

Dialectics Facing Prehistoric Catastrophe: Merely Possible Climate Change Solutions

Critical Sociology
2020, Vol. 46(4-5) 605–621

© The Author(s) 2019

Article reuse guidelines:

sagepub.com/journals-permissions

DOI: 10.1177/0896920519827350

journals.sagepub.com/home/crs



Ryan Gunderson 

Miami University, USA

Abstract

The Frankfurt School formulated a negative dialectics that keeps open the possibility for alternative social futures by explaining and diagnosing the non-existence of ‘real possibilities’ to actualize a better world. Ernst Bloch’s category of ‘mere possibility’ makes a ‘warmer’ negative dialectics viable, a form that faces a grim reality head on yet loosens the prohibition against identifying pathways toward alternative social futures latent in social conditions, possibilities with the *potentiality* (the objective-external dimension of possibility), but lack the *capacity* (the subjective-internal dimension of possibility), to become actual. This allows negative dialectics to engage in relatively programmatic ‘prospect-exploration’ when tackling dire issues like climate change, even if the proposed solutions are deficient. Identifying merely possible climate change solutions skirts three problematic tendencies in prescriptive assessments of climate politics: (1) promoting the continuation of ineffective mitigation strategies (e.g., carbon markets), (2) calling for a revolution without a revolutionary subject, and (3) fatalism.

Keywords

Adorno, Bloch, climate change, climate politics, critical theory, negative dialectics, potentiality, work time reduction

Introduction: Negative Dialectics and Its Social Origins

‘[Dialectics] would renounce itself in renouncing the idea of potentiality’.

Theodor W. Adorno (1967: 92)

The goal of this project is to develop a negative dialectics conducive to the search for a better future and paths to reach more desirable social conditions, even if these alternatives remain *mere possibilities* as opposed to *real possibilities*. Ernst Bloch’s distinction between ‘potentiality’ and ‘capacity’ and the notion of ‘mere possibility’ allow negative dialectics to occasionally bathe in the ‘warm stream’ of Marxism’s search for historical alternatives (Bloch, 1986: 209; see below)

Corresponding author:

Ryan Gunderson, Department of Sociology and Gerontology, 375 Upham Hall, Miami University, Oxford, OH 45050, USA.
Email: gunderrm@miamioh.edu

while remaining cognizant of the reality of nonideal historical circumstances. To make this case, it is first helpful to review the social basis for, and method of, negative dialectics.

This project is primarily concerned with negative dialectics' penchant for illuminating 'possible – not actual – forms of reconciliation' (Stone, 2008: 53). This dimension is not only 'negative' in the Hegelian-Marxian sense of non-affirmative, oppositional, or defiant thinking, but also in the common sense of 'negative' as pessimistic. Negative dialectical thinking customarily avoids campaigning for clear alternative social futures or programmatically identifying pathways for achieving these alternatives. This avoidance is not out of dogmatic principle, but for specific social and historical reasons that closed off avenues for qualitative social change: mass conformity born from the manufacturing and satisfaction of 'false needs' that nurture the deceptive belief that the depth of our desires, hopes, and dreams have already been met via mass consumption (Marcuse, 1964) coupled with a near universalization of instrumentality (Horkheimer, 1947; Horkheimer and Adorno, 1969). Not only were the early Frankfurt School figures uneasy about the possibility of another authoritarian outcome if revolutionary action was pursued, they also believed that they did not live in a revolutionary situation. In these conditions, one can only expose and challenge the 'irrationality of the current society [...] by the "negative" possibility of a truly rational alternative' (Jay, 1973: 61). The argument runs as follows: 'political action that is not grounded in extensive thought and self-reflection risks, by its refusal of critical distance, perpetuating the very repressive conditions it seeks to change. Thinking, therefore, is ultimately a more effective means of resistance than action' (Tettlebaum, 2008: 133).

In a society with ubiquitous instrumentality and conformity, as well as a corresponding lack of revolutionary consciousness, the Frankfurt School was left with a historical materialist framework without the real possibility of a fundamentally better future. The idea that a revolution was around the corner was a thesis 'only stubbornness could still maintain' (Adorno, 1998: 14). As a historical method, dialectics was reformulated to account for these conditions, a 'negative' dialectics that could still counterpose what is with what could be while 'deny[ing] that there is an immanent logic to the actual that is emancipatory' and 'reject[ing] precisely what Marx could still presuppose' (Benhabib, 1986: 173). Because immediate political action is lucky yet blind at best and dangerous at worst, the first-generation Frankfurt School's assessment still informs yet haunts the search for a better world: we can only keep the possibility of alternatives open through oppositional thinking. The latter 'negative utopianism' and emphasis on thought over practice are grounds for the typical critique of the Frankfurt School's pessimism as apolitical, quietistic, and even conservative (e.g., Lukács, 1971: 9). I agree with others that the Frankfurt School's pessimism and emphasis on thinking over immediate action are still defensible and valid positions (e.g., Tettlebaum, 2008; Gunderson, 2015). However, I argue that the prohibition against detailing alternatives and illuminating paths to alternatives should be softened, for two reasons: (1) the category of possibility itself calls for flexibility and (2) the catastrophic implications of some problems facing contemporary societies, notably climate change, compel the dialectician to identify alternatives, even if these alternatives remain 'mere' rather than 'real' possibilities. To make this case, this project draws from a thinker credited as saving Adorno from nihilism: Ernst Bloch (Mendieta, 2005: 12).

Bloch was an exhilarating and scandalous Marxist theorist. Largely ignored until the last decades of his life, Bloch has received increasing attention in recent years (Boldyrev, 2014: 1, e.g., Thompson and Žižek, 2013; Lerner, 2015: ch. 3; Thompson, 2016). He broke numerous Marxist intellectual norms, from integrating non- and even anti-Marxist traditions into Marxism, including *Lebensphilosophie*, mysticism, cabalism, neo-Kantianism, and neo-Platonism, to explicitly yet atheistically defending religion and theology as fountains of hope (Goldstein, 2001, 2005; Jay,

1984, ch. 5). One of Bloch's consistent blasphemies within the Marxist tradition is his proud identification with *utopianism*, though a 'concrete' version that locates 'objective real possibilities' latent in current tendencies and contradictions (Anderson, 2006; Hudson, 1982: 99ff; Levitas, 1990; Solomon, 1972; see also, Wright, 2010).

Bloch's life was devoted to elaborating a 'philosophy of hope', an ontology that directs consciousness toward *what is possible*, centering around a concept with multiple meanings: 'not-yet'. The 'not-yet-conscious' is our 'unclear and undefined awareness of our needs and potentialities which are prefigured in our daydreams and desiring' (Kellner and O'Hara, 1976: 24) and anticipatory knowledge of possibilities latent in the world. The world is full of 'not-yet-being', an unfinished and changeable multiverse of latent possible futures in the present that are partially formed and will either wither, remain latent until an anticipated future realization, or burst asunder due to our sharpened 'theory-praxis' that helps birth a desirable future. The 'not-yet' that is of central concern here is the 'conceivable now, but not yet possible' (Hudson, 1982: 20) or *mere possibility*, a realm that may never be actualized but still exists in the sense that some of the conditions for becoming actual are present. Bloch's brilliant and in-depth treatment of the category of 'possibility' is revisited to salvage dialectics in the age of climate change.

In what follows, I first summarize recent alarming reports on the prospects of catastrophic climate change and three problematic climate change prescriptions. Following, I outline the Hegelian-Marxian distinction between 'actuality' and 'possibility' and, drawing from Bloch, further break down the category of possibility into external ('potentiality') and internal ('capacity') forms. Next, 'mere' possibility, as opposed to 'real' possibility, is conceptualized and the necessity of the category of mere possibility is defended on practical grounds. Finally, I return to climate politics to illustrate the fruitfulness of the concept of mere possibility.

Prescriptive Responses to Catastrophic Climate Change

Two recent works forecast possible catastrophic futures due to climate change: the Special Report of the Intergovernmental Panel on Climate Change (IPCC), *Global Warming of 1.5°C* (2018), and Steffen et al.'s (2018) 'Trajectories of the Earth System in the Anthropocene', published in *Proceedings of the National Academies of Sciences*. Both are in conversation with the goal of the Paris Climate Agreement of the 21st Conference of the Parties of the United Nations Framework Convention on Climate Change (UNFCCC, 2015: n.p.): 'keeping a global temperature rise this century well below 2 degrees Celsius above preindustrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius'.

The IPCC Special Report details reasons why a 1.5°C warmer world would be much less risky than a 2°C warmer world, including lower mean temperatures in most regions, fewer hot extremes in most inhabited regions, a lower probability of drought in some regions, lower sea level rise, less biodiversity loss, and less health, food, water, security, and other risks to humans. The social and ecological forecasts of a 2°C world are grim, including the loss of almost all coral reefs (> 99%) and a less secure food supply.

Similarly, Steffen et al. (2018) argue that even if societies manage to keep global warming within 1.5–2°C of preindustrial levels, Earth may cross a planetary boundary in which global average temperatures stabilize at 4–5°C higher than preindustrial temperatures (a 'Hothouse Earth') due to numerous carbon cycle feedbacks caused by global warming. Warming-induced feedbacks, such as permafrost loss and forest dieback, would increase greenhouse gas emissions and project Earth into an irreversible 'Hothouse Earth,' which

is likely to be uncontrollable and dangerous to many, particularly if we transition into it in only a century or two, and it poses severe risks for health, economies, political stability (especially for the most climate vulnerable), and ultimately, the habitability of the planet for humans. (Steffen et al. 2018: 8256)

Both the IPCC (2018) and Steffen et al. (2018) stress that societies would need to fundamentally and immediately alter the status quo to remain below 1.5°C above preindustrial levels: ‘rapid and far-reaching transitions in energy, land, urban and infrastructure, and industrial systems’ are required, changes that are ‘unprecedented in terms of scale’ (IPCC, 2018: 21, 17).

Social science can contribute to the central questions raised by climate change, the answers to which become more urgent with new catastrophic projections: (1) What are the underlying drivers of climate change?; (2) How are we (unequally) impacted by climate change?; (3) Why have societies failed to effectively respond to climate change?; and (4) How might societies be able to more effectively respond to climate change? (Norgaard, 2018; e.g., Dunlap and Brulle, 2015)

The first two questions concerning climate change—underlying causes and unequal impacts—have received a lot of attention in environmental social science (for review, see Norgaard, 2018: 173). For example, environmental social scientific research consistently shows that structurally compelled economic growth is a major driver of climate change (e.g., Jorgenson and Clark 2012; Rosa and Dietz, 2012) and that there are extreme inequalities in climate change causes and impacts (e.g., Harlan et al., 2015). In relation to the the first theme, the case that capitalism is the underlying driver of climate change is well-established (for review, see Antonio and Clark, 2015), an argument built on Schnaiberg’s (1980) theory that capitalist economies must increase resource use and pollution due to an in-built ‘treadmill of production’ or expansionary growth mechanism. While the third central problem of interdisciplinary climate change research—why societies fail to respond adequately, or, ‘why [is there] no Red October of ecology?’ (Beck, 2010: 254)—has received less attention, sociological research and theory also explains climate change inaction (e.g., Blühdorn, 2007; Gunderson et al., 2018a; McCright and Dunlap, 2010; Norgaard, 2011; Stoner, 2014; Ollinaho, 2016). Both Stoner and Melathopoulos (2015) and Gunderson (2017) make the case that the critical sociological tradition has much to offer when formulating an explanation for climate change inaction, seeing as we are in a situation analogous to that of the first-generation Frankfurt School, who were forced to alter the traditional Marxist question, When will the revolution happen?, to the disillusioned one: Why do we willingly accept an alienated existence instead of revolting?

The fourth key problematic of climate change—How might societies be able to effectively respond to climate change?—calls for prescriptive and political argumentation. While there are a wide range of concrete responses to climate change discussed in the literature, three broad responses are engaged with here, categorized as: (1) ecological modernization, (2) ecological revolution, and (3) pessimistic fatalism.

The most prevalent and popular prescriptive responses to climate change are mainstream climate mitigation strategies, including improved efficiency, carbon markets, and green growth. Mainstream climate mitigation strategies are in line with the framework of ecological modernization, where ‘environmental deterioration is conceived of as a challenge for socio-technical and economic reform, rather than the inevitable consequence of the current institutional structure’ (Mol, 2001: 58). These strategies have been shown to have limited success and unintended impacts. For example, countries with high levels of efficiency tend to have higher rates of carbon dioxide emissions, electricity consumption and energy use, all examples of the ‘Jevons paradox’ (York and McGee, 2016). This project does not deeply engage with mainstream responses to climate change because empirical evidence shows that this policy suite has been ineffective and deceptive (for overview, see Gunderson et al., 2018a) and the ecological modernist reasoning underlying

mainstream climate change solutions is marked by irreparable logical and empirical flaws (York et al. 2010). This article is written for those who have left behind hopes for a ‘green capitalism’ and are interested in other paths moving forward.

A second, more rational yet still problematic tendency in climate change prescription is the case for an ‘ecological’ or ‘climate’ revolution (e.g., Foster, 2009; Magdoff and Williams, 2017). In a recent interview, John Bellamy Foster (2018: n.p.) maintains that keeping global warming well below 2°C requires nothing less than an ‘ecological and social revolution’ and that

[t]hose who pronounce that it is already ‘too late’ are [...] not referring to whether the change is humanly possible at this point—it definitely is. Rather, they are acceding to the prevailing logic of capital and the attendant political structure, as defining the limits of what is feasible.

I agree with Foster’s underlying arguments that deep emissions cuts are still possible and that this possibility depends on rapid and fundamental changes in social systems by challenging the logic of capital at a global level. Further, Foster rightly argues that one falls into ideology when one declares that change is impossible. However, a ‘ruptural transformation’ or revolution is a highly unlikely prospect in the near future (Wright, 2010). The reason for the lack of revolutionary potential is straightforward, though the circumstances underlying the problem are complex: what remains of the left is fractured and unorganized and there is nothing that bears a resemblance to an international anti-capitalist movement necessary to hint at the real possibility of forming a qualitatively different historical alternative that prioritizes environmental and social wellbeing.

This is not to make a strawman of the case for ecological revolution. Its proponents understand the obstacles ahead. For example, in the same interview, Foster (2018: n.p.) states that ‘[t]he worry is that by the time the catastrophic conditions are felt on a wide enough scale, and by the time people mobilize, the situation may be immeasurably worse, with much of it out of our control. That is of course our greatest fear’. Despite this concern, those arguing for ecological revolution remind us that the future is open, and history is contingent: rapid and abrupt social change has occurred in the past and is possible in the future (York and Clark, 2007) and sometimes revolutions are propelled forward for structural reasons (Skocpol, 1979). What remains undertheorized in the case for ecological revolution is what it means to say that unprecedented ‘rapid and far-reaching’ (IPCC, 2018) changes required to reduce the risk of catastrophic climate change are ‘humanly *possible*’ (Foster, 2018; emphasis added). As shown below, Bloch’s framework is illuminating here.

A third problematic prescriptive response to the prospects of catastrophic climate change is pessimistic fatalism, a response more common in hushed discussions and private fears than in formal public and academic discussions. Before explaining why ‘pessimistic fatalism’ is ‘problematic’, I qualify this point because this third tendency is revealing and certainly not without some historical validity. Capitalism is on a path of ‘creative self-destruction’ (Wright and Nyberg, 2015) while actively deceiving itself that this is the case (Blühdorn, 2007; Gunderson et al., 2018a). Further, there has been a rightward shift in global politics since the 1980s, a swing that has intensified in recent years, with some exceptions. The current administration in the most powerful country in the world, for example, is actively chipping away at decades of environmental reforms (for a running list, see Greshko et al., 2018). In such conditions, we need ‘enlightened doomsaying’ now more than ever (Dupuy, 2009; e.g., see interview with Hillman in Barkham, 2018; Scranton, 2018).

Lueck (2007) makes the case that environmental sociology itself is characterized by an ‘undercurrent of pessimism’. A survey of the major debates and concepts in the field—for example, the ‘treadmill of production’ summarized above—reveals that environmental sociology ‘engenders’ pessimism. She argues for *hope*, when understood as ‘the acknowledgement of the divide between

structure and agency and the force that prevents us from disengaging when faced with obstacles' (Lueck, 2007: 251), to be consciously incorporated in environmental sociological analysis. The aim is not to blindly adopt a rosy view of the future or overlook the structural determinants of our environmental crisis, but, instead, to actively search for pathways toward a better future.

Although I disagree with the assumption that pessimism is necessarily fatalistic and only an emotion (for replies, see Dienstag, 2006; Gunderson, 2015; Tettlebaum, 2008), I do agree with the argument that a pessimistic perspective ought to avoid the dusk of fatalism through a persistent search for alternatives, what Bloch calls the 'warm stream' of Marxist analysis (see below). One motive for writing this article is my sympathy with both the case for ecological revolution and the lure of pessimistic fatalism. What both responses share is a resolute recognition of the direness of the potential for catastrophic climate change, a recognition that does not succumb to the temptation of prescribing so-called 'realistic' market solutions and techno-fixes to reduce anxiety and fear by masking irreparable socio-ecological contradictions. However, I think both approaches are limited, for the reasons described above, which I return to below. Revisiting the rather esoteric work of Bloch paradoxically illuminates the search for possible social alternatives in dark times.

Possibility and Actuality, Capacity and Potentiality

'Things can also be otherwise'.

Ernst Bloch (1968: 274)

A necessary precondition for critical theoretical analysis is a distinction between 'appearance' (sometimes 'existence' or 'actuality') and 'essence' (sometimes 'potentiality' or 'possibility') (Cohen 1969; Held, 1980: 224ff; Marcuse, 1968). In the Marxist tradition, 'appearance' has referred to the established social-economic and political order and ossified social relations formed in the past that are thrust upon living individuals as experienced in the matter-of-fact world we find ourselves in everyday life. Since Hegel, 'essence' has signified what is *possible* or *potential* in the real (Benhabib, 1986: 172). In critical theory, this means what is possible in the current order's level of development, presently inhibited—yet attainable in modified conditions—hopes, needs, aims, and longings of humans, social movements to rationally alter the established order, as well as the underlying total social process that shapes the social order (Marcuse, 1968). Possibility is the *Can-Be* of reality (Bloch, 1986: 224).

Dialectical thinking assumes that 'what is is fraught with tension between its empirical reality and its potentialities' (Feenberg, 2004: 87). With this Hegelian supposition that the present is pregnant with the future, critical theory makes counterfactual comparisons of what is possible with what is. There is a 'tension between potentiality and actuality, between what men and things could be and what they are in fact' (Marcuse, 1968: 69). Critical theory elevates these antagonistic tendencies to consciousness. The goal is to help actualize more rational alternatives already pregnant in the present or, at minimum, explain what restricts social alternatives. The most well-known example is Marx's (1970: 21) 'contradiction' between the forces and relations of production, where 'the forces of production enter into the basic contradiction only as they are developed or limited by the capitalist production relations' (Young, 1976: 201). The practical purpose is to search for emancipatory alternatives within already existing oppositional ideas and social movements as well as technological potential.

'Possibility' is a murky and broad category, and there is a common lack of precision when the term is used. Bloch's (1986: 223ff) four-part typology of the 'layers' or 'grades' of possibility is instructive: (1) the formally Possible; (2) the factually-objectively Possible, or, the factually

Possible; (3) the fact-based object-suited Possible, or, the fact-based Possible; and (4) the objectively-real Possible, or, real possibility (Hudson, 1982: 132ff). This section is concerned with Bloch's third layer of possibility: the *fact-based possible* (see the next section for discussion of 'real possibility'). Unlike the factually possible, which rests on insufficient knowledge that requires 'caution in judgement' (e.g., when we make hypothetical or probabilistic predictions), the fact-based possible rests on the object that is 'insufficiently *emerged*', 'that could become this or that' (Bloch, 1986: 229; emphasis in original). The fact-based possible refers to 'the open structural or dispositional possibility of the *Gegenstand* [Object] and its states of affairs [...] and taking account of its social and lawful variability' as well as 'a copy of what the object can hypothetically become through variability and inter-relation' (Hudson, 1982: 133). The fact-based possible is the 'purely structural possibility of the propensity to something', which is 'not yet the same as this real propensity itself' (Bloch, 1986: 231).

Understanding the variable nature of fact-based possibilities, and crucial to the distinctiveness of this ontological category of possibility, is the distinction between the *internal* and *external* dimensions or conditions of fact-based possibilities. Although Bloch applies his categories to non-humans as well, the *internal* dimension of the fact-based possible is usually 'subjective human activity' (Amsler, 2015: 107) and the 'political form of active possibility is the ability of the subjective factor' (Bloch, 1986: 232). He calls this internal dimension 'active' possibility, 'capacity' or 'potency'. The *external* condition of the fact-based possible refers to social, technical, and environmental factors that are partially ripe or ripe for change. He calls these conditions 'passive' possibility or 'potentiality' (note that I use 'potential' as a synonym for 'potentiality'). Capacity is the ability to change, direct, and 're-determine' changeable external conditions (potentiality). That is, the internal dimension, capacity, is the 'capability-of-doing-other' and the external dimension, or potentiality, is the 'capability-of-being-done' or 'capability-of-becoming-other'.

The internal (capacity) and external (potentiality) dimensions of fact-based possibilities interact in partial fulfillment and different levels of development. For example, you cannot have a workable capacity, or a 'capable-of-doing-other', without an environment and/or social structure that are changeable or 'capable-of-being-done' or 'capability-of-becoming-other', i.e., conditions with the potentiality for change: 'without potentiality of the capability-of-becoming-other, neither the capability-of-doing-other of potency would have space, nor, without the capability-of-doing-other of potency, would the capability-of-becoming-other of the world have a sense which could be mediated with human beings' (Bloch, 1986: 232–33). Bloch's distinction between capacity and potentiality is central to this project as the elucidation of their relation shines light on a specific kind of fact-based possibility helpful for understanding our current social condition: the *merely possible*.

Mere vs. Real Possibilities

To recap, the 'fact-based possible' is composed of an internal dimension, an active *capacity* to alter external conditions, and an external dimension, changeable social and/or environmental conditions that Bloch calls *potentialities*. Bloch's distinction between capacity and potentiality permits a categorization of possibilities that remain latent or wither away. For example,

a blossom can of course let the fruit ripen within it with complete internal conditionality, but if the complete external condition of good weather is missing, then the fruit is still merely possible. Conversely, an even more reductive effect than the missing external condition is produced by the weakness of internal conditions when there is a simultaneous abundance of external ones. (Bloch, 1986: 231)

Bloch's (1986: 232) social-political example is more illuminating for this project:

[o]f course, humanity always set itself tasks it can solve, but if the great moment for solution is met by a faint-hearted generation, then more than ever this solution is merely possible, i.e., only remains weakly possible. The lack of revolutionary consequences that followed from the 9th November 1918 in Germany provides an example of this.

In this example, Germany failed to bring about a socialist revolution despite ripe conditions, in Bloch's estimation, because the 'generation' was too 'faint-hearted' or lacked revolutionary consciousness and will (capacity) (see also, Haffner, 2013). Notably, Bloch uses the term 'merely possible' to describe both a capacity that has insufficient or absent potentiality (a fruit-bearing flower without adequate weather) and a potentiality that has insufficient or absent capacity (the failure of the German left to establish a viable socialist republic despite conducive conditions).

Mere possibility can be contrasted with the 'objectively-real Possible', or just 'real possibility', the fourth layer of possibility in Bloch's possibility typology (see above). Real possibility is a 'future-laden definitiveness in the real itself' (Bloch, 1986: 235) or a 'future-laden determination' that is 'starting to be' and 'already underway' (Hudson, 1982: 134). Real possibilities differ from the other layers of the possible described above because they are the 'materialized' and 'contingent manifestations of possibility' that 'emerge from the active transformation of the subjective and objective conditions which occurs when they are brought into encounter with one another in practice' (Amsler, 2015: 108). Like the fact-based possible's external and internal dimensions, the real possible also has two 'sides': (1) an objective realm of 'strict determinations which cannot be skipped over', a 'What-Is according to possibility', and (2) a forward-looking 'unexhausted fullness of expectation', a 'What-Is in possibility' (Bloch, 1986: 208; emphasis removed). 'What-Is according to possibility' is examined via the 'cold stream' of Marxism: ideology critique and the socio-economic analysis of 'condition-exploration'. 'What-Is in possibility' is revealed by Marxism's 'warm stream': 'prospect exploration', i.e., the exploration of 'concrete utopias' already existing in the crevices of the actual. Both currents should flow together because the 'science of conditions' is necessary to find 'the path' (cold stream) and the warm stream of 'liberating intention' is needed to illuminate 'the goal' and 'appeal to the debased, enslaved, abandoned, belittled human being' (Bloch, 1986: 209, cf. 1355ff; Marx, 1963: 52).¹

Unfortunately, unlike the helpful category of the 'fact-based possible', Bloch's conception of real possibility is too vague and inclusive (Hudson, 1982: 135f). For example, matter is said to be the real possibility of any form that it can deliver throughout its 'process' and he believes that we see real possibilities reflected in everything from wishful images to utopian ideas. In Bloch, real possibility is often an underlying propensity driving toward communism or the human being: 'man is the real possibility of everything which has become of him in his history and, above all, which can still become of him if his progress is not blocked' (Bloch, 1986: 235; cf. Bloch, 1968). If the category is to be of much use for us here, a more restricted notion is necessary. Levy's (1997: 178) conceptualization is especially helpful:

real possibilities ... exhibit a practical relation to the future. They are concretely linked to the hoped-for utopia. In this case utopia is no empty, merely theoretical, possibility, but a very real one. As such it is not only edifying and convincing, but – this is the crux of the matter – it also displays the ways and means for its realization. Utopia is a striving toward the 'real possible,' since present reality already contains the elements for its possible future changes (i.e. possibilities that do not exist *in actu* but are at hand in potential). Humanity's creative capacities which are still dormant can be aroused and realized; this is implied in the idea of utopia.

If real possibility ‘displays the ways and means for its [utopia’s] realization’ (Levy, 1997: 178) and is ‘already underway’ (Hudson, 1982: 134) then mere possibility only dimly illuminates a possible but perhaps unlikely future that is blocked by either a lack of potential (e.g., social organization, technology) or capacity (the right will or revolutionary consciousness). Mere possibility is possibility-in-itself while real possibility is possibility-for-itself.

To return to the introductory discussion, the early Frankfurt School described a social condition in which the *capacity* for change evaporated, despite the *potentiality* for change, or, more precisely, a condition in which the capacity for change evaporated *due to* the social process that made the potentiality for change possible. However, owing to a lack of analytical precision, the Frankfurt School’s position runs into contradictions when the category of possibility is at hand. *One-Dimensional Man* is an illustrative example of the need for a more robust conceptualization of possibility.² On the one hand, Marcuse (1964: 1, 220) uses the term ‘real possibility’ to refer to conditions that make ‘freedom from want’ possible, in contrast to a past ‘state of lower productivity’, suggesting that ‘real possibility’ refers to forces of production that are ‘fettered’ by current social relations, an aspect of Bloch’s notion of *potentiality*. However, in the same work, he argues that any future ‘transcendent project must be in accordance with the real possibilities open at the attained level of the material and intellectual culture’ (Marcuse 1964: 220). The inclusion of real possibilities stemming from already attained developments in ‘intellectual culture’ suggests that the category has a broader meaning than fettered productive forces. The same conceptual paradox appears in later and more hopeful works, where Marcuse continues to speak of the ‘real possibility for a free society’ (Marcuse, 1969: 60) though maintains that these ‘real possibilities of establishing a free society’ are obscured (Marcuse, 1972: 31). What eludes the concept of ‘real possibility’ is brought to light by ‘mere possibility’: a condition in which some necessary potentialities (e.g., productive technological development) and/or capacities (e.g., a vague dissatisfaction with the status quo) exist for a desirable alternative future yet other potentialities (usually a lack of social organization) and/or capacities (usually a lack of revolutionary consciousness) necessary for realizing alternative futures are underdeveloped or absent.

The Merely Possible for Negative Dialectics

After any foray in hairsplitting social-ontological definitions, it is worth addressing the practical question: Why does the category of mere possibility matter? In addition to illuminating climate politics (see the following section), I address this question by explaining how the concept can bolster negative dialectical thinking and why searching for merely possible alternatives has ethical and political implications. In line with negative dialectics, and unlike the detection of real possibilities, the category of mere possibility does not allow for outlining clear pathways for realizing desirable alternative social futures, let alone coherent blueprints, usually due to the lack of a historical subject. At the same time, unlike pure negative dialectics, recognizing the merely possible clears space for affirmative or positive speculation that negative dialectics avoids: ‘a copy of what the object can hypothetically become through variability and inter-relation’ (Hudson, 1982: 133). In other words, distinguishing between capacity and potentiality, and assuming that possibility is not synonymous with real possibility, delivers a warmer negative dialectics that not only indirectly and negatively illuminates the possible, like the Frankfurt School, but can also point to concrete political alternatives, even if these alternatives remain merely possible alternatives.

The category of mere possibility has two practical implications for negative dialectics. First, drawing attention to mere possibilities can highlight the existence of alternatives that, while blocked or constrained in the present, may become real possibilities in the future. The assumption is that drawing attention to these partially formed and constrained alternatives increases the chances

or probability that they can be actualized when the ‘doors’ are no longer ‘barricaded’ (Adorno, 1991: 173). However, as negative dialectics emphasizes, this reasonable—reasonable because it is rooted in partially formed potentiality or capacity—and hopeful anticipation does *not* mean actualization is predetermined. Any ‘warmer’ negative dialectics should continue to consciously avoid teleology.

The second practical implication of the category of mere possibility for negative dialectics is allowing critique to stay true to its origins and ethical thrust: ‘changing the concrete conditions under which men suffer’, as Horkheimer (1972: 32) plainly put it. In a society that still lacks the real possibility for change due to the absence of a revolutionary subject, negative dialectics follows Horkheimer’s (1978: 237) late reformulation of critical theory’s commitment: ‘[i]f one wishes to define the good as the attempt to abolish evil, it can be determined. And this is the teaching of Critical Theory. But the opposite—to define evil by the good—would be an impossibility, even in morality’. However, there are periods and events that are so dire and catastrophic that they *compel* negative dialectics to propose concrete solutions, even if these solutions are constrained, inadequate to the task, barely-formed, and unlikely to actualize. For example, Adorno (1973: 365) famously advances a new historical categorical imperative rooted in dire real events: ‘to arrange their [humankind’s] thoughts and actions so that Auschwitz will not repeat itself, so that nothing similar will happen’. This imperative not only requires the cold stream of Marxist analysis (i.e., to grasp the social conditions and ideologies that are conducive to genocide), but also the warm stream of affirmative prospect-exploration. In this case, Adorno (1998: 191–204) controversially recommended education and thinking (see Tettlebaum, 2008: 133f). The point here is not to judge the soundness of Adorno’s programmatic recommendation, but to show that (1) even negative dialectics requires a warm stream to stay true to its task in certain conditions and (2) the concept of mere possibility can logically and conceptually strengthen this endeavor. The following section makes this case in the context of climate change.

Merely Possible Climate Change Solutions

This section brings the concept of mere possibility to bear on the social and political-economic dimensions of climate politics. It was due to the inadequacy and ineffectiveness of current climate change strategies that co-authors and I (Stuart et al., under review) sought to identify ‘transitional’ climate change mitigation strategies that:

- have the potential to increase social wellbeing in a just manner while effectively decreasing carbon emissions;
- already exist in pockets of the existing order ‘but as present only intermittently, partially, or potentially’ (Young, 2001: 10); and
- can possibly overcome a major driver of climate change, which we formulate as a contradiction between capital’s need to expand production, on the one hand, and the destructive effects expansionistic production has on the climate system, on the other (the ‘capital–climate contradiction’) (Gunderson et al., 2018a).

The following climate change responses were identified as genuine ‘win–win’ strategies for the climate and society as well as having the potential to help transcend the capital–climate contradiction:

- Socializing energy systems, such as community energy projects (e.g., Gunderson et al., 2018b; Kunze and Becker, 2015) and proposals to nationalize-and-shrink fossil fuel industries (e.g., Gowan, 2018).

- Work time reduction (e.g., Fitzgerald et al., 2015; Knight et al., 2013; Pullinger, 2014; Rosnick, 2013; Rosnick and Weisbrot, 2006; Schor, 2005).
- Economic democracy (e.g., Boillat et al., 2012; Johanisova and Wolf, 2012).
- Democratizing global climate governance (e.g., Stevenson and Dryzek, 2014).

These strategies have the *potential* to significantly reduce total carbon emissions if they took hold as prominent climate mitigation strategies.

While Stuart et al. (under review) deliver an integrative analysis that cannot be reproduced here, I briefly summarize one example: work time reduction. Shorter working hours are associated with significant reductions in environmental pressure and resource use (e.g., Fitzgerald et al., 2015; Gunderson, 2019; Knight et al., 2013; Rosnick and Weisbrot, 2006). For example, among OECD countries, those with shorter working hours have significantly lower carbon emissions and ecological footprints (Knight et al., 2013). If the U.S. used productivity gains to shorten the workweek or extend vacation time, as opposed to producing more, then the country would consume around 20 percent less energy (Rosnick and Weisbrot, 2006) and if working hours were reduced 0.5 percent annually for the next century, it would ‘eliminate about one-quarter to one-half, if not more, of any warming that is not already locked in’ (Rosnick, 2013: 124).

Despite the potential of work time reduction and the other climate mitigation strategies listed above, there are three interrelated reasons to be skeptical of the likelihood of the wide and effective adoption of the above strategies: (1) most current political trends are at odds with effective and just climate change solutions; (2) there do not seem to be social groups with the power, organization, and/or consciousness necessary to implement these mitigation strategies at the scale and pace necessary to meet climate targets; and (3) transitional mitigation strategies can be easily co-opted and recuperated if they are not pursued together in a collective political project. In the case of work time reduction, the social organizations historically responsible for reductions in working hours, labor unions, were co-opted into bargaining for higher levels of material consumption instead of work time reduction (Obach, 2004: 344) and there has been a steep decline in labor’s power in many advanced industrial societies, especially since the late 1970s, for a number of structural reasons, including global economic liberalization, financialization of the economy, “flexible” labor markets, a rightward political shift, outdated organizing methods, demographic changes, deindustrialization, and anti-labor practices and legislation (e.g., Bryson et al., 2011). In other words, these strategies have a *technical potentiality* to significantly contribute to climate change mitigation yet are constrained by social-structural conditions (i.e., a lack of social *potentiality*) as well as lacking the *capacity* to be implemented on a wide scale by a historical subject. In short, they are *mere possibilities*, not real possibilities.

Identifying what is merely possible in climate politics is not only a helpful descriptive concept. More importantly, it helps evade the three problematic tendencies in prescriptive assessments of climate politics discussed in above: ecological modernization, ecological revolution, and pessimistic fatalism. First, the category of possibility in general helps circumvent the most common yet most problematic tendency in climate political analysis: repeating naïve techno-optimistic and market-friendly talking points about ‘green growth’, ‘green capitalism’, ‘ecological modernization’, etc. even though the strategies associated with these frames have had limited success and counterintuitive impacts. In contrast, the very concept of possibility in social analysis directs attention to what is not normative or fully emerged. Striving to locate social alternatives within the real is central to any critical theory of society. As Young (2001: 10) put it:

[a] critical theory does not derive [normative] principles and ideals from philosophical premises about morality, human nature, or the good life. Instead, the method of critical theory [...] reflects on existing social relations and processes to identify what we experience as valuable in them, but as present only intermittently, partially, or potentially.

Such an approach, directed by the concept of possibility, allows for a prescriptive analysis of climate change to look beyond mainstream approaches that are known to be ineffective.

The category of mere possibility also assists in modifying the reasonable case for an ecological revolution (e.g., Foster, 2009; Magdoff and Williams, 2017). While an active attempt should be made to identify, support, empower, link, and organize historical actors who are in structural positions capable of establishing a better social formation, there is little reason to anticipate that a revolution around the corner or that something great will rise out of the capital–climate contradiction. At this time, there does not seem to be a historical subject that will carry out the revolution. This is not to say that there are not seeds of resistance. There are, including movements against resource privatization in the Global South, Indigenous resistance to extractivism, an explicit push to develop a combative global climate movement that adopts civil disobedience and direct-action tactics (e.g., the UK-based Extinction Rebellion), red–green political alliances in Europe, and pockets of deliberative democratic forums. Yet it is unlikely that these seeds of resistance will grow into an international movement with the power, organization, and vision necessary to replace global capitalism with an ecological society. While I do not dispute the argument that fundamental social and economic changes are necessary to avoid catastrophic climate change, a revolution is highly unlikely in the near future. Revolutionary consciousness (capacity) *and* sufficient organization (one aspect of potentiality) are absent.

As stated above, even if ecological revolution is not even ‘conceivable now’ (Hudson, 1982: 20) as a mere possibility, the future is relatively open. One reason Stuart et al. (under review) target ‘non-reformist reforms’ (Gorz, 1967) that may act as part of a ‘transitional program’ (Löwy, 2015: 37) out of capitalism is due to the following impasse: mainstream climate policy is unable to address climate change yet revolution is a highly unlikely prospect for the near future, even more implausible than a wide implementation of transitional mitigation strategies. Further, if the future does bring a revolutionary situation it will only be because ‘social agents of revolution [...] are formed [...] in process of the transformation itself’ (Marcuse, 1970: 64). In other words, transitional mitigation strategies, although only mere possibilities, may heighten the prospects for an ecological revolution. In the meantime, radical alternatives must be self-critical (Stoner and Melathopoulos, 2016; Blühdorn, 2017). Stoner and Melathopoulos (2016) make the case that we think in error if we think ‘things will get better’ just because they are getting worse.

The third problematic tendency that the category of mere possibility circumvents is pessimistic fatalism. In some ways, a bleak outlook today is a prerequisite for discovering anything more than the ‘fraudulent hope’ (Bloch, 1986) that reigns in mainstream climate change discourse. Although Bloch opposed the Frankfurt School’s pessimism (see Tar, 1977: 206), even he, a defender of ‘militant optimism’, argues that pessimism, as long as it is not made absolute, is a ‘better traveling companion than cheap credulity’ and ‘constitutes the critical coldness of Marxism’ (Bloch, 1986: 199; see also Levitas and Sargisson, 2003). While dark times require that we ‘do what the miner’s adage forbids: to work one’s way through the darkness without a lamp’ (Adorno, 2000: 144), the *catastrophic stakes* of climate change still *oblige* the dialectician to report imperfect and unclear paths forward. In the same way that the horror of the Holocaust compelled the master of negative dialectics—a method that shuns cheap, programmatic solutions—to propose an imperfect affirmative prescription (see above), the stakes of climate change compel us to do the same today. This does not mean that negative dialectics should give up ideology critique and political-economic analysis in favor of empty promises. The ‘cold stream’ of Marxist analysis should remain central and we should seek to ‘displace and estrange the world, reveal it to be, with its rifts and crevices, as indigent and distorted as it will appear one day in the messianic light’ (Adorno,

1978: 247). However, the direness of particular events and eras warrant deficient 'prospect exploration' contextualized with negative findings if we are to stay true to the foundation of critical theory. The category of mere possibility allows for this task in a prehistoric era without real possibilities.

This brings us to the paper's unusual title. Why '*prehistoric catastrophe*'? This is an allusion to Marx's (1970: 22) assertion that a humanity ruled by capital is still part of prehistory, i.e., 'not consciously produced' history (Bloch, 1976: 4) or a history in which humans are 'still unfree' (Marcuse, 1970: 62). The central paradox that Marx brings to light is that humanity is a subject that actively creates its own world but that this artifact-world, its second nature, still dominates the subject, climate change being a preeminent example today. Even when real possibilities to step out of prehistory into a consciously formed history are exhausted (e.g., the prospect of revolution), mere possibilities still exist, usually as technical potentialities with inadequate social organization and lacking the capacity for their actualization. While the wide and effective implementation of transitional mitigation strategies are an unlikely outcome in an inhospitable political-economic and social climate (i.e., they are not real possibilities), an understanding of mere possibilities allows for a form of critical analysis that recognizes that the *potential* for a future with reduced carbon emissions and increased social wellbeing already exists in the current social order.

Conclusions

The first-generation Frankfurt School argued that 'real possibilities' had been extinguished by a co-opted working class and a society characterized by one-dimensionality and instrumental reason. Due to these and other historical reasons (e.g., the Holocaust), they reformulated Marxist theory as well as how to go about thinking dialectically and locating alternatives within the present. The outcome was a 'negative' dialectics that paradoxically kept open the possibility for qualitatively different alternative social futures by explaining and diagnosing the non-existence of real possibilities to achieve a better world. Ernst Bloch's category of 'mere possibility' makes a 'warmer' negative dialectics viable, a form that faces a grim reality head on yet loosens the prohibition against naming alternatives latent in already existing conditions, alternatives that have the *potential* yet lack the *capacity* to become actual. The category of 'mere possibility' can act as a placeholder for 'real possibility' in the dark age of climate change.

There are two practical implications of a 'warmer' negative dialectics. First, drawing attention to mere possibilities helps locate alternative social futures within the present that may become real possibilities at a future time, despite being constrained in current conditions. The second practical implication of the category of mere possibility for negative dialectics is it allows theory to offer affirmative prescriptions, even if these solutions are deficient and unlikely to actualize, in events or eras that demand remedies due to their direness. Climate change is the preeminent case today. Along with ideology critique and political-economic analysis, climate change also calls for prospect-exploration. A 'warmer' negative dialectics can deliver an analysis of climate change that examines political-economic drivers of carbon emissions, submits prominent climate change solutions to ideology critique, *and* searches for better mitigation strategies that, though currently lack the *capacity* and *social potentiality* to be implemented at the scale and rate necessary to avoid catastrophic climate change, are still *technical potentialities* and partially emerged in the present. The category of 'mere possibility' not only helps conceptualize these technical potentialities without capacities, but also avoids more problematic avenues: promoting the continuation of ineffective mitigation strategies, calling for a revolution without a revolutionary subject, and fatalism.

Funding

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Notes

1. Bloch, who can be faulted for disregarding the ‘cold stream’ of social-economic analysis (Jay, 1984: 191f), spent more time elaborating the open-endedness and possibilities immanent in humanity and nature, the quintessential thinker of Marxism’s ‘warm stream’ (Kellner and O’Hara, 1976: 30).
2. Although the Frankfurt School often used the concept of possibility vaguely, Marcuse (1970) adopts a more precise approach in ‘The end of utopia’. In the latter lecture, Marcuse (1970: 63) argues that the typical use of the word ‘utopia’, when employed to describe ‘projects for social change that are considered impossible’, is still applicable to define social projects that seek to break natural laws. However, when alternative social futures seem impossible only due to inadequate or absent subjective and objective factors—in Bloch, capacity and potentiality, respectively—they can no longer be adequately described as ‘utopian’ in the sense of ‘unfeasible’. Unfeasible is an inadequate label because (1) unfeasibility ‘shows itself only after the fact’ and, (2) even if potentialities and capacities are absent or immature, they may be developed *during* a transition. Most importantly, these projects are only *provisionally* unfeasible because: ‘[a]ll of the material and intellectual forces which could be put to work for the realization of a free society are at hand’ (Marcuse, 1970: 64). Marcuse’s notion of ‘provisionally unfeasible’ projects for social change is the political equivalent to Bloch’s category of mere possibility. It is also why I do not use the term ‘unfeasible’ to describe mere possibilities.

ORCID iD

Ryan Gunderson  <https://orcid.org/0000-0002-3837-0723>

References

- Adorno TW (1967) *Prisms*. Cambridge, MA: MIT Press.
- Adorno TW (1973) *Negative Dialectics*. New York, NY: Seabury Press.
- Adorno TW (1978) *Minima Moralia*. New York, NY: Verso.
- Adorno TW (1991) Resignation. In: Bernstein JM (ed) *The Culture Industry: Selected Essays on Mass Culture*. New York, NY: Routledge, 171–175.
- Adorno TW (1998) *Critical Models*. New York, NY: Columbia University Press.
- Adorno TW (2000) *Metaphysics*. Stanford, CA: Stanford University Press.
- Amsler SS (2015) *The Education of Radical Democracy*. London: Routledge.
- Anderson B (2006) ‘Transcending without transcendence’: Utopianism and an ethos of hope. *Antipode* 38(4): 691–710.
- Antonio RJ and Clark B (2015) The climate change divide in social theory. In: Dunlap R and Brulle R (eds) *Climate Change and Society: Sociological Perspectives*. New York, NY: Oxford University Press, 333–368.
- Barkham P (2018) “We’re doomed”: Mayer Hillman on the climate reality no one else will dare mention. *The Guardian*. Available (accessed 28 January 2019) at: <https://www.theguardian.com/environment/2018/apr/26/were-doomed-mayer-hillman-on-the-climate-reality-no-one-else-will-dare-mention>
- Beck U (2010) Climate for change, or how to create a green modernity? *Theory, Culture & Society* 27(2–3): 254–266.
- Benhabib S (1986) *Critique, Norm, and Utopia: A Study of the Foundations of Critical Theory*. New York, NY: Columbia University Press.
- Bloch E (1968) Man as possibility. *CrossCurrents* 18(3): 273–283.
- Bloch E (1976) Dialectics and hope. *New German Critique* 9: 3–10.
- Bloch E (1986) *The Principle of Hope* (3 vols). Cambridge, MA: MIT Press.
- Boillat S, Gerber JF, and Funes-Monzote FR (2012) What economic democracy for degrowth? Some comments on the contribution of socialist models and Cuban agroecology. *Futures* 44(6): 600–607.

- Boldyrev I (2014) *Ernst Bloch and his Contemporaries: Locating Utopian Messianism*. New York, NY: Bloomsbury.
- Blühdorn I (2007) Sustaining the unsustainable: Symbolic politics and the politics of simulation. *Environmental Politics* 16(2): 251–275.
- Blühdorn I (2017) Post-capitalism, post-growth, post-consumerism? Eco-political hopes beyond sustainability. *Global Discourse* 7(1): 42–61.
- Bryson A, Ebbinghaus B and Visser J (2011) Introduction: Causes, consequences and cures of union decline. *European Journal of Industrial Relations* 17(2): 97–105.
- Cohen J (1969) Critical theory: The philosophy of Marcuse. *New Left Review* 57: 35–59.
- Dienstag JF (2006) *Pessimism: Philosophy, Ethic, Spirit*. Princeton, NJ: Princeton University Press.
- Dunlap R and Brulle R (eds) (2015) *Climate Change and Society: Sociological Perspectives*. New York, NY: Oxford University Press.
- Dupuy J-P (2009) The precautionary principle and enlightened doomsaying: Rational choice before the apocalypse. *Occasion* 1(1): 1–13.
- Feenberg A (2004) *Heidegger and Marcuse: The Catastrophe of Redemption and History*. New York, NY: Routledge.
- Fitzgerald JB, Jorgenson AK and Clark B (2015) Energy consumption and working hours: A longitudinal study of developed and developing nations, 1990–2008. *Environmental Sociology* 3(1): 213–223.
- Foster JB (2009) *The Ecological Revolution: Making Peace with the Planet*. New York, NY: Monthly Review Press.
- Foster JB (2018) There is still time for an ecological revolution to prevent Hothouse Earth. *Rebel News*. Available (accessed 28 January 2019) at: <http://www.rebelnews.ie/2018/08/24/john-bellamy-foster-there-is-still-time-for-an-ecological-revolution/>
- Goldstein WS (2001) Messianism and Marxism: Walter Benjamin and Ernst Bloch's dialectical theories of secularization. *Critical Sociology* 27(2): 246–281.
- Goldstein WS (2005) The dialectics of religious rationalization and secularization: Max Weber and Ernst Bloch. *Critical Sociology* 31(1–2): 115–151.
- Gorz A (1967) *Strategy for Labor*. Boston, MA: Beacon Press.
- Gowan P (2018) A plan to nationalize fossil-fuel companies. *Jacobin*. Available (accessed 28 January 2019) at: <https://www.jacobinmag.com/2018/03/nationalize-fossil-fuel-companies-climate-change>
- Greshko M, Parker L and Howard BC (2018) A running list of how Trump is changing the environment. *National Geographic*. Available (accessed 23 January 2019) at: <https://news.nationalgeographic.com/2017/03/how-trump-is-changing-science-environment/>
- Gunderson R (2015) A defense of the 'Grand Hotel Abyss': The Frankfurt School's nonideal theory. *Acta Sociologica* 58(1): 25–38.
- Gunderson R (2017) Ideology critique for the environmental social sciences: What reproduces the treadmill of production? *Nature and Culture* 12(3): 263–289.
- Gunderson R (2019) Work time reduction and economic democracy as climate change mitigation strategies: Or why the climate needs a renewed labor movement. *Journal of Environmental Studies and Sciences* 9(1): 35–44.
- Gunderson R, Stuart D and Petersen B (2018a) Ideological obstacles to effective climate policy: The greening of markets, technology, and growth. *Capital & Class* 42(1): 133–160.
- Gunderson R, Stuart D, Petersen B and Yun S-J (2018b) Social conditions to better realize the environmental gains of alternative energy: Degrowth and collective ownership. *Futures* 99: 36–44.
- Haffner S (2013) *Failure of a Revolution: Germany 1918–1919* (Trans. RappG). Lexington, MA: Plunkett Lake Press. Available (accessed 23 January 2019) at: https://libcom.org/files/Failure%20of%20a%20Revolution_%20German%20-%20Sebastian%20Haffner.pdf
- Harlan SL, Pellow DN, Roberts JT, et al. (2015) Climate justice and inequality. In: Dunlap R and Brulle R (eds) *Climate Change and Society: Sociological Perspectives*. New York, NY: Oxford University Press, 127–163.
- Held D (1980) *Introduction to Critical Theory: Horkheimer to Habermas*. Berkeley, CA: University of California Press.

- Horkheimer M (1947) *Eclipse of Reason*. New York, NY: Continuum.
- Horkheimer M (1972) *Critical Theory*. New York, NY: Continuum.
- Horkheimer M (1978) *Dawn & Decline*. New York, NY: Seabury Press.
- Horkheimer M and Adorno TW (1969) *Dialectic of Enlightenment*. New York, NY: Continuum.
- Hudson W (1982) *The Marxist Philosophy of Ernst Bloch*. New York, NY: St. Martin's Press.
- IPCC (2018) Summary for policymakers. In: *Global warming of 1.5°C*. Geneva: World Meteorological Organization. Available (accessed 23 January 2019) at: https://www.ipcc.ch/site/assets/uploads/sites/2/2018/07/SR15_SPM_High_Res.pdf
- Jay M (1973) *The Dialectical Imagination*. Boston, MA: Little, Brown and Company.
- Jay M (1984) *Marxism & Totality*. Berkeley, CA: University of California Press.
- Johanisova N and Wolf S (2012) Economic democracy: A path for the future? *Futures* 44(6): 562–570.
- Jorgenson AK and Clark B (2012) Are the economy and the environment decoupling? A comparative international study, 1960–2005. *American Journal of Sociology* 118(1): 1–44.
- Kellner D and O'Hara H (1976) Utopia and Marxism in Ernst Bloch. *New German Critique* 9: 11–34.
- Knight KW, Rosa EA and Schor JB (2013) Could working less reduce pressures on the environment? A cross-national panel analysis of OECD countries, 1970–2007. *Global Environmental Change* 23(4): 691–700.
- Kunze C and Becker S (2015) Collective ownership in renewable energy and opportunities for sustainable degrowth. *Sustainability Science* 10(3) (2015): 425–437.
- Lerner AJ (2015) *Redemptive Hope: From the Age of Enlightenment to the Age of Obama*. New York, NY: Fordham University Press.
- Levitas R (1990) Educated hope: Ernst Bloch on abstract and concrete utopia. *Utopian Studies* 1(2): 13–26.
- Levitas R and Sargisson L (2003) Utopia in dark times: Optimism/pessimism and utopia/dystopia. In: Baccolini R and Moylan T (eds) *Dark Horizons*. New York, NY: Routledge, 13–28.
- Levy Z (1997) Utopia and reality in the philosophy of Ernst Bloch. In: Owen J and Moylan T (eds) *Not Yet: Reconsidering Ernst Bloch*. New York, NY: Verso, 175–185.
- Löwy M (2015) *Ecosocialism: A Radical Alternative to Capitalist Catastrophe*. Chicago, IL: Haymarket Books.
- Lueck MA (2007) Hope for a cause as cause for hope: The need for hope in environmental sociology. *The American Sociologist* 38(3): 250–261.
- Lukács G (1971) *The Theory of the Novel*. London: Merlin Press.
- Magdoff F and Williams C (2017) *Creating an Ecological Society: Toward a Revolutionary Transformation*. New York, NY: Monthly Review Press.
- Marcuse H (1964) *One-Dimensional Man*. Boston, MA: Beacon Press.
- Marcuse H (1968) The concept of essence. In: *Negations*. Boston, MA: Beacon Press, 43–87.
- Marcuse H (1969) *An Essay on Liberation*. Boston, MA: Beacon Press.
- Marcuse H (1970) The end of utopia. In: *Five Lectures*. Boston, MA: Beacon Press, 62–82.
- Marcuse H (1972) *Counterrevolution and Revolt*. Boston, MA: Beacon Press.
- Marx K (1963) Contribution to the critique of Hegel's Philosophy of Right: Introduction. In: Bottomore TB (ed) *Karl Marx: Early Writings*. New York, NY: McGraw-Hill, 41–59.
- Marx K (1970) *A Contribution to the Critique of Political Economy*. New York, NY: International Publishers.
- McCright A and Dunlap RE (2010) Anti-reflexivity. *Theory, Culture & Society* 27(2–3): 100–133.
- Mendieta E (ed) (2005) *The Frankfurt School on Religion: Key Writings by the Major Thinkers*. New York, NY: Routledge.
- Mol APJ (2001) *Globalization and Environmental Reform: The Ecological Modernization of the Global Economy*. Cambridge, MA: MIT Press.
- Norgaard KM (2011) *Living in Denial: Climate Change: Emotions, and Everyday Life*. Cambridge, MA: MIT Press.
- Norgaard KM (2018) The sociological imagination in a time of climate change. *Global and Planetary Change* 163: 171–176.
- Obach BK (2004) New labor: Slowing the treadmill of production? *Organization & Environment* 17(3): 337–354.
- Ollinaho OI (2016) Environmental destruction as (objectively) uneventful and (subjectively) irrelevant. *Environmental Sociology* 2(1): 53–63.

- Pullinger M (2014) Working time reduction policy in a sustainable economy: Criteria and options for its design. *Ecological Economics* 103: 11–19.
- Rosa EA and Dietz T (2012) Human drivers of national greenhouse-gas emissions. *Nature Climate Change* 28: 581–586.
- Rosnick D (2013) Reduced work hours as a means of slowing climate change. *Real-World Economic Review* 63: 124–133.
- Rosnick D and Weisbrot M (2006) Are shorter working hours good for the environment? A comparison of U.S. and European energy consumption. Washington, DC: Center for Economic and Policy Research.
- Schnaiberg A (1980) *The Environment: From Surplus to Scarcity*. New York, NY: Oxford University Press.
- Schor JB (2005) Sustainable consumption and worktime reduction. *Journal of Industrial Ecology* 9(1–2): 37–50.
- Scranton R (2018) *We're Doomed. Now What?: Dispatches from the Far Side of Hope*. New York, NY: Soho Press.
- Skocpol T (1979) *States and Social Revolutions: A Comparative Analysis of France, Russia, and China*. New York, NY: Cambridge University Press.
- Solomon M (1972) Marx and Bloch: Reflection on utopia and art. *Telos* 13: 68–85.
- Steffen W, Rockström J, Richardson K, et al. (2018) Trajectories of the earth system in the Anthropocene. *Proceedings of the National Academy of Sciences* 115(33): 8252–8259.
- Stevenson H and Dryzek JS (2014) *Democratizing Global Climate Governance*. New York, NY: Cambridge University Press.
- Stone A (2008) Adorno and logic. In: Cook D (ed) *Theodor Adorno: Key Concepts*. Stocksfield: Acumen, 47–62.
- Stoner AM (2014) Sociobiophysicality and the necessity of critical theory: Moving beyond prevailing conceptions of environmental sociology in the USA. *Critical Sociology* 40(4): 621–642.
- Stoner AM and Melathopoulos A (2015) *Freedom in the Anthropocene: Twentieth-century Helplessness in the Face of Climate Change*. New York, NY: Palgrave Macmillan.
- Stoner AM and Melathopoulos A (2016) If climate ‘changes everything’, why does so much remain the same? *Logos* 15(1). Available (accessed 22 January 2019) at: <http://logosjournal.com/2016/stoner/>
- Stuart D, Gunderson R and Petersen B (under review) *Another Way is Possible: Beyond the Capital–Climate Contradiction*.
- Tar Z (1977) *The Frankfurt School: The Critical Theories of Max Horkheimer and Theodor W. Adorno*. New York, NY: Wiley.
- Tettlebaum M (2008) Political philosophy. In: Cook D (ed) *Theodor Adorno: Key Concepts*. Stocksfield: Acumen, 131–146.
- Thompson P (2016) Ernst Bloch and the spirituality of utopia. *Rethinking Marxism* 28(3–4): 438–452.
- Thompson P and Žižek S (2013) *The Privatization of Hope: Ernst Bloch and the Future of Utopia*. Durham, NC: Duke University Press.
- UNFCCC (2015) The Paris Agreement. Available (accessed 22 January 2019) at: <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>
- Wright EO (2010) *Envisioning Real Utopias*. New York, NY: Verso.
- Wright C and Nyberg D (2015) *Climate Change, Capitalism, and Corporations: Processes of Creative Self-destruction*. Cambridge: Cambridge University Press.
- York R and Clark B (2007) The problem with prediction: Contingency, emergence, and the reification of projections. *The Sociological Quarterly* 48(4): 713–743.
- York R and McGee J (2016) Understanding the Jevons paradox. *Environmental Sociology* 2(1): 77–87.
- York R, Rosa EA and Dietz T (2010) Ecological modernization theory: Theoretical and empirical challenges. In: Redclift MR and Woodgate G (eds) *The International Handbook of Environmental Sociology* (2nd ed.). Cheltenham: Edward Elgar, 77–90.
- Young G (1976) The fundamental contradiction of capitalist production. *Philosophy & Public Affairs* 5(2): 196–234.
- Young IM (2001) *Inclusion and Democracy*. New York, NY: Oxford University Press.

