**1: Transitions, Sustainable Transitions, Just Transitions**

Draft chapter from Damian White/Timmons Roberts/Dustin Mulvaney *Climate Futures and the Just Transition* (forthcoming)…still very rough and ready but comments welcome

“Those who preceded us had it much worse, and did so much. It can be done.”

Noam Chomsky

“hope in the face of an existential crisis that is still technically preventable is not just a matter of cold calculation. It’s also a question of ethics.” Naomi Klein (2014)

**Waking up from Francis Fukuyama's Great Slumber Party**

In 1992 the political scientist Francis Fukuyama published *The End of History and the Last Man*. It suggested that at this historical moment “What we may be witnessing is not just the end of the cold war……[but]…the end point of mankind’s ideological evolution”[[1]](#footnote-1). As the Cold War reached its end, Fukuyama argued we had very possibly reached a moment of political closure as History was reaching an end in the universalization of Western liberal democracy and the triumph of free market capitalism. If political life in the twentieth century was characterized by fundamental *ideological* disputes about the merits of broad systems, *The End of History* suggested we would find ourselves increasingly living in worlds where rather more narrow and data driven policy debates focused on the means to achieve incremental improvements of the free market/liberal democratic model. Two years before Fukayama published this book, the Intergovernmental Panel on Climate Change (IPCC) published its first report[[2]](#footnote-2) on climate change to contribute to the Earth Summit that met at Rio de Janeiro in 1992. Presenting a very different view of the future to *The End of History* thesis, the IPCC offered a painstakingly careful review and aggregation of the assessment of our climate futures. Full of caveats acknowledging complexity, uncertainty and carefully avoiding any political commentary or prescriptive discussion of what we should do, the Report nevertheless argued, that if all things remained equal, there was a very real possibility that if greenhouse gas emissions continued their upward curve, we could be facing catastrophic climate change.

Nearly two decades and more on since this moment, we have seen the contradictions of these two narratives play out in an ever “widening gyre”. It is hard to overstate how much *The End of History thesis* defined the political imagination or sense of possibility for a generation and more, for “new” Democrats and Republicans in the USA, for New Labour, social democratic, liberal and conservative parties across the developed West and for environmental policy making elites. Yet, as business environmentalisms have continually proclaimed the possibilities of a pain free “win-win” path to sustainable development, each subsequent IPCC report has pointed to the need for a dramatic de-carbonization of the global economy which is not in sight. The work of the IPCC has been forcefully supported by every Academy of Science across the planet that has argued the evidence points to the need for immediate action to deal with greenhouse gas emissions. A vast research community of environmental scientists has continually voiced the opinion that business as usual will have catastrophic consequences for people and planet. Mainstream economists such as Nicholas Stern have presented our current predicament as marking “the greatest market failure the world has ever seen”[[3]](#footnote-3). And yet, we are still very far from making the kinds of progress necessary to move us towards a post carbon sustainable future. Indeed, it could be argued that an unhelpful mix of *incrementalism, obstructionism/denialism* and *fatalism* increasingly dominate public discussions of climate and environmental crisis in the global North.

**Environmental incrementalism, obstructionism and denialism**

The dominant assumptions shared by business environmentalists and many core environmental policy making political elites situated in the center Left to the center Right - are that Fukuyama's understanding of the room for political maneuver essentially remains intact. From this perspective, since some version of the neo-liberal consensus still orders the international system (whether it manifests itself in more “progressive neoliberal” or conservative neoliberal forms) *incrementalism* must be the order of the day. The focus in this camp has been that the externalities of actual existing fossil capitalism are most effectively dealt with through the development of technological and market based solutions to environmental problems. It is maintained that the successful policy mix of Anglo-Saxon capitalism that has been exported around the globe over the last four decades – premised on fiscal rectitude and the lean state, an acknowledgement of the efficiency gains to be had from financialization, privatization free trade and outsourcing can still deliver a greening of capitalism. Free market economies can encourage policy shifts toward sustainability through policies that support the problem-solving abilities of private industry and unleash the genius of green entrepreneurship, they can devolve cumbersome “command and control” focused environmental regulations to more agile public–private partnerships and flexible voluntary agreements, and green financial innovations such as carbon markets, tradable pollution permits and the like to bring down emissions. In short, it has been argued that a greening of capitalism-as-is, can largely be achieved without any need to disrupt conventional economic growth or existing patterns of ownership and investment, production and consumption.[[4]](#footnote-4).

The second view that has long been central to many of the most influential factions of conservative, nationalist, and populist forces most closely allied with the fossil fuel industry is that the uncertain and largely politically motivated science of climate change, joins a long list of environmental scare stories and forms of eco-hysteria that have been peddled by assorted liberals, environmentalists and anti-capitalists for over four decades. From this perspective, fossil *capitalism* is not only alive and well but must be actively and aggressively defended against its many critics and celebrated as the most successful wealth generating and poverty amelioration machine in human history. Legislation to address climate change should be *resisted* on principle as both unnecessary but also dangerous in that it has the potential to actively sabotage economic growth in the global North and slow efforts to improve living standards in the South. Indeed, if anything, it is maintained the mountain of unnecessary, burdensome, job-destroying and freedom suppressing environmental regulations imposed on industry by over weening environmental regulatory state since the 1970s need to be rolled back. Broader projects to place restrictions on energy exploration and resource extraction, contain suburban or exurban development, expand energy efficiency or reduce private car use in the name of “climate stability” or other dubious environmental outcomes need to be squarely called out for their underlying misanthropic and freedom suppressing politics. As such, far from aspiring for low carbon outcomes, the infrastructure for expanding fossil capitalism needs to be aggressively expanded to exploit new terrain (e.g., the Arctic and the Antarctic, the interior of Africa, South America and Asia, deeper offshore in the Gulf of Mexico, etc.) and new opportunities for wealth creation. Such forces increasingly suggest that whatever “externalities” this existing model generates– wealth is always the best solution to environmental degradation. Moreover, environmental degradation, civil unrest, protest, migration and people movement can be dealt with by decisive strong government and more rigorous applications of controls and border securities[[5]](#footnote-5).

Discussions of our carbon futures in the global North have largely been dominated by battles between these advocates of “green” and “grey” capitalisms, battles which have clearly ebbed and flowed over the last two decades. Until recently, many readings of the political landscape had largely assumed that if the material infrastructure of fossil or grey capitalism remained stubbornly resilient, it was nevertheless a set of forces that were ideological losing ground to the forces promoting incremental transformations to low carbon capitalism. To be sure, significant and powerful forces remained as major sources of support for business as usual: the Republican Party in the United States, the Conservative Parties of Canada and Australia, OPEC and the petro-exporting states. Nevertheless, in many other parts of the affluent world, particularly in much of the European Union, the project to build green capitalism through processes of ecological modernization appeared (unevenly and sporadically) ascendant. Indeed *incrementalists* could point to significant practical alliances being made towards the construction of technocratic green neo-liberalisms led by the EU and the Obama White House, with the Chinese State directed market model equally committing vast resources to the support of renewables. Such forces appeared to offer the most likely drivers for cultivating modes of environmental regulation and management to bring about low carbon outcomes and modes of environmental disciplining and management that would allowing for continuous capital accumulation. Indeed, the global financial crisis of 2008, appeared, for a brief period, to offer bolder challenges still to the hegemony of this incremental vision of green neo-liberalism as the future.

The surge in authoritarian populisms across the affluent world since the Great Recession represented by the Tea Party, the rise of the Alt-Right in the United States, the successes of the *Front Nationale* in France, the Law and Justice Party in Poland, Victor Orban in Hungary, Geert Wilders in the Netherlands, Pauline Hanson’s One Nation Party in Australia, Brexit Britain and now the Trump White House would now seem to have changed this calculus for the moment. Authoritarian populists in a surprisingly broader range of political configurations have all successfully combined called for immigration restrictions and climate skepticism, with a more generalized politics of resentment for the status quo and xenophobia particularly for migrants and asylum seekers (some of whom are climate displaced peoples). Many of these groups and parties have frequently combined such calls for clampdowns on environmental regulation and welfare regimes that reward the “undeserving poor” with further calls for economic development that doubles down on fossil fuel extractivism, securitization and militarization.

Whilst a great deal of valuable sociological research has focused on the key role that anti-environmental free market think-tanks, media outlets and private foundations have played in seeding and sustaining anti-environmental and climate-skeptic policies, causes and currents, there has always been more to denialism and obstructionism that this. As James McCarthy and more recently Matt Huber have acutely observed, anti-environmental and climate skeptic mobilizations in the United States (and increasingly elsewhere) have also been underpinned by a sophisticated and powerful cultural politics[[6]](#footnote-6). Political messaging premised on the assumption that elite liberal and urban environmentalisms will suppress entrepreneurship and opportunities for job creation in extraction industries, raise energy prices, take your guns and pick-up truck away from you and seek to further regulate your life, your culture, your shopping, your religion and your access to public land clearly has deep popular resonance in the United States, but increasingly further afield. A politics that combines cheap energy populism with racial resentment, nationalism with traditional religious conservative themes clearly can not only successfully mobilize the traditional coalitions of affluent white urban and suburban classes, white rural communities and religious conservatives that have historically resisted all forms of social or environmental progress but it is a message that also has resonance for many further groups and communities that have been most devastated by neo-liberal de-industrialization and extractivism.

**Apocalytic Environmentalism and the it’s-too-late-o-cene**

If denialism and authoritarian populism presents one set of very significant obstacles for building climate just futures, there are also reasons to be concerned with the ways in which environmental crisis reworked as the apocalyptic Anthropocene has now returned as the dominant environmental political and cultural imaginary coursing through the affluent world. Not since the mid-1970s, have we seen such a torrent of survivalist and catastrophist currents move through popular culture. From *The Walking Dead* to *The 100*, from Cormac McCarthy’s *The Road*, *Snowpiercer, Mad Max* or *Elysium,* visions of socio-ecological collapse are everywhere. Our bookshops heave with apocalyptic environmental tomes. Clive Hamilton has offered us a *Requiem for a Species*. Roy Scranton offers us instructions on *Learning to Die in the Anthropocene.* Elizabeth Kolbert documents *Field Notes from a Catastrophe.* The ever ironic Bruno Latour seems to have lost his cheeky Gallic sense humor of late and has now embraced James Lovelock’s Revenge of Gaia. In Britain, the Dark Mountain project suggests we should take to the hills[[7]](#footnote-7). The environmental humanities are now full of books about grieving, loss, and mourning. In the academic worlds of anarcho-primitivism and ultra-Left theorizing nihilism has returned as a central space to explore deflationary accounts of the future. On the libertarian Right, billionaires are buying up high security “eco-bolt holes” in New Zealand just in case the shit really does hit the fan.

Turning our multiple ecological crises and political impasse into a vision of the future as the apocalyptic Anthropocene, clearly has a good deal of material to work with – as we have already seen. Well before the rise of authoritarian populism, the existing climate models of the IPCC indicated that business as usual could generate a 1:10 chance of runaway global warming. This of course would be a complete calamity. But even under the most conservative estimates, it is clear that we are now faced with the need to embark on a massive decarbonization of the world economy with 50%-90% reductions in energy related CO2 emissions whilst meeting the challenge of energy poverty and meeting the developmental needs of a global population of perhaps 9-10 billion. The authoritarian populist moment has occurred then at exactly the time when leading climate scientists like Kevin Anderson and Alice Bows[[8]](#footnote-8) were questioning whether a two degrees rise in average global temperatures was in any way plausible given present trends, and James Hansen had declared the two-degree “guardrail” was no safe guardrail at all but going to take us into completely uncharted waters[[9]](#footnote-9). Nevertheless, as assorted currents of radical environmentalism rework the apocalyptic Anthropocene into the *it’s-too-late-o-cene*, it is important for us to ask who is going to benefit from this particular political imaginary and whose stories and struggles threaten to be silenced or rendered invisible? How does “Learning to die” in the Anthropocene” speaks to the concerns of working people who have scarcely been able to make a living in the Holocene?

Here it is important to acknowledge that climate and eco-apocalyticism itself contains a particular situated politics, a particular understanding of history temporality and agency that is, in many respects, every bit as problematic as naïve environmental incrementalism or denialism. Environmental justice scholars, indigenous scholars, voices from the global South, social ecologists, ecosocialists and feminists, have long observed that a central problem that has existed with the generic apocalyptic imaginaries that have continually been deployed by Malthusian liberal environmental discourse emanating out of the Global North is that its endless preference for telling stories about generic humans at fault has always operated as a means of obscuring that “we” have contributed in different ways to the problem, “we” will be impacted in very different ways by the outcomes, and “we” come with very different capacities to shape “solutions.” Some people after all have credit cards that can get them out of harm’s way and some just have to be culled.

Further issues emerge once it is recognized that the backdrop to much of the Apocalyptic Anthropocene is a naturalized and Northern centric environmental history, a vision of “the good Holocene”, a moment of homeostasis when socio-ecological relations were once “in balance.” This is a moment variously located in much romantic natural history emanating out of the US or France, Britain and Germany as the authors childhood memories of landscape, holiday retreats that made powerful impressions, the landscape of ancestors, often for white North American environmentalist landscapes prior to human settlement. But the “good” socio-ecology of the “good Holocene” sits awkwardly the observation of indigenous scholars, that for them, the apocalyptic transformations of socio-ecological relations actually happened a long time ago and it’s been ongoing for a very long time. It is also a mode of narration that finds it hard to grapple with the entangled black and brown histories of the Atlantic slave trade or the deeply interlinked Columbian explosions of ecologies, pathogens, bacteria, plants, human slaves and indentured servants purely through a historical imaginary focused on stories of current events taking us beyond the “safe operating space” of the Holocene.

The extent to which the apocalyptic Anthropocene might ultimately share more in common with the politics of denialism is a further thought that is worth exploring. William Connelly has insightfully suggested in *Facing the Planetary: Entangled Humanism and the Politics of Swarming* (2017) that different modalities of nihilism – “the sense that all meaning has been subtracted from the world” saturates a good deal of the contemporary politics of the old Euro-American capitalist states both on the green left and the populist right. There is the passive nihilism of those environmental currents who practice a kind of “morose resignation” essentially believing that all is lost, that we must “learn how to die with nobility”[[10]](#footnote-10). But Connolly also observes that a not dissimilar forms of passive and more aggressive nihilisms has long provided the fuel that sustains the politics of resentment underpinning many articulations of anti-environmental Christian-Evangelical far right politics in the United States. Connolly’s analysis of passive and aggressive nihilism reminds us that denialism and eco-fatalism may well be more closely aligned than first meets the eye. It is important to acknowledge that there have been many moments in the environmental debate over the last 100 years when xenophobia and ecology, sustainability and fear of the immigrant, nihilistic fears of collapse and desires for a strong man “to sort things out” have come together with dangerous results. There is a long and dark history of Malthusianism and eugenics coming together with population control projects to deal with “the problem” of miscegenation in the North and “too many black babies” in the Global South. At the high point of the last wave of eco-survivalism in the 1970s, a series of deeply influential thinkers emerged from environmental quarters to offer certain “tough minded” assertions about the inevitable ways in which authoritarian measures might have to be embraced to deal with impending Limits to Growth. Garrett Hardin offered his lifeboat ethic. William Oplus expressly argued that only a Green Leviathan would be able to sort things out. Robert Heilbroner similarly envisages the new politics of ecology as necessarily moving beyond democracy[[11]](#footnote-11). Such theoretical interventions often offered intellectual support for the practice of coercive conservation and enforced population sterilization programs. Some three decades later, it is striking how the proposition that our ecological crisis might not need a renewal of democracy but a firm hand on the tiller emerges now in all kinds of quarters. James Lovelock has explicitly argued that the climate crisis might only be resolved if we see the suspension of democracy. Such abstract chatter though is almost entirely divorced from any engagement with the long history of authoritarian ecologies that practiced coercive conservation, enforced population sterilization programs and the like[[12]](#footnote-12). The apocalyptic Anthropocene could easily be reworked by authoritarian populists coming around to the reality of climate disruption. Yet this kind of politics is almost inevitably going to look to the military and the security state for solutions. A greening of authoritarian populisms might offer some very poor blueprints for transitions. Other options must be on the table.

**Spaces for Hope: Agencies, Hybridity, Design and Creative Labor**

So, what are the potential sources for hope that can help us move beyond fatalism, denialism and incrementalism or cynical critiques and towards different kinds of political imaginaries for different kinds of transition stories? What are the conceptual tools and resources that might sustain a vision of the sustainable transition that is broad enough to build solidarities across movements, that carry the potential to inspire hope and possibility, that can politically channel anxiety and crisis into a sense of political agency and struggle that is compatible with life in the post human world of the Anthropocene? How can we start to develop critical tools that do not simply confirm the obvious that we face a crisis but provide us with greater understanding of where the leverage points lie that could open up possibilities for reconstruction?

Perhaps a starting point here for grounding a critical theory of transition is to acknowledge that it can be productively informed by a socio-ecological and historical imagination that now goes beyond the romantic, dualist and declenionist myths that have long been cherished by affluent world Northern environmentalisms. One of the central orientations of the environmental movement has been to emphasize the extent to which the human project is profoundly entangled with nonhuman forces, ecologies and agencies. Yet, this has often run alongside a great deal of discomfort in thinking about the potential productive or creative role human agencies have and might still play in the co-creation of these natures. Indeed, oftentimes a great deal of environmental thought emerging out of the Global North has only been able to think in terms of humans as generic environmental degraders continually unraveling pristine natures. These ways of thinking though underpin ecological apocalyptic discourse and ecofatalism and they are ineffective for building coherent theories of transition. It is a narrative which is being challenged from a range of quarters.

Nearly three decades of research emerging out of ecological anthropology and archeology, environmental history and historical geography has left us with a much more complex understanding historical socio-ecological relations than the generic stories of humans as inevitable environmental degraders that underpin eco-apocalyptic discourse. Such work has of course demonstrated that there have been many critical moments in the Holocene where socio-ecological problems poses dramatic challenges for many historical human communities. Sometimes varied social and ecological challenges lead to disaster. But historical ecology also increasingly demonstrates we can point to many critical moments when human communities were remarkably productive gardeners of lively hybrid natures for millennia. We know from historical ecologies of the pre-Columbian Americas that some of the most remarkable ecologies on the planet - from the Amazon to the New England forests - were in part anthropogenically shaped[[13]](#footnote-13). As the science of ecology has increasingly moved from homeostatic understandings of ecosystems to greater emphasis on change, dynamic relations and contingent forces growing attention has been given to the ways in which uncertainty and complexity are features of all historical socio-ecological relations as are spatial and scalar complexity in understanding degradation across time[[14]](#footnote-14). Degradation can be a matter of perspective.[[15]](#footnote-15) At one point in time and at one spatial scales degradation can provide opportunities for new makings of social natures at other scales and temporalities[[16]](#footnote-16). Conservation biology has mapped the destructive practice our unraveling biodiversity but restoration ecology is also starting to highlight the human species and processes of hybridization and the development of novel ecosystems can play an important productive role in speciation as well[[17]](#footnote-17). Ecosystems can unravel with disastrous consequences. But reconciliation ecologies demonstrate that when they are given breathing space, there are contexts in which life can bounce back. Moreover, we know that homo-sapiens has demonstrated remarkable capacities for not only adaptation but creative gardening and remarkable levels of improvisation to new circumstances[[18]](#footnote-18). Contemporary archaeologies of homo sapiens tell us that our ancestors have survived population bottlenecks that nearly finished us off and profound crises generated by the rise of agriculture. We did this through building institutions and cultures that not only mediate the relation between society and nature but allow for memory and collective learning[[19]](#footnote-19). We can do so again.

The expansion of discourses of socio-natural hybridity across the social and natural sciences across the last decade and more potentially provides complimentary new openings for thinking about transition futures. Donna Haraway for example provides some initial pointers for thinking about entangled humans and multi-species flourishing in the Anthropocene. Long before discussions in Earth systems science had started to move towards the proposition that the social and the natural, the human and the non-human cannot be thought of in hard and distinct categories, but are categories that are porous and relational, Haraway’s call for a feminist science studies had prefigured much of this thinking. Developing her own political imaginaries from science, anthropology, from the science fiction of Octavia Butler and from an ever more elaborate cast of characters or “figuration” produced by science fact, she has variously used the cyborg, the coyote, the Vampire, Oncomouse (a laboratory mouse genetically altered for use in cancer research and owned by DuPont) and numerous companion species to explore blurring boundaries as well as possibilities for different kinds of connection and kinship –“oddkin” - that have opened up between entangled humans, machines and other animals.

A constant theme of all these enquires has been to claim that our emerging hybrid worlds are not innocent by any means. All Haraway’s characters are deep enmeshed in the “informatics of domination.” She insists that our worlds are thoroughly made by patriarchy, racialized capitalisms. But, at the same time she insists, pure natures, a reclaiming of the pure body, the pure Holocene, offers us no way back from hybrid worlds. The cyborg is not to be trusted. But we can’t abandon the cyborg either. What does any of this have to do with transition discussions? Perhaps centrally, Haraway suggests that a project of transition cannot be premised on nostalgia. There is no return to pure natures that can save us in turbulent times. There is no going back to some kind of simple socio-centric analysis that starts with a neat division between the social and the natural and then seeks to add the one to the other (the strategy of many fields of environmental inquiry in the 1980s and the 1990s)[[20]](#footnote-20). Rather we are entangled, we have to push on and we have to “stay with the trouble” rather than head for the hills. Her recent work is particular interesting for its suggestion that we find ways of telling socio-ecological histories of the Anthropocene that move us beyond fatalism, apocalyticism and declenionism. As she has observed:

 The idea that disaster will come is not new; disaster, indeed genocide and devastated home places, has already come, decades and centuries ago, and it has not stopped. The resurgence of peoples and of places is nurtured with ragged vitality in the teeth of such loss, mourning, memory, resilience, reinvention of what it means to be native, refusal to deny irreversible destruction, and refusal to disengage from living and dying well in presents and futures”[[21]](#footnote-21).

Haraway’s observation here should serve as a reminder that the apocalyptic Anthropocene can be found wanting for its historical amnesia that erases all manner of struggles that have occurred against oppressive structures and its preemptive defeatism which increasingly declares the game is up before the game has even started. Let us take slavery here as an example of a robust institution that was a central component to the “good Holocene.” Charles C Mann has observed; slavery was an unquestioned social norm for most of human history “from one end of the world to another.” It was central to the Europe-centered explosion of capitalism but also central to Mughal India, Ming China and the Ottoman Empire and in 1860 slaves were “the single most value asset in the United States.” And yet “in the space of a few decades in the nineteenth century, slavery, one of humankind’s most enduring institutions almost vanish.[[22]](#footnote-22)” Climate activists today then can terrify themselves with stories of how intractable our energy systems are, how consolidated and embedded they are, how decarbonization presents almost impossible logistic challenges. But as Michael Dyson has suggested, perhaps it is at this point important to have a historical imagination and recognize that inspiration must be drawn from the histories of women, African Americans, labor activists, indigenous peoples, colonized and oppressed people’s everywhere to find examples of humans “getting things done under almost impossible circumstances” (Dyson).

Hybrid thinking can have additional advantages in encouraging us to explore ways of thinking about our socio-technical systems which present them in a-historical terms as obdurate, intractable, irreducible complex or so expensive to change as to place all modes of transition out of reach. Cost and obduracy are important issues but imaginaries that do nothing but persistently foreground tales of obduracy should perhaps be treated with a certain degree of caution. For example, as even Conservative commentator such as Oren Cass has observed:

 “The costs of climate adaptation can also appear deceptively large if the alternative of maintaining the status quo is imagined to be free. But regardless of climate change, almost every component of the global economy’s capital base—from city sewers to farm silos— will be fully depreciated and will need to be replaced by new investment over the next 100 years, both because existing infrastructure will deteriorate and because new alternatives will be worth installing. In that way, major coastal cities will be entirely rebuilt regardless of whether rising seas threaten them. If people allocating capital—be they small-town farmers, resort designers, or mayors—have the information and incentives to incorporate climate adaptation into their planning, it need not impose sudden and unmanageable recovery costs.[[23]](#footnote-23)”

Existing sprawling urbanscapes, ruralscapes and energy systems are going to be difficult to transform. But these are also dynamic forms, socio-material forms that incrementally change over time and cost considerable resources to maintain them in their current forms. And as such, this observation allows us to think more about the question of design, redesign and labor. Critical design scholars such as Tony Fry, Anne Marie Willis, Ezio Manzini, Gideon Kossoff, Cameron Tonkinwise and Terry Irvin have all argued in various places over the last decade that a re-conceptualized and expanded understanding of design as a socio-material, socio-ecological and socio-technical form of *redirective practice* – operating from the spaces of everyday life to planetary ontologies – could perhaps become a central imaginary for reconfiguring socio-environmental politics writ large.

In ways that are quite complementary to Haraway figurations –like the cyborg - which continually seek to dislodge static Eurocentric stories of the rise of “man” - Fry and Willis posit the notion that the anthros is better understood in dynamic ways as a self-designing species. We prefigure our courses of action and making. We are in turn “designed by our designing and by that which we have designed (i.e., through our interactions with the structural and material specificities of our environments)” (Willis, 20\*\*) . This results in a “double movement”, notably we are continually involved in the attempt to design our world but this world, is of course full of its own recalcitrance and agencies, it folds back on us and designs us.

The result of this world is that we live in a hybrid world, a made world, indeed a (mal)designed world and that this is a world where “Nature alone cannot sustain us: we are too many, we have done too much ecological damage and we have become too dependent on the artificial worlds that we have designed, fabricated and occupied[[24]](#footnote-24)”. An ecopolitical imaginary then must render our designed world visible rather than retreat into the dualist worldview of romantic environmentalism. But in contrast to Haraway’s anxious and somewhat declarative view of political agency Fry argues we must center the idea of design as the act of making and remaking. If we understand design, at root as naming “….our ability to prefigure what we create before the act of creation” this can open up a vision of creative sustainable making and remaking that can move from the intimate sphere, to the household to the garden, the firm and the workplace, the garden and agriculture to architecture, planning, services, production and consumption to the urban future. Design the can be politicized and generalized. In connecting transition with radical histories of vernacular making and participatory design this could perhaps allow us to think in more inter-linked ways about how public and community orientated transition design at scale. Design by definition draws into view the question of *labour* and the role that the *creative laboring subject* is going to play in making and remaking our future worlds. And it is debates around transition where many of these discussions are now unfolding in concrete terms.

**Discourses of Transition**

The concept of *transition* would increasingly seem to be providing a political imaginary for diverse forces around the planet looking for very different opportunities to think about post-carbon, sustainable and climate just futures. The concept of transition and more specifically, the need for a sustainable transition is now found in many spaces and places. It is to be found amongst labor activists and environmental justice campaigners, radical designers, engineers and scientists, urban ecologists and community organizers, advocates of farmers rights, the rights of women and indigenous people. Advocates of sustainable transitions are diverse and eclectic (as is inevitably because transitions in different parts of the global will be diverse and eclectic)[[25]](#footnote-25). This is a body of thinking and debates that are presently quite fluid, informed by a range of ontological and political imaginaries, by diverse ideological and policy commitments. As will become apparent in this book, transition discussions are populated by high-energy society ecomodernists and de-growthers, as well as advocates of a-growth and post-growth. Transition discussions find champions of *Buen Vivir*, food sovereignty, post-extractivism, autonomia and communalism alongside advocates of cyborg feminism, ecosocialism, green social market economies, plenitude and indigenous futures.

Transition discussions contain reformers – that are prepared to pragmatically work with incremental-ists to achieve low carbon futures. It also contains voices that argue that transition requires much more fundamental transformations of our social, cultural relations and political-economic institutions to have any chance of success because low carbon capitalism, will not in any way bring about “the good society in a good nature[[26]](#footnote-26)” as Erik Swyngedouw has observed. It contains many more forces and currents situated somewhere in between.

In the remains of this chapter, we briefly introduce a range of discourses that we will suggest are vying to shape the contours of the new social science of post-carbon transitions. What follows are sketches of seven positions which we will argue capture some of the most important empirical, theoretical and normative matters at stake. It should be emphasized that each position sketched here is a distilled “ideal type” as Max Weber would have it, a pure case which is presented in its purity so that we can highlight and accentuate out some of the key suppositions underlying a particular transition argument. Reality of course is more complicated and messy with plenty of room for fuzzy boundaries between these positions. As will be evident all these transition positions come with strengths and limitations with plenty of opportunities emerging from this for partial agreement and even new synthesis between positions which could potentially disrupt old discussions as we will indicate in the conclusion to this chapter.

**Typologizing transition discourse**

**(i) Natural Capitalism, Eco Enterpreneurship and Greening the Market**

The view that the post-carbon transition must and will occur through *the greening of the market,* the construction of *Natural Capitalism* and the unleashing of green business and green entrepreneurial energies is perhaps the most influential and most powerful transition discourse on the planet. It is a transition discourse that is clearly very closely allied with mainstream environmental policy incrementalists, and is held in wide regard by remaining “progressive neo-liberals” as well as many mainstream environmental groups. Green market thinking has its rootsin the Business Council on Sustainable Development which from the mid-1980s onwards, and particularly under the leadership of Maurice Strong began to have an increasingly influential role in shaping global environmental politics at the United Nations. But it is a discourse that became firmly established in global environmentalism through key Global institutions from the UNEP to the OECD. It is a body of thinking that clearly has a great deal of overlap with the conventional incremental approaches to environmental policy making that we described earlier, even if key proponants such as Paul Hawken, Hunter Lovins and Amory Lovins maintain a more comprehensive vision of transformed socio-ecological relations in texts like *Natural Capitalism* and *The Drawdown.*

**The problem:** Green market thinking understands the problem largely in terms of the inability of neo-classic economics to price “externalities”/natural capital or deal with market failure of greenhouse gas emissions and other forms of environmental degredation (biodiversity loss, air pollution, climate change). It defines **solutions** largely in terms of the need to put a price those aspects of “natural capital” which remain unpriced and therefore viewed as free goods (greenhouse gases, biodiversity, ozone etc. .) It is technologies and post-carbon energy systems that are seen as important but it is argued that the price signal operates as the most powerful and the most efficient system on the planet to speedily drive investment to low carbon technologies and to facilitate broader green investments. It is this range of measures then that allow for us to conceptualize transition in terms of the continuation of capitalism in terms of Natural Capitalism and growth but now in terms of **green growth.** Green growth will be achieved by efficient resource use, valuing natural capital, green price signals, cap and trade, internalize externalities through market mechanisms, taking on value of natural capital as a factor of production, decoupling.

Advocates of green markets point to numerous **concrete manifestations** of their worldview. Conservation politics in the 1990s increasingly experimented with debt for nature swaps. The cap and trade systems that have been set up by the European Union and now spread further afield work on the basis of green market principles. The principle to cap and trade is that best results can be achieved when governments decide a lid to carbon pollution in a particular sector and then allow private firms to work out themselves the best ways in which they can reduce their emissions. In terms of **influence**, outside of obstructionists, contrarians and various climate denialists, an understanding of transition through the cultivation of green capitalism could be viewed as the most influential is a position that is largely agreed upon by most of the sectors of the global elite and all the major political blocs – EU, Japan that have not embraced obstructionism. It informs most of the thinking of key globalist environmental institutions such as the UNEP and the OECD. In many respects, it could be seen as a position that floats somewhere between the incrementalist worldview that we outlined in the last chapter and more radical transition thinking depending on its champions.

In terms of **manifestations,** it can be observed that advocates of green market transition can come in a range of different forms. This discourse can vary from the straightforward advocates of green neo-liberalism largely position on the political Right that sees market mechanisms and only market mechanism as the only method through which environmental policy should be approached. Yet, advocates of *Natural Capitalism* emerging out of the political center such as Paul Hawken, Amory and Hunter Lovins have argued that a mixture of green markets, the encouragement of green entrepreneurship, the cultivation and generalization of good green corporate practice around green technological innovation, service economies, sensible regulation and ethical investment allow one to envisage a green capitalism that would allow sustainable commerce and the green profit motive to flourish. If the greening of markets is a transition position that is largely associated with the political Right and Center, it also has to be noted that some green social democratic and even market socialisms are often open to some pragmatic use of market mechanisms to achieve low carbon outcomes.

**(ii) Technological Breakthrough and the Neo-Schumpterians**

If green market realists, champions of eco-enterpreneurship and assorted Natural Capitalists tended to dominated much transition mainstream transition discussion in the 1990s and 2000s significant sections of Silicon Valley as well as think tanks such as the Breakthrough Institute, Environmental Progress and Third Way are more skeptical that green market mechanisms alone are going to be economically or politically sufficient for outlining a path to post carbon sustainable transitions. Breakthrough advocates as such have increasingly outlined positions and modes of politics that are more critical of green neo-liberalism, Natural Capitalist approaches and policy incrementalism, frequently articulate a problem frame for transition that is often heavily influenced by the economic writings of Joseph Schumpeter as well as modernization theory to move beyond these approaches. Such approaches then are draw to technological determinist positions that emphasize by definition the central role that technological innovation plays in moving society forward. In contrast to the state skepticism of green capitalists, advocates of technological breakthroughs argue that modernization in the 20th century has been substantially facilitated by *the developmental state* and its agencies. Whether we consider the Manhattan Project which lead to the atomic bomb, NASA involvement in the Apollo Moon Landing, the post-war economic boom in Japan, France and Germany, or even the explosion of Silicon Valley in the 1990s, it is argued that the state and core innovation and technology federal administrative units such as DEPRA in the US (The Defense Advanced Research Projects Agency) or ,**Japan's** Ministry of International Trade and Industry (MITI) played a critical role in prime pumping basic research that gave rise to innovation revolutions.

Advocate of technology and energy breakthroughs **define the problem** face by transition in narrower terms green capitalism. Firstly, they understand our environmental crisis primarily as an energy crisis. They argue this energy crisis (which involves the need to decarbonize whilst also irradiating energy poverty in the Global South and acknowledging the widespread need for high energy societies) is unlikely to be resolved with existing renewable energy technologies. This discourse suggests that there is a chronic lack of up front state investment in post-carbon energy technologies in the US to sustain a high energy/low carbon planet. But they also suggest that the environmental debate in the United States has become so vitriolic and partisan in the United States in particular in large part because of the romantic, anti-modern and austerity worldview of much of the US environmental movement and the environmental Left in particular. It is argued that these currents are unable to take seriously either the gains of “Northern modernization” or the aspirations in the Global South for industrial development and high energy societies.; partisanship and lack of pragmatisms. **Solutions:** Advocates of technological breakthrough clearly place a central emphasis on the importance of innovation, new technologies and progress as means through which sustainable transitions can occur. These arguments are pitched in different ways though by different thinkers. Schumpeterian thinkers on the center Left such as Fred Block or Mariana Mazzacato have emphasized the critical role that “the entrepreneurial state” and industry policy can play in cultivating the grounds for renewable energy innovation. Promethean ecomodernist associated with groups such as the Breakthrough Institute and Environmental Progress also support such arguments but seek to maintain a much stronger intellectual commitment to modernization theory. Here it is argued that modernist environmentalists must push back against ecoromanticism, ecolocalism and anti-industrial environmental currents by insisting that the grand arch of history driven by the technological change and market capitalism is leading toward prosperity, pacification, liberal democracy and progress. Modernization understood as a teleological process generating industrial/post industrialization; urbanization; spread of post material values, industrial agricultural and urban/rural transition. Breakthrough modernists argue that these processes are already leading to environmentally virtuous outcomes such as decoupling, population transition, urban densification, rural depopulation. and thus the possibilities for thus rewilding rural worlds. These processes of modernization need to be continued and generalized whilst decarbonizing. Here such Breakthrough modernists argue that nuclear power, carbon capture and storage, industrial agriculture will play a central role in any conceivable sustainable transition. More radical transhumanist Breakthrough advocates have increasingly argued that negative emissions technologies (carbon capture and storage) and geoengineering technologies – direct air capture must be acknowledged as having a very significant role to play in maintaining global temperatures to safe limits. Some breakthrough advocates argue that reframing climate issues as less about “nature” or climate and more pragmatically about “energy independence” and “national security” opens up many more opportunities to build broad post-partisan support for a federal funded big research and development push in low carbon technologies.

**(iii) Cultivating Socio-technical system innovation – Innovation Studies and the multi-level perspective**

If green market and technological breakthrough approaches largely dominate mainstream transitions thinking in the United States, it is interesting to note how much European discussions of transition over the last decade been rather more focused on literatures on socio-technical transitions, the multi-level perspective and the focus on whole systems innovation. Socio-technical transitions thinking can be seen as a middle-range body of theory that has its **roots** in the writings of science and technology/innovation theory scholars such as Johan Schot, Frank Geels, Arie Rip and others. It has certain convergences with European discussions of ecological modernization and draws inspiration from institutional/evolutionary economics. The field of socio-technical transitions is through an increasingly diverse research community that can also draw insights from management studies (transition management), structuration theory and actor network theory (social practice transitions theory) and even approaches informed by Marxian political economy. We will focus here though on the influential “Dutch School of socio-transition studies” developed by Geels and Schot since it offers a clear set of approaches to socio-technical transitions thinking.

**The problem:** Many advocates *of socio-technical transition* *theory* agree that market incentives and public/private investment in research and development are important in moving advanced economies towards sustainable transitions. However, it is argued by Geels and his colleagues that both Breakthough and Natural Capitalist approaches can equally suffer from an oversimplified “magic bullet” vision of technological change, an inadequate understanding of the innovation process, and a tendency to fall back on incremental visions of transition which really fail to grasp the scale of challenge. Geels, Schot and their colleagues have argued that historical studies of the innovation process reveals that the innovation cycle: from research and development to the production of innovative technologies can take many decades, that they are always characterized by struggles between different actors. The research and development cycle is by definition uncertain in its outcome, marked by hype cycles, disappointments and even complete failure. What is needed then are understandings of innovation that can allow us to think about the mechanisms that facilitate whole system change in socio-technical systems.

**Solutions:** the multi-level approach proposed by Geels and his colleagues takes as a starting point the proposition that all technologies exist in a set of broader socio-technical relations which include “user practices, regulation, industrial networks, infrastructure, and symbolic meaning” (Geels, 2002: 1257). Transitions the are best seen as “…outcomes of alignments between developments at multiple levels” (Geels and Schot, 2007:399). An individual technology quickly develops *interdependent relations*. Geels (2012) offer the example of transportation. Breakthrough approaches to transport question tend to focus on the need to develop singular technologies – for example: green cars/ fuel cells/hybrids/EV. Green market approaches focus on the need to get the price right for these strategies. But what often goes missing from this approach is acknowledgement as Geels (2012) notes that a green transportation system requires much more than *singular Breakthrough transport* technologies or correct prices. Low carbon mobility futures are also going to entail multi-level thinking about how we can develop multi-modal infrastructures that can facilitate innovations at many moments in the system. As such, green cars will need new fuel and charging infrastructure, new business models, new information technology systems to function in optimal ways. But to get to radical cuts in carbon emissions requires much more significant opportunities to experiment with car sharing and carpooling systems, expanded and integrated opportunities for walking, train, tram and bicycle use, smart ticketing, intermodal and smart traffic management smart ticketing & intermodal transport systems. So, transitions thinking needs to start with multi-level systemic understanding of system innovation to grasp transition (not *just innovation system*) which can open up broader possibilities to achieve transformations in whole systems and radical innovation at many levels because path dependency/lock can be economic, political, behavioral, cultural. Systems can be locked in for many reasons. You get radical innovations in niches, protected spaces, can be subsidies, different actors putting time in, crisis etc.

The multi-level perspective goes on to theorize change in the world of socio-technical transitions in terms of three levels of analysis: technological niches, sociotechnical regimes and the sociotechnical landscape (Gels, 2002:1272). Drawing analogies from evolution, it is argued niches are “the locus where radical variety is generated” (2002:1272). These are spaces that are often “protected or insulated from ‘normal’ market selection in the regime”, they “are ‘incubation rooms’ for radical novelties (Schot, 1998)” (2002:1260). Socio-technical regimes are “the semi-coherent set of rules carried by different social groups” (2002:1260), these are the spaces where the selection and retention mechanisms are situated and the places where incremental innovation occurs (Geels 2002:1260). The socio-technical landscape consisting of the deep structural trends e.g. “the material and spatial arrangements of cities, factories, highways, and electricity infrastructures, ….. heterogeneous factors, such as oil prices, economic growth, wars, emigration, broad political coalitions, cultural and normative values, environmental problems”. Geels argues “the landscape is an external structure or context for interactions of actors”. The socio-technical regime can be distinguished from the socio-technical landscape in that “While regimes refer to rules that enable and constrain activities within communities, the ‘ST-landscape’ refers to wider technology-*external* factors. The context of landscape is even harder to change than that of regimes. Landscapes do change, but more slowly than regimes” (Geels, 2002:1260). So how does change occur? Geels suggests (2002:1260) “The important point of the multi-level perspective is that the further success of a new technology is not only governed by processes within the niche, but also by developments at the level of the existing regime and the sociotechnical landscape. “It is the alignment of developments (successful processes within the niche reinforced by changes at regime level and at the level of the sociotechnical landscape) which deter- mine if a regime shift will occur” (Kemp et al., 2001, “

**(iv) Experiments in Everyday Life, Social Practice and Commoning**

Since the 1960s, visions of a cultural, communitarian and bottom-up led path to socio-ecological transformation have long inspired diverse counter-culture radicals. The proposition that has long been entertained by such currents is that everyday life can potentially emerge as a critical site for experiments, inventions and transformations. Movements focused on building transition towns/communities/cities/societies – have been inspired by such currents. Within the field of transition studies it has been currents drawing from social practice theory, actor network theory, cultural sociology as well as interpretive and feminist traditions which have increasingly sought to map, investigate and sometimes instigate these developments. **The problem:** a core theme of this work has been to stress that a focus on green technological innovation or whole system innovation is important but even relatively sophisticated understandings of socio-technical innovation can lapse into a kind of managerial approach to transition if attention is not given to the ways in which cultural and social expectations of convenience, need, desire, comfort and so on are not fully examined as further drives of energy or resource intensive behavior. Broader issues such as the sustenance and generation of consumer culture, the design of urban form and the design of systems and services which facilitate current modes of carbon intensive lifestyles need to be examined. **Solutions** Fields of inquiry focused on everyday life are interested in cultivating social innovation in a range of different spaces of everyday life. Such work can range from modest and still quite incremental ways to explore how new modes of nudging and norming might facilitate more sustainable social practices, new forms of green consumption or lifestyle changes. Yet, such literature can also look to more substantial social experiments at the family/street/community/locality or city level to explore or device social experiments that seek to generate public engaged in low carbon futures. Examples of this might include different kinds of community gardening, guerilla gardening, low carbon streets, public art for social change. Beyond this, we can see growing intersections occur between social design, service design and activities in everyday life. Key writers here such as Juliet Schor have argued there are already multiple modes of self-provisioning which could lead to very different visions of consumption for the future.

**(v) Degrowth, Social Ecology and Distributed Futures**

If green movements since the 1960s have been marked by many different advocates of bottom up lifestyle change and cultural experimentation, other currents have sought to place the structural impediments placed on lifestyle change by capitalist growth at the center of their critiques of contemporary society. Such currents, drawing inspiration from anarchist and left libertarian traditions have equally sought to champion bottom up visions of transition futures. But these bottom up visions have accented the importance of building decentralized and distributed political and socio-technical systems as alternatives to gigantistic capitalist futures. Influences: Early advocates of such distributed and decentralized visions would include Murray Bookchin’s defense of participatory municipal democracy and ‘liberatory technology” that contributed to autonomy and civic engagement and Ivan Illich’s defence of tools for conviviality. These thinkers help inspire the radical technology movement in the 1970s. The problem: Degrowth approaches to transition generally make four core arguments against the fetishization of economic growth: (i) a physicalist ecological argument that current social forms are entirely dependent on growth, that the endless drive for growth lies at the heart of current forms of ecological destruction and that exponential growth in a finite system is impossible (expressed either through resource limits arguments, a concern with ecological simplification, climate change or the 4th law of thermodynamics); (ii) the pursuit of ‘economic growth’ for the sake of economic growth has often generated barbaric forms of “grow at any cost” forms of “modernization” (socialist and capitalist) which have themselves often resulted in social processes which destroyed and displaced the social and ecological livelihoods and communities of all manner of working class urban and rural communities -particularly of peasants, but in addition diverse indigenous peoples.; (iii) the presentation of growth as the solution to all social and ecological problems ensures that other ways of solving social and ecological problems (through a change in social relations or redistribution) is taken off the table ; (d) GDP is the primary measure of health used in the OECD. Yet, this measure can be very misleading if we wish to understand quality of life, happiness, the ecological footprint of a society or other matters. Indeed, it is argued there are a range of empirical evidences that bring into question the relationship between happiness and economic growth (Wilkinson and Pickett, 2009).

**Solutions** The critique of growth has informed the search for new economic indicators of well-being (see Stiglitz, Sen and Fitoussi, 2010). Most notably, these arguments have also galvanized global political movements, some of which now are actively mobilizing around the concept of ‘‘la de ́croissance’’ (French) or ‘‘la decrescita’’ (Italy) or de-growth movement.

Key thinkers of the de ́croissance’’ or degrowth movement such as Serge Latouche (2009, 2012), Mauro Bonaiuti (2012) and Joan Mart ́ınez-Alier (2012) have drawn inspiration from Georgescu-Roegen’s ‘‘bioeconomic criticism’’ of neo-classical economics (Georgescu-Roegen 1971a, 1971b maintain we need a fundamental changing of horizons. We must discard older modernist Promethean ideologies and ensure that “altruism” takes “precedence over egoism, cooperation over unbridled competition, the importance of social life over unlimited consumption” (Latouche, 2012:75). This will involve re-valuating the importance of social life over unlimited consumption” (Latouche, 2012:75) and require re-conceptualize, “sharing wealth and access to the natural resources between North and South as well as within each society” (Latouche, 2012:75). Latouche in a neat formulation has argued that these virtues are part of the 8 “r”s which are: (i) reevaluating (ii) reconceptualize, (iii) restructure; (iv) redistribute, (v) relocalize, (vi) reduce,(vii) re-use, (viii) recycle (Latouche, 2012: 74). He has spoken of degrowth as a project that seeks to “exit the economy” in the sense of undercut the imperial role “economic reasoning plays in society.

**(vi) Red Green Productivism and Ecosocialist Statism**

If greening the market is essentially the default transition position of most mainstream advocates in the transitions discussion, some vision of green social democracy or ecosocialism has become, something of a similar default positions for many on the environmental Left of the political spectrum. The view that the post-carbon transition requires equity centered approaches that place the environmental problems of neo-liberal political economy at the center of its analysis has intellectual **roots** in a range of red-green scholarship ranging from eco-Marxisms and eco-socialisms to the environmental justice movement. However, much critical sociological discourse on the green left that declared capitalism as inherently unecological has often prevaricated over the actual alternative to this system and been rather lacking in practical proposals for sustainable transition. We use the term red-green Productivism to refer to a series of state centered transition that have emerged out of this vacuum and emerged out of a convergence of reformist and labor centered traditions of the political Left, socialist feminist analysis, and perspectives emergent from the environmental justice movement. The **influences** of red-green productivism can be found in a range of different places. Advocacy of something like green social democracy has a long history in affluent world radical circles. Barry Commoner in the United States for example argued that socialists should embrace industrial ecology as a means of retrofitting and greening industry. Andre Gorz in France provided some of the earliest arguments for an eco-socialist politics that could attend to the productive activities that could occur outside work. *Green socialist feminists* such as Mary Mellor, Kate Soper, Nancy Fraser as well have all played a critical role in this discussion focusing on the unpaid labor and so they attend to . Yet such perspectives have been significantly renewed by the emergence of environmental justice movements in the United States and further afield, that have placed a central role on the ways in which the state can enforce environmental justice legislation and questions of equity and unequal sharing of environmental bads both domestically and nationally. More generally, distinctive labor friendly versions of Keynesianism have emerged and often been deployed by green social democrats to move their politics forward – even if Keynesian political economy can articulate with many different kinds of politics. Green social democrats have tended to understand **the problem** in terms of the environmental problems produced by grey and green neo-liberalism, conventional economic growth, the neo-liberal state and a global political economy that has been captured by the interests of the 1%. In terms of **the solution** the market and the economy need to be understood as both embedded and profoundly political, we need to draw out the politics of the economy and we could re-envisage political economy in very different ways. We might outline here a spectrum of different positions. Forms of green social democracy to be found at the more liberal end of the spectrum have advocate for a **The Green New Deal.** Economists such asRobert Polin in the USA and have sought to renew green or **The New Economics Foundation “The Great Transformation (2010)** have both argued for basically argues for a much broader reconfiguring of the global political economy. We need state driven stimulus spending that would generate major shifts in investment/regulation on energy; demand and supply policy innovation; green industrial policy but also green employment policy in the forms of a green collar economy. More radical red-green currents argue that we need modes of red green reformism that shift power to working people and drive new modes of green economic growth. Low Carbon populism – job training for green collar work, energy efficiency targeted for low income communities. return of urban and regional planning new indicators for prosperity, new role for the state beyond just R&D, new localism, renewal of urban and regional planning, policy stimulants to generate a circular economy and support transformations towards green manufacturing. Advocates of green social democracy that veer towards democratic socialism have increasingly emphasized the need for all of the above but building an Eco socialist pluralists commonwealth will require a shift to a new socially owned banking system, green worker’s co-operatives, just transitions for labor/regions displaced by sustainable transition, experiments with new modes of social ownership to develop green public goods for all.

**(vii) Queer/Post/Decolonial Perspectives and the Pluraliverse**

Finally, we can identify a persistent range of movements and thinkers that have positioned themselves in critical relations with “Northern” transition discourse or settler colonial transition concepts**. The Problem**: advocates of post and de-colonial perspectives have sought to draw attention to the ways in which much of the mainstream transition debate is purposely a-historical. Notably it chooses certain starting points of analysis in “the energy crisis” or “decarbonization” whilst evading exploration of the ways in which environmentally damaging patterns of resource and energy extraction, environmentally destructive and carbon intensive lifestyles, approaches and political economies of the overdeveloped world are intimately tied to ecologically and socially disastrous longer histories of colonialism, imperialism, white supremacy, people displacement dispossession and genocide that have defined relations between the West and the Rest, settler colonists and the colonized since the dawn of modernity/coloniality. From this perspective then, projects to develop ecological modernities that refuse to reflect on the modernity/coloniality coupling, the ways in which it influences global environmental agreements and all manner of environmental patterns of management today are likely to embark on sustainable transition projects marked by all manner of environmental injustices. Minimally, we may see environmental transition schemes that are deeply embedded in environmentality of human subjects. More generally projects to build sustainable transitions in the global North may well profess progressive credentials but they can easily be involved in displace, marginalize, dehumanize or display continue to be built on the backs of black, brown and indigenous bodies.

**Solutions:** Advocates of post and decolonial perspectives have offered many different solutions to transition issues. At a global level, acknowledgement of the ecological debt and the carbon debt owed by the overdeveloped global North to the Global South has to be brought into view. This has often been followed by the claim that the luxury emissions and resource needs of the global Northern must immediately shrink to allow for sustainable growth of the survival emissions of the global South. Decolonial and post-colonial advocates have equally sought to draw attention to the ways in which “environmentalism movements of the poor” are often at the frontline of resistance to eco-colonialism and eco-imperialism in the global South. They have also sought to draw attention to the *settler colonial frames* of knowledge that dominate mainstream transition thinking. In this respect De/post-colonial theory stands as an implicit critique of the energy centricism of much Northern transition discourse but also what Couthard (2014) has called the “normative developmentalism” and view that there is “one true path” to transition. Decolonial and post-colonial thinkers such as Escobar, champion modes of transition design and transition politics which explicitly argue that transitions within and between the global North and the global South are by necessity going to be plural, iterative and ongoing. They must be attentive to context and situated. Post/and Decolonial imaginaries can complement attempts by Afro-futurists, Chicano and Latino futurists and advocates of indigenous futurisms to disrupt the whole ontology of one single (Western) transition. What is required are modes of transition thinking and transition practice that open up transition debates to the insights of subordinated subaltern knowledges such as indigenous knowledges and indigenous science, modes of indigenous futuring etc. Some decolonial thinkers (Mignolo) advocate delinking from the state and capital as a first step in building spaces for decolonial transitions to be imagined.

**Sustainable Transitions, Just Transitions**

This chapter has sought to demonstrate that sustainable transition talk is presently marked by quite a distinct array of discourses or political imaginaries which can read the project of transition in quite different ways. As will become apparent as this book proceeds, sustainable transition discourses are marked by some fundamental tensions and points of disagreement. The status of modernity, capitalism and growth are clearly critical points of tension between different transition schema. The extent to which transitions should be conceptualized as a process of reform, transformation or revolution is also a matter of significant contention. Mainstream transition thinking has - in the large - drawn from modernist Western social science to develop its conceptual frames it has had a strong orientation to conceptualizing transition in terms of possible ecological modernities. Yet, we have also seen that post-colonial and de-colonial perspectives are emerging currents that seek to problematize or even dislodge the modernist commitments of mainstream transition thinking. Underlying all sustainable transition discourses are fundamentally political contestations about what remains fixed and what might be fluid in our socio-ecological, socio-technical and socio-political relations. The debate on transitions is still in its early stages. We will also see in this book that there are also distinct attempts emerging to combine transition discourses to generate new moments and new possibilities.

The aim of this book is to explore the coherent and credibility of the arguments and proposals of transition thinking. We take it as given that the overwhelming body of scientific evidence suggests we need to transition as far as possible to a low carbon economy, a sustainable society and a regenerative culture. However, transition is a daunting task. We know from moments in the past when social transitions have occurred or been attempted that they have often been brutal, violent, protracted affairs. It would be naïve to think that advocates of transition are simply going to win the day by sheer force of will or by the fact that they have *History*, science, righteous indignation or “moral truth” on their side. Moreover, this book will suggest that there are things that can and should be learned from the arguments of *incrementalists* and *obstructionists*. As we will document, even incremental measures aimed to shift to low carbon economies (keeping all else equal) have already revealed that sustainable transition strategies, policies and politics can quickly be beset with their own series of problems and issues, intended and unintended consequences. We already know that the urgent need to move forward on renewable energy systems cannot turn a blind eye to the observation that large scale solar and wind installation systems can move forward through land grabs systems or through generating their own modes of environmental injustice. Political rhetoric framing the challenge in terms of the need to shut down fossil capitalism is all very well yet this rhetoric can itself fail to fully address how millions of communities, industries, jobs and livelihoods are as still tied into these older infrastructures and profoundly dependent on them to sustain the means of life. In short, without coherent and compelling climate transition plans and imaginaries, a low carbon society could be nothing short of disastrous for many people on the planet. Unless transition thinking is able to present convincing and compelling arguments not only focused on desirability but viability of low carbon futures, we will be left with empty slogans, naive utopias, clueless proposals and ineffective modes of politics that could even be damaging. A balance needs to be struck between hope and hard-nosed realism. Without this, there are good reasons to believe that pathologies in attempts to generate transition are liable to further feed obstructionist and anti-environmental movements, if all things remain equal and there is not a shift in the balance of forces but also a shift in the ways in which transition is thought.

1. Francis Fukuyama *The End of History and the Last Man*. Free Press, 1992. [↑](#footnote-ref-1)
2. Intergovernmental Panel on Climate Change., Houghton, J. T., Intergovernmental Panel on Climate Change., & World Meteorological Organization. (1990). *IPCC first assessment report*. Geneva: WMO. [↑](#footnote-ref-2)
3. Nicholas Stern (2007). *The economics of climate change: The Stern review*. Cambridge, UK: Cambridge University Press.p.viii. [↑](#footnote-ref-3)
4. For critical appraisals of these developments see James McCarthy and Scott Prudham (2004) "Neoliberal nature and the nature of neoliberalism." *Geoforum* 35 (3): 275-283; Neil Smith, “Nature as accumulation strategy.” *Socialist register* 43.43 (2009). [↑](#footnote-ref-4)
5. See Saskia Sassen (2014). *Expulsions : brutality and complexity in the global economy*. Cambridge, Massachusetts :The Belknap Press of Harvard University Press for a mapping of the political geography of these processes. [↑](#footnote-ref-5)
6. James McCarthy 2002. "First World political ecology: lessons from the Wise Use movement." Environment and Planning A 34 (7): 1281-1302; 2004. "Race, nation, and nature: the cultural politics of 'Celtic' identification in the American West" (with Euan Hague, Department of Geography, DePaul University). Annals of the Association of American Geographers 94 (2): 387-408; 2013. *Lifeblood: Oil, Freedom, and the Forces of Capital* (Minneapolis, MN: University of Minnesota Press). [↑](#footnote-ref-6)
7. See variously Clive Hamilton (2010) *Requiem for a Species*. London, Earthscan; Roy Scranton (2016) *Learning to Die in the Anthropocene* City Light Books; Elizabeth Kolbert *Field Notes from a Catastrophe;* Bruno Latour (2017) *Facing Gaia: Eight Lectures on the New Climatic Regime;* James Lovelock (2006) *The Revenge of Gaia: Why the Earth is Fighting Back – and How we Can Still Save Humanity* Basic Books, New York; The Dark Mountain Project (2015) *Uncivilization* http://dark-mountain.net/about/manifesto/ [↑](#footnote-ref-7)
8. Kevin Anderson, Alice Bows “Beyond ‘dangerous’ climate change: emission scenarios for a new world”

Phil. Trans. R. Soc. A 2011 369 20-44 [↑](#footnote-ref-8)
9. J Hansen, M Sato, P Hearty, R Ruedy, M Kelley et al (2015) “Ice melt, sea level rise and superstorms: evidence from paleoclimate data, climate modeling, and modern observations that 2° C global warming is highly dangerous”. *Atmospheric Chemistry & Physics* 15 (14) Discussions. [↑](#footnote-ref-9)
10. Connolly is quoting here the climate scientist Guy McPherson [↑](#footnote-ref-10)
11. See variously Robert Heilbroner, 1974. *An Inquiry into the Human Prospect*. London: Calder & Boyars. Ophuls, W. 1977. *Ecology and the Politics of Scarcity: Prologue to a Political Theory of the Steady State*. San Francisco: W.H. Freeman. Garrett Hardin (1968) ‘The Tragedy of the Commons’. *Science* 162: 1243-1248. [↑](#footnote-ref-11)
12. For explorations of the ways in which Malthusian environmentalisms have frequently found themselves involved in human rights abuses see Eric B Ross.1998 *The Malthus Factor: Poverty, Politics and Population in Capitalist Development* London, Zed Books; [↑](#footnote-ref-12)
13. For the definitive popular surveys of these developments see Charles C.Mann (2005) *1491: New Revelations of the Americas Before Columbus*, Knopf and Mann (2011) *1493: Uncovering the New World Columbus Created*, Knopf. [↑](#footnote-ref-13)
14. See Pickett, S.T.A. and White, P.S. (eds.) 1985. The Ecology of Natural Disturbance and Patch

Dynamics. New York: Academic Press; Pickett, S.T.A., Parker, V.T. and Fiedler, P.L. 1992. ‘The New Paradigm in Ecology: Implications for Conservation Biology Above The Species Level’ in Fiedler, P.L. and Jain S.K. (eds.) Conservation Biology. London: Chapman and Hall, 1992; Pickett, S.T.A., Kolasa, J. and Jones, C.G. 1994. Ecological Understanding. San Diego, CA:

Academic Press. [↑](#footnote-ref-14)
15. Blaikie, P., & Brookfield, H. (Eds.). (1987). *Land Degradation and Society*. London. [↑](#footnote-ref-15)
16. Tim Forsyth 2003. *Critical Political Ecology* London, Routledge. [↑](#footnote-ref-16)
17. Chris D. Thomas “The Anthropocene could raise biological diversity” *Nature*, 3 October 2013 Vol 502. Broader debates in conservation biology around hope in the age of the Anthropocene contribute a good deal to this discussion –see Swaisgood RR, Sheppard JK. 2010. The culture of conservation biologists: Show me the hope! BioScience 60: 626–630. Garnett ST, Lindenmayer DB. 2011. Conservation science must engender hope to succeed. Trends in Ecology and Evolution 26: 59–60. Ronald R. Swaisgood and JameS Sheppard “Hope Springs Eternal: Biodiversity Conservation Requires That We See the Glass as Half Full”

BioScience *June 2011 / Vol. 61 No. 6* [↑](#footnote-ref-17)
18. For a review of the literature see Damian F. White, Alan P. Rudy and Brian J. Gareau (2016) *Environments, Natures, and Social Theory: Towards a Critical Hybridity.* London: Palgrave. Chapter 2. [↑](#footnote-ref-18)
19. See Annalee Netwitz (2013) *Scatter, Adapt, and Remember: How Humans Will Survive a Mass Extinction* Random House; Noah Yuval (2014) *Sapiens: A Brief History* of Humankind Harper. [↑](#footnote-ref-19)
20. Donna Haraway, 1991. *Simians, Cyborgs and Women: The Reinvention of Nature*. London: Routledge. [↑](#footnote-ref-20)
21. Donna Haraway (2016) *Staying with the Trouble: Making Kin in the Chthulucene* Duke University Press p. [↑](#footnote-ref-21)
22. Charles C. Mann “State of the Species” Orion Magazine Nov/Dec 2012 [↑](#footnote-ref-22)
23. Oren Cass “The Problem With Climate Catastrophizing” *Foreign Affairs* p.\*\* [↑](#footnote-ref-23)
24. Tony Fry, (2009) *Design Futuring: Sustainability, Ethics and New Practice* Berg. Oxford and New York. p.3 [↑](#footnote-ref-24)
25. For an earlier attempt to map out the field of the just transition see Peter Newell and Dustin Mulvaney (2013) “The political economy of the ‘just transition’” *The Geographical Journal*. [↑](#footnote-ref-25)
26. Erik Swyngedouw (2010) “Apocalypse Forever? Post-political Populism and the Spectre of Climate Change”

*Theory, Culture & Society*, *27*(2–3), 213–232. [↑](#footnote-ref-26)