On Social Ecology and the Movement for Climate Justice

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Abstract:

The theory and praxis of social ecology have guided social movements seeking a radical, counter-systemic ecological outlook since the 1960s, advancing goals of transforming society's relationship to non-human nature and reharmonizing human communities' ties to the natural world. This chapter reviews the philosophy and political outlook of social ecology, its multifaceted contributions to social movements past and present, and its emerging contributions to addressing current climate policy challenges. These include the viability of proposed transition strategies toward a fossil-free future, the potentialities and limitations of localist, community-centered responses to climate change, the problems inherent in current market-driven models of renewable energy development, and the potential contributions of reconstructive, neo-utopian outlooks to contemporary climate politics. We conclude that, despite the ever-present threat of climate catastrophe, a genuinely transformative climate justice movement needs to advance a forward-looking view of an improved quality of life for most people in a future freed from fossil fuel dependence.

As the immediate consequences of global climate disruptions become increasingly difficult to ignore, a host of long-range, systemic questions are capturing the attention of activists and scholars. Can economic and political structures be sufficiently transformed to accommodate a rapid transition to a fossil-free economy? Will economies continue to grow as fossil fuel infrastructure is replaced by renewable energy sources, or can a functioning growth-free economy be sustained? Could capitalist institutions collapse under the weight of massive stranded investments in fossil fuels, perhaps overturning their insidious and widespread political influence? What manner of transitions are feasible in the global South, where the daily effects of climate disruptions are the most extreme and the imperatives of poverty reduction are perennially co-opted by elites still focused on economic growth (Bidwai 2012)? What new political strategies can emerge to aid community resilience and help facilitate a more thoroughgoing transformation? And how can we transcend the limits of today's often defensive environmental struggles to nurture a movement better able to confront the problems ahead?

All these questions share the assumption that a rational and organized transition to a more sustainable future remains possible in this historical period. This is far from certain in an era of profound social upheaval, with progressive political tendencies frequently on the defensive and well-funded neo-fascist movements vying for political power. With the world rapidly approaching climate tipping points, we no longer have the luxury of several decades to plan for a just transition, as was once the case. With the magnitude of extreme weather events growing every year, and at least 240 million people already affected by climate related events annually (Oxfam International 2009), the scientific consensus now suggests that there is virtually no time left for the measured and gradual transition that policymakers and economic elites clearly prefer.

From the earliest popular writings about global warming, authors have suggested that a failure of preventive action would raise the likelihood of an authoritarian response to climate instability. For

example, in his 1992 book, *Earth in the Balance*, then US Senator Al Gore remarked that societal responses to past weather catastrophes paralleled the rise of "the bureaucratic, administrative tendencies of the modern state." If societies are unable to anticipate and prevent climate-related disasters it could necessitate "a new worldwide bureaucracy to manage the unimaginable problems caused by massive social and political upheavals." (Gore 1992, 73, 79). Other prominent voices suggest that human civilizations are not only doomed to collapse, but that the collapse of civilization may be an inevitable or even necessary precondition for the preservation of biodiversity (Jensen 2006, Kingsnorth and Hine n.d.). Such doomsday scenarios are rarely consistent, however, with a justice-centered perspective that aims to sustain human development and advance social equality. Further, the doomsayers often ignore the central lesson of climate justice: that those who contribute the least to climate disrupting forms of pollution have long experienced the severest consequences (Samson, et al. 2011). Thus it is more urgent than ever before to seek out a political outlook that is both critical and forward-looking, which offers a systemic critique of status-quo politics and a coherent vision of an ecologically transformed society. Social ecology, which emerged in the 1960s and has influenced a wide array of social movements, represents such a view, and one that has already contributed to the unfolding global movement for climate justice.

To better contextualize social ecology's contributions, it is useful to first review the various social movement influences have converged to shape the climate justice perspective. In earlier work I have identified three principle currents that have become most visible and influential in various international forums over the past decade (Tokar 2013, 2014). Foremost are the diverse array of indigenous and other land-based people's movements from around the world that have effectively highlighted their extreme vulnerability to climate disruptions along with their continued resilience in the face of colonizing influences. These include rainforest dwellers opposing new mega-dams and palm oil plantations, African and Latin American communities resisting land appropriations for industrial agriculture and agrofuel production, Pacific Islanders facing the loss of their homes due to rising seas, and peasant farmers fighting for food sovereignty and basic land rights, among many others. A second key influence has come from representatives of environmental justice communities, primarily from North America. These mainly African American, Latino and Native American activists represent communities that have resisted daily exposure to chemical toxins and other environmental hazards for decades, highlighted the links between environmental and racial justice, and contributed an essential perspective of frontline leadership around a wide array of climate-related concerns. Organizations such as the Indigenous Environmental Network (ienearth.org) that help bridge these two complementary worlds of struggle have been in the forefront of articulating and advancing a compelling climate justice framework ever since the mid-1990s.

A third central influence upon the evolution of climate justice has evolved from the global justice or "alterglobalization" movements that arose in opposition to the World Trade Organization (WTO) and other international financial institutions, including the annual G7/G8/G20 economic summits, during the 1990s and early 2000s. A discussion paper by European activists hoping to sustain the momentum from mass protests around the 2009 UN climate conference in Copenhagen, suggested that "Climate Justice means linking all struggles together that reject neoliberal markets and working towards a world that puts autonomous decision making power in the hands of communities." (Anon. 2010) This tendency is generally anti-capitalist in its outlook, and has advanced systemic critiques of carbon markets and other policies widely viewed as false solutions to the unfolding climate crisis. The international Rising Tide

network (risingtide.org.uk, risingtidenorthamerica.org) is one continuing organizational expression of this approach that has helped sustain opposition to controversial fossil fuel projects in North America, the UK, Australia, and beyond.

The theory and praxis of social ecology have helped guide numerous efforts to articulate a radical, counter-systemic ecological outlook since the 1960s, with its goal of transforming society's relationship to non-human nature and reharmonizing human communities' ties to the natural world. For many decades, social ecologists have articulated a fundamental ecological critique of the institutions of capitalism and the nation state and proposed an alternative vision of empowered communities organized confederally in pursuit of a more harmonious relationship to the natural world. Social ecology has helped shape the 1960s to 1970s New Left and antinuclear movements, the emergence of Green politics in many countries, the alterglobalization movement and the present struggle for democratic autonomy by Kurdish communities in Turkey and Syria, among many others. This chapter will review the distinct perspective of social ecology and then aim to address a variety of challenging political questions for the climate justice that this approach may help clarify. These include the assessment of transition strategies for a fossil-free future, the potentialities and limitations of a localist, community-centered response to climate disruptions, the problems underlying market-driven models of renewable energy development, and the potential contribution of reconstructive, neo-utopian outlooks to contemporary climate politics.

Locating social ecology

The philosophy and praxis of social ecology were initially developed by the social theorist Murray Bookchin during the early 1960s to early 2000s, and have been further elaborated by his colleagues and many others throughout the world, including writers and activists working presently in the Scandinavian countries, the U.K., Turkey, and throughout southern and eastern Europe (Eiglad 2015). It is a unique synthesis of utopian social criticism, historical and anthropological investigation, dialectical philosophy, and political strategy. Social ecology can be viewed as an unfolding of several distinct layers of understanding and insight, spanning all of these dimensions, and more. It begins with an understanding that environmental problems are fundamentally social and political in nature, and are rooted in the historical legacies of domination and social hierarchy. Bookchin was among the first thinkers in the West to identify the growth imperative of capitalism as a fundamental threat to the integrity of living ecosystems, and he consistently argued that social and ecological concerns are fundamentally inseparable, questioning the narrowly instrumental approaches advanced by many environmentalists to address particular issues.

This critical outlook on the nascent environmental movement spurred many years of research into the evolution of the relationship between human societies and non-human nature. Bookchin challenged the common Western notion that humans inherently seek to dominate the natural world, concluding instead that the domination of nature is a myth rooted in relationships of domination among people that emerged from the breakdown of ancient tribal societies in Europe and the Middle East (Bookchin 1982). He sought to highlight various egalitarian social principles that many indigenous cultures – both past and present – have held in common, and elevated these as guideposts for a renewed social order. Such principles have been described by progressive anthropologists and indigenous thinkers alike, and include concepts of

interdependence, reciprocity, unity-in-diversity and an ethics of complementarity, *i.e.* the balancing of roles among various social sectors, especially by actively compensating for differences among individuals. The inherent conflict between these guiding principles and those of increasingly stratified hierarchical societies has shaped the contending legacies of domination and freedom through much of human history.

Next, social ecology's philosophical inquiry examines the emergence of human consciousness from within the processes of natural evolution. Reaching back to the roots of dialectical thought, from Aristotle to Hegel, Bookchin (1990) advanced a unique approach to ecophilosophy, emphasizing the potentialities that lie latent within the evolution of both natural and social phenomena and celebrating the uniqueness of human creativity and self-reflection. Social ecology eschews the common view of nature as a realm of necessity, instead viewing natural evolution as striving, in a sense, to actualize an underlying potentiality for consciousness, creativity and freedom. For Bookchin, a dialectical outlook on human history compels us to reject what merely is and follow the potentialities inherent in natural history that suggest an expanded view of what could be, and ultimately what ought to be. While the realization of a free, ecological society is far from inevitable, it may perhaps be the most rational outcome of four billion years of natural evolution.

These historical and philosophical explorations provide an underpinning for social ecology's political strategy, which is described as libertarian (or confederal) municipalism or, more simply, as *communalism*, stemming from the roots of key ideas in the legacy of the Paris Commune of 1871. Social ecology reclaims the ancient Greek roots of the word "politics" as the democratic self-management of the *polis*, or municipality. Bookchin argued for liberated cities, towns and neighborhoods, governed by open popular assemblies, which confederate to challenge parochialism, encourage independence, and build a genuine counter-power to currently dominant institutions. He celebrated the lasting Town Meeting traditions in Vermont and throughout the New England region of the United States, describing how the region's Town Meetings and colonial legislatures assumed an increasingly radical and egalitarian character in the years prior to the American Revolution (Bookchin 1996, 154-55, 196-97). Bookchin believed that the limits of local action can be overcome by confederations of cities, towns and neighborhoods, joining together to sustain counterinstitutions aimed at challenging centralized power, overcoming parochialism, promoting interdependence, and advancing a broad liberatory agenda (Bookchin 2015, 67-82). Further, the stifling anonymity of the capitalist market can be replaced by a moral economy in which economic, as well as political relationships, are guided by an ethics of mutualism and reciprocity (Bookchin 1986).

Social ecologists believe that whereas institutions of capitalism and the state heighten social stratification and exploit divisions among people, alternative structures rooted in direct democracy can foster the expression of a general social interest toward social and ecological renewal. "[I]t is from the municipality," Bookchin wrote (1992, 283), "that people can reconstitute themselves from isolated monads into a creative body politic and create and existentially vital … civic life that has institutional form as well as civic content: the block committees, assemblies, neighborhood organizations, cooperatives, citizens' action groups, and public arenas for discourse that go beyond such episodic acts as demonstrations and retain a lived as well as organized community." People inspired by this view have brought structures of direct democracy through popular assemblies into numerous social movements in

the U.S., Europe and beyond, from popular direct action campaigns against nuclear power in the late 1970s to the more recent alterglobalization and Occupy Wall Street movements. The prefigurative dimension of these movements – anticipating and enacting the various elements of a liberated society – has encouraged participants to challenge the status quo and advance transformative future visions.

Social ecologists have also sought to renew the utopian tradition in Western thought. Institute for Social Ecology co-founder Dan Chodorkoff argues for a practical utopianism, combining social ecology's theoretical insights and political praxis with advanced principles from green urban design and building, together with ecotechnologies to produce food, energy and other necessities (Chodorkoff 2014). Ecological design concepts like permaculture that encourage a more profound understanding of the patterns of the natural world resonate with social ecology's view that human beings can participate in nature in creative, mutually beneficial ways, while seeking to overturn historical legacies of abuse and destruction.

The influence of these ideas upon popular movements began with the largely underground distribution of Bookchin's essays during the 1960s. Ideas he first advanced, such as the need for a fundamentally radical ecology in contrast to technocratic environmentalism, were embraced by growing numbers of ecologically-informed radicals. Bookchin and his colleagues at the Institute for Social Ecology participated in some of the earliest efforts to "green" cities and bring alternative, solar-based technologies into economically marginalized urban neighborhoods.

By the late 1970s, social ecology was playing quite a visible role in the rapidly growing movement against nuclear power in the U.S. Following the mass arrest of over 1400 people who sought to nonviolently occupy a nuclear construction site on the coast of New Hampshire in 1977 – an event inspired by long-term nuclear site occupations in Germany and elsewhere – decentralized anti-nuclear alliances began to appear across the U.S. These groups were committed to direct action, nonviolence, and grassroots organization, and many were captivated by the utopian dimension of the emerging "appropriate technology" movement for which Bookchin and other social ecologists provided an essential theoretical and historical grounding. New England's anti-nuclear Clamshell Alliance was the first to adopt the model of the "affinity group" as the basis of a long-range regional organizing effort – a concept that Bookchin (1971, 1977) first brought to the attention of U.S. activists through his research on the Spanish revolutionary tradition, and which continued to shape the structures of decentralized direct action movements in North America and beyond for decades to come (Kauffman 2017).

Also beginning in the 1970s, feminist thinkers informed by social ecology began to articulate a distinctive approach to "ecofeminism" that sought to re-evaluate the legacy of the historical association between women and non-human nature in Western culture, rejecting the essentialist and biological determinist notions that are typically linked to this association. A dialectical outlook informed by social ecology enabled writers like Ynestra King and Chaia Heller to eschew romanticized views of a women-nature connection while consciously embracing the knowledge that women have acquired from an oppressive past to advance the goal of a free society that liberates women and men alike (King 1989, Heller 1999).

By the mid-1980s emerging Green political movements in many countries were torn between conventional party politics and strategies rooted in radically democratic, ecologically-centered grassroots movements. Social ecologists on both sides of the Atlantic argued for a strategy rooted in issue-oriented local campaigns, ultimately seeking structural changes that would devolve decision making to directly democratic cities, towns and neighborhoods. While Greens in most countries ultimately favored more traditional electoral routes, those who remained committed to their social movement base significantly influenced key policy positions (Tokar 2006), and set the stage for the renewal of ideas about radical democracy in various kindred movements.

In the global justice movements of the 1990s and early 2000s, social ecologists raised support for a politics of direct democracy to challenge centralized economic and political institutions, advanced longer-range reconstructive visions within the movement, and established grassroots democratic organizing and decision-making structures that helped shape the aspirations of social movement actors for a generation to come (Staudenmaier, et al. 2000). In the New England region of the U.S., where traditions of local Town Meeting governance evolved prior to the American Revolution and continue to this day, social ecologists have initiated local campaigns around several issues where political progress appeared deadlocked at the national level. One such effort, challenging the proliferation of genetically modified foods in the early 2000s, led to the passage of local Town Meeting resolutions in 120 towns in Vermont and other New England states (ISE Biotechnology Project 2005). While efforts in many towns served a primarily educational role, furthering public discussions of a relatively new area of concern for most people, the campaign also raised pressure on state legislatures to address the issue and a few towns were able to use local zoning rules and other measures to prevent the growing of GMOs (genetically modified organisms).

More recently, social ecology has become a central theoretical and strategic influence for militants in the Kurdish regions of the Middle East, where ethnically diverse populations, long marginalized by colonial powers and modern states alike, have created institutions of confederal direct democracy in one of the world's most war-torn regions. Despite persistent sectarian warfare and religious violence, Kurdish towns near the Turkish-Syrian border are working toward gender equity and ecological reconstruction, significantly informed by social ecology and other critical social outlooks. Drawing upon concepts first elaborated by Murray Bookchin, Kurdish communities have established multi-ethnic confederal councils to manage the economy in areas they control, and are developing "a new political architecture, one that is based on a critique of the state and a connection to a praxis based on the self-governing abilities of people." (Jongerden 2017, 254).

Social ecology and current movements

Before approaching some of the particular challenges faced by today's climate justice movement, it may be useful to clarify some general principles that underlie social ecology's contributions to social movements.

First, social ecology offers an uncompromising ecological outlook that challenges the entrenched power structures that underlie the systems of capitalism and the nation-state. A movement that fails to confront the underlying causes of environmental destruction and climate disruption can, at best, only superficially

address those problems. Climate justice activists generally understand, for example, that false climate solutions such as carbon markets, geoengineering, and the promotion of natural gas obtained from fracking as a "bridge fuel" on the path to renewable energy mainly serve the current economic system's imperative to keep growing. To fully address the causes of climate change and other compelling environmental and social problems requires movement actors to raise long-range, transformative demands that the dominant economic and political systems may prove unable to accommodate. Using tools developed by social ecologists, activist campaigns can help illuminate hidden structures of oppression and hierarchy, and reveal how various oppressions intersect, even while dramatically illustrating the long-range, reconstructive potential of the movement (Heller 1999, 149–171).

Second, social ecology offers us a lens to better comprehend the origins and historical emergence of ecological radicalism, from the nascent movements of the late 1950s and early sixties right up to the present. Over more than five decades, the writings of Murray Bookchin and his colleagues have reflected upon important on-the-ground debates within ecological and social movements with passion and polemic, as well as with humor and long-range vision. Social ecology also played a central role in exposing and challenging the inherent anti-ecological biases of much of twentieth century Marxism, and thus serves as an important complement to current efforts to reclaim Marx's ecological legacy. While the understanding of Marx's long-ignored ecological writings, as advanced by authors such as Foster (2010) and Saito (2016), is essential to the emerging eco-left tradition, so are the political debates and theoretical insights that unfolded over decades when the Marxist left was disturbingly and often quite vehemently uninterested in environmental matters. Movements that are aware of their history, and comprehend the lessons of their past, are far better equipped to discuss where we may be headed.

Third, social ecology offers the most comprehensive treatment of the origins of human social domination and its historical relationship to abuses of the earth's living ecosystems. Social ecology highlights the origins of ecological destruction in social relations of domination, in contrast to conventional views suggesting that impulses to dominate non-human nature are a product of historical necessity. Social ecologists celebrate the ways that humans can participate meaningfully and supportively in the processes of natural evolution, not solely as a disruptive force.

Fourth, social ecology presents a framework for comprehending the origins of human consciousness and the emergence of human reason from its natural context. Bookchin's philosophy reaches far beyond popular, often solipsistic notions of an "ecological self," grounding the embeddedness of consciousness in nature in a coherent theoretical framework with roots in both classical nature philosophies and modern science. It challenges us to overcome popular acceptance of the world as it is, and consider how the social and political world perhaps ought to be. Further, social ecology's attempt to forge an ethics grounded in natural evolution has helped generations of activists articulate a coherent challenge to ecophilosophical tendencies that can sometimes veer toward atavism, biological determinism, and "blood and soil" ethnocentrism (Biehl and Staudenmaier 2011).

Fifth, social ecology offers a comprehensive historical and strategic grounding for discussing the promise of direct democracy. Social ecologists have worked to bring the praxis of direct democracy into popular movements since the 1970s, and Bookchin's writings offer an essential historical and theoretical context

for this continuing conversation. Social ecology offers a comprehensive strategic outlook that looks beyond the role of popular assemblies as a form of public expression and outrage toward more fully realized self-organization, confederation, and a revolutionary challenge to entrenched nation-state institutions.

Finally, social ecology asserts the inseparability of effective oppositional political activity from a reconstructive vision of an ecological future. Bookchin viewed most popular dissident writing as incomplete, focusing on critique and analysis without also proposing a coherent way forward. At the same time, social ecologists have spoken out against the accommodation of many alternative institutions—including numerous formerly radical cooperatives and collectives—to a stifling capitalist status quo (Bookchin 1986, Tokar 1992, 115-17, 146). The convergence of oppositional and reconstructive strands of activity is a crucial step toward a political movement that can ultimately contest and reclaim political power. This is realized within the international climate movement through the creation of new political spaces that embody the principles of "blockadia" and "alternatiba" (Combes 2014). The former term, popularized by Naomi Klein (2014), was coined by the activists of the Tar Sands Blockade in Texas, who engaged in an extended series of nonviolent actions to block the construction of the Keystone XL oil pipeline. The latter is a French Basque word, adopted as the theme of a bicycle tour that encircled France during the summer of 2015 and highlighted scores of local alternative-building projects (See alternatiba.eu/en/).

What kind of transition?

Having outlined these general principles, how can they help address several of the central dilemmas facing climate justice movements today? Can local action help drive a sufficiently robust and timely transition to a fossil-free economy? Is such a transition compatible with capitalist growth, or is a more thoroughgoing transition in the offing? How can humanity sustain a sense of hope and possibility in the face of potential climate catastrophe? The questions we face today tend to elude straightforward answers, but social ecology's principles and praxis may help illuminate the way forward.

Climate scientists have long been in the forefront of mapping out the magnitude of the challenges we all face. A decade ago James Hansen and his colleagues demonstrated that carbon dioxide levels need to stabilize around 350 parts per million (ppm) to sustain a hope of "preserving a planet resembling the one on which civilization developed" (Hansen, *et al*. 2007, 1926). More recently, his group at Columbia University determined that total global emissions will need to peak by around 2030 in order to return to 350 ppm within 2-300 years, and that a slower recovery time could result in highly unstable climate regime lasting many thousands of years (Hansen, et al., 2013). Several of Europe's leading climate scientists have calculated that to prevent average warming beyond 1.5 degrees Celsius – as demanded by global South delegates over years of climate negotiations and affirmed in the 2015 Paris agreement – will require an emissions peak no later than 2020 and the halving of anthropogenic emissions every subsequent decade (Rogelj, et al. 2015; Rockström, et al. 2017). Less ambitious scenarios that would further delay the emissions peak bring potentially devastating human and ecological consequences.

Kevin Anderson, one of Britain's most prominent and politically engaged climate scientists, has calculated that even a 50 percent chance to avoid more than 2 degrees of average warming would require a 10 percent annual decline in emissions between 2020 and 2040 (2012, 24). While recent decades have seen a decoupling of emissions growth from economic growth in many countries (Smith 2017), it appears unlikely that such a magnitude of reduction can be achieved without significant economic contraction. In capitalist economies, that almost invariably results in widespread loss of employment and livelihoods (Magdoff and Foster 2011, 55-59), along with a potential political backlash. Others argue, in contrast, that a period of significant economic expansion may be necessary to support a sufficiently rapid transition to a renewable energy economy that also fosters job creation and global poverty relief (Pollin 2015, Schwartzman and Schwartzman 2013). A series of widely cited studies by Mark Jacobson and his colleagues at Stanford University aim to demonstrate the feasibility of such a conversion, mandating the construction of over 1.7 billion new renewable energy installations in the coming decades, utilizing just under two percent of the potentially accessible global land mass available for such projects (Jacobson and Delucchi 2011).

While critics have challenged several of the specific assumptions behind these projections (Clack, et al. 2017), such "green growth" proposals raise a variety of more fundamental questions. For example, Jacobson and Delucchi argue in some detail (1161-64) that a combination of metals recycling and substitution of alternatives for rare minerals may be sufficient to address the material needs of such a large scale deployment of new technology, but this is far from certain. Further, economists have suggested since the 19th century coal boom, that technological changes, even if they improve the efficiency of resource consumption, tend to *increase* the demand for energy and materials as capitalists learn how to do more with less while continuing to grow the economy. This is known as the Jevons Paradox, after research by the British economist William Stanley Jevons on patterns of coal use during the Industrial Revolution (Foster 2009). To cite one current example, jet fuel consumption per passenger-mile has fallen 82 percent since the late 1950s, however the rapid expansion of air travel has led to a seven-fold increase in total fuel use (Lohmann and Hildyard 2013, 36). Richard York from the University of Oregon has calculated (2012) that as little as a quarter of non-fossil energy currently replaces fossil fuels, and only a tenth of non-fossil electricity; the rest is simply adding new capacity to the system. While some studies suggest that global carbon emissions may be reaching a plateau (Jackson et al. 2016), global emissions spiked significantly in 2016, even before a new U.S. administration began to dismantle environmental regulations and aggressively promote new fossil fuel extraction (Friedman 2017).

Investment in renewable energy grew rapidly through the first decade of this century, but leveled off in 2012 and has substantially declined in some recent years (Frankfurt School of Finance & Management 2015, 12). Andreas Malm (2016, 370-71) further documents the cancellation of renewable investments by several major corporations, explaining how in capitalist terms, the industry has become a victim of its own success. As technology costs continue to fall – making renewable energy more affordable throughout much of the world – investors may face a trend of steadily declining asset value. Malm laments how renewable energy has "lost so much of its exchange-value at the very same time that its social use-value – slowing down climate change – rose toward priceless heights" (371).

The UK-based Corner House research group, managed by former editors of *The Ecologist* magazine, argues that future technology projections such as the Jacobson group's may indeed be asking the wrong questions. First, they posit future scenarios as if a "class of hypothetical independent, impartial, supremely powerful global or national regulators" were empowered to make decisions about the world's energy resources (Lohmann and Hildyard 2013, 19). At the very least, they imply a far more robust and agile public sector than currently appears within reach; the logic of the market, in contrast, is far more chaotic and less predictable. But, more fundamentally, such projections perpetuate an "abstract concept of 'energy'" that "has largely been a creation of fossil-fuelled industrial capitalism" (26). With annual coal, oil and gas consumption now burning the equivalent of 400 years of terrestrial plant growth each year, fossil fuels have encouraged us to ignore "time, place or context," viewing energy as an abstract commodity that is ever-present rather than as a means to perform a diverse range of discrete useful tasks. This ultimately furthers the destructive myth of unlimited production and consumption, even as the world needs to rapidly curtail emissions of greenhouse gases.

Further, the scale and character of current renewable energy installations tends to reflect what Bookchin (1982) described as the "social matrix" of technology. Technological innovations are not simply products of the particular social relations of industrial capitalism, but are developed specifically to reinforce and strengthen those relationships. For example, the trend toward ever larger-scaled wind turbines can be justified in terms of their increased power output and efficiency, but it has also served to shift control of wind power production toward larger corporations and undermine the many local, cooperative arrangements that drove earlier waves of wind power development (Maegard 2010, Shaffer 2016). The increasingly massive scale and centralized ownership of renewable energy installations has also increased local opposition to wind and solar energy projects in many rural areas, impeding overall progress toward a renewable future (Phadke 2011, Agnew 2017).While social ecologists are generally optimistic about the potential for an informed human engagement with ecological processes to help enhance the integrity of natural systems, there is also considerable resonance with the critique of gigantism and preference for smaller-scale solutions that have driven the European degrowth movement (Demaria, et al. 2013). Bookchin consistently argued, however, that "small" is not enough, and that the ethical and political character of the solutions we propose are ultimately what matters most (1992, 265).

Global inertia, local response

Following the exuberant but ultimately disappointing conclusion of the 2015 UN climate conference in Paris, many climate justice activists have embraced a return to the local. While delegates to the conference tended to echo Ban Ki-moon's appraisal of the Paris agreement as ushering in a "new era of global cooperation," (UNFCCC 2015a) the civil society response was generally skeptical. Friends of the Earth International (2015) denounced the agreement as a "sham of a deal" and Kevin Anderson said it was "weaker than Copenhagen" and "not consistent with the latest science." (Chivers and Worth 2015) Tens of thousands of people who assembled on the streets of Paris on the last day of the conference described the agreement as having crossed dangerous "red lines," and the global 350.org network went on to initiate an international series of actions the following spring urging the world to "Break Free from Fossil Fuels" (breakfree2016.org).

While the Paris agreement's Preamble embraced many of the concerns that various countries and their civil society representatives brought to the table – even citing "the importance for some of the concept of 'climate justice'" (UNFCCC 2015b, 21) – activists condemned the agreement's fundamentally voluntary nature and the absence of enforcement measures (Tokar 2015). Article 15 of the agreement proposed a "mechanism to facilitate implementation and promote compliance," but only in the form of an international "expert-based" committee that is to be "transparent, non-adversarial and non-punitive." (UNFCCC 2015b, 29). The document offered a nod to global South concerns to address current climate-related losses and damage, but the text explicitly denied, at the insistence of the US and other wealthy countries, "a basis for any liability or compensation." (UNFCCC 2015b, 8). The U.S. administration added insult to injury in June of 2017 by announcing its withdrawal from the agreement, threatening to undermine even the voluntary process that had drawn most of the world's nations to bring their emissions reduction plans to the table.

In response to the announced U.S. withdrawal, an alliance of over 200 cities and counties, along with some 1600 businesses and investors, announced their intention to uphold the commitments the previous administration had brought to Paris (Tabuchi and Friedman 2017). But this represents only a modest step forward, for three main reasons. First, the sum of all the "national contributions" that countries brought to Paris is only a partial step toward keeping average warming below 1.5 or 2 degrees (www.climateactiontracker.org, www.climateinteractive.org). Second, the Obama administration's Climate Action Plan offered little to advance the actual historic pace of U.S. emissions reductions (Komanoff 2015). And third, financial analysts from institutions such as Bloomberg and Morgan Stanley now suggest that rapidly falling prices for renewable energy could accelerate the deployment of alternatives considerably faster than any current policy initiatives (Schlanger 2017, Shankleman and Warren 2017). Beyond the electrical sector, at least three European countries – Norway, Germany and France – have announced plans to ban the sale of petroleum powered vehicles in the next decade or two, with some auto companies promising a much faster transition (Chow 2017). However the continuing relevance of the Jevons Paradox suggests that even these measures will not necessarily translate into economy-wide emissions reductions. A far more ambitious people-driven effort is necessary to address the fundamental inadequacy of international climate agreements, market-oriented approaches, and symbolic local measures.

The history of local measures to reduce energy use and greenhouse gas emissions is reasonably encouraging. In the U.S., cities and states have mandated important measures to save energy and further incentivize alternatives. These include "renewable portfolio standards" that require utilities to obtain a rising share of their power supplies from renewable sources, net metering and feed-in tariffs to stabilize costs for subsidize home- and farm-scale producers of solar and wind energy, and measures to attach loans for fuel-saving equipment to home mortgages to facilitate easier financing. Over several decades, U.S. cities have advanced local zoning changes to encourage higher downtown population densities and thereby limit urban sprawl, strengthened building codes to mandate energy savings, built infrastructure to charge electric vehicles, and supported urban farms and relocalized food systems (Linstroth and Bell 2007). A few U.S. cities are even expanding public transportation systems, despite continuing pressures toward fiscal austerity. Numerous European cities have taken steps to significantly redesign their central cores to reduce traffic, air pollution and fossil fuel use (Schneibel 2016). Internationally, more than 2500

cities from Oslo to Sydney have submitted plans to the United Nations to reduce their greenhouse gas emissions, sometimes in defiance of their national governments' more cautious commitments (Doyle 2017).

Popular grassroots pressure can also help reshape national policies. In Germany, for example, decades of local efforts – from successful anti-nuclear campaigns and citizen initiatives in the 1970s to the more recent emergence of hundreds of energy cooperatives and Bioenergy Villages – led to the passage of a pioneering renewable energy law in 2000 that helped increase renewable electricity use to a third of the nation's total production (Mueller 2017). Even the landmark U.S. environmental laws of the 1970s resulted in part from successful local efforts to regulate pollution; a wave of environmental regulations and lawsuits in numerous cities and states helped convince influential business interests that a uniform set of national standards and funding mechanisms to implement pollution controls was a far better option (Tokar 1997, 58). A parallel scenario for overcoming political deadlocks around climate policy is not difficult to envision.

Locally focused campaigns have also had a large impact in many areas of the global South, from Gandhi's historic drive to reinvigorate rural economies to land defense movements in present-day India and the movement of landless people in Brazil, among many others. Each of these movements in turn has significantly impacted domestic politics and also provided a living example for social movement actors throughout the world. One recent report described two local popular *consultas* in Columbia that moved to reject mineral and oil exploitation within their territories, citing the affiliation of one of the towns with the Italian-based "Slow Cities" movement (Weinberg 2017). The latter is an outgrowth of the famous Slow Food movement that has helped raise the social and cultural standing of local food producers in Italy and many other countries. A Slow Cities statement of principles suggests that by "[w]orking towards sustainability, defending the environment and reducing our excessive ecological footprint" communities are "committing … to rediscover traditional know-how and to make the most of our resources through recycling and reuse, applying the new technologies." (Cittaslow International n.d.). In contrast to the somewhat similar Transition Town movement, whose reach has only minimally extended beyond the English-speaking world, the Slow Cities website lists scores of affiliated cities and towns including Germany, Poland, Turkey, South Korea and China.

The ability of localist movements to build support and pressure for broader institutional changes is central to their political importance in a period when social and environmental progress is stalled in many countries. Actions initiated locally may also have more staying power than those mandated by higher authorities. They are far more likely to be democratically structured and accountable to people who are most affected by the outcomes. They help build relationships among neighbors and strengthen the capacity for self-reliance. They enable us to see that the institutions that now dominate our lives are far less essential for our daily sustenance than we are often led to believe. And, perhaps most important, local initiatives can challenge regressive national policies that favor fossil fuel corporations and allied financial interests.

Of course not all social movements at the local level seek forward-looking, progressive changes. In both Europe and North America, forces of the far right have adopted the rhetoric of local control toward

regressive, ultra-nationalist and often racist ends. For example, when the UK Independence Party, which helped lead the drive for British withdrawal from the European Union, proclaimed that "real decision-making should be given to local communities," it only thinly veiled their intent to marginalize immigrant populations, oppose renewable energy projects, and even ban discussions of climate change in some local schools (Hopkins 2014). Racist organizations in the American South have long hidden behind localist rhetoric, as does the militia movement and other far right pseudo-populist formations that support the Trump presidency in the United States. At least one prominent voice of "anti-civilization" environmentalism has written in support of a nationalist response to globalism (Kingsnorth 2017). Bookchin was well aware of such tendencies, and of the potential for atavistic forms of ecological thought to turn in a reactionary direction, but remained hopeful that a more consistently liberatory localism would emerge from the practice of direct democracy, with communities acting as "a school for creating a new kind of citizenship," rooted in participatory self-governance and an expansive ecological ethics (1986, 95). Whether this can ultimately serve to counter the current neo-populist wave still remains to be seen.

For the most part, recent local initiatives in the U.S. and beyond have mainly evolved in a progressive, socially liberatory direction. The Center for Immigration Studies, which seeks to reduce immigration rates into the United States, lists over 160 cities and counties that have declared themselves as "sanctuaries" in defiance of the Trump administration's elevated enforcement of U.S. immigration laws (Griffith and Vaughan 2017). Thirteen U.S. and Canadian cities are implementing steps toward participatory budgeting at the neighborhood level, a practice that originated in the 1980s in Porto Alegre, Brazil (Hagelskamp, et al. 2016). Several U.S. cities have raised their local minimum wage well above state and national levels, along with other measures to help mend a threatened social safety net. Indeed, several Republican-dominated state legislatures have responded to the threat of progressive local measures by passing controversial new "pre-emption" laws designed to overturn local initiatives to protect refugees, guarantee the rights of gay, lesbian and transgender people, and encourage local hiring on public works projects (Badger 2017). The Texas legislature passed a law prohibiting cities and towns from banning fracking for oil and gas. This replicates an earlier wave of state pre-emption measures over a decade ago that prohibited local jurisdictions from banning smoking, restricting pesticide use, and regulating the use of genetically modified seeds, among other measures (Newman 2006). Ongoing political and legal battles over the rights of municipalities vs. states speak to the continuing political potency of socially and environmentally progressive measures emerging from the local level.

Social and environmental justice activists in the U.S. are also challenging the trend of right wing electoral victories at the national and many state levels by running and winning bold campaigns for a variety of local positions, from city councils, to top law enforcement posts and mayors' offices. Perhaps most noteworthy is the successful 2017 campaign of Chokwe Antar Lumumba, who was elected mayor of Jackson, Mississippi, in the heart of the Deep South, with a program focused on human rights, local democracy and neighborhood-based economic and ecological renewal. Lumumba ran as the voice of a movement known as Cooperation Jackson, which has put forward numerous ideas resonant with social ecology, including empowered neighborhood assemblies, cooperative economics, and a dual-power political strategy (Akuno 2014). Cooperation Jackson takes its inspirations mainly from traditionally Black American and global South sources, including the resistance struggles of enslaved Africans before and after the U.S. Civil War, the Zapatista movement in southern Mexico, and recent international

popular uprisings. Another central source of inspiration for the climate justice movement is the legacy of active collaborations between environmental justice and labor activists, a thirty-year effort that has advanced demands for energy democracy and a just transition for workers in the fossil fuel sector and other polluting industries (Sweeney 2014, jtalliance.org, labor4sustainability.org).

Utopian visions

The projections of climate science highlight the difficulty of transforming our societies and economies quickly enough to prevent a descent into a planet-wide climate catastrophe. Science also affirms that the actions we undertake today can mean the difference between a future climate regime that is disruptive and difficult and one that rapidly descends toward apocalyptic extremes. While some authors focus on the most dire future scenarios, hoping that people can be shocked into realizing the magnitude of changes that are necessary, this approach appears more likely to inspire despair and withdrawal than meaningful action. Author Eddie Yuen describes the problem of "catastrophe fatigue," which typically pacifies rather than energizes people, and argues that real solutions to the climate crisis "must be prefigurative and practical as well as visionary and participatory," appealing to "community and solidarity" rather than "austerity and discipline" (2012, 16, 42).

This resonates strongly with the utopian dimensions of social ecology, and with the continually renewed history of utopian thought over many centuries. While we need to be completely realistic about the potentially devastating consequences of continuing climate disruptions, a genuinely transformative movement needs to be rooted in a forward-looking view of an improved quality of life for most people in the world in a future freed from fossil fuel dependence. As Naomi Klein has written (2014), the climate crisis demands not only an end to the unlimited exploitation of people and the earth, but also a restructuring of society around the egalitarian, community-centered values that progressive movements have championed for generations.

While centrist thinkers, especially since the fall of the Soviet Union, have often condemned the pursuit of utopian solutions as a harbinger of totalitarianism, the utopian impulse has historically been a popular expression of human strivings for a better world. It has deep roots in ancient thought and came fully into its own with the emergence of secular culture in the West, as the desire for a better world was freed from narrowly religious forms of expression (Chodorkoff 2014, 121-143; Touraine 2000). The pioneering German sociologist Karl Mannheim believed that "The utopian mentality is at the base of all serious social change" and invoked "the reality-transcending power of utopia" (Quoted in Sargent 2000, 14; Kumar 2000, 265). World systems theorist Immanuel Wallerstein has proposed a renewed study of "utopistics" that broadly examines future possibilities and reveals "the substantive rationality of alternative possible historical systems" (1998).

In a world confronting the possibility of a rapidly deteriorating natural order, with unprecedented weather-related catastrophes and an epochal wave of mass extinctions of living species, humanity's future may depend on our ability to envision and create a better world. Partial measures are far from sufficient, but the cumulative impact of local efforts to challenge entrenched interests and actualize living alternatives – combined with coherent revolutionary visions and strategies toward a radically transformed

society – may perhaps be enough to fend off a dystopian future of deprivation and authoritarianism. Whether local democratic initiatives are aimed at pressuring and transforming established institutions or at fully superseding and abolishing them, they remain our best hope to meaningfully reshape the future. Perhaps the threat of climate chaos, combined with our deep knowledge of the potential for a more humane and ecologically harmonious future, can indeed help inspire the profound transformations that are necessary for humanity and the earth to continue to thrive.

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