simplifying assumptions to understand outcomes (Vedula et al., 2022), provides a good example of this second approach. Yet, this dissertation has introduced policy resistance as a conceptual framework to approach system-level outcomes in a way that integrates the strengths of both approaches, while mitigating some of their limitations. Concretely, the concept of policy resistance acknowledges that mental models are always a simplification of complex realities (Forrester, 1971). However, this simplification is a necessary, and often desirable, precondition for decision-making, planning and evaluation. Yet, at the same time, it allows decision-makers to explore and potentially integrate more complex dynamics, if these are found to significantly affect their intended outcomes. As such, policy resistance can be thought of as an approach to system thinking, that is akin to sensitivity analysis, and defines the appropriate scope of analysis in light of the intentionality of the intervention. As such, it could present a gradual, but actionable avenue to answer calls for more consideration of systemic complexity in management theories (Burbano, Delmas, & Cobo, 2023; Carmine & De Marchi, 2023; Schad & Bansal, 2018).

Last, this dissertation contributes to ongoing debates on counterperformativity (Wickert & Muzio, 2024), both on an empirical and a conceptual level. Concretely, we find several instances of counterperformative results in the context of environmental entrepreneurship and suggest avenues for future research on counterperformativity at the nexus of business and the natural environment. First, system boundaries are found to be important. In particular, the use of narrow system boundaries in combination with an assumption of perfect substitution may result in counterperformativity as illustrated in Study 2. Especially when it leads to a focus on consumer segments with low substitution ratios, for example, green consumers. Second, theories of environmental entrepreneurship, neglecting feedback mechanisms, such as rebound effects, risk generating counterperformativity, as illustrated in Study 3. Study 4, suggests that

this issue is indeed being overlooked in management research more broadly. In our research agenda, we suggest that the integration of this issue in future research is especially relevant for theories concerned with 'whether it pays to be green' (Albertini, 2013; Ambec & Lanoie, 2008; Berchicci & King, 2007), or how firms can simultaneously pursue both environmental and economic goals (Cohen & Winn, 2007; Vedula et al., 2022a; York & Venkataraman, 2010). These literatures hold in common, a focus on win-win strategies to improve economic and environmental performance simultaneously through product, process or business model innovations relying on efficiency improvements (Ambec & Lanoie, 2008). While these can be expected to trigger substantial rebound effects, this issue is not being addressed at present. Next to the literature on environmental entrepreneurship, this includes the natural resource-based view of the firm, a theory of competitive advantage based on the relationship between the firm and the natural environment (Hart, 1995), and the literature on eco-innovation focusing on the modification of "processes, techniques, systems and products for avoiding or reducing environmental damage" (Costantini et al., 2015, p. 578). While these strategies may still be 'green' after accounting for rebound effects, this is, at present, an open question, and their neglect indicates an area of theory that may be counterperformative (Wickert & Muzio, 2024). In addition to this, our research agenda highlights the potential to build on the trend towards multidimensional rebound estimates (Font Vivanco, McDowall, Freire-González, Kemp, & van der Voet, 2016). This could improve our understanding of environmental problem shifting (Wood Hansen & van den Bergh, 2023), which has historically been another important source of unintended consequences associated with technological progress. At a conceptual level, this dissertation contributes to the study of counterperformativity by linking it to policy resistance. Concretely, a theoretical framework is akin to a mental model in that entails implicit and explicit assumptions, heuristics and simplifications. Policy resistance can thus provide a framework to explain and explore when such simplifications may be inappropriate because of the counterproductive effects they generate.

2. Limitations & future research

Above and beyond the limitations of the individual papers, there are two important limitations to this dissertation as a whole, which also provide pointers for future research. First, there is a need to deepen our understanding of the actual mental models and heuristics used by decision-makers in companies to think about their interactions with the natural environment. Given the complex, uncertain and rapidly changing nature of environmental conditions, mental models can be expected to be disconnected from the underlying physical realities. Such discrepancies

can be persistent in the absence of unambiguous feedback about outcomes and other barriers to learning. This means there is also a need for studies seeking to develop concrete tools, simulations and workshops that could improve such mental models over time. Since decision-making routines are grounded in past successes and learning by doing, they are especially likely to be subject to inertia and misapprehension in contexts of environmental change (Audia, Locke, & Smith, 2000). This can be problematic when thinking about impact, as has been explored in this dissertation, but may be even more problematic when it comes to understanding risks related to the natural environment, an avenue for future research. For example, historically our economies have developed in the context of widespread abundance of resources. As our economies grow relative to the natural environment on which they depend, resource systems are depleted or become scarcer. Yet at the same time, fragility has increased as economic activities have become interconnected through complex supply chains amidst a climate system that becomes increasingly unstable. In this context, thinking about and anticipating disruption, whether they are due to resource depletion or supply chains shocks, and other physical risks posed by the natural environment will become increasingly important (Sheffi, 2015). A concrete example as to how companies can do so, is provided by the Operational Climate Adaptation and Resilience Assessment (OCARA) workshop developed by Carbone 4, a consultancy firm. This workshop allows participants to make their thinking about resource constraints explicit and develop company-level strategies to anticipate various scenarios of resource availability, amongst other adaptation measures.

The second limitation of this project relates to its limited empirical scope and a need for more research to understand the generalizability of its implications on three levels. First, the mechanisms and theoretical constructs identified in this PhD could be explored for environmental entrepreneurship in other settings. For example, more work could be done on other empirical contexts in which imperfect substitution has been documented, including alternative food products (Cottrell et al., 2021), renewable energy sources (York, 2012), as well as in the context of the circular economy (Zink, Geyer, & Startz, 2018). Different empirically relevant contexts for the future research on rebound effects have been identified in Study 4. Next to this, future research could operationalize the sources of policy resistance, delayed, distant and feedback effects, in different ways. A particularly interesting avenue in terms of generalizability, concerns future research drawing on public data sets that contain environmental indicators, for example the Toxic Release Inventory for the United States, to study these issues on a larger scale. As environmental reporting requirements proliferate, such

studies will become increasingly feasible in diverse empirical contexts. Last, there is a growing interest among management scholars to understand how firms can address complex societal problems, denoted 'wicked problems', 'grand challenges' or even 'messes' (Klag & Langley, 2023). As a consequence of the difficulty of anticipating and thinking through the impact of interventions in these contexts, policy resistance may be a fruitful concept and avenue for future research in related fields dealing with these issues, including social entrepreneurship, corporate social responsibility and philanthropy. For example, Chalmers (2021) argues that social entrepreneurship may substitute for and reduce pressure to instigate ambitious legislative and institutional reforms that address the causes of social problems in a more permanent manner. Indeed, he argues that superficial attempts to tackle complex social problems "may be doing more harm than good" (Chalmers, 2021, p. 1464), while existing theorizing often takes for granted that the phenomenon is desirable. Last, more interdisciplinary research when dealing with topics beyond the traditional purview of management research could form a powerful antidote to the simplifying assumptions that drive policy resistance and the potential counterperformativity of existing theories.

3. Implications for practice

This dissertation builds on a number of starting points that are important to understand. First, a lot of society's pressing concerns are human-caused. Think about climate change, species extinction or societal polarization. They are typically not intentional, but rather incidental, or more precisely, the unexpected, unintended and undesirable consequences, of human actions. Consequently, what we call problems are often just symptoms. From this perspective, the real problem is a flawed mental model guiding decisions and behavior. Mental pictures are especially likely to lead to unintended consequences under short-term thinking, when viewing the world in silos or by neglecting the responses to our actions. Second, when dealing with complex issues, even well-intentioned efforts to solve problems may be defeated by unintended consequences. This tendency is referred to as policy resistance (Castro, 2022; Ghaffarzadegan et al., 2011; Sterman, 2010). Usually, it is possible to overcome this unfortunate state of affairs by learning through trial and error, thereby improving our performance over time. However, this is not the case for certain problems (Rahmandad, Repenning, & Sterman, 2009; Repenning & Sterman, 2002; Sterman, 1994). For example, if there are important time delays, like for climate change, learning through trial and error will be slower (or even impossible). Next to this, if the outcomes associated with actions are unclear, for example, for becoming vegetarian, or if it is unclear what caused a certain outcome, for example, a flood, learning through trial

and error will be tricky. As technical and organizational complexity increase and cooperation and coordination across an increasingly large number of people is required, learning becomes more and more complicated (Sterman, 2015). In extreme cases, even theoretical frameworks that simplify too much while dealing with complex problems, may result in counterproductive, unexpected outcomes when applied in practice. This dissertation has explored, and found evidence of, just such dynamics in the context of environmental entrepreneurship. Yet, it also derives a number of recommendations to anticipate and mitigate these unintended consequences.

The first implication for practice revolves around the need to find ways in which mental models can be articulated, challenged and improved. In particular, it is important to think about interventions along different time horizons, considering wider spatial boundaries, or considering how an intervention might trigger responses from others. Practical avenues for doing so, include the use of participatory systems mapping (de Gooyert, Rouwette, van Kranenburg, Freeman, & van Breen, 2016), causal loop diagrams, simple simulation models or more elaborate digital twins (Ghaffarzadegan et al., 2011). A concrete example, is provided by de Gooyert et al. (2016), who detail an effort using a combination of these techniques that brought together a variety of stakeholders in the context of the Dutch energy transition. During eight workshops, they allowed these experts to collaboratively construct a shared understanding of the problem that incorporated feedback mechanisms and cross-sectoral interactions. By mapping out the structure of a problem, such workshops can enable discussion among participants in a system and a type of learning that is typically not possible through trial and error. If these efforts succeed in avoiding defensive routines (Sterman, 1994), they allow participants to adjust their mental pictures of problems and constitute a promising way to overcome policy resistance in practice. More broadly, such exercises challenge decision-makers to make their mental models explicit and open them up to discussion and critical evaluation. In doing so, they present an important step towards improved decision-making in the face of complex problems.

As policy resistance can only persist when there are barriers to learning, this dissertation also points to a need for and interesting opportunities surrounding innovative pedagogy that seeks to stimulate the articulation and examination of mental models and their realignment with complex realities. The scope of the challenge and the complexity of the issues involved seem to favor pedagogical approaches in which participants play an active role. Some examples of such approaches include participative workshops, role playing games and simulations. A

concrete example of innovative pedagogy is offered by La Fresque du Climat. An association that was set up in France in 2018 with the ambition to create awareness and understanding of the complex risks associated with climate change through collaborative workshops. Concretely, the card game it developed allows participants to reconstruct the causal logic underlying the scientific reports of the IPCC. It enables a visual and intuitive understanding of complex links between outcomes such as ocean acidification, biodiversity loss and even armed conflicts, all of which are results of human activities involving fossil fuels. Such workshops have reached almost 2 million people globally and are increasingly being used to train executives too. Moreover, similar formats already are and could be developed further for teaching about other complex issues, including biodiversity, supply chain disruptions and chemical pollution.

Next to this, this dissertation also holds a number of implications for public policy. First, the results of this dissertation highlight the complexity of anticipating and evaluating the environmental impacts associated with policy strategies that rely on voluntary corporate action and technological innovation. This means such strategies and the savings anticipated from them should be treated with great caution in policy design. At present, this is not the case. For example, the IPCC has noted that deriving actual environmental savings from low-emission innovation and technology diffusion implies a need to design policy mixes to avoid rebound effects (IPCC, 2022). Yet, the report is at present unable to detail how policy actors could achieve this. Moreover, the issue is altogether overlooked in its scenarios, as the Integrated Assessment Models used to develop them exclude rebound effects by definition (Krey et al., 2019). This explains how policy strategies come to overestimate the savings they will produce. Next to this, there is the distinct risk that policy actually exacerbates rebound effects (Font Vivanco, Sala, & McDowall, 2018). This risk is especially high for the most commonly used market-based forms of climate policies, namely, subsidies to stimulate the diffusion of green technologies. Empirical evidence supporting these arguments is provided by Stechemesser et al. (2024)’s analysis of 1500 policies that sought to reduce carbon emissions over the past 20 years. Their findings show that significant emission reductions were achieved for only 69 policies. This implies a disturbingly low success rate of 4.6%. Improving this track record will either require getting serious about understanding the complex systemic effects associated with green innovation and technologies or a switch in policy instruments. Regarding the latter option, the uncertainty around environmental savings is reduced by policy approaches that seek to cap impacts directly, for example, the EU cap-and-trade scheme (Alcott, 2010). Even though it

remains important to consider how any government revenues from such schemes are re-spent (Font Vivanco et al., 2018).

Last but not least, it is important to stress that this dissertation in no way claims that environmental entrepreneurship is usually or always harmful nor that it needs to be. As such, it should not be interpreted as a reason to cease efforts to improve the eco-efficiency of products, services and business models nor to downplay the challenges involved in getting these products onto the market. However, this dissertation has highlighted and found evidence of mechanisms that can offset the environmental savings of such efforts. This means technological improvements and innovations used to develop greener products, processes and business models can be thought of as a necessary, but not sufficient, condition to improve macro-level environmental outcomes. Their impact cannot be derived from or anticipated by product-level comparisons only, but depends on the way in which they interact with existing consumption and production patterns. To put it differently, the focus has usually been on the product itself, for example, whether it is reusable, recyclable or renewable. But such green products can both increase environmental impacts and lead to environmental savings, depending on the consumption and production they displace. This conditionality is often overlooked, as debates portray green products as inherently good and desirable. This tendency has been exacerbated by framing corporate action on environmental problems under the umbrella of corporate social responsibility and 'doing the right thing', leading to complacency among external actors, including consumers and regulators (Bansal & Song, 2016). Consequently, this dissertation has sought to illustrate how unexpected, unintended and usually undesirable consequences may be less inherent to products or technologies themselves but also derive from the way in which we plan for, think about and decide to use them. Indeed, realizing substantial environmental savings through environmental entrepreneurship will require not just the introduction of green products, services and technologies but a broader reshaping of roles and responsibilities among consumers, businesses and policymakers and implies a need to deepen the mental models on which we rely to make sense of such interactions. As such, the problem can be restated as an issue of mind over matter, a way to highlight how these unintended consequences are not physical features of reality but rather "a situation in which someone is able to control a physical condition or problem by using the mind" (Merriam-Webster, 2024).

4. Conclusion

The debate on business and the environment is a polarized one. Critical perspectives have rightfully highlighted the tardy, shallow and mainly face-saving efforts of businesses to respond to environmental problems (Gaim, Clegg, & Cunha, 2021; Lyon & Montgomery, 2015; Slawinski, Pinkse, Busch, & Banerjee, 2015), resulting in calls for a drastic overhaul of existing theories (Bansal, Durand, Kreutzer, Kunisch, & McGahan, 2024; Davis & DeWitt, 2024; Nyberg & Wright, 2022). However, such overhauls typically embrace a heroic view of managers that will supposedly and simultaneously integrate various social, environmental and economic concerns (King & Pucker, 2021). By contrast, optimists have stressed cases in which firms creatively identify synergies, win-wins and opportunities to innovate in response to environmental challenges (Ambec & Lanoie, 2008; Vedula et al., 2022a; York & Venkataraman, 2010). This has sometimes resulted in the conclusion that existing theory will do just fine (Foss & Klein, 2024). This dissertation has sought to strike a balance between the two by exploring the risk that optimistic perspectives become counterproductive in practice due to the simplifying assumptions on which they are based. In doing so, I hope it can enable productive dialogue between both perspectives and can constitute a modest contribution in its own right to the integration of the natural environment in business operations and management.

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