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From sustainable development to social- ecological justice: Addressing taboos and naturalizations in order to shift perspective

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Abstract

While sustainability was introduced as a game-changing idea, it has often been criticized for its vagueness and its over-accommodating bent toward powerful, vested interests, economic growth, and profit seeking—or, on the contrary, for not being able to enter mainstream politics. As a result, in the current political climate, sustainability policies seem to be everywhere, but so does the social and ecological critique of these policies. In this article, we articulate the seeds of an emerging cross-sectoral shift away from sustainability and toward social-ecological justice. Coming from a multidisciplinary background, we explore commonalities in the shortcomings of sustainability agendas and identify discursive barriers to change

across three critical fields: transport, energy, and urban greening. Within each of these fields, we observe an upswing of scholarly work addressing the pitfalls and trade-offs of sustainability, but we also show how taboos and naturalizations embedded in these fields hinder adequately questioning the economy's role in sustainability thinking and action. To develop our argument that there is an emerging cross-sectoral push away from sustainability agendas and toward social-ecological justice goals, we briefly examine the current state of the wider sustainability discourse together with its critique from a social and ecological justice angle. We then review relevant academic work across the applied fields of transport, energy, and urban greening, focusing on the normative and analytical aspects dealt with, and how they address and conceptualize tensions between the different dimensions of sustainability. In the concluding section, we highlight how a focus on sectoral and local tensions between ecological, economic, and social policy goals uncovers the ways in which injustices or environmental degradation are continually reproduced, despite the sustainability framework. We conclude with suggestions for thinking and acting under the umbrella of social-ecological justice.

Introduction

In the current political climate of many countries, sustainability policies seem to be everywhere. So are the critiques of these policies, which come from two sides. From an ecological perspective, social movements push for more effective environmental and climate policies, arguing that present efforts to preserve the ecosystem are simply not enough. Meanwhile, social justice critiques emerge from different ends of the political spectrum with a focus on rising inequalities, growing mistrust of liberal democracy, and a “populist turn” in Western countries (Lockwood, 2018; Mudde, 2004). These lines of criticism address distinct social or environmental limitations of sustainability policies as implemented despite the longstanding recognition that, to use Pope Francis' words, “We are not faced with two separate crises, one environmental and the other social, but rather with one complex crisis which is both social and environmental”.¹

Initially, sustainability was developed as a concept meant to internalize these critiques within a development-oriented agenda by jointly addressing poverty and environmental degradation alongside economic prosperity based on the principles of intergenerational equity (WCED, 1987). While debate about the concept began as soon as it was launched and is anything but settled, the three fundamental elements—economic prosperity, environmental protection, and social equity—appear in all mainstream accounts of sustainability. This tripartite framework is the source of a well-known, ongoing, and perhaps unresolvable tension around conflicts between the growth-oriented development paradigm on one hand and social and environmental goals on the other (e.g. Fatheuer et al., 2016). Indeed, the dividing lines between these two sides (growth vs. social-ecological equity) remain

¹ Pope Francis provides thoughts on a just transition in his Enzyklika „Laudato si’”, see <https://insidethevatican.com/magazine/culture/laudato-si-francis-we-face-a-complex-crisis-which-is-both-social-and-environmental/>

relevant to sustainability practice, where issues of social and ecological justice are commonly treated as additive rather than integrated within the sustainable economy (Bartelmus, 2012). As a result, while sustainability was introduced as a game-changing idea, it has often been criticized for its vagueness (Arler, 2003) and its over-accommodating bent toward powerful, vested interests, economic growth, and profit seeking—or, on the contrary, for not being able to enter mainstream politics (Swyngedouw, 2009).

As a multidisciplinary team of researchers variously concerned with social justice and ecological sustainability, we explore how this incommensurable structure within sustainability shapes agendas in three critical fields: transport, energy, and urban greening. Within each of these fields, we see an upswing of scholarly work addressing the pitfalls and trade-offs of sustainability agendas. For example, calls to explicitly prioritize social and environmental goals over economic ones have recently emerged within “mobility justice” (e.g. Sheller, 2018), “energy justice” (e.g. Jenkins et al., 2016), and “green gentrification” (e.g. Anguelovski et al., 2018) as well as in current contributions highlighting trade-offs in green space development (e.g. Haase et al., 2017), social impacts of energy transitions (e.g. Bouzarovski et al., 2017; Grossmann, 2019a), and transit-induced gentrification (Dawkins and Moeckel, 2016). Given the converging set of issues within these different research fields, this paper undertakes a cross-sectoral exploration of where the decades-old sustainability debate has left us, while articulating important missing and underappreciated points for the transition to a fair future. Fundamentally, we ask: Is the sustainability model capable of guiding our fields toward a socially and ecologically just transition? If not, what are the key elements of what must come next?

By tracing and synthesizing emerging sustainability-related trends across these applied fields, we identify and highlight shared challenges hindering effective change. Most essentially, while we need to rethink which position the economy inhabits in discourses on sustainable development, it remains the case that taboos and naturalizations inherent in these applied fields are hindering such a shift. Taken together, these taboos and naturalizations add up to and solidify a blockage within the sustainability debate and its practical outputs. In an effort to uncover sources of this blockage, we review the current discourses of our three research fields, pointing out where implicit normative assumptions enter—or hinder—the debate, and what would happen if we adopted alternative normative positions.

It needs to be acknowledged that this paper has a geographical positionality (Rose, 1997) in that the attention to these concerns has been inspired mainly by empirical experiences in the European and North American context. Also, the conceptual literature used consists of mostly English-language contributions which by and large share this positionality. We may run into biases here, e.g. as to how sustainability concepts have been taken up in policy agendas or not, and how conditions and consequences of the implementation vary across world regions. Despite what we believe is a widely applicable argument for a needed shift of paradigms from sustainability concepts, we are aware that the uptake may look very

different in different government systems. In a similar vein, Europe and North America are not homogeneous; differences exist among western liberal societies, with for example Scandinavian welfare countries employing sustainability politics in different ways than more market-based Anglo-American countries, and new democracies in Eastern Europe or the Global South very likely also differ in their engagement with and implementation of sustainability discourses and sustainability practices. In this context, we strongly encourage a broader debate and more research to explore the global variations of sustainability politics, to which we contribute based on our experiences.

In the remainder of the paper, we first engage with and summarize selected aspects of the larger sustainability discourse together with its critique, and highlight some main points of debate that shape our perspective. We then review relevant academic work across the applied fields of transport, energy, and urban greening, focusing on the normative and analytical aspects dealt with and how they address and conceptualize tensions between the different dimensions of sustainability. In the concluding section, we argue that adopting a coherent social-ecological justice framework could improve our thinking on necessary change in these fields that has, thus far, blocked sustainability initiatives from achieving wider impact. We highlight how a focus on sectoral and a local tension between ecological, economic, and social policy goals uncover the ways in which injustices or environmental degradation is continually reproduced, despite the sustainability framework. We conclude with suggestions for thinking and acting about the next generation of effective change for a more just and sustainable society. We thus add to the emerging discussion on social-ecological justice (Gunnarsson-Osstling and Svenfelt, 2018; Yaka, 2019) as a framework that alters sustainability thinking.

Thinking and acting from a social-ecological framework

The various conceptualizations of sustainability, based on different assumptions about what is considered important, range from narrow, instrumental, economic views to holistic, ethical ideals (Kothari, 1991). The mainstream sustainability approach that is most commonly adopted by policymakers upholds a model of green capitalism premised on continuous economic growth and non-declining utility (Pezzey, 1992). Meanwhile, the more ecologically-oriented sustainability perspective is focused on limits to the use of natural resources and prioritizes environmental preservation in its model of development (Costanza, 1992). Finally, the social equity dimension of a sustainable society, which is notoriously the most difficult to define² (Condie and Cooper, 2015; Eizenberg and Jabareen, 2017), is still

² Eizenberg and Jabareen (2017) have organized specific concepts of social sustainability in a framework built on four tenets: safety (as the fundamental requirement of social sustainability, and sustainability at large), eco-prospection (focused on social responsibility and mitigation of future risks), equity (recognition, participation, and redistribution issues), and urban form as the physical dimensions of urban and communal design. Another approach to substantiating social sustainability is McKenzie's "process-oriented perspective" (2004), according to which social sustainability is "a positive condition within communities and a process within communities that can achieve that condition" (p. 23).

the most marginalized and underdeveloped area of research in sustainability studies (Agyeman et al., 2003; Yiftachel and Hedgcock, 1993). Social sustainability is concerned with a broad array of issues ranging from social inclusion and employment to participatory decision making. Both in theory and practice, the debates on social, ecological, and economic sustainability remain largely separate. Conceptualizations of sustainability further highlight different priorities, but also disagreements over three normative questions: (1) which forms of capital to preserve (social, ecological, or economic) and how much; (2) what is to be sustained; and (3) how it is sustained (see Bartelmus, 2012; Daly, 2007; Neumayer, 1998; O'Neill et al., 2007). Thus, within different conceptualizations, there are different normative orientations, and these camps can again be split into two broad sustainability paradigms: weak and strong (Neumayer, 1998). Weak sustainability assumes that social, ecological, and economic capital are interchangeable (or substitutable), and the goal is maintaining the overall amount of capital. It does not propose substantive changes to socio-economic systems, but rather tweaks geared toward offsetting losses. In contrast, strong sustainability argues that natural or socio-cultural capital plays a critical role for a broader system and cannot be replaced. Representatives of strong sustainability concepts counter the idea of substitutability as purely anthropocentric and highlight practical limits in terms of protecting the environment (Ayres, 2007; Robinson, 2004).

The counter-voices argue that sustainability and economic growth stand in contradiction to one another (Dale et al., 2017). From this point of view, the rise of weak models of sustainability to mainstream status is premised on a false portrayal of value neutrality within mainstream economics, neoliberal ideology, and economic policies (Brown et al., 2017; Cook and Swyngedouw, 2012; Nussbaum, 2010). Such an understanding of sustainability, it is argued, specifically undermines social and ecological justice by subsuming and discounting these issues within the process of constructing a “sustainability fix” for the challenges of rapacious growth (White et al., 2004). Generally, a “sustainability fix” converges on economic and environmental goals, but the spatial and social selectivity of interventions displays a rift within sustainability discourse (Scanu et al., 2020). As this critique is gaining hold, the normative camps within sustainability studies are entrenched in different sides of “the contradiction between our desire for a better life and our concern for what this may do to the environment” (Kuhlman and Farrington, 2010: 3439).

Meanwhile, proponents of the weak sustainability orientation hold that “narrowly defined sustainability of economic activity stands a better chance of success than holistic visions of development” (Bartelmus, 2012: xiv). This belief, as well as the normative assumptions that animate it, is visible in the Sustainable Development Goals (SDGs), which are a part of the UN 2030 Agenda adopted by 93 member countries in 2015. The 17 SDGs are meant as “the blueprint to achieve a better and more sustainable future for all,” addressing the global challenges of humanity (UN, 2015). SDGs represent a consensus, or even a compromise view on important goals and values of sustainable development. It has been argued, however, that the goals are inconsistent, as goal number 8 (“sustained economic growth”) is likely to hinder the achievement of other, ecologically and socially-oriented goals: “SDG 8 is the

fatal flaw within the SDGs. By taking this trojan horse in, the other SDGs will not be achieved” (Martinez-Alier and Meynen, 2019). Indeed, the idea of economic growth is deeply anchored in political and social imaginations (Akbulut, 2019), to which sustainability has been tied. For its part, mainstream sustainability discourse largely avoids criticism of the dominant growth paradigm, but, at the same time, it is widely acknowledged that significant progress toward actual sustainability has not been achieved (Soederbaum, 2008).

Different conceptualizations of sustainability and interpretations of SDGs notwithstanding, the same old growth paradigm is reiterated in new ways of doing business across the world. This paradigm underlines globalization and profit-seeking trends, evident in the ever-growing power of trans-national corporations. Especially in an era of pervasive digitalization of economic and social activities, digital transnational corporations hold power capable of impacting government decisions and livelihood as well as life conditions of people. Vandana Shiva, a prominent ecological justice researcher and activist, has been alarming the world about this problem with reference to corporate control of seeds, food, and health as well as water wars (Shiva, 2000, 2002, 2005). Yet, the corporate transnational context is missed from most sustainability debates. Consider, for example, that differences in regulatory regimes across different nation-states create numerous advantages of multinationality for companies (e.g. in bargaining with labor for wages and work conditions in negotiations with governments for financial and other support to inward FDI; and transnational corporations’ taxation liability that arises from different fiscal regimes of countries) (Letto-Gillies, 2019), enabling them to dictate the rules of the economic game and as a result creating social disadvantages. At the same time, the realization of SDGs is consistently linked to establishing public-private partnerships to accelerate the sustainability transition. For example, the 2030Vision, which is a partnership to scale technologies for the global goals³ created under the auspices of the World Economic Forum, aims at just that. Yet, the distribution of wealth and increasing power of tech giants are not addressed as a part of sustainability justice.

Nowadays, even in the current discussions about “green deals”, we see a reliance on clean technology that can serve as the basis for the next growth cycle. This may echo the concerns raised already in the context of green economy and green growth initiatives: the technological basis that serves the main macro-level objective of the green initiatives is enabling future economic growth by decoupling growth from environmental limitations (Spangenberg, 2016). Furthermore, retaining the economic growth primacy conveniently helps to avoid discussion that would distort the existing order: without growth, more justice cannot be generated by distributing surplus, but only by taking from those who have and giving to those who do not, taking from the 1% and giving to – let’s say – the lower 50%. It is against this backdrop

³ “2030Vision aims to be the global public-private platform that puts the expertise and resources of the tech sector in service of accelerating the achievement of the Global Goals. The platform mobilizes technology companies, government, civil society and international organization leaders to harness emerging technologies and at scale to accelerate action to achieve the Global Goals within the next decade,” <https://www.weforum.org/projects/frontier-2030>.

that the social consciousness of the wealthy groups in the affluent countries is eroding. (Spangenberg, 2016).

It is precisely with these concerns in mind that we consider it worth distinguishing growth orientation from neoliberalism as a phase in capitalist development that indeed contributes to and worsens the taboos, but is not our focal point. We consider economic growth in sustainability debates as the primary driver of many of the taboos that we point to, in our search for global alternatives.

The social-ecological nexus as the alternative pathway

The term “social-ecological” has emerged as a container for a parallel set of discourses and practices that seek a related but alternate intellectual pathway from that of sustainability (e.g. Asara et al., 2015; Folke, 2004; Rawluk et al., 2020). The term is variously used to emphasize the interlinkages and interactions between social and ecological developments which—it is argued—are obscured in global sustainability discussions. For example, social-ecological systems thinking emphasizes the need to integrate society into ecological research and to deal with uncertainty and complexity. Thus, “All humanly used resources are embedded in complex, social-ecological systems (SESs). SESs are composed of multiple subsystems and internal variables within these subsystems at multiple levels..” (Ostrom, 2009: 419). Here, society is depicted as the domain of human behavior that can be especially differentiated in terms of degree of technology acceptance, level of awareness of challenges, and orientations within governance systems.

Building on the potential for an alternative intellectual pathway that spotlights underdeveloped elements of the sustainability discourse, social-ecological justice as a term has recently emerged across several scholarly and applied fields (Calcagni et al., 2019; Stevis and Felli, 2016). There is also a growing emphasis on the social-ecological nexus among activists and social movements (e.g. Barton and Román, 2012; Schlosberg, 2002), pointing to the combination of social and ecological engagement in political agendas (Boonstra, 2016). In recent contributions, it has been argued that a social-ecological analytic perspective directs attention toward identifying how injustice and social vulnerability are produced in ways that perhaps get around the hopelessly stuck nature of old sustainability debates (e.g. Bickerstaff et al., 2013; Connolly, 2019; Jenkins et al., 2014). Importantly for the argument presented here, this emerging perspective holds the economy as separate, seen as one of the interacting factors shaping change or stability within social-ecological transitions (Asara et al., 2015). Among efforts for the integration of ecological and social perspectives, the concept of a just transition seeks to inject social justice concerns into ecological discourses and green growth practices. The term “just transition” was coined by North American labor movements to advocate for workers’ interests in the green economy transition, aiming to avoid the social hardship that often comes with economic restructuring (e.g. Stevis and Felli, 2016). More recently, the scope of just transition was extended to include broader social justice concerns in various fields of sustainability transitions such as (among others) transition to renewable energy systems, food

production, climate change mitigation and adaptation (Morena et al., 2019; Newell and Mulvaney, 2013; Sovacool and Dworkin, 2015). While there is agreement within this debate on the importance of social justice in the ecological transition, there are various approaches to this goal: from “reformist” just transition conceptions which focus on the greening of capitalist economies, to critical analysis of the role of the capitalist economy in the production of injustices in green economies (see Just Transition Research Collaborative, 2018).

The turn toward social-ecological concepts across several domains that has gained momentum recently has led to a nascent effort to develop a full framework of social-ecological justice. In scholarly work, Gunnarson-O€stling and Svenfelt (2018: 168) argue that such a framework differs from others specifically because it addresses “a need both for understanding the ecological basis for sustaining societies and highlighting the distribution of environmental resources and environmental impacts between different groups in society.” Yaka (2019) goes even further by arguing that socio-ecological justice allows for the rethinking of social justice in the light of a relational ontology of human and non-human worlds and the framing of the relational existence of human and non-human ecologies as a matter of justice. In other words, Yaka aligns social-ecological justice with deep ecology efforts to develop a notion of communities of justice that include both humans and non-humans alike (e.g. Pepper, 2002). In order to expose the existing conversation about social-ecological justice, examining conflict (especially around hidden tensions in sustainability policies) has been suggested recently in energy transitions research following the idea that conflicts are a window into so-far undiscovered normative tensions, incompatibilities or injustices (Ciplet and Harrison, 2019; Grossmann, 2019b; Krüger and Pellicer-Sifres, 2020). These lines of thought build on work aimed at furthering environmental justice concerns (e.g. Agyeman, et al. 2003; Pulido and De Lara, 2018; Schlosberg, 2007) by focusing deliberately on social justice in environmental sustainability debates. Notably, though, it does not replicate sustainability tendencies to make economic goals central.

The role of the economy and development of a decidedly social-ecological perspective has been addressed more explicitly within post-growth or degrowth debates (Asara et al., 2015). As an example, Raworth (2017) sets planetary boundaries as the outer ring of her “doughnut economy,” and critical thresholds of human deprivation as the inner ring. She argues that reaching the space between the boundaries should be the goal of economic activity, while we should be “agnostic” about economic growth per se. Thus, from a degrowth perspective, the outsized importance given to economic growth is the central concern around which efforts to achieve social justice should be organized (Demaria et al., 2013; Martinez-Alier, 2012). Relatedly, an older radical approach from the post-war years that relates to degrowth efforts to positively formulate a scenario for a new societal organization that is consistent with socio-ecological justice thinking was proposed by scholars working under the banner of Social Ecology and Communalism (Bookchin, 1982).

Sustainability discourse: Taboos and naturalizations

We argue that the social-ecological justice discourse, thinking, and activism stand in opposition to entrenched taboos and naturalizations designed to uphold the institution of mainstream sustainability. These institutional mechanisms suppress fundamental change in society. Thus, we explicitly articulate how these taboos and naturalizations work in three areas of practice. We propose that such articulations are a missing point in the emerging scholarship and that this approach can serve efforts to support a budding alternative, inclusive and empowering shift from sustainability to social-ecological justice.

Taboo is a prominent concept in anthropology (see e.g. Steiner, 2013), used to describe social features or objects that are untouchable and represent core, even sacred, elements of a society. The taboo status ensures that they remain unchanged and unchallenged. In this way, taboos are key mechanisms for supporting existing institutions. Gosling and Cohen (2014) have adapted the concept to investigate “policy taboos” in the transport sector. These are issues that are routinely avoided in the social and political debate, because their discussion would violate collective (although generally unspoken) norms and “sacred values,” thus threatening social order. When policy taboos are “touched,” this tends to result in moral outrage, with the perpetrators seen as norm violators and at risk of political marginalization. In the sustainability context, several taboos relate to the “sacred value” of economic growth and to the hierarchy of economy, environment, and social equity, as “their consideration would require transcending neoliberal forms of governance to initiate fundamental sociocultural change”⁴ (Gossling and Cohen, 2014: 198).

Naturalizations refer to circumstances where certain societal features are declared as “natural” and thereby unchangeable. Fairclough (1989) describes naturalizations as an effect of power that turns a specific view of reality into common sense and thus prevents it from being contested.

Naturalization is the royal road to common sense. Ideologies come to be ideological common sense to the extent that the discourse types which embody them become naturalized. What comes to be common sense is thus in large measure determined by who exercises power and domination in a society or a social institution.

As such, the role of naturalizations is to secure power relations that should not be threatened, to avoid disruptions to a social order that is construed as “natural.” We explore the role of naturalization and taboos in the following section, which examines the applications of sustainability in three fields. We use this as an entry point for identifying normative, taken-for-granted issues and highlighting the emerging areas of inquiry that challenge taboos and naturalizations holding up the existing model of sustainability.

⁴ While Gossling and Cohen refer specifically to neoliberal forms of governance, their argument has wider applicability to the economic growth imperative.

Sectoral sustainability approaches: Evidence of limited change and socio-ecological tensions

Urban greening

Urban greening is a popular strand of sustainability strategies in liberal democracies that refers to the implementation of an environmental planning agenda in (peri-)urban areas as a response to current ecological challenges such as climate adaptation, industrial waste site cleanup, and the creation of less environmentally impactful infrastructure. In practice, greening cities is realized in two ways—it comprises initiatives with clear spatial instantiations (e.g. the creation of new parks or greenways) and those without a discrete spatial boundary (e.g. alternative materials initiatives that reduce the ecological impact of development across a diffuse area). Always, though, greening is a fluid state. It refers to making a space greener than it was at a prior time. How much greener and under which terms is contingent on who decides priorities for a given urban area. Though greening is an inherent part of urban development practices worldwide, the scholarly discussions and research regarding urban greening tend to focus on Western cities in liberal democracies. As such, there is a research gap that fails to address the variance and differences in the conditions and consequences of greening being used as a development tool in cities globally.

Nonetheless, the practice of urban greening is founded on a widely held belief that greener is always better for all people. Green interventions in cities are commonly framed in terms of “win–win solutions” and are often underpinned by local agendas based on cultural preferences for a greener and more livable city (Anguelovski and Carmin, 2011; Checker, 2011; Wheeler and Beatley, 2009) and by municipal sustainability plans (Portney, 2013). Until recently, there were very few challenges to the notion that urban greening is only beneficial (Connolly, 2019), which provides an interesting lens on the role played by sustainability as an urban planning framework in general.

The focus on benefits of urban greening is supported by a wide body of research and practice concerned with urban health (Triguero Mas et al., 2015), urban environmental planning (Du and Zhang, 2020), and urban ecosystem services (Baro et al., 2014). Given the extent and force with which policy and research has beaten the greening drum in cities since 1990, it has long been taboo to challenge the win–win framing, at least in practice. Green growth, after all, is seen by some as the most politically palatable means for altering business-as-usual urbanization⁵ and thus, paradoxically, to politicize urban greening is seen by some as pouring cold water on efforts to institutionalize a more progressive model of urban development. It is this

⁵ For example, see recent conversations on the European Green Deal: <https://cor.europa.eu/en/news/Pages/The-European-Green-Deal-frames-cities-and-regions-new-priorities-.aspx>

paradox that maintains taboos against challenging win–win frameworks for urban greening.

Yet, urban greening practice entails a variety of spatially, temporally, and culturally contingent activities, which some point out makes greening an arena for politicized expressions of differential social power within space (Anguelovski et al., 2018). Thus, there is an emerging discourse focused on breaking the urban greening taboos by politicizing planning for greener cities and exposing the social costs (Gould and Lewis, 2016). This discourse can be approached from two angles, with the first pointing out the unequal distribution of environmental benefits and environmental disadvantages along the lines of social composition such as class and race. For example, research from the US has shown (see Eckerd and Keeler, 2012) that disadvantaged groups tend to be more exposed to harmful ecological practices in proximity to their homes, and clean-ups in these areas take much longer, if they happen at all. There are also significant equity issues regarding access to green spaces (see e.g. Kabisch and Haase, 2014) which have been associated with reduced well-being and physical and mental health (Van den Berg et al., 2010). As a response to this acknowledged injustice, new greening strategies in urban disadvantaged areas have been developed and implemented in the past years, though unanticipated impacts have been acknowledged (EPA, 2006).

The second justice angle, which makes addressing the first one more complex, approaches greening initiatives as practices that can in fact increase social injustices due to sustainably branded developments such as new parks adding fuel to already rising housing costs and property values (Anguelovski et al., 2018). This means that precisely those groups who were supposed to be the beneficiaries of new policies are no longer able to afford living in their newly greened neighborhoods. Case study research for different, mostly European and North American Cities, have found similar tendencies that connect urban environmental planning agendas with increasing existing displacement processes (see e.g. Anguelovski et al., 2018; Dooling, 2009; Wolch et al., 2014). There seems to be a gap between how these environmental projects are “branded” with reference to sustainability and the actual social outcome (Garcia-Lamarca et al., 2021). In this vein, development projects have been criticized (e.g. by Checker, 2011) for appropriating discourses of justice and sustainability in order to “greenwash” the underlying economic interests.

Urban greening justice therefore stresses the need to take a closer look at environmental policies in order to ensure that economical, ecological, and social values are balanced accordingly. In order to do so, the involvement of heterogeneous stakeholders from the public, private, and civil society sectors, as well as direct address of political conflicts, is often urgently recommended with the goal of creating new governing regimes associated with urban environmental agendas. This relates for instance to bottom-up practices such as community gardens and neighborhood initiatives that are being integrated into official city policies and which create new relations and responsibilities between the state and civil society actors (Rosol, 2012). Urban greening justice advocates keep a careful eye on the emergence of new networks of power under the guise of citizen and community empowerment by asking: who gets to be included in the network and

voice their concerns, and who doesn't. In short, the critical urban greening perspective has taken on the contingent aspect of these initiatives in order to attend to questions of who decides how much green, of what type, and under which conditions—thereby aiming to uncover the often forced trade-offs between social and ecological goals that arise when urban greening agendas become a tool for economic growth.

Overall, recent efforts in research and activism have created a foundation for challenging the naturalization of urban greening as an unquestioned benefit for city dwellers and developed grounds for violating the taboo against raising concerns about the social equity effects of growth-oriented greening initiatives. However, these taboos and naturalizations certainly remain within mainstream planning and are reinforced by a global green growth agenda. Green gentrification, critical urban studies and urban environmental justice discourses, though, are pushing to strongly differentiate the economic from social effects of greening, and to prioritize the social effects. Sometimes this takes the form of system-challenging disagreement with the urban sustainability approach (Swyngedow, 2009) and sometimes it takes on a more pragmatic approach focused on the formation of new alliances (Curran and Hamilton, 2012; Wolch et al., 2014) to carefully balance between ecological and social sustainability goals. The various pathways share a focus on western liberal cities that are following sustainable urban planning frameworks, and the economic and political conditions found in this context. For cities globally, the problem framing as well as the strategies could differ. Yet, regardless of location and which direction is taken, the discussions on the emerging conflicts around social costs demonstrate the intellectual and practical dead end of following the politically expedient path of framing urban greening as only a benefit for all. Eventually, the social costs are felt by some and the legitimacy of this naturalized pathway toward weak sustainability is compromised. No amount of consensus research and practice can change this effect. Therefore, a stronger embrace of the environmental and social effects of urban greening is needed for the long-term political calculus to work.

Transport

Transport is the source of multiple forms of ecological damage and one of the hardest-to-decarbonize sectors of the economy. The problem is largely one of “car dependence,” i.e. the progressive entrenchment of high levels of car ownership and use. Traditional approaches to transport planning and policy-making are part of the problem, as they tend to accommodate and encourage increasing levels of car use. As such, the need for a new “sustainable transport paradigm” (Banister, 2008) has long been acknowledged within research. This would include measures to reduce the need to travel, shift trips to more sustainable modes, and improve energy efficiency, with the overarching aim of improving people's accessibility to services and opportunities. In this context, managing levels of travel demand is widely seen as necessary, as technological innovation would not be sufficient to reduce ecological damage on its own (Anable et al., 2012).

The sustainable transport paradigm, however, has failed to bring about substantial reductions in the ecological impact, and critics have highlighted the apolitical nature of much sustainable transport research, the dearth of critical perspectives, and the limited attention paid to policy and governance processes (KeR łowski & Bassens, 2018; Marsden and Reardon, 2017). The overwhelming focus on the consumption and use of cars and the factors influencing them is also problematic, as it neglects the production side and the political economy drivers of car dependence, such as the automotive industry’s need for continued market expansion (Mattioli et al., 2020). These include the automotive industry’s high capital intensity, tendency toward overproduction, and historically declining profit margins, which result in the need for a continued expansion of the car market (Nieuwenhuis and Wells, 2003). These and other issues—such as the lack of credibility of current transport mitigation strategies, the need to curb travel demand, and the disproportionate contribution of higher income groups to transport emissions—are generally not part of the sustainable transport debate, and are even construed as taboo, as they violate the imperative of economic growth (Gossling and Cohen, 2014).

The end result is a depoliticization of the sustainable transport agenda. More critical perspectives exist within other research traditions such as the “new mobilities paradigm” (Sheller and Urry, 2006). This approach brings together the study of transport with that of other “mobilities,” emphasizes the complexity and interconnectedness of social life, and is grounded in a relational ontology, thereby criticizing the narrow focus on travel demand. However, this approach remains relatively marginal, especially in terms of its policy influence (KeR łowski et al., 2017).

While in theory “sustainable transport” has both a social and an environmental dimension, in practice, research in this area has focused overwhelmingly on the environmental side of sustainability. Meanwhile, a complementary “transport poverty” research tradition has emerged, focused on social inequalities in everyday mobility (Lucas, 2012), i.e. on the distribution of the “goods” of transport, in relation e.g. to access to services and opportunities. The inequitable distribution of the “bads” of transport, including exposure to ecological problems, has been only marginally considered within this framework (Lucas et al., 2016a). It also eschews openly normative theorizing, relying instead on a relative deprivation approach to poverty, and can therefore be criticized for assuming an equivalence between inequality and injustice (Mattioli, 2016). References to global inequalities or an explicit socio-ecological perspective are similarly scarce.

Only more recently did considerations of justice in relation to transport and mobility gain some attention. Key tools of transport policy-making such as transport modeling and cost-benefit analysis, while often “naturalized” and seen as normatively neutral, are in fact driven by problematic distributive principles, which tend to reinforce existing inequalities (Martens, 2017). As a remedy, several authors have proposed to rely on justice theories such as the capabilities approach, sufficientarianism, theories of equality and human need (e.g. Beyazit, 2011; Lucas

et al., 2016b; Martens, 2017; Pereira et al., 2017). These approaches make the normative assumption that transport policy should prioritize providing accessibility for all over catering to travel demand. However, with few exceptions (e.g. Mattioli, 2016; Mullen and Marsden, 2016), the literature on transport justice largely refers to a distributive conception of justice in terms of accessibility as the “good” of transport, mostly ignoring the ecological impacts of transport. It could also be argued that it reifies the transport system grown under the premises of capitalist societies and disembeds transport from its larger social context (Cass and Manderscheid, 2018; Sheller, 2018).

Overall then, there are movements to challenge taboos and naturalizations within transport research, but the resulting debate is slightly schizophrenic. While both transport poverty and transport justice research narrowly focus on social issues to the detriment of ecological questions, the reverse happens within sustainable transport research. Transport poverty studies sometimes conclude that the ideal solution would be expanding access to cars—while noting that this may raise environmental concerns; sustainable transport studies tend to conclude that reductions in car ownership and use are required—while noting that this may raise social equality concerns. Meanwhile, both research traditions tend to eschew important political economy questions around the broader factors underpinning car-dependent societies. This illustrates the intellectual dead-end of conceptually separating social and ecological justice within mainstream transport research and its critical counterparts. An alternative approach would be to explicitly interlink social and ecological problems and struggles, while highlighting the political economic structures underlying both.

Energy transitions

Energy transition is nowadays a catchword that frames the large-scale move from carbon-based and nuclear energy toward renewable energy production. While the current energy transition is not unique in human history, what defines the contemporary period is the urgency due to the present ecological crisis (Fouquet and Pearson, 2012).

For decades, energy transition discussions have been concerned with ecological, technological, and economic aspects. Policy measures were designed mainly by engineers and economists, and put forward by activists and politicians. Besides questions of public acceptance of technological change, for a long time there was only one widely acknowledged social justice aspect: the issue of intergenerational justice to ensure a planet supporting life for future generations and non-human species, prominently phrased in the Brundtland-Report as “Humanity has the ability to make development sustainable to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs.” (WCED, 1987).

This sole focus on intergenerational issues was reflective of a phase where the role of social science was largely reduced to that of accompanying research, answering

questions of acceptance of technological change or understanding how a larger change of values and orientations emerges or can be fostered. In the 2000s, the sustainability transitions literature posed the question of the mechanisms of societal change, namely how (mainly technological) innovations can reach mainstream society (Elzen et al., 2004; Geels, 2002). In more recent research on sustainability transitions, new questions of power and justice emerge, such as: how do power structures influence the spread of (mainly technological) innovations, and how does power hinder or support their movement from niches to mainstream (Köhler et al., 2019). Only lately the debate has broadened to include other contemporary justice concerns and inequality impacts (e.g. in the Trade Unions movement for a Just Transition) and has a wider discourse emerged in academic work on energy justice (Jenkins et al., 2016). Roughly since the 2010s, social concerns about affordability of energy services, access to energy and deprivation have started to impact energy research. Prior to that, energy transitions were arguably naturalized as a purely technical and economic challenge. Alongside this naturalization, several taboos can be identified as e.g. those against challenges to technological optimism (Basiago, 1994; Stephens and Markusson, 2018), whereby technological fixes are expected to tackle linked social problems (Rosner, 2004).

Parallel to energy transitions literature, the energy poverty research community has emerged since the 1990s. This community advocates for more attention toward the deprived sectors of society within energy research. Originating from social movements for affordable warmth in the 1970s and 1980s in the UK and Ireland, their concern was to ease the burden of energy costs for low-income households, who often spend considerable amounts on energy due to inefficient homes and appliances (Liddell, 2012, see also www.energy-poverty.eu). Since the seminal book by Brenda Boardman in 1991, this strand of research has largely been concerned with identifying the causes of the problem and measuring its extent (Thomson et al., 2017). In the early years of energy poverty research and policy, the debate focused mainly on securing access to energy, as well as on households' lack of financial resources to pay for heating and electricity. A range of support schemes were developed including e.g. additional financial support such as the winter fuel payments in the UK; social tariffs to lower households' energy bills or bans on disconnections during the winter season as in France (Pye et al., 2015: 75). These measures have been criticized as short term and unsustainable because they do not reduce energy needs and consumption in the long run.

During the past decade, investment in housing energy efficiency has been promoted as a win-win solution in terms of social, environmental, and economic impact (Urge-Vorsatz and Tirado Herrero, 2012). Even this approach, however, fails to challenge the systemic factors underlying income poverty and unequal access to good quality housing. It also tends to overlook the economic interests of the construction and housing refurbishment industries, while taking for granted, and almost naturalizing, the positive impact of housing renovation on society and ecology. However, research has shown that energy efficiency policies in the housing sector are not necessarily to the benefit of low-income groups. Market mechanisms tend to reproduce socio-spatial segregation patterns, with good quality housing

being affordable to high-income groups only. Over time, low-income groups face affordability restrictions and discrimination and end up in housing that is lower-quality, also from an energy perspective.

While eco-gentrification—i.e. the displacement of less privileged households through the means of ecological urban renewal—is well documented in this area (Grossmann, 2019a), energy retrofitting is still a common and seemingly win-win strategy for saving energy and fighting “energy poverty.” Arguably, drawing awareness to the unjust effects of housing markets reflects a policy taboo: the notion that retrofitting has positive social effects has to some extent become conventional wisdom, and as such it remains largely unquestioned in political debates, while the current configuration of the housing market is naturalized as the inevitable context for energy efficiency measures. To make things worse, the allegedly inappropriate and “wasteful” consumption behavior of households is increasingly presented as a further cause of energy poverty, thus blaming the poor instead of investigating the underlying systemic drivers of energy deprivation (Kearns et al., 2019). Accordingly, research funding calls like those under the EU Horizon 2020 program emphasized behavior change as a way to alleviate energy poverty.⁶ Energy saving assistance has become a major strand of energy poverty alleviation policies which has recently been criticized and questioned from within EU projects (Jeliazkova et al., 2020).

Energy production, access to energy and related technology, and the material environment of households have always impacted societies, and are interlinked with social inequalities affecting human well-being. Yet only recently have they become flagship topics in the climate change debate, as e.g. in current discussions on a “Green New Deal” in the US. Several new debates within the energy transition literature are starting to connect justice and ecological concerns. The energy justice scholarship (MJenkins et al., 2014; Sovacool et al., 2017, among others) has developed a framework to analyze the impacts of energy systems in justice terms. Here, energy justice is defined as a characteristic of a “global energy system that fairly disseminates both the benefits and costs of energy services, and one that has representative and impartial energy decision-making” (Sovacool and Dworkin, 2015: 436). This notion relates to other ideas surrounding the socio-ecological dimension. McCauley and Heffron (2018) have recently used the just transition concept to bridge previous debates on climate, environmental and energy justice, while Baker (2017) subsumes energy justice as an expansion of the discourse of the previous two.

However, this scholarship is not free of criticism. Pellegrini-Masini et al. (2020) argue that energy justice research is primarily anthropocentrically-oriented, and overlaps with sustainability since both notions include the triad of economy, environment, and social issues as core elements, implicitly assuming the continuation of the dominant neoliberal paradigm, all of which tends to limit its potential (see also McCauley and Heffron, 2018: 2). We would add that energy transition projects often

⁶ See Horizon 2020 call LC-SC3-EC-2-2018-2019-2020—Mitigating household energy poverty.

coincide with elite and high-tech lifestyles, which have become normalized into yet another naturalization. Further, the concern has been raised that renewable energy policies cater to high social strata, while poor households cannot access the projects and support schemes. Decentralized energy production projects, which aim to combine renewable energy production with economic independence from the fossil energy market are not accessible to energy poor households (Lowitzsch and Hanke, 2019).

There are growing concerns that just energy transitions will not be achieved within the current capitalist, neoliberal organization of society and that the connection between fossil fuel use and capitalism, and particularly between fossil-fuel-based consumption and economic growth, constitute key barriers to social-ecological justice (Bridge and Gailing, 2020; DiMuzio, 2015; Klein, 2014). Here, the transition to a renewable energy model has been presented as a promising solution (Bithas and Kalimeris, 2013). As McCarthy (2015) points out, an empirically feasible transition to a zero-carbon and renewable model could be used as a “socioecological fix” for the economic crisis that the end of the fossil fuels would otherwise generate—without touching any of the core elements of the current system. In his opinion, this shift would lead to an appropriation and commodification process of biophysical elements that were not previously in the circuits of capital (McCarthy, 2015: 2496).

Discussion

Each of the three policy fields presented in the previous section has been working under the rubric of sustainability for decades. They have followed a similar trajectory of often leaning on an inherent support for economic growth agendas as a way of lending political weight to ecological conservation initiatives, followed (often belatedly) by an emerging focus on social justice. Lately, though, these fields have also been characterized by a nascent effort to identify, understand, and analyze the conflicts and contradictions across sustainability goals on the ground. In all three fields, the emphasis on both debate and practice has been on managing ecological change, while improving the environmental outcome of practices of production, consumption, and of the physical and technical design of living space and settlements. An optimism prevailed that economic activities could be transformed in line with environmental needs and, almost as an automatic co-benefit, create equitable social benefits. Looking at these sectoral debates, it is hard not to conclude that social complexity was abstracted away in some of this formulation. Evidence from the three sectors also suggests a common cause for failure: the unquestioned expectation that sustainability can be achieved within the market economy as it is. What we see instead is that, when neoliberal and environmental agendas join forces to foster a “green economy,” social inequalities and vulnerabilities are reproduced and reinforced. Alternatively, economic activities are protected from environmental demand of change in the name of social welfare. Only lately, such social-ecological conflicts and trade-offs have been named and addressed by scholars and civil society, mostly in the context of western liberal democracies.

In the mainstream debate, however, taboos and naturalizations dominate. To be sure, there are occasional challenges to the assumption that any sustainable transformation needs to happen within the current configuration of market economies. In the wider national and international policy arena, however, overt questioning of the suitability of the global capitalist economy as a basis for sustainable and just societies remains taboo. The recent taboo to question SDG8 lately exemplified this point, as it sets economic growth as an unquestioned value and objective, while obscuring the conflicts between economic and social-ecological objectives of sustainable development. Considering the anthropological function of taboos—i.e. preventing change—it helps explain why sustainability has not been able to establish societal change to date. Instead, the mechanisms of policy formation avoid change by naturalizing the current configuration of the economy. Naturalizing the importance of respecting the interests of economic actors results in protecting them from being questioned. To assume that a strong economy provides welfare, green technology and green business will “naturally” solve the problem (technological optimism), is also to sidetrack social costs. This is prominent especially in the win-win assumptions that urban greening, energy retrofitting, or the electrification of the vehicle fleet serve all interests, which tends to hide or underestimate the associated social consequences. We argue that, in order to overcome current unjust and dysfunctional practices, we need more disruptive thinking and action. This means destabilizing the status quo—something that can happen only once the hidden normative assumptions, including taboos and naturalizations, are made transparent.

Some schools of thought already capture some aspects of these concerns. The degrowth debate is the most advanced in confronting economic claims and concerns and thus questioning the economy’s place in accounts of sustainability. The basic move here is to reject economic growth as a societal goal. However, while degrowth is deeply concerned with environmental goals, equity and justice are less in the focus. Social inequalities are present in the writings, but they remain a side topic, and it is often assumed that consumption reductions inherently enhance well-being, despite mixed evidence on this point (Buchts and Koch, 2019).

We propose that a robust concept of social-ecological justice best captures the needed change in direction. To map out this concept, we suggest four guiding principles that might then be applied in different ways in different fields and different geographies.

Economy as a tool, not a goal

A social-ecological justice framework repositions the economy as a tool aimed at assisting human and environmental development, rather than as a normative goal of societal development. This perspective asks simultaneously for social justice and a fair handling of the planet, future generations, and other species, while disengaging with narratives that prioritize economic needs or boundaries. We turn the weak sustainability approach around by asking which economic setup would be

most suitable to reach such goals. In other words, a social-ecological justice framework removes the economy from the triangle of sustainability thinking, reducing it to an analytical, rather than a normative, category. The normative concern is refocused toward ecological sustainability and social justice instead.

Transparent normativity

For a social-ecological justice model to move beyond current debates, the close interlinkages between normative and analytical aspects must be reflected on and made transparent. In both research and practice, normative assumptions are inevitable in sustainability and social-ecological debates, requiring that these assumptions be made in an overt rather than a covert manner (Walker, 2012). This means, for instance, being aware that the concepts and tools of mainstream economics are not normatively neutral, as they reflect a (questionable) “hedonic” understanding of human well-being (Brand-Correa and Steinberger, 2017).

Conflict analysis as methodological entry point to identifying social-ecological injustices.

In order to better uncover trade-offs between social and ecological goals and how they come about, we highlight the importance of research focused on conflicts and tensions. Here, we can draw on a long tradition in social theory—with e.g. Simmel and Marx highlighting the role of conflicts as drivers of societal change. Migration research also interprets conflicts as a sign of successful integration, and a driver of democratic development (see Grossmann, 2019b). Conflicts reveal contradictory interests, and protests have long been used as a catalyst for research efforts for example in environmental justice literature (Agyeman et al., 2003). They open a window into the mechanisms that lead to injustices in the first place. Not by chance, the attempts of powerful economic actors to increase profit at the expense of people and the environment are often at the core of such struggles. We suggest deepening this path and making it a starting point for research.

Sectorial and local comparative frame

We believe that there are lessons to be learned from the approach adopted in this paper, with sectorial and local case studies across various fields informing a broader theoretical framework. It seems that the study of specific actions taken in sectorial policy fields at the local level reveals more clearly the contradictions between the declared goals of sustainability policy and actual outcomes. Contradictions between stated intentions and unanticipated effects become more manifest “on the ground” than in debates on the (ever-elusive) definition of sustainability. While win-win assumptions work in the abstract or as assumptions for designing national policies, it is only in local contexts where relations and dependencies are “graspable” that one can understand why things do not work as officially intended—why urban greening strategies foster gentrification, why mobility infrastructure does not serve the disadvantaged, why the energy transition creates social costs. On a more hopeful note, the local may also be the place where practices that “put the

economy in its place,” conflicts and political action can emerge, disrupting the powerful forces of the elephant in the room—the global market economy and its unquestioned legitimacy.

Conclusion

Sustainability was established as a game-changing idea that promised to simultaneously address social and ecological concerns. After several decades of academic as well as policy debate; after the introduction of local agendas 21; much reporting and monitoring; reframing as green growth, transitions, or more recently SDGs; critical reflections from de-growth; and despite much-touted achievements, it never changed the “game” that generated unsustainable pathways. What is clear now is that perhaps the most substantial success of the sustainability concept was on a rhetorical level, wherein the transition to sustainability was effectively presented as a relatively easy ride toward a livable future that needed not question the existing social order. In illiberal democracies, sustainability agendas might even be used as a fig leaf for concealing the pursuit of rather unsustainable, neo-liberal, undemocratic agendas, such as the smart cities in China. The inclusion of economic goals into the normative triangle of sustainability made such “label fraud” possible. A normative orientation that provides a base for political and analytical rigor needs to be resilient to becoming an empty signifier.

To achieve the disruptive effect sustainability thinking originally aimed at, we suggest to remove the goal of sustainability in favor of “social-ecological justice” (Gunnarsson-Ostling and Svenfelt, 2018; Yaka, 2019). Our goal is to establish social-ecological justice as a frame that would shift the perspective away from ongoing struggles between ecological and economic or social and economic goals, but also from one-sided perspectives putting either ecological or social development first. We use the term “social-ecological justice” because it pulls out, prioritizes, and establishes equivalence between these two goals while separating economy as a sphere unto itself with goals that may conflict or not with those of social-ecological justice. Normatively, it assumes that economy should be put to work for these goals and not the other way around. We believe that distinguishing between this normative position and its analytical consequences is key for scholarly work in this area, and helps to inspire politics.

Of course, such an adoption of a shift in normative paradigms raises new questions. Social and ecological goals come with conflicts and trade-offs that deserve more attention than they have so far received. Also, social justice is a contested concept in itself, where different philosophical literature inspired a variety of normative and analytical frames. Be it liberal or feminist approaches, distributional or procedural issues, questions of recognition or of basic capabilities, this all would lead to different research and policy agendas, as ongoing debates e.g. in mobility, environmental justice or energy justice research are starting to reveal. Perspectives on social-ecological justice are also likely to differ across world regions. Overall, this suggests that a lot of conceptual work is still ahead of us, even though there is a broad and stable foundation upon which to build.

References

- Agyeman J, Bullard R and Evans B (2003) *Just Sustainabilities: Development in an Unequal World*. Cambridge: MIT Press.
- Akbulut B (2019) The 'state' of degrowth: Economic growth and the making of state hegemony in Turkey. *Environment and Planning E: Nature and Space* 2(3): 513–527.
- Anable J, Brand C, Tran M, et al. (2012) Modelling transport energy demand: A socio-technical approach. *Energy Policy* 41: 125–138.
- Anguelovski I and Carmin JA (2011) Something borrowed, everything new: Innovation and institutionalization in urban climate governance. *Current Opinion in Environmental Sustainability* 3(3): 169–175.
- Anguelovski I, Connolly JJT, Masip L, et al. (2018) Assessing green gentrification in historically disenfranchised neighborhoods: A longitudinal and spatial analysis of Barcelona. *Urban Geography* 39(3): 458–491.
- Arler F (2003) Ecological utilization of space: Operationalizing sustainability. In: Light A and De-Shalit A (eds) *Moral and Political Reasoning in Environmental Practice*. Cambridge: The MIT Press, pp.155–185.
- Asara V, Otero I, Demaria F, et al. (2015) Socially sustainable degrowth as a social-ecological transformation: Repoliticizing sustainability. *Sustainability Science* 10(3): 375–384.
- Ayres RU (2007) On the practical limits to substitution. *Ecological Economics* 61(1): 115–128.
- Baker SH (2017) Unlocking the energy commons: Expanding community energy generation. In: Scanlan MK (ed.) *Law and Policy for a New Economy: Sustainable, Just, and Democratic*. Northampton: Edward Edgar Publishing, pp.211–234.
- Banister D (2008) The sustainable mobility paradigm. *Transport Policy* 15(2): 73–80.
- Baro F, Chaparro L, Go'mez-Baggethun E, et al. (2014) Contribution of ecosystem services to air quality and climate change mitigation policies: the case of urban forests in Barcelona, Spain. *Ambio* 43(4): 466–479.
- Bartelmus P (2012) *Sustainability Economics: An Introduction*. London: Routledge.
- Barton JR and Román A (2012) Social movement strategies for articulating claims for socio-ecological justice: global asymmetries in the Chilean forestry sector. *Globalizations* 9(6): 869–885.
- Basiago AD (1994) The limits of technological optimism. *The Environmentalist* 14(1): 17–22.
- Beyazit E (2011) Evaluating social justice in transport: Lessons to be learned from the capability approach. *Transport Reviews* 31(1): 117–134.
- Bickerstaff K, Walker G and Bulkeley H (2013) *Energy Justice in a Changing Climate: Social Equity and Low-Carbon Energy*. New York: Zed Books.
- Bithas K and Kalimeris P (2013) Re-estimating the decoupling effect: Is there an actual transition towards a less energy-intensive economy? *Energy* 51: 78–84.
- Bookchin M (1982) *The Ecology of Freedom. The Emergence and Dissolution of Hierarchy*. Cheshire Books: Palo Alto.

- Boonstra WJ (2016) Conceptualizing power to study social-ecological interactions. *Ecology and Society* 21(1): 21.
- Bouzarovski S, Herrero ST, Petrova S, et al. (2017) Multiple transformations: Theorizing energy vulnerability as a socio-spatial phenomenon. *Geografiska Annaler, Series B: Human Geography* 99(1): 20–41.
- Brand-Correa LI and Steinberger JK (2017) A framework for decoupling human need satisfaction from energy use. *Ecological Economics* 141: 43–52.
- Bridge G and Gailing L (2020) New energy spaces: Towards a geographical political economy of energy transition. *Environment and Planning A: Economy and Space* 52(6): 1037–1050.
- Brown J, Soëderbaum P and Dereniowska M (2017) *Positional Analysis for Sustainable Development: Reconsidering Policy, Economics and Accounting*. London: Routledge.
- Buchs M and Koch M (2019) Challenges for the degrowth transition: The debate about wellbeing. *Futures* 105: 155–165.
- Calcagni F, Maia ATA, Connolly JJT, et al. (2019) Digital co-construction of relational values: Understanding the role of social media for sustainability. *Sustainability Science* 14(5): 1309–1321.
- Cass N and Manderscheid K (2018) The automobility system: Mobility justice and freedom under sustainability. In: Cook N and Butz D (eds) *Mobilities, Mobility Justice and Social Justice*. Abingdon: Routledge.
- Checker M (2011) Wiped out by the “Greenwave”: Environmental gentrification and the paradoxical politics of urban sustainability. *City and Society* 23(2): 210–229.
- Ciplet D and Harrison JL (2019) Transition tensions: Mapping conflicts in movements for a just and sustainable transition. *Environmental Politics*.
- Condie J and Cooper AM (2015) *Dialogues of Sustainable Urbanisation: Social Science Research and Transitions to Urban Contexts*. Penrith: Western Sydney University.
- Connolly JJT (2019) From Jacobs to the Just City: A foundation for challenging the green planning orthodoxy. *Cities* 91: 64–70.
- Cook IR and Swyngedouw E (2012) Cities, social cohesion and the environment: Towards a future research agenda. *Urban Studies* 49(9): 1959–1979.
- Curran W and Hamilton T (2012) Just green enough: Contesting environmental gentrification in Greenpoint, Brooklyn. *Local Environment* 17(9): 1027–1042.
- Costanza R (1992) *Ecological Economics: The Science and Management of Sustainability*. New York: Columbia University Press.
- Dale G, Mathai MV and de Oliveira JP (2017) *Green Growth: Ideology, Political Economy and the Alternatives*. London: Zed Books.
- Daly HE (2007) *Ecological Economics and Sustainable Development, Selected Essays of Herman Daly*. Advances in Ecological Economics. Cheltenham: Edward Edgar Publishing.
- Dawkins C and Moeckel R (2016) Transit-induced gentrification: Who will stay, and who will go? *Housing Policy Debate* 26(4–5): 801–818.
- Demaria F, Schneider F, Sekulova F and Martinez-Alier J (2013) What is degrowth? From an activist slogan to a social movement. *Environmental Values* 22(2): 191–215.

- DiMuzio T (2015) *Carbon Capitalism: Energy, Social Reproduction and World Order*. London: Rowman Littlefield International.
- Dooling S (2009) Ecological gentrification: A research agenda exploring justice in the city. *International Journal of Urban and Regional Research* 33: 621–639.
- Du M and Zhang X (2020) Urban greening: A new paradox of economic or social sustainability? *Land Use Policy* 92: 104487.
- Eckerd A and Keeler AG (2012) Going green together? Brownfield remediation and environmental justice. *Policy Sciences* 45(4): 293–314.
- Eizenberg E and Jabareen Y (2017) Social sustainability: A new conceptual framework. *Sustainability* 9(1): 68.
- Elzen B, Geels FW and Green K (eds) (2004) *System Innovation and the Transition to Sustainability: Theory, Evidence and Policy*. Cheltenham: Edward Elgar.
- Environmental Protection Agency (EPA) (2006) Unintended impacts of redevelopment and revitalization efforts in five environmental justice communities. Available at: <https://www.epa.gov/sites/production/files/2015-02/documents/redev-revital-recomm-9-27-06.pdf> (accessed 10 January 2021).
- Fairclough N (1989) *Discoursal and Social Change*. Lancaster: University of Lancaster, Centre for Language in Social Life.
- Fatheuer T, Fuhr L and Unmußig B (2016) *Inside the Green Economy: Promises and Pitfalls*. Cambridge/Munich: Heinrich-Boell-Stiftung and Green Books.
- Folke C (2004) Traditional knowledge in social–ecological systems. *Ecology and Society* 9(3): 7.
- Fouquet R and Pearson PJG (2012) Past and prospective energy transitions: Insights from history. *Energy Policy* 50: 1–7.
- Garcia-Lamarca M, Anguelovski I, Cole H, et al. (2021) Urban green boosterism and city affordability: For whom is the ‘branded’ green city? *Urban Studies* 58(1): 90–112.
- Geels FW (2002) Technological transitions as evolutionary reconfiguration processes: A multi-level perspective and a case-study. *Research Policy* 31(8–9): 1257–1274.
- Gossling S and Cohen S (2014) Why sustainable transport policies will fail: EU climate policy in the light of transport taboos. *Journal of Transport Geography* 39: 197–207.
- Gould KA and Lewis TL (2016) *Green Gentrification: Urban Sustainability and the Struggle for Environmental Justice*. London: Routledge.
- Grossmann K (2019a) Energy efficiency for whom? A conceptual view on retrofitting, residential segregation and the housing market. *Sociologia Urbana e Rurale* (119): 78–95.
- Grossmann K (2019b) Using conflicts to uncover injustices in energy transitions: The case of social impacts of energy efficiency policies in the housing sector in Germany. *Global Transitions* 1: 148–156.
- Gunnarsson O€stling U and Svenfelt A° (2018) Sustainability discourses and justice: Towards social ecological justice. In: Holifield RB and Walker G (eds) *The Routledge Handbook of Environmental Justice*. KTH: Routledge.
- Letto-Gillies G (2019) Digitalization and the transnational corporations. In: *Rethinking economics*, World Economics Association (WEA) Conferences, No. 1, 2019.

- Haase D, Kabisch S, Haase A, et al. (2017) Greening cities – To be socially inclusive? About the alleged paradox of society and ecology in cities. *Habitat International* 64: 41–48.
- Jeliaskova M, Krasteva V, and Minev D (2020) Inconsistencies in policy-making as drivers of energy poverty in Bulgaria. In: Jigla G, Sinea A, Dubois U, et al. (eds) *Perspectives on Energy Poverty in Post-Communist Europe*. London: Routledge, pp. 55–76.
- Jenkins K, McCauley D, Heffron R, et al. (2014) Energy justice, a whole systems approach. *Queens Political Review* 2(2): 74–87.
- Jenkins K, McCauley D, Heffron R, et al. (2016) Energy justice: A conceptual review. *Energy Research and Social Science* 11: 174–182.
- Just Transition Research Collaborative (2018) Mapping just transition(s) to a low-carbon world. DOI: 10.1103/PhysRevA.90.053405.
- Kabisch N and Haase D (2014) Green justice or just green? Provision of urban green spaces in Berlin, Germany. *Landscape and Urban Planning* 122: 129–139.
- Kearns A, Whitley E and Curl A (2019) Occupant behaviour as a fourth driver of fuel poverty (aka warmth & energy deprivation). *Energy Policy* 129: 1143–1155. <https://doi.org/10.1016/j.enpol.2019.03.023>
- KRebłowski W and Bassens D (2018) “All transport problems are essentially mathematical”: The uneven resonance of academic transport and mobility knowledge in Brussels. *Urban Geography* 39(3): 413–437.
- Klein N (2014) *This Changes Everything – Capitalism vs. the Climate*. New York: Simon & Schuster.
- Koehler J, Geels FW, Kern F, et al. (2019) An agenda for sustainability transitions research: State of the art and future directions. *Environmental Innovation and Societal Transitions* 31: 1–32.
- Kothari R (1994) Environment, technology and ethics. In: Gruen L and Jamieson D (eds) *Reflection on Nature: Readings in Environmental Philosophy*. New York: Oxford University Press, pp. 228–238.
- Kuhlman T and Farrington J (2010) What is sustainability? *Sustainability* 2(11): 3436–3448.
- Liddell C (2012) Fuel poverty comes of age: Commemorating 21 years of research and policy. *Energy Policy* 49: 2–5.
- Lockwood M (2018) Right-wing populism and the climate change agenda: Exploring the linkages. *Environmental Politics* 27: 712–732.
- Lowitzsch J and Hanke F (2019) Consumer (Co-)ownership in RE, EE & the fight against energy poverty – A dilemma of energy transitions. *Renewable Energy Law and Policy Review* 9(3): 5–21.
- Lucas K (2012) Transport and social exclusion: Where are we now? *Transport Policy* 20: 105–113. Lucas K, Mattioli G, Verlinghieri E, et al. (2016a) Transport poverty and its adverse social consequences. *Proceedings of the Institution of Civil Engineers: Transport* 169(6): 353–365.
- Lucas K, van Wee B and Maat K (2016b) A method to evaluate equitable accessibility: Combining ethical theories and accessibility-based approaches. *Transportation* 43(3): 473–490.

- McCarthy J (2015) A socioecological fix to capitalist crisis and climate change? The possibilities and limits of renewable energy. *Environment and Planning A* 47(12): 2485–2502.
- McCauley D and Heffron R (2018) Just transition: Integrating climate, energy and environmental justice. *Energy Policy* 119: 1–7.
- McKenzie S (2004) Social sustainability: towards some definitions. Hawke Research Institute Working Paper Series. WP 27. Available at: <https://unisa.edu.au/SysSiteAssets/episerver-6-files/documents/eass/hri/working-papers/wp27.pdf> (accessed 10 January 2021).
- Marsden G and Reardon L (2017) Questions of governance: Rethinking the study of transportation policy. *Transportation Research Part A: Policy and Practice* 101: 238–251.
- Martens K (2017) *Transport Justice: Designing Fair Transportation Systems*. New York and London: Routledge.
- Martinez-Alier J (2012) Environmental justice and economic degrowth: An alliance between two movements. *Capitalism Nature Socialism* 23(1): 51–73.
- Martinez-Alier J and Meynen N (2019) Never-ending growth? The fatal flaw in the plan to end poverty and save the planet. Available at: <https://www.commondreams.org/views/2019/07/29/never-ending-growth#> (accessed 1 October 2019).
- Mattioli G (2016) Transport needs in a climate-constrained world. A novel framework to reconcile social and environmental sustainability in transport. *Energy Research and Social Science* 18: 118–128.
- Mattioli G, Roberts C, Steinberger JK, et al. (2020) The political economy of car dependence: A systems of provision approach. *Energy Research and Social Science* 66: 101486.
- Mudde C (2004) The populist zeitgeist. *Government and Opposition* 39(4): 541–563.
- Mullen C and Marsden G (2016) Mobility justice in low carbon energy transitions. *Energy Research and Social Science* 18: 109–117.
- Neumayer E (1998) Preserving natural capital in a world of uncertainty and scarce financial resources. *International Journal of Sustainable Development and World Ecology* 5(1): 27–42.
- Newell P and Mulvaney D (2013) The political economy of the ‘just transition’. *The Geographical Journal* 179(2): 132–140.
- Nieuwenhuis P and Wells P (2003) *The Automotive Industry and the Environment*. Abingdon: Woodhead Publishing.
- Nussbaum MC (2010) *Not for Profit: Why Democracy Needs the Humanities*. Princeton: Princeton University Press.
- O’Neill J, Holland A and Light A (2007) *Environmental Values*. London and New York: Routledge.
- Ostrom E (2009) A general framework for analyzing sustainability of social-ecological systems. *Science* 325(5939): 419–422.
- Pellegrini-Masini G, Pirni A and Maran S (2020) Energy justice revisited: A critical review on the philosophical and political origins of equality. *Energy Research and Social Science* 59: 101310.
- Pepper D (2002) *Eco-Socialism: From Deep Ecology to Social Justice*. Abingdon: Routledge.

- Pereira RHM, Schwanen T and Banister D (2017) Distributive justice and equity in transportation. *Transport Reviews* 37(2): 170–191.
- Pezzey J (1992) Sustainability: An interdisciplinary guide. *Environmental Values* (14): 321–362.
- Portney KE (2013) *Taking Sustainable Cities Seriously: Economic Development, the Environment, and Quality of Life in American Cities*. Cambridge, MA: MIT Press.
- Pulido L and De Lara J (2018) Reimagining ‘justice’ in environmental justice: Radical ecologies, decolonial thought, and the Black Radical Tradition. *Environment and Planning E: Nature and Space* 1(1–2): 76–98.
- Pye S, Dobbins A, Baffert C, et al. (2015) Energy poverty and vulnerable consumers in the energy sector across the EU: Analysis of policies and measures. Policy Report. Available at: http://knjiznica.sabor.hr/pdf/E_publikacije/Energy_poverty_and_vulnerable_consumers_in_the_energy_sector_across_the_EU.pdf (accessed 10 January 2021).
- Rawluk A, Beilin R, Bender H, et al. (2020) Finding ourselves in the messy entanglement of complexity: An introduction to the challenges and opportunities in social ecological systems. In: Rawluk A, Beilin R, Bende H, et al. (eds) *Practices in Social Ecological Research*. Cham: Palgrave Macmillan, pp.1–6.
- Raworth K (2017) *Doughnut Economics: Seven Ways to Think Like a 21st-Century Economist*. White River Junction: Chelsea Green Publishing.
- Robinson J (2004) Squaring the circle? Some thoughts on the idea of sustainable development. *Ecological Economics* 48(4): 369–384.
- Rose G (1997) Situating knowledges: positionality, reflexivities and other tactics. *Progress in Human Geography* 21: 305–320.
- Rosner L (2004) *The Technological Fix: How People Use Technology to Create and Solve Problems*. Abingdon: Routledge.
- Rosol M (2012) Community volunteering as neoliberal strategy? Green space production in Berlin. *Antipode* 44(1): 239–257.
- Scanu E, Cloutier G and Trudelle C (2020) Contesting the greening of the urban growth machine: Ecological modernization and the promethean counter-discourse. *Environment and Planning E: Nature and Space*. DOI: 10.1177/2514848620952326.
- Schlosberg D (2007) *Defining Environmental Justice: Theories, Movements, and Nature*. Oxford: Oxford University Press.
- Schlosberg M (2002) Department in denial: The San Francisco Police department’s failure to address racial profiling. Available at: <http://search.ebscohost.com/login.aspx?direct=true&db=i3h&AN=CJA0310010000930&site=ehost-live&scope=site>
- Sheller M (2018) *Mobility Justice - The Politics of Movement in an Age of Extremes*. New York: Verso.
- Sheller M and Urry J (2006) The new mobilities paradigm. *Environment and Planning A* 38(2): 207–226.
- Shiva V (2000) *Stolen Harvest: The Hijacking of the Global Food Supply*. Cambridge, MA: South End Press.
- Shiva V (2002) *Water Wars; Privatization, Pollution, and Profit*. Cambridge, MA: South End Press.
- Shiva V (2005) *Globalization’s New Wars: Seed, Water and Life*

- Forms. New Delhi: Women Unlimited. Soëderbaum P (2008) *Understanding Sustainability Economics: Towards Pluralism in Economics*. London: Earthscan/Routledge.
- Sovacool BK, Burke M, Baker L, et al. (2017) New frontiers and conceptual frameworks for energy justice. *Energy Policy* 105: 677–691.
- Sovacool BK and Dworkin MH (2015) Energy justice: Conceptual insights and practical applications. *Applied Energy* 142: 435–444.
- Spangenberg J (2016) The world we see shapes the world we create: how the underlying worldviews lead to different recommendations from environmental and ecological economics – The green economy example. *International Journal of Sustainable Development* 19(2): 127–146.
- Steiner F (2013) *Taboo*. London: Routledge.
- Stephens JC and Markusson N (2018) Technological optimism in climate mitigation: The case of carbon capture and storage. In: Davidson DJ and Gross M (eds) *Oxford Handbook of Energy and Society*. Oxford: Oxford University Press, pp.503–518.
- Stavis D and Felli R (2016) Green transitions, just transitions? Broadening and deepening justice. *Kurswechsel* 3: 35–45.
- Swyngedouw E (2009) The antinomies of the postpolitical city: In search of a democratic politics of environmental production. *International Journal of Urban and Regional Research* 33(3): 601–620.
- Thomson H, Bouzarovski S and Snell C (2017) Rethinking the measurement of energy poverty in Europe: A critical analysis of indicators and data. *Indoor and Built Environment* 26(7): 879–901.
- Triguero-Mas M, Dadvand P, Cirach M, et al. (2015) Natural outdoor environments and mental and physical health: relationships and mechanisms. *Environment International* 77: 35–41.
- UN (2015) *Transforming our world: The 2030 Agenda for Sustainable Development*. A/RES/70/1. Available at: https://www.un.org/en/development/desa/population/migration/generalassembly/docs/globalcompact/A_RES_70_1_E.pdf (accessed 8 August 2018).
- Urge-Vorsatz D and Tirado Herrero S (2012) Building synergies between climate change mitigation and energy poverty alleviation. *Energy Policy* 49: 83–90.
- Van den Berg AE, Maas J, Verheij RA, et al. (2010) Green space as a buffer between stressful life events and health. *Social Science and Medicine* 70(8): 1203–1210.
- World Commission on Environment and Development (WCED) (1987) *Our Common Future*. Oxford: United Nations.
- Wheeler SM and Beatley T (2009) Case studies of urban sustainability. In: Wheeler SM and Beatley T (eds) *The Sustainable Urban Development Reader*. London: Routledge, pp.393–456.
- While A, Jonas AEG and Gibbs D (2004) The environment and the entrepreneurial city: Searching for the urban ‘sustainability fix’ in Manchester and Leeds. *International Journal of Urban and Regional Research* 28(3): 549–569.
- Wolch JR, Byrne J and Newell JP (2014) Urban green space, public health, and environmental justice: The challenge of making cities ‘just green enough’. *Landscape and Urban Planning* 125: 234–244.

Yaka O€ (2019) Rethinking justice: Struggles for environmental commons and the notion of socio-ecological justice. *Antipode* 51(1): 353–372.

Yiftachel O and Hedgcock D (1993) Urban social sustainability: The planning of an Australian city. *Cities* 10(2): 139–157.