# Just Transitions/Design for Transitions: Preliminary Notes on a Design Politics for a Green New Deal

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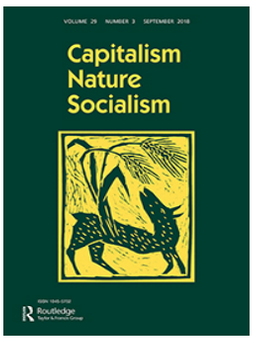

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# Just Transitions/Design for Transitions: Preliminary Notes on a Design Politics for a Green New Deal

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**ABSTRACT**

Mobilizations occurring around *just transitions* and *design for transition* contain many potential points of overlap. They are presently remarkably disengaged. This article seeks to rectify this situation by offering some preliminary notes on how convergences between these currents might facilitate modes of anti-racist, feminist and ecosocialist design futuring that can get us to think beyond degrowth/Left ecomodern binaries and toward a design politics that can support a Green New Deal. I proceed by mapping the evolution of labor-focused just transition discussions and indicate how feminist, climate justice and decolonial contributions have expanded and complicated understandings of the labors of transition. I then go on to suggest how such currents could productively engage further with the emerging field of design for transition. Design is not to be trusted. However, post-carbon futures are not simply going to emerge through protest and policy shifts alone. Just transitions will have to be imagined and built, fabricated and realized, coded and created. This will involve the channeling of enormous amounts of *creative labor* and inventive praxis. It will also involve the construction of public spaces and public institutions where new knowledge practices can meet. Bringing radical traditions of design, invention and innovation into dialogue with movements pushing for just transitions could make significant contributions to achieving this end.

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## Introduction

> A problem like climate change is going to need unprecedented collaboration between kinds of knowledge and labor. Such a challenge may well require of us that we produce new kinds of production relations, new technologies, new kinds of affective culture, new ways of organizing the world. (McKenzie Wark 2013)

In a bleak context, where projections of our climate futures move from bad to worse with each IPCC report, mobilizations occurring around *just transitions*

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running alongside a vibrant explosion of interest in *design for transitions* stand as one of the few bright spots on the horizon. These projects are at different stages of development. They come with the usual bundle of issues, problems, controversies and setbacks. They also define a field of engagement marked by a refreshing level of pragmatic concreteness and *makerly ambition*.

Discussions of just transitions now increasingly moving through labor, democratic socialist, climate justice/environmental justice, feminist and decolonial circles have begun to develop important political and policy imaginaries for thinking about the complex and fraught alliances that will have to be built to move just post-carbon transitions forward. The field of *design for transitions* has equally drawn critical fields of design, architecture and planning into an ever widening set of discussions with design activists, transition town advocates, radical municipalists and commoners. Rather than being focused on *policy*, these latter conversations are as much interested in the modes of *praxis*, the design cultures and the modes of design futuring that could be unleashed to help *build* post-carbon futures. Despite shared points of departure in thinking about the pathways for egalitarian and democratic post carbon transitions, these discourses and movements are presently marked by relatively modest levels of engagement.

In this paper I seek to explore the ways in which an engagement between these two fields of political practice might make a contribution to reconfiguring some of the increasingly fraught disputes about post-carbon transitions that have run through the contemporary Green-Left. Recent debates between degrowthers and Left ecomodernists, ecostatists and municipalists, ecoromantic ecosocialists and assorted fully automated luxury communists had their moments and generated insights about the tensions and choices that underpin post-carbon futures (see variously Phillips 2015; Frase 2017; White, Rudy, and Gareau 2017; Foster 2017). As positions have become increasingly polarized, it is easy to get the impression from some of these debates that the only options on the table are to support a technocratic high-modernist project to decarbonize the status quo or embrace a "prepare-for-the-worst" survivalist communism. We must either accelerate or decelerate, choose "the social" or "the technical" path, wait for the tech *breakthrough* or gleefully announce "we" have twelve years till *revolutionary breakdown*.

This paper is written from the sense that it may well be more productive now to acknowledge that all conceivable programs for just transition are going to be *socio-technical* in nature, multi-scalar and, by definition, concerned with *designing* low-carbon futures. All attempts at energy transitions will take place in circumstances "not of our own choosing" and, as climate conditions deteriorate, we will increasingly confront non-optimal choices and trade-offs. All transition struggles will have to *degrow* and *decelerate* carbon-intensive activities in sectors that contribute little to socioecological

well-being but vastly *accelerate* and *grow* the forms of public investment, public innovation and collective agency to build the social, cultural, urban agro-food and energy infrastructures that can bring a just zero carbon society into being (Schwartzman 2012; Cohen 2017; Aronoff 2018). What is needed, then, is less endless evoking that we are at "five minutes to midnight" or that "tech/automation will save us," and more hybrid, *multi-scalar* and programmatic accounts that can think about the modes of state-led action *and* grassroots innovation, the forms of social institutionalization, democratic design *and* planning and modes of radical design futuring that can ally with protest, struggle and resistance to move a post-carbon politics forward (see White, Rudy, and Gareau 2016; White, Rudy, and Gareau 2017). An engagement between just transitions and design for transition might open up some spaces here.

## Conventional Genealogies of Just Transitions: From Margins to Center

The concept of the just transition has been around for a number of decades but has re-emerged of late in labor and trade union, climate justice, and, more recently, indigenous environmental mobilizations as a powerful and salient frame through which to think about the multiple challenges that confront the project of deep decarbonization. Labor-focused histories of "the just transition" have traced the term to discussions occurring in the US labor movement in the 1970s (see Newell and Mulvaney 2013; Stevis 2013; Stevis and Felli 2015; Healy and Barry 2017; Sweeney and Treat 2018), and specifically to attempts at thinking beyond the "hippies-versus-hardhats" tensions that pervaded the era. To take two important figures here, by the mid 1970s both Tony Mazzochi, of the Oil Chemical and Atomic Workers Union (OCAW), and the ecologist and labor activist Barry Commoner had reached the conclusion that labor needed to ally with environmental movements if there was to be any hope of building a progressive sustainable economy that could transcend the impasse of "jobs versus environment" (Commoner 1971; Leopold 2007). Mazzochi and Commoner developed the view that trade unionists working in industries subject to environmental regulation had to move beyond purely defensive strategies that were shortsighted at best or, at worst, unjustly offloading the externalities of one industry onto other communities and other workers.

One of the earliest conceptualizations of the just transition emerged out of the OCAW. This took the form of demands for support not only for a "superfund for communities" impacted by toxics, but a "superfund for workers" that would compensate displaced workers impacted by environmental regulations and offer opportunities for retraining. Commoner and Mazzochi went on to argue that a transition to a labor-friendly and equitable vision of a sustainable

future would, of course, require much more than this. It would need the application of labor-friendly industrial ecologies at scale to clean up the output of particular plants. New modes of social and design innovation to eliminate the waste endemic to industrial capitalism would also be required. Commoner argued, in addition, that a just transition required the embrace of forms of democratic planning that could facilitate the development of eco-industrial strategies for sustainable futures (see Commoner 1990; Leopold 2007; Mazzochi 1993).

In the 1990s and 2000s labor focused discussions of just transitions in the US and Canadian unions shifted from a singular focus on waste, toxics and environmental health and safety issues to include broader global environmental and climate concerns. Attempts to build labor-environmentalist alliances for green jobs and eco-industrial transitions evolved throughout the 2000s with greater and lesser degrees of success (see TUC 2008). Within the North American trade union movement the call for just transitions has ebbed and flowed (Sweeney and Treat 2018). Advocacy organizations and think tanks, from *Trade Unions for Energy Democracy* to the *Just Transition Alliance*, the *Blue Green Alliance* to the *Labor Network for Sustainability*, have added organizational, intellectual and policy depth to such discussions. Hope that a Green New Deal might actually get traction surfaced during the financial crisis of 2008. The full promise of this moment was closed down by the deference of the Obama White House (and the other members of the G7) to keep stimulus within the frame of economic orthodoxies (see Healy and Barry 2017; Goldstein 2018). Nevertheless, the American Recovery and Reinvestment Act, despite its considerable limitations, did direct over $90 billion of public investment to low-carbon energy initiatives.

It is these public investments in the US, running alongside similar investments made in China and Germany, that underpinned the clean energy boom of the last decade in solar PV, wind, battery storage and other developments. Moreover, the progressive resurgence in the US since 2016, marked by the resurgence of Democratic Socialists of America and the election of democratic socialists such as Alexandria Ocasio-Cortez to the US Congress, has demonstrated that in the United States there will be a second act to the pursuit of just transitions under the Green New Deal frame.

Beyond the US the concept of the just transition has increasingly helped frame climate and environmental policy in many European green and labor/social democratic parties (Healy and Barry 2017). It is a discourse that has moved into the IPPC process through advocacy and lobbying of the *International Trade Union Confederation* (ITUC) and the *International Labour Organization's Workers* Office (ACTRAV), as well as through collaborations between the ITUC, the International Labor Organization (ILO) and the UN Environment Program (UNEP) (Stevis and Felli 2015). Such

developments have led to demands by the ITUC for a just transition which is not just concerned with reactive but proactive transformation (see Mertins-Kirkwood 2016). Attention, it contends, must be given to "retraining, redeployment and secure pensions" for fossil fuel workers impacted by decarbonization but also to "community renewal" for areas facing energy and other kinds of transitions, the importance of worker involvement in the development of green urban futures, plans for investment and financing in adaptation and mitigation that "guarantee essential social protection and human rights" and "support the most vulnerable" (ITUC 2014).

As a number of commentators have noted, the discussion of just transitions in labor circles is marked by a certain vibrancy and increasing ideological diversity (Stevis and Felli 2015; Sweeney and Treat 2018). Stevis and Felli (2015) have suggested that unions have tended to follow three main approaches to underpin their visions of the just transition:

(1) There are those unions that focus on "shared solutions" with a focus on the need of unions to have a seat at the table in social dialogue about green economy futures. The *ITUC guidelines for the just transition* capture much of this model. Calls for "green growth" to be socialized and made "responsible" have also emerged out of this model.
(2) There are clusters of unions more focused on a "differentiated responsibilities model," that is, one particularly concerned with vulnerable and stranded workers, sectors and communities that could be undercut by decarbonization. The focus here could variously be on the need for "state-led green industrial policies" (Stevis and Felli 2015, 37) that will facilitate managed transitions to other parts of the economy and job-generating green innovation.
(3) Finally, a more transformational vision can be identified amongst certain factions of Northern and Southern trade unions that are much more explicit about making demands for a green economy that attempts to achieve systemic "re-organization of the relations between state, capital and labor" (Stevis and Felli 2015; Satgar 2018). The need for ecosocialist approaches to energy transition that address questions of ownership and control and champion the possibilities of democratic planning have obtained much great centrality—even if there is a certain level of slippage between rhetoric and reality (see Satgar 2018).

## Skeptics and Pushback

The concept of the just transition is clearly not without issues and problems. For climate skeptics in the US labor movement that see the future of the unions as eternally allied to fossil capitalism, the just transition is simply "a fancy name for a funeral," to cite the extraordinarily blinkered comments

of ALF-CIO president Richard Trumpka. For apocalyptic eco-radicals, it is a proposition that can, of course, be dismissed as too little too late. More nuanced critics, though, have raised issues about the "conceptual elasticity" of the concept and concerns about co-optation and implementation. For example, Lauren Contorno (2018) has argued that a great deal of just transition rhetoric can gloss over how hard it is to implement just transitions in practice. Dimitris Stevis (2013) and the *Just Transition Research Collective* (2018) have noted that language of "just transitions" is increasingly to be found in all manner of discourses situated far from Leftist discussions: from the disastrous environmental policies of Emmanuel Macron in France to Mauricio Macri's regressive right-wing administration in Argentina; from the Vatican to corporate sector actors' talk about job retraining and nothing more. Indeed, Stevis has noted that the expansion of the use of the term just transition in United Nations human rights and climate documents has occurred at a time when references to labor in the very same documents are increasingly being left out and radical policy implications are thin on the ground.

Within international labor circles, very different political cultures, different national and sectorial priorities, different levels of unionization and kinds of political struggles are already generating very diverse and sometimes clashing versions of what exactly constitutes a "just" transition and how this might be implemented. Whether the "just" in just transitions should prioritize the struggles of *displaced fossil fuel workers and communities, interstate, interregional or intersectoral inequalities, inter-generation justice*, or give priority to colonized people against settler colonial states, or even the ecological debt between the North and the South, is far from settled.

As for the Southern context, South African scholars such as Eve Annecke, Mark Swilling, Vishwar Satgar, Jacklyn Cock, and Michelle Williams (see Swilling and Annecke 2012; Satgar 2018) have documented how the political difficulties generated by carbon and other resource dependencies in resource export-driven countries have ensured that progressive commitments made by Southern unions to just transitions (see COSATU 2011) can unravel quickly when push comes to shove. Southern unions that prioritize the importance of obtaining national sovereignty over energy supplies from private and international owners over rapid decarbonization can end up operating with very different understandings of the just transition to Northern environmentalists. A narrow Northern-workerist vision of the just transition can be used by incumbent sectors—such as fairly well remunerated fossil fuel workers—to simply slow down and delay the moves to deep decarbonization (Mertins-Kirkwood 2016). Aji (2018) has reminded us that a project focused on building "green social democracy" in a global North that still uses the global South as resource and sink will not do.

## The Just Transition—Diversification and Radicalization Beyond Workerist Green Social Democracy?

The just transition, then, certainly offers no magic elixir, and concerns that it could be reduced to the status of an empty signifier, or worse, are not without substance. There are also signs, though, that diversification of what might be implied by a just transition might not simply generate friction, fragmentation and co-optation, but also productive insights and new alliances that can expand our understanding of the labors of transition.

For example, socialist ecofeminists have long argued that environmentally destructive and patriarchal capital accumulation proceeds through the continual appropriation and gendering of labor in the formal economy accompanied by capturing the unpaid labor of "women, nature and colonies" (Mies 1996, 77). Gendered, racialized and classed processes of social reproduction are central to the maintenance of the current order and will emerge as key points of tension for all transition proposals—just or otherwise. Such observations are now being explored productively in a number of ways by resurgent feminist scholarship on just transitions.

Burke and Stephens (2018) have argued that within the US formal "green" economy the gendered nature of pay, protection and reward in the green jobs and renewable energy sector has not magically caused old forms of exploitation to disappear. Far from it. Like much of the tech sector in the United States, not only is gender discrimination much in evidence in pay rates and access to the emerging renewable energy industry employment, but studies would seem to suggest that the emerging solar industry is dominated by many small to medium-sized contractors that are no more sympathetic to organized labor than any other employer, and are growing mostly non-union jobs. As Kate Aronoff (2018) has noted, this is one of the reasons why a transition narrowly focused on carbon reduction alone is unlikely to address pressing material concerns. As Yellow Vest protests in France has demonstrated, transitions which seek to increase gasoline prices whilst closing public transport options, will not gain popular support. A just transition must differentiate itself from technocratic ecomodern proposals through the advocacy of a suite of policies that ensure carbon policies have redistributive outcomes—such as a green new deal focused on "high road and high wage jobs," a green jobs guarantee, carbon taxes with rebates policies that have clear redistributive effects, or demands for different modes of public ownership for utilities to tie low carbon outcomes to other public benefits (Aronoff 2018).

Alyssa Battistoni (2017) has observed that the "hard hat focus" of a great deal of just transition discussions, preoccupied with questions of how we can transition traditional blue collar workers to green collar jobs is important. But it can also function to limit our political imagination if it does not link

these concerns with the growing sectors of the working class in the US and elsewhere to be found in what might be called *pink collar work*. Pink collar here can refer to teaching, nursing, care-work, service work and so on. It is these sectors that are the critical growing sectors of the US and other affluent world economies. Much of this pink collar work, Battistoni notes, is exploitative and underpaid, disproportionately occupied by women, immigrants and people of color. But in many cases it is also labor that is central for human flourishment. It is low carbon and demonstrating renewed labor militancy. A low carbon economy oriented towards human flourishing is invariably going to see an expansion of this work (under different terms and conditions, to be sure). A key labor strategy for just transitions, then, cannot simply be focused on fossil fuel workers or green tech jobs. It must also involve efforts to organize the "nurses and teachers, care workers and service workers who are already doing the work that will be foundational to a low-carbon society oriented toward the flourishing of all" (Battistoni 2017). It is worth noting that whilst the ALF-CIO supported the Keystone XL Pipeline, SEIU 1199 (Service Employees International Union), two nursing unions (National Nurses United and New York State Nurses Association), unions representing workers in manufacturing (United Electrical Workers) and unions representing domestic work (National Domestic Workers Alliance) stood strong in opposition (see Sweeney and Treat 2018).

Intersectional approaches attending to the ways in which race/class/gender and indigenous struggles around energy and food justice are invariably enmeshed with broader struggles over environmental justice, incarceration/criminal justice reform, public health, urban and rural land use planning and so on have further diversified accounts of the histories of just transitions and enriched accounts of how just transition approaches think about "the labor point of view" (Wark 2015). In the North American context the pioneering work of environmental justice scholars such as Dorcetta Taylor (2009) has long documented how fossil capitalism was built off the backs of the labor of enslaved African-Americans and the dispossession of land and life of indigenous peoples across the Americas. Beyond the labor movement, it has been political resistance by frontline and fenceline communities of color to environmental toxics, pollution, and health risks that has informed a good deal of the political horizons of current just transition discussions (see Akuno and Nangwaya 2017; Nishime and Williams 2018).

Just transitions, then, may often involve deployment of the powers of the regulatory state to close down the pollution-industrial complex and redirect economic activity towards local economy development and solidarity economies that can move the city forward (see Akuno and Nangwaya 2017). That said, it is also apparent there are green jobs in recycling and waste management that can be as dirty and dangerous as old, grey economy jobs. Public/private community renewable energy programs can generate complex and

fraught relations between communities of color and green capitalists,as Myles Lennon (2017) has outlined. Race- and gender-blind attempts to move green urban design and planning forward can, in certain contexts, further green gentrification. Eco-industrial development following conventional economic models can generate new toxic waste streams and forms of ecologically uneven exchange where cleanup occurs in some spaces and places at the expense of others (Newell and Mulvaney 2013). Technocratic approaches to just transitions which present the social democratic state as the primary and unproblematic vehicle for decarbonization could easily evolve platforms and programs at odds with indigenous, first nation or pastoral peoples and communities seeking autonomy from logics of the settler colonial state. as more pressing than embracing statist decarbonization strategies that they have had little consultation in devising (see Whyte 2018).

These issues are not intractable. The Indigenous Environmental Network (2018) has initiated a generous indigenous-based just transition campaign developing indigenous principles of just transition that stands in full solidarity with workers, communities of color and frontline/fenceline communities fighting similar battles. The vision of the just transition issued by the New Zealand Council of Trade Unions in 2017 begins its statement of principles by acknowledging that in Aotearoa the just transition "requires the active involvement of iwi and hapū"—the indigenous communities. Policy, alliances and power matters. But these examples are salutary and focus attention on the daunting political and socio-technical complexity of the project of transition. The just transition is an analytic and policy discourse that alerts us to the fact that *unjust* transitions are far more likely than just transitions, all things remaining equal. With some notable exceptions (Swilling and Annecke 2012), though, it is a discourse that has had less to say about the future-oriented political imaginaries, the cultural and material aesthetics, the modes of work/life balance and the modes of making and doing that might inform post-carbon futures. Design for transition might expand the realm of possible discussions here.

## Design for Transitions—Bringing the Inventive into Dialogue with the Just Transition

The proposition that design and the building of different kinds of design culture and modes of design futuring could play a significant role in the shift to sustainability is a claim to be found at the very beginnings of the modern postwar environmental movement. For example, if we were to sketch out the ancestors and antecedents to contemporary discussions in design for transitions, a historical genealogy of the field would have to acknowledge how the convergence of the radical science and technology movements, the sustainable architecture and design movements of the

1960s and 1970s provide a major point of inspiration. Early touchstones of this counterculture influences would, of course, have to include the DIY sensibilities of Stewart Brand's *Whole Earth Catalogue* which championed "tools" that could sustain urban communities underpinned by renewable energy to tools to sustain libertarian off-the-grid living and the wild geodesic fantasies of Buckminster Fuller. The extent to which these two very influential forces have informed technocentric environmental currents that have fed into Silicon Valley "solutionist" ideologies and ecomodern tech-topian thinking to this day has to be fully recognized.

A partial reading of the history of sustainable design that only lingers on the technocentric liberal traditions can obscure the continual attempt of far more politicized design currents to open up very different understandings of possible post-capitalist design futures. *Science for the People* and the *Radical Technology Movement* (see Boyle and Harper 1976) explicitly drew inspiration from anarchist, socialist and civic republican transitions in their attempts to envisage publically accountable platforms for science, technology, design and democratic forms of urban and rural planning. Much of this work was developed in dialogue with Ivan Illich's hugely influential call to distinguish "tools of domination" from "tools for conviviality" and Victor Papenek's visceral critiques of the brutal uselessness of a great deal of commercially focused graphic and industrial design and his militant demand for socially useful design and production. The socialist feminist architectural critique of the heteropatriarchal assumptions informing suburbia and the spur these critiques gave to the emergence of self-build and partial build housing, community design, architecture and participatory planning also offer critical moments in this discussion have been largely ignored (see Hayden 1980). At broader scales, Bookchin called for an ecological urbanism and a new municipalism that would be sustained by post-scarcity labor-saving modes of automation *and* cultures of pleasure and leisure running alongside *liberatory ecotechnologies* that could "reawaken man's sense of dependence on the environment" but also "restore selfhood and competence to a 'client citizenry'" (Bookchin 1971). It is notable here for the extent to which Bookchin's design enfused political imageries cut across many contemporary degrowthers and Left ecomodernists debates.

If we move beyond the often US-centric stories told of sustainable design, we can see that there are vitally important socialist and labor friendly design histories that offer vital antecedents for contemporary transition discussions. William Morris essay "A Factory as it might be" (1884) offers a remarkable account of an ecosocialist industrial ecology. The far sighted attempts by British Trade Unionists involved in the Lucas Plan to instigate forms of worker-centered design around socially useful and environmentally responsible production has much to offer current discussions of green production (see Cooley 1980). It is often forgotten that the participatory design

movement has its origins in attempts by the Scandinavian trade union movement to implement labor-friendly modes of design and innovation that would be capable of resisting Taylorism and deskilling (see Ehn 1990).

Recent scholarship by Dorcetta Taylor (2009), Gordon Nembhard (2014) and Ted Jojola and his colleagues (see Walker, Jojola, and Natcher 2013) has drawn attention to the "hidden histories" of Indigenous, African American and Latinx experiments with building spaces of freedom beyond settler colonialism through seven generation visioning, designing food cultivation systems, systems of co-operative gardening, systems of mutual aid and experiments with co-operative ownership and intentional communities. Such work has highlighted the significant debt of countercultural sustainable design to indigenous traditions and practices as well as to the contemporary relevance of such currents for informing design strategies to build post-carbon solidarity economies (see Walker, Jojola, and Natcher 2013; Akuno and Nangwaya 2017).

It is also important to acknowledge Latin American/Andean tradition of *buen vivir/sumak kawsay/suma qamaña* (see Escobar 2017), diverse indigenous traditions of ecological knowledge, maintenance and repair, frugal innovation, *jugaad* and *gambiarra* (Scholz 2016), and attempts to combine radical design strategies with African traditions of *ubuntu* (Satgar 2018). All these currents have further mingled with, intersect, reject and/or hybridize with equally diverse global modernist design traditions in quite varied ways, and help us think beyond US-centered narratives.

Ecological/sustainable/green design was mainstreamed, disciplined, largely depoliticized and radically reshaped from the 1990s onwards by all manner of US- and EU-supported research programs and further technological innovations emerging out of industry, academia, social movements and local practice. Key definitional moments here, such as the publication of *Natural Capitalism* (1999) and *The Drawdown* (2016), provide popularizations of more technical and technocratic research programs occurring in industrial ecology, smart materials and new sustainable building technologies, agroecology, green chemistry, renewable energy, energy efficiency and battery storage systems (now increasingly aggregated through circular economy discussions). Much of this research intersects with the rise of product system service design, theories of socio-technical systems innovation (such as transition management and the multi-level perspective), social practice research and the evolution of research programs focused on design for social innovation. The information technology/coding revolution transformed all these fields, giving rise to multiple further regressive and progressive proposals to think about digital design futuring and its dystopian other—from "the internet of things," smart cities and neoliberal sharing economies, through peer-to-peer lending and solidarity economies, to platform co-operatives (Scholz 2016; Gaziulusoy and Öztekin 2018).

In the contemporary context I will use the term *design for transition* to refer to a cluster of contemporary approaches to radical, sustainable and labor-focused design. Such currents are diverse and still at different stages of development. But they are unified by a common understanding that the fields of design, social practice and design for social innovation must explicitly push back against neoliberal design and managerial and corporate visions of "design thinking," and be comprehensive, restructured, politicized and mobilized to augment all manner of interventions concerned with transition to post-carbon societies. Whilst there are now many modes of critical, speculative and adversarial design that, much like the politicized end of the fine arts, are primarily interested in interventions that create cultural reflection and dialogue, I am more interested here in currents that have sought to think about ways in which we might not simply encourage design interventions for transition but those that seek to envisage and instantiate a broader material culture for transition. For example, the recent work of Ezio Manzini and the *DESIS* lab network, Carnegie Mellon's Transition Design research group, the Decolonising Design group (Abdulla et al. 2019), the NODUS Sustainable Design Research Group at Aalto University and the *Digital Bauhaus* project at Malmo (see Ehn, Nilsson, and Topgaard 2014; Kossoff, Tonkinwise, and Irwin 2015; Manzini 2015; Tonkinwise 2015; Gaziulusoy and Öztekin 2018) have all sought to model ways in which modes of grassroots communitarian design innovations could contribute to cosmopolitan-local transition paths for low-carbon futures. The methods deployed here generally use the tools of design (such as design-led participatory processes, workshops, scenario visualizations, building digital platforms and interfaces etc.) that could connect and hopefully aggregate forms of grassroots best practice—from neighborhood gardens to care centers, maker-spaces, fab-labs and sharing systems; from co-operative housing to new modes of cultural production.

The aspiration of many of these research programs is captured by Manzini's *Design Where Everyone Designs* (2015). The central theme of the text is that a design politics can be envisaged where *expert design* (design performed by those who have been trained as designers) is brought into alliance with *diffuse design* (which refers to the design skills of lay publics). Manzini argues that nurturing these alliances can give rise to "creative communities" that allow for the emergence of new institutions engaged in co-design for low-carbon transition. Beyond this, Tony Fry, Anne Marie Willis and Cameron Tonkinwise have offered important theoretical interventions from rather more militant Heideggerian-Marxist and decolonial perspectives to the more project-based worldview of Manzini and his colleagues (Fry 2009; Wilson 2018). The core argument here is that design is not simply a field owned by professional designers but *a generalizable human practice*. Post-carbon transitions must be thought of as requiring a wave of explicitly politicized, sociotechnical design processes or *redirective practices*. Fry (2009)

argues that these redirective practices must function and be deployed by design professionals *and* design-literate publics at multiple scales and spheres of operation if we are to have any hope of unraveling coloniality, resisting capital and surviving climate destabilization. Redirective practices, then, must move swiftly from care of the self to modes of design strategizing that attempt to build new sustainable workplaces out of the old (platforming). Design as politics must intervene in the broader ecological restructuring of the economy through engagement with design for closed loop production to eliminative design (designing destructive goods and services out of use). More generally, Fry claims we need a design politics that can operate at multiple scales of action, from community-facilitated urban planning to comprehensive climate retrofitting and ruggedization of the urban landscape. The *infrastructural turn in design* could provide further impetus for developing this concept of redirective practice, whether we consider the kinds of proposals by Hillary Brown (2014) for resilient multi-modal, multi-purpose, low-carbon public infrastructures or the focus of Trebor Scholz (2016) on hacking and repurposing digital platforms and infrastructures to facilitate new, labor-friendly, networked platforms or worker-owned platform co-operatives.

## Designs for Ecosocialism?

To be clear, design will not save us, and design for transition as currently configured has its limitations. Transition discussions across the many fields of design are still disconnected from each other and unevenly engaged with broader discussions in political economy or political ecology (see White 2015). There is much coalition building work to be done to connect the diverse insights of different critical design traditions and consider the most useful ways in which design for transition can build more effective institutions forms. Nevertheless, if the project of the just transition is to gain serious traction, it will have to grapple with the experimental and makerly knowledges produced by design. As the field of design has become less object-centered over the last four decades, its remit has expanded to strategy, services, interfaces, logistics and platforms, urban, regional and landscape planning, community development, social innovation, and prototyping and running democratic experiments. This ever-expanding ubiquity of design across our sociotechnical and socioecological worlds (see Escobar 2017) must be understood and engaged with in sophisticated ways by ecosocialists if we are to embark on rapid and just redesigns of this material culture, because design has altered and radically expanded the socio-technical field of political struggle. As Scholz (2016) observes, platform capitalism will have to be systematically "hacked" and repurposed, with designers working with social movements, if we are to move from it to platform co-operativism. Transition

design is further important because it brings into view the fact that paths to just transitions may well have more entry points than technological determinist accounts of energy transition allow. Just transitions need to think carefully about energy supply and demand, but they require that we also ask additional questions here, such as "energy for what?," and "to sustain what kinds of modes of life?" They need to explore the forms of urban design and culture, consumption, work and leisure, aesthetics and pleasure that maintain a high-energy planet and consider the many elements of this picture that need to change to facilitate low-carbon/high-quality futures.

Design is also of significance for thinking about post-carbon futures because it is one of the few remaining spaces in the academy that takes futuring seriously. Prototyping, prefiguring, speculative thinking, scenario-building, doing things differently, failing, and then starting all over again are all core components of design education. This interest in speculating about mid- to long-term possible sociotechnical futures is not well developed in the largely policy focused literatures on just transitions. There are good reasons for believing that speculative thought about just low-carbon futures is going to be much needed in the years ahead. Simply at the level of the political imaginary, design futuring provides useful tools to help generate public dialogues at varying scales to think about the options open to us in negotiating life on a warming planet that can push back against climate catastrophism and fatalism (See Escobar 2017; White, Rudy, and Gareau 2017). Design futuring is important for its capacity to challenge outdated, homeostatic visions of a sustainable future that involve settler-colonial myths of return to the stable nature we have lost. It forces recognition that the just transition is going to be ongoing and iterative, requiring that we constantly and persistently make and remake climate-adaptive socioecological worlds—again and again and again (see Fry 2009; Kossoff, Tonkinwise, and Irwin 2015). More generally, design futuring underscores that a just transition cannot simply seek to globalize Euro-American futures (as ecomodernism imaginaries largely maintain). Rather design futuring for the pluriverse (Escobar 2017) is going to involve requiring thinking modernist traditions with and against diverse subaltern and marginalized speculative traditions from Afro-futurists, Chicano and Latinx futures, to sino-futures, queer futures, indigenous futures and beyond, all in order to make other worlds possible.

Finally, design for transition has increasingly demonstrated that design is a field of socio-material strategizing and praxis that involves much more than just validating the work of professional eco-designers. Design has always understood that *users matter*, and it is itself an excellent aggregator of the inventive praxis of diverse users. But beyond this critical design seeks to develop tools that can enroll many more agents, objects and entities into its schemes. This comes with all kinds of problems, of course, and we are all more than familiar with the ways in which neoliberal design cultures

continually to enroll us through consumption, advertising, data-mining, profiling and so forth. In many parts of the world the just transition will have to involve a reinvention of both the state as active public actor, new public institutions and modes of public ownership, democratic planning and vast amounts of climate-smart public investment to build new social-technical infrastructures. And this will inevitably entail designing new ways of enrolling the creative labor of expert and diffuse designers in new institutional forms.

## Design Futuring for Just Transitions

Let us conclude here with some examples of converging possibilities that might allow us to open up future research agendas.

Growing attention is now being given to the land use impacts of industrial wind and utility-scale solar energy, their "spatial intensity" and the ways in which such technologies not only "demand space" but "substantively remake" it (see Huber and McCarthy 2017). As James McCarthy and Matt Huber have compellingly outlined, the scale of the reorganization of space involved in the expected global expansion of renewable technologies in the next two decades will have dramatic implications on land use, particularly in rural areas where land values are low, and where rural people in developing world contexts have precarious land rights. All things remaining equal, a renewable energy transition could lead to an intensification of land displacement and new rounds of green-grabbing. But why should critique stop at an "all things remain equal" premise? What would it mean to build planning institutions for just energy transitions that sought to prevent land grabbing by taking participatory design and social planning for the energy transition seriously (Walker, Jojola, and Natcher 2013; Miller and Richter 2014)? Could the full range of techniques that draw from participatory design in urban planning over multiple decades of development allied with political organizing provide the beginnings of a political design response to the environmental and social justice challenges posed by energy transitions? Could the design of multi-modal and multi-purpose low-carbon public infrastructures that combine energy production with public space and regenerative ecology and public ecologies alleviate some of these tensions (cf. Brown 2014)? Could this be supplemented with policies that ensured that rural communities owned their renewable resources and received compensation for the stewardship of these energy resources?

Just transition advocates argue we need to see massive public investment directed towards high-quality, sustainable public housing and climate-smart infrastructure to meet pressing needs, ensure swift decarbonization and maximize urban resilience to future climate challenges. This is important work, but a critical design imaginary might add that the history of public housing and

infrastructure development in the US was often blighted not just by lack of investment but also by paternalist, gendered and racialized modes of high modernism architecture and public administration which often designed public housing as mechanisms for social control, segregation, and governance of the urban working classes. Some of the best examples of successful social democratic public housing schemes in the postwar era in Northern Europe often ran alongside the enforcement of a range of moralistic codes, petty ordinances, rules and regulations which could often shame and disempower working people, disaggregated communal relations and gave little scope for deploying the skills and contributions that "users" might bring to the design, redesign and retrofitting of urban space. But what would it mean for such projects to attend additionally to the modes of life and solidarity that design forms can facilitate or impede? How can we design new public institutions and new forms of public ownership to expand the range of participatory design directed toward urban and infrastructure transition? What are the opportunities for bringing the creative labor of publics into the process of co-creating and redesigning climate-smart systems, services and built environments that meet pressing needs in more sustainable ways?

If we turn to democratic decarbonized economies, what would it mean for a post-carbon design politics to aspire not only to dematerialize material flows but to democratize, decarbonize and "ecologize" the workplace? Labor-focused just transition movements are currently pushing hard to obtain national commitments to move us to eco-industrial strategies (as they should). However, unless eco-industrial policy is complimented with further design strategies and cultural and political economic interventions that challenge exploitative supply chains, the treadmill of consumption, and a quantity-over-quality consumer culture, eco-industrial policy will continually be undercut by rebound effects. How could we combine (and improve) the largely technocratic literature on the circular economy, with the critical design focus on emotionally durable design (Chapman 2005), or what Fry (2009) has called eliminative design (where we build systems and services that design out of existence wasteful and carbon intensive forms of material culture that contribute little to human well-being)? How can we add to this the call from decolonial designers to pluralize our knowledge base and construction design-cultures for disassemblage, repair, maintenance and reuse (cf. Abdulla et al. 2019)? To what extent could this agenda be taken further by integrating calls for work and leisure shifts towards what Daniel Aldana Cohen (2014) has referred to as "low-carbon pleasures"? Could such moves allow us to think in more comprehensive ways about policy agendas that achieve not only low-carbon production and consumption but also a sustainable material culture? What would a circular economy look like that was reshaped by worker-oriented designs that took the knowledge and insights

of workers seriously and provided tools for them to communicate and organize across supply chains?

## Conclusion: Transition as an Act of Creative Labor

Just transitions—whether understood in terms of the green new deal, *buen vivir,* the great transformation, or just low-carbon futures, are not going to emerge without social protest and revolt, labor stoppages and mobilized class forces seeking to take power at every level to undercut and ultimately shut down fossil capitalism. The day after the demonstration, a just post-carbon world that actively improves people's lives still has to be imagine and built, fabricated and realized, institutionalized and sustained by public support and ongoing engagement. Decarbonizing, decolonizing, democratizing and de-commodifying our carbon-intensive material world is going to require programmatic thinking. It is also going to necessitate the unleashing of enormous amounts of *creative labor* and inventive praxis to build public institutions, a public ecology and a public culture to allow us to survive and flourish on a warming planet. This will require spaces where very different kinds technical, cultural, political and economic knowledge, labor and practice can meet and develop new modes of collaboration (see Wark 2015; Goldstein 2018). A politicized mode of design for transition brought into deeper engagement with social movements mobilized around just transitions could provide important spaces where this dialogue takes place.

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