RECLAIMING THE ENLIGHTENMENT AND IMAGINING A NEW SOCIAL WORLD: GROUNDING NORMATIVITY

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The Interrelated Nature of our Global Crisis: A Summary
i) The situation today – A brief statement of need

"The Enlightenment", Theodor Adorno and Max Horkheimer famously wrote, "understood in the widest sense as the advance of thought, has always aimed at liberating human beings" (Adorno and Horkheimer, 2002, p. 1). But instead of fulfilling its promise, "the wholly enlightened earth is" today "radiant with triumphant calamity" (p.1). Have the values of society regressed from the hopeful aspirations of the enlightenment? Along what philosophical and empirical lines might we outline such "triumphant calamity" in the contemporary social world?

We could begin with a reference to systematic research concerning key crises confronting human civilization – crises defined, for instance, by two notable experts in systems theory as global, industrial, and capitalist in nature (Ahmed 2010; King, 2011, 2012, 2015, 2016). Research by Nafeez Ahmed highlights the systemic interconnections between a number of global crises: from water scarcity and food insecurity to climate change; potential energy crisis; food insecurity; economic instability; forced migration; international terrorism; mass surveillance and increasing militarization (Ahmed, 2010; 2013a; 2013b; 2014a; 2014b; 2015a).

Additionally we may consider as further evidence of the deep crises of the modern social world, new scientific models supported by the British government's Foreign Office that are being developed at Anglia Ruskin University's Global Sustainability Institute (GSI) – models which show that if we don't change course, that if the status quo continues, in less than three decades industrial civilisation will essentially collapse (Sample, 2009; Ahmed, 2015b). Catastrophic food shortages, triggered by a combination of climate change, water scarcity, energy

crisis, and political instability are cited as key issues (Ahmed, 2015b). Even Lloyds (2015), an insurance market specialist, has released a study for the insurance industry entitled *Food System Shock*, detailing potential impacts of acute disruption to global food supply as part of its "emerging risk report".

To add to this picture, it was estimated recently by the United Nations Food and Agriculture Organization (2015) that one in nine human beings – that is, approximately 795 million people of the 7.3 billion people in the world – suffered from chronic undernourishment. On top of this, a study by the International Food Policy Research Institute (2015) reports that lower grain yields and increase in crop prices across the developing world, as a direct result of climate change, will further increase malnutrition rates, leading to a 20-percent rise in child malnutrition. The report, which also draws similar systemic links between hunger and violence, appears to be one of many highlighting the precisely interrelated nature of global crises today. Furthermore, a 2016 research article published by the IFPRI, *Global linkages among energy, food and water: An economic assessment* (Ringler, Willenbockel, Perez, et al., 2016) emphasizes the same point.

I offer this sample of research and empirical evidence to disclose the magnitude of crises confronting human civilization. But it's not just issues of food insecurity, energy crises, global violence and potential climate catastrophe that we face. Focusing on empirical and philosophical assessments within the United Kingdom, United States and Canada in particular, one can discern a number of pressing and interrelated crises. Due to lack of space it is impossible for us to cite each particular issue, but we can highlight a few for contextual purposes. We may cite, for instance, the crisis of education (Amsler, 2016; De Graaff, 2012/2015; Giroux, 2011;); the detrimental effects of neoliberalization on the whole of life (Barnett, 2010; Brenner and Theodore, 2002; Evans and Sewell, 2013); psychology and social pathology (Harris, 2010; Smith, 2016); the diminishing of psychological and emotional well-being (Smith, 2016; Sugarman, 2015; Verhaeghe, 2015); severe environmental degradation (De Graaff, 2016); the crisis of democracy and community (Brady, Schoeneman and Sawyer, 2014; Isakhan and Slaughter, 2014); inequality (Geier, 2016; Jacobs, 2014; Piketty, 2014); international conflict (Ahmed, 2010; 2013a; 2013b; 2014a; 2014b; 2015a); and global economic injustice (Smith, 2012).

Providing some discussion on the issues at hand, my intention is to reflect on what an alternative foundation might look like from a number of key perspectives. In light of all the evidence about the present crisis, it is remarkable that for each area of life there are significant, proven alternative projects and practices available. With regard to poverty, hunger, undernourishment, food production, for example, new research and reports of workable global solutions appear on a

regular basis. But it seems like ideologies and power structures blind political and industrial leaders from embracing and implementing these measures (Desmaris, A. & Wiebe, N. 2011; Reganold, J. 2016; Peter, O. 2013; De Schutter, O. 2014, 2015; Frison, E.A. 2016; UNCTAD, 2013). These sources referenced above highlight, I think, how much we are in need of a structural change based on objective morality and core enlightenment-humanistic values.

In any or all cases, each particular negative aspect of our modern social reality, each systemically interlinked crisis, evidences, it would seem, *a fundamental conflict of values.* On the one hand, this conflict of values relates to global political economy. Empirically, there is quite a list of studies that discern a direct connection between contemporary crises and the system of global capitalism. From an enlightenment perspective, at the heart of the crisis of civilization would seem to be a moral and ethical conflict centred on two generally very different visions of life and society – an egalitarian, ecologically just and actually democratic vision on the one hand, and an alienated, exploitative, destructive vision on the other hand. In a book I recently read, it was suggested from the perspective of philosophy of history that this conflict directly relates to the "dialectic of enlightenment" (Zuidervaart, 2007), which serves as an interesting site of reflection.

On this point, I have come to a similar conclusion as Stephen E. Bronner (2004), and argue that if a revival of the idea of "progress" is to materialize, what is urgently required is a revival of the enlightenment and its normative universalism.

This point is emphasized further considering the various detrimental effects poststructuralism and other postmodern theories have had when it comes to the general erosion of the value of normativity and universalism for the benefit of theories of social relativism (moral, ethical or otherwise), which, one might say, has resulted in or certainly at least compounded the crisis of social theory (Kellner, 2014a).

Additionally, when it comes postmodern and poststructuralist accounts, it is perhaps no coincidence that, in their particularly definitive state of "great confusion" (to borrow from Habermas), the postmodern view has, as Bronner puts it, resulted in a period of significant "intellectual and political disorientation" (Bronner, 2004, p.1). In turn, if what is required today is a comprehensive and coherent social philosophical foundation, what this requirement necessitates, philosophically and empirically, is a direct confrontation with basic questions concerning morality, ethics and values and the damaged status of societal principles (Zuidervaart, 2007). What this entails, in part, is a deeper emphasis on the importance of how we understand history, tradition, social development, and the ongoing enlightenment struggle for progress and a rational society (Bronner, 2004). One could argue – and many do- that what is needed is a return to the

Enlightenment as well as a progressive revival of Enlightenment values. I think such a project can also learn much from modern scientific sensibility and from demands for an evidence-based approach to civic policy.

There is substantial reason to suggest that a progressive and contemporary guide to economic democracy is already present in the enlightenment philosophes. In realizing the highest ideals of reason and science and progress, the Enlightenment still has much to offer. Currently, in the dark and almost barren desert of neoliberal capitalist society, progressive theoretical and scientific movements may provide us with some light. But today, movements in the global north mostly exist as fireflies, scattered, often isolated, without universal solidarity or a broader social philosophical foundation to draw on. In the global south greater solidarity and unity is developing among the peoples' movements often at the risk of their lives and much suffering (Desmarais, A. 2006; Tramel, S. 2016). And yet still, the need for a comprehensive alternative social philosophical vision remains.

ii) A critical intervention

Why open with a reference to the *Dialectic of Enlightenment* (1964/2002)? Adorno and Horkheimer's philosophical study of the modern social world is widely read and referenced in the field of critical philosophy (and perhaps also across the human sciences). They offer a philosophy of history that "traced the fate of the Enlightenment from the beginnings of scientific thought among the Greeks to fascist concentration camps and the cultural industries of U.S. capitalism" (Kellner, 2014). Moreover, they showed how the enlightenment project was betrayed and how society regressed to domination and the opposite of enlightenment: namely, mystification and oppression. The book, not without its issues, criticized a certain form of deformed rationality, and implicitly implicated Marxism within the "dialectic of Enlightenment" (Kellner, 2014). I intend to engage with this book from the perspective of the enlightenment.

Since the time *Dialectic of Enlightenment* was originally published, much has been written and discussed about the implications of this work, what remains significant about the text today, what it got wrong and what requires critical retrieval (Bronner, 1995, 2004, 2005, 2006, 2014; Kellner, 1989, 2014; Zuidervaart, 2007; Sherman, 2007; and Smith, 2015)[1]. In this paper, however, I do not seek to reproduce these arguments or focus on developing yet another piece of secondary literature. Instead, the primary aim is to re-engage with the enlightenment in progressive ways, engaging with this book for the reason that it is often cited in the world of popular literature as a source of "critique".

To add to the above: it is becoming increasingly understood that, in spite of Adorno and Horkheimer's critical analysis of the "betrayal of the enlightenment",

one of the primary aims of their study was not to do away with the liberating force of the enlightenment project (Adorno and Horkheimer, 2002, p. xviii; Bronner, 2004). Moreover, "it should not be forgotten that its authors were concerned with criticizing enlightenment generally, and the historical epoch known as the Enlightenment in particular, from the standpoint of enlightenment itself: thus the title of the work. Their book was actually "intended to prepare the way for a positive notion of enlightenment, which will release it from entanglement in blind domination." Later, in fact, Horkheimer and Adorno even talked about writing a sequel that would have carried a title like "Rescuing the Enlightenment" (Rettung der Aufklärung)" (Bronner, 2004).

Though, as Stephen Bronner correctly points out, "this reclamation project was never completed, and much time has been spent speculating about why it wasn't" (Bronner, 2004), significant efforts have been made toward accomplishing just such a task. Over the past two decades, Bronner himself (Bronner, 1995, 2004, 2005, 2006, 2014) has offered a number of particularly significant contributions to a wider project of critical retrieval when it comes to the Enlightenment and Enlightenment values. Indebted to his efforts, this paper directly engages with his project as well as combines a diversity of scholarship from across numerous disciplines.

Moreover, the following discussion, however informal, seeks to provide a comprehensive account of what might be one positive approach when it comes to re-engaging with the enlightenment and its advancement. In working toward this, my engagement is one that primarily wants to bridge philosophy and empirical study. Through considerable research in the areas of psychology, cognitive science, social and natural science, anthropology, epistemology and critical philosophy (to name a few), I will look to reflect on why an advancing notion of enlightenment values and morality must find direct and concrete expression in what one might term "a radically virtuous alternative of normative (critical) humanism" and in what one might identify as a phenomenological ethics and a fundamental notion of social objectivity.

Furthermore, in engaging with Adorno and Horkheimer's thesis, my goal is to think about possible broader explanations of the crisis of civilization on the basis of philosophy of history. If "the wholly enlightened earth is" today "radiant with triumphant calamity" (Adorno and Horkheimer, 2002, p.1), I want to ask: is it possible that a connection may be drawn between the dialectic of enlightenment – that is, the betrayal of the enlightenment – and the ongoing crisis of civilization?

2. Why does the Enlightenment still matter?
i) An introduction

To state at the outset that after reviewing and working through numerous sources, the Enlightenment and debates around its legacy are today some of the most fundamentally culturally important, this statement may sound extreme or excessive. But it's not. The positive impact that the Enlightenment had on Western society – and, indeed, throughout the world – underlines a significant part of modern political and social history (Bronner, 1995, 2002, 2004, 2005, 2014). This political and social history concerns not only the emergence of such important values as reason, progress and science (Bronner, 2004; Pagden, 2013); in fact, so many of the positive values and ideals we take for granted today owe a debt to the enlightenment and humanist project.

Whether explicitly realized or not, the basic values often shared today by progressive social movements around the world are tied to the Enlightenment and its social-political legacy (Bronner, 2004, 2014). In fact, it is fair to state that many basic values popularly celebrated in contemporary society, whether in the mainstream or on the progressive fringes, owe a great deal to the revolutionary ideals of the 18th Century philosophical movement (Bronner, 2002; Trevor-Roper, 2010; Pagden, 2013). Equality, cosmopolitanism, and modern conceptions of democracy are a few examples (Bronner, 2004). Then, of course, there is the basic value of reason, understood as the basis for authority and legitimacy in thought and action, grounding such ideals as empiricism, scientific rigor, and finally also the view of social-historical progress (Bronner, 2004; Pagden, 2013).

Conversely, and in addition to the above, modern emphasis on individual liberty and religious tolerance, along with notions of constitutional government, normative critique of the abuses church and state, and popular scepticism of traditional authority can all be traced to the Enlightenment (Bronner, 2004). In the world of thought and, especially, the broad philosophical basis for contemporary society, such 19th century movements as liberalism and neo-classicism are a direct product of the Enlightenment intellectual legacy (Pagden, 2013).

In short: with just a brief overview, it is clear how much modern western society and culture is entangled with the Enlightenment. Far from a distinct historical period without connection to the present, the legacy of the Enlightenment remains a central if not primary point of reference when it comes to modern hopes for society, the mission of social-historical and cultural progress, and the advance of basic humanistic ideals (Bronner, 2004; Trevor-Roper, 2010; Pagden, 2013).

The humanistic underpinning of the Enlightenment is of course no coincidence (Trevor-Roper, 2010). Widely understood as the continuation of a process rooted

in the Scientific Revolution, dated roughly between the years of 1550 and 1700, the Enlightenment can be traced back to the "renaissance humanists" in France and Italy in the 14th and 15th century (Trevor-Roper, 2010). As a very broad cultural and intellectual movement in Europe that affected every area of life – especially views regarding science, political and legal theory, and morality – the Enlightenment represented more than a distinct era (Bronner, 2004; Pagden, 2013). It symbolized or sought to symbolize significant turns in philosophy, culture and society, coinciding with the emergence of a new foundational perspective on life (Bronner, 2004).

Responding to the closed structures and practices of medieval society, the Enlightenment's best representatives argued for a project, a political vision, and a certain philosophical framework based on the emancipation of human beings (Bronner, 2004). Its main objective was about liberating life, society, culture, and our common human values from the authority and control of the church and established monarchies (Bronner, 2004; Pagden, 2013). The God-ordained order of the universe mediated by the church had to be broken through to allow for the free flourishing of the human subject; for human freedom, initiative, discovery, exploration and the transformation of society (Bronner, 2004). These humanistic values were not static, but still remained universal and objective principles (Bronner, 2004; Pagden, 2013). They served first of all to liberate the person and society from external authority and oppressive governments (Bronner, 2004).

With these summarized points noted, it should also be said that the Enlightenment encompassed many different aspects of life and there were many historical and national variations (Bronner, 1995, 2004, 2005; Pagden, 2013). In other words, it was not a monolithic movement (Bronner, 1995). Though my own considerations do not cover all of the variations and history, as this has already been accomplished by several leading and notable scholars (Bronner, 2004; Trevor-Roper, 2010; Pagden, 2013), the intention of my essay is to focus on the common values amongst Enlightenment thinkers. This essay, adhering thematically to the disciplines of sociology, anthropology, psychology, and epistemology, emanates from a detailed and comprehensive look at common Enlightenment values and their ongoing significance, which one might take as socially, politically, philosophically and empirically evident.

Perhaps now more than ever, the legacy of the Enlightenment represents an important and deeply morally relevant site of contemporary debate. The many issues which characterize or define this site of consideration cut across almost every aspect of modern social life (Bronner, 2004). A philosophical project, a programme of revolutionary humanistic ideals and values, and an open-ended critical intellectual process resistant to dogmatic and totalitarian political movements, the Enlightenment is more than a distinct historical period (Pagden,

2013). It is the beginning of a progressive project which seeks to establish an alternative way of looking at the world. Indeed, recent scholarship even shows in systematic detail how Enlightenment ideas include a potentially universalizing vision of humanity – of common emancipatory values – as well as the full recognition of the emotional ties that bind all human beings together (Pagden, 2013).

In terms of the study of moral philosophy, which Kenan Malik lays out nicely in his book *The Quest for a Moral Compass*, it should be noted that the Enlightenment did not invent or discover many common human moral values; but what it did is promoted ideas of individual freedom, scientific knowledge, democratic governance and society in the sense of their liberation from external authority. As I noted earlier, with roots traced back to the renaissance humanists (Trevor-Roper, 2010; Pagden, 2013) we can see for example how Enlightenment thinkers critically retrieved certain basic human values from this 14th and 15th century movement and generally sought to free them from their religious bias and dogma (Bronner, 2004). But it need be said, too, that there are many other cultures at different historical times that have lived these directives, whether successfully or not, starting with the ancient Greeks. In fact, in certain places and in certain ways, other cultures can be said to have practiced one or more of the relevant values we now tie to the Enlightenment. Consider, for example, the Cree nation and their study of the environment and ecological inter-relationships, egalitarian relations, and the basic ideals around communal sharing (De Graaff, 2016). Another example can be seen in the Guna tribe, particularly when it comes to their thoughts on child rearing, democracy, and the intricate relation between the individual and the tribe (De Graaff, 2016). These points of recognition are important when it comes to understanding the enlightenment and what it sought to offer, in a particular moment in history, as part of a larger human struggle toward ideas of justice and solidarity, among others. Throughout history variations of values have not always been realized in a positive way – in fact, there is an argument to be made that much of the history of human society is deeply pathological. What the enlightenment sought was to ultimately ground core values in a normative universal framework, informed by science and empirical thought as well as philosophical consideration. This broader context helps give further meaning to what the enlightenment sought to stand for, not only in Europe but also throughout the world, including the enlightenment movement in India and other places. As contemporary scholars point out, seeing the enlightenment achievement from a broader historical and cultural perspective delivers it from the critique of being *Eurocentric* (Bronner, 2004), and this is important.

In closing: one cannot deny that the Enlightenment has had a significant impact on the world, and remains deeply relevant. The struggle to defend science and

the debates around the importance of the modern scientific endeavour – the values of reason and economics – the enlightenment can continue to serve as an important frame of guidance. At the same time, there are also lots of debates about the Enlightenment legacy. Indeed, when answering the question 'Why the Enlightenment?', one can simply point to the Enlightenment's impact in relation to the many conflicted views it evokes, truly striking the heart of the conflicts of how we view society, our relation with each other and the natural world.

ii) The Enlightenment and Counter-Enlightenment

The source of criticism for both sides of the political spectrum, the Enlightenment seems to be considered negatively on many parts of the left today (Bronner, 2004). On the right, conservatives have traditionally detested the "nihilism" of the Enlightenment project, which in many ways is a view inherited from the Counter-Enlightenment (Bronner, 2004; Ralston, 1992; MacIntyre, 1984; Pagden, 2013; Thomas, 2014).

Historically and empirically, we can trace back or in the least draw parallels between many of today's conservative viewpoints against the Enlightenment and the emergence of the Counter-Enlightenment in the 18th century (Bronner, 2004; Pagden, 2013; Thomas, 2014). This counter-enlightenment was essentially made up of political conservatives and clerical defenders of traditional religion (Bronner, 2004; Pagden, 2013; Thomas, 2014). "It deplored the progressive assault on communal life, religious faith, social privilege, and traditional authority" (Bronner, 2004, p. 1). The very contemporary idea of personal freedom, for example, rooted in the enlightenment's resistance against the authority and control of the Church and the closed structure of medieval society (Bronner, 2004; Pagden, 2013), represented a significant challenge against established power structures of the time.

Keith Thomas (2014) summarises this complex history and the political dynamics of the Enlightenment and Counter-Enlightenment in his article "The Great Fight Over the Enlightenment", when he writes how counter-enlightenment resistance attacked materialism and scientific scepticism, not to mention the natural sciences and philosophy (Thomas, 2014).

In sum, if the enlightenment was meant to blow open history in the sense of challenging and breaking free from traditional doctrines and dogmas as well oppressive regimes of thought and social organization (Bronner, 2004; Pagden, 2013), this is because the very idea of the Enlightenment as a project and as a set of ideals was meant to become the "source of everything that is progressive about the modern world", standing "for freedom of thought, rational inquiry, critical thinking, religious tolerance, political liberty, scientific achievement, the pursuit of happiness, and hope for the future" (Thomas, 2014). Perhaps more

emphatically, the Enlightenment was meant to liberate human beings once and for all (Bronner, 2004). Even Theodor Adorno and Max Horkheimer (2002), whose study is widely referenced as a leading critique of the Enlightenment and its betrayal, state that the Enlightenment originally meant to emancipate human beings. This project of emancipation was not only social and political; it represented the possibility of a certain existential liberation as well (Israel, 2002), especially when it comes to the advent of reason and science as common values which support humanity's overcoming Myth more generally and certainly also the oppressive grip of the Church in particular (Pagden, 2013).

One can cite numerous texts by key Enlightenment thinkers which support the above view.

Marquis de Condorcet (1794/2012), in his famous work titled *Sketch for a Historical Picture of the Progress of the Human Mind*, writes for example on the interrelation between the progress of the sciences and enlightened social behaviour (Michael, 1975, 2004; David, 2004; Gregory, 2010; Leiss, 2011; Pagden, 2013).William Leiss summarizes this nicely while quoting Condorcet: "He [Condorcet] remarks that 'all errors in politics and morals are based on philosophical errors and these in turn are connected with scientific errors'. He is saying that there is a connection between our conceptions of natural processes, on the one hand, and our understanding of society and individual behaviour, on the other" (Leiss, 2011, p. 29).Moreover, "Condorcet envisioned a future in which 'the dissemination of enlightenment' would 'include in its scope the whole of the human race'" (Leiss, 2011, p. 29). He maintains the position that the enlightenment provides a new way of thinking, a new view of the world, and that this view, based on a transformative ethos (Bronner, 2004, pp. 4-5), not only connects science and reason with morality and ethics, but is principled, as Bronner (2004) writes, on a series of core human values.

Condorcet's reflections in *Sketch for a Historical Picture of the Progress of the Human Mind* share a common vision with many other Enlightenment thinkers (Bronner, 2004). Indeed, "the Enlightenment" as a whole "crystallized around the principles connected with fostering the accountability of institutions, reciprocity under the law, and a commitment to experiment with social reform" (Bronner, 2004, p. 9). It sought not "imperialism, or racism, or the manipulation of liberty", but instead the ideals of liberty, individual rights and dignity (Bronner, 2004; Pagden, 2013) and what we might describe today as social conditions which foster the "free flourishing subject" (Sherman, 2007; Smith, 2015a, 2016). These ideals formed the basis of Enlightenment universalism (Israel, 2001; Bronner, 2004; Pagden, 2013), which sought to protect rather than threaten the exercise of subjectivity (Bronner, 2004, p. 9).

Enlightenment universalism, in other words, "presumes to render institutions accountable, a fundamental principle of democracy, and thereby create the preconditions for expanding individual freedom. Such a view would inform liberal movements concerned with civil liberties as well as socialist movements seeking to constrain the power of capital" (Bronner, 2004, p. 9). In much the same way, Enlightenment universalism – or what we may also describe as the common values of the Enlightenment (Pagden, 2013; Israel, 2002) – moves against prejudice to include "the other", underpinning the liberal notion of the citizen with its "inherently democratic imperative", while also pushing back against capitalism's drive to reduce people to the mere status of 'economic objects' and therefore, too, mere 'costs of production' (Bronner, 2004, p. 9). Therefore, there should be no surprise when Condorcet, for example, writes in rather radical fashion:

Thus an understanding of the natural rights of man, the belief that these rights are inalienable and [cannot be forfeited], a strongly expressed desire for liberty of thought and letters, of trade and industry, and for the alleviation of the people's suffering, for the [elimination] of all penal laws against religious dissenters and the abolition of torture and barbarous punishments, the desire for a milder system of criminal legislation and jurisprudence which should give complete security to the innocent, and for a simpler civil code, more in conformance with reason and nature, indifference in all matters of religion which now were relegated to the status of superstitions and political [deception], a hatred of hypocrisy and fanaticism, a contempt for prejudice, zeal for the propagation of enlightenment, all these principles, gradually filtering down from philosophical works to every class of society whose education went beyond the catechism and the alphabet, became the common faith . . . [of enlightened people]. In some countries these principles formed a public opinion sufficiently widespread for even the mass of the people to show a willingness to be guided by and to obey it. (Condorcet, 1794/2012, p. 101)

As we read here and elsewhere, including in the works of lesser-known figures, Enlightenment universalism – its core values – "provide a foundation for opposing contemporary infringements on individuals rights and dignity by new global forms of capitalism" (Bronner, 2004, p. 9). Even in terms of the oft-cited "crisis of democracy" today, where democracy, as a concept and as a thing, has less to do with the actual content of "democracy" as an egalitarian system of political-economic values than it does with the neglect of this content for its (mere) form, "The Enlightenment notion of political engagement […] alone keeps" the very notion of "democracy fresh and alive" (Bronner, 2004, p. 9).

The same could be said for the frequently contested notion of social and historical "progress". It is true that historical "progress" as some clean linear process must be challenged. But as Kenan Malik has pointed out on numerous occasions, such an engagement is deeply nuanced and to suggest that the

enlightenment itself is the source of colonial racism and domination isn't accurate.

Over recent years post- and decolonial theorists have criticized the idea of historical progress, rooted in and a product of the Enlightenment, as Eurocentric, imperialist, and neo-colonialist (Allen, 2016). It is even argued that this idea is largely central to the 'western fallacy' (Allen, 2016). In many or all cases of such critique, the notion of progress is at risk being thrown away (Allen, 2016). This is a mistake. While there is certainly a critical normative imperative to breaking open the view of a purely progressive reading of history, which tends to suppress the many critical realities – consider, for example, the issue of "land grabbing" or slavery or resource-based wars and terror – the very notion of "progress" itself is also a critical-political imperative (Allen, 2016). Additionally, most of the issues cited, such as colonialism and resource-based wars, has much less to do with the enlightenment and more to do, as Malik notes, with the forces of capitalism.

Contrary to post-structural and especially post-modern critiques of the Enlightenment, which, usually, are guilty of lacking nuance (Bronner, 2004), the common view of "progress" by Enlightenment thinkers was employed as part of a *critical project of rational thought* (Bronner, 2004; pp. 20-28). The notion was used to attack the institutions and ideas of a bygone age in the name of reason, rights, and interests of the individual (p. 21), not to mention to support the philosophical vision concerning the need to promote common decency, a sense of compassion for people in relation to the direction of society, and respect for the ideals of fairness, reciprocity, and civility among others (pp. 20-22).

Progress was viewed, most importantly, in relation to the critical challenging of prejudice, oppressive customs, and dominant instincts; it was employed in explicit contempt for dogma and privilege, and relied upon as part of a guiding principle of critique of political purposes that questions tradition and authority on behalf of an open-ended, transitory, many-sided and complex view of societal transformation (pp. 20-28). No doubt that the Enlightenment attempt "to "soften" the vices of humanity […] reaches back to other cultures: Jewish law condemned the torture of animals; the Buddha spoke of "selfishness" and compassion for suffering; Confucius saw himself as part of the human race; Hinduism lauded the journey of life; and Jesus articulated the Golden Rule" (p. 20).

In this sense, there is a clearly distinguishable and very real "anthropological grounding for the historical experience of Enlightenment" (p. 20). In this sense, too, there is a common and shared human value to the broader historical, cultural project which seeks what we may identify as the egalitarian ideals of transformative progress along several important lines. No doubt the struggle continues. But what makes the Enlightenment so historically significant in this regard concerns how, as an intellectual movement, it made important strides

toward grounding these values. In contrast to renaissance humanists, for example, who evidenced a very strong religious emphasis, Enlightenment thinkers begun the task of grounding progressive and transformative values, particularly through the notion of reason as the primary source of authority and legitimacy in defense against the constant human threat of a return to myth and dogma.

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So what are we to make of the 18th century Enlightenment? For over two hundred years the legacy of its most prominent thinkers, from Locke and Newton to Voltaire, Hume, Diderot, and Kant, has been the subject of bitter debate. On the one hand, supporters hail it as the source of everything that is progressive about the modern world. For them, it stands for freedom of thought, rational inquiry, critical thinking, religious tolerance, political liberty, scientific achievement, the pursuit of happiness, and hope for the future. By contrast, its enemies accuse it of "shallow" rationalism, naive optimism, unrealistic universalism, and moral darkness. Certain criticism can be understood as legitimate and worthy of reflection, suggests some scholars, while not in any way undermining the validaity of the enlightenment project as a whole. Another portion of criticism has been shown to be illegitimate (Bronner, 2004).

Regarding the former – the legitimate criticism of the Enlightenment – Bronner (2004) makes it incredibly clear that with its emphasis on civil liberties, tolerance and humanism, there is something to be preserved about Enlightenment political theory. What's more, it is clear that in viewing the Enlightenment and its complex and deeply nuanced political history in accurate terms, this requires opposition to "current fashions and conceits", including recognition of the many systematic and unbiased studies on the Enlightenment (Bronner, 2004, p. 10) as well as detailed historical scholarship, which pushes back against postmodern and poststructral views.

Moving forward, there is another body of literature that argues that humanistic thought has been appropriated by prejudiced political and economic ideology, and has been corrupted to serve as the basis for such concepts as "human capital". "Human rights", yet another lasting legacy of the enlightenment project, is said to now be a concept often employed "as an ideological excuse for the exercise of arbitrary power" (Bronner, 2004, p. 1). Democracy, likewise, which as a concept and a distinct political value once possessed discernible revolutionary characteristics, has undergone a "hollowing out" process. The actual content of the radical moment of the enlightenment's uniquely modern understanding of democracy (Bronner, 2004, p. 58) has been increasingly boiled away. "The security of western states", often cited by governments throughout the world, "has served as justification for the constriction of personal freedom" (Bronner,

2004, p. 1). All the while "rigid notions of progress have fallen by the wayside", and "liberal regimes have often been corrupted by imperialist ambitions and parasitical elites" (Bronner, 2004, p. 1). In reclaiming the Enlightenment or, in other words, in returning to and re-vivifying the enlightenment project, it is argued that progressives must reclaim or critically retrieve these concepts and values.

It is said that notions of "reason", "science" and "progress" too require critical evaluation. Where "progress" once meant a critical normative value which sought to challenge the status quo of systems of domination and exploitation for the betterment of all of humanity; the confronting of traditional authority; a contempt for dogma, prejudice, and elitism; resistance to dominant institutions and practices, as well as political movements which attack rights and the vision of individual and collective well-being (Bronner, 2004, pp. 19-22, 39, 40); "progress" is argued to be at risk of being divorced from its core radical social philosophical purpose, serving instead the ideological economic worldview.

iii) The enlightenment and race

The main point at the current juncture is to understand that many Enlightenment thinkers understood "progress" in emancipatory and critical ways. But there seems to be a case that core values are open to distortion and to being stripped of their critical, non-partisan and objective character (Bronner, 2002, p.23). Today, the evidence of such a reality is truly striking. "Progress" is celebrated in light of the advance of medical science, for example, and yet the reality that many are unable to access necessary medical treatments; that the privatization of medicine has led to a new kind of social-economic barbarity, where vital treatments are controlled by business and are deeply prejudiced, governed by the capitalist law of inequality (Acemoglu and Robinson, 2014; Grewal, 2014; Piketty, 2014) goes unspoken by those same people quick to revere. The need of the hour, then, is not to abandon this critical concept, as we read in Bronner (2004); but to critically retrieve it for the sake of the enlightenment as part of the retaining of the belief in the possibility of an emancipated future. Rather than being zealous dogmatists, some of the best Enlightenment thinkers perceived "progress" and, impliedly, the struggle for societal transformation as something that may never be complete (p. 21), often resisting the urge to secure a totalitarian utopian ideology, understanding in a very critical way that we must continue to critique, to improve, to challenge and strive to do better (pp. 21-22).

We could dedicate an entire series of books on the Enlightenment; its history and key figures; its values and their ongoing relevance; and the need for a deep project of critical retrieval. Later on, I will offer a number of examples and expand on the direction of such a project, in hope that others might continue the effort. For the time being, it is enough to state that, with regards to the notion of progress, Bronner's (2004) effort is notably advanced. For this reason it serves

as a source of constructive engagement. For example, Bronner's ideas of progress in the earliest pages of his book are wonderfully descriptive and illustrative, offering the reader historically very careful attention to the real meaning and intention behind key Enlightenment concepts and movements in thought. At the same time we can build from this and also consider where things may have gone off the rails as the 18th century enlightenment began to recede in and through the 19th century (Malik, 2013a, 2013b).

Consider, for example, the accusations of racism against a number of different Enlightenment thinkers. No doubt that, "With its emphasis upon autonomy, tolerance, and reason – no less than its attack upon received traditions, popular prejudices, and religious superstitions – the Enlightenment was generally recognized as the foundation for any kind of progressive politics" (Bronner, 2004, p.2). However, one cannot completely erase the contradictions within the Enlightenment when it comes to the issue race, as one example. One such criticism, particularly from a postcolonial perspective, suggests that certain Enlightenment thinker's evidenced moments of social prejudice and a Eurocentric point of view. At the same time, we also have to understand the historical and cultural time of the philosophes and the mess that they sought to work through and overcome.

On the one hand, the Enlightenment was a critical movement and sought, for instance, to attack popular prejudices. On the other hand, there are people who argue thatcertain passages expose lasting traces of such prejudices and of distinct aspects of what we might today describe as the language of oppression (Bosmajian, 1974/1983). And the evidence of these lasting traces of deep historical, cultural prejudices were particularly held against non-Europeans (Malik, 1996, 2009a, 2009b, 2013a, 2013b). Moreover, it is argued that there was an emerging contradiction in enlightenment thought moving into the 19th century (Malik, 2013a, 2013b). Notable scholar Kenan Malik (2013a, 2013b) provides a deeply nuanced account of the now oft-termed Enlightenment's 'race problem', particularly in a series of articles and in a book which questions the idea that the modern roots of the idea of race lie in the Enlightenment. He writes: "The relationship between race and the Enlightenment is […] far more complex than much contemporary discussion allows for. It was the transformation of Enlightenment attitudes through the course of the nineteenth century that helped mutate the eighteenth century discussion of human variety into the nineteenth century obsession with racial difference" (Malik, 2013b).

This account seems to affirm Bronner's (2004) study as well as a wider body of unbiased scholarship. Whatever the misguided prejudices of Bernier, Voltaire or Kant (Bronner, 2004, p. 89), or even those of Hume and Jefferson (Malik, 2013a), it is important to understand:

The first intimations of a contradiction that was to become a key motor of nineteenth century social and political thinking – a contradiction between the intellectual categories thrown up Enlightenment philosophy and the social relations of the emerging capitalist society, between an abstract belief in equality, on the one hand, and the concrete reality of an unequal society. It was out of this contradiction, as we shall see, that the idea of race emerges.

It is true that in the eighteenth century, a number of thinkers within the mainstream of the Enlightenment, Hume, Voltaire and Thomas Jefferson among them, dabbled with ideas of innate differences between human groups, including ideas of polygenism – the belief that different races had different origins and were akin to distinct species. Yet, with one or two exceptions, they did so only diffidently or in passing. Hume's comment about the innate inferiority of blacks appeared in a footnote. Thomas Jefferson conceded that 'the opinion that [negroes] are inferior in the faculties of reason and imagination must be hazarded with great diffidence' particularly so 'when our conclusion would degrade a whole race of men from the rank in the scale of beings which their Creator may perhaps have given them.' Twenty years later, he wrote to a French correspondent that he had expressed his opinions about the inferiority of negroes 'with great hesitation'. He added that 'whatever their degree of talents, it is no measure of their rights'. (Malik, 2013b)

As we can see, "the roots of the racial ideas that would flourish in the nineteenth century" in a certain sense "lay in Enlightenment writing" (Malik, 2013). But we must also approach this complicated issue by recognizing there were two basic movements within the Enlightenment (Israel, 2002). These two movements can be differentiated as: Radical Enlightenment and Enlightenment Contested (Israel, 2002). As Malik summarizes: "The mainstream Enlightenment of Kant, Locke, Voltaire and Hume is the one of which we know and which provides the public face of the Enlightenment. But it was the Radical Enlightenment, shaped by lesser-known figures such as d'Holbach, Diderot, Condorcet and Spinoza that provided the Enlightenment's heart and soul" (Malik, 2013a). Additionally, for Kant and Voltaire especially, concern with race had little bearing on their general theories (Bronner, 2004, p.89). In most cases, where any contradiction may appear, it is found within "the equivocations of the mainstream" (Malik, 2013a). "Yet", writes Malik, "eighteenth century thinkers remained highly resistant to the idea of race". (2013a). Furthermore, the actual universal principles of Enlightenment political theory left little room for racism (Bronner, 2004). Indeed, as Malik also notes: "political attitudes towards progress and human unity left little room for race" (Malik, 2013a). The deeper issue, it appears, is the "transformation of Enlightenment attitudes through the course of the nineteenth century that helped mutate the eighteenth century discussion of human variety into the nineteenth century obsession with racial difference" (Malik, 2013a). But what allowed this to happen?

Perhaps it is fair to suggest that in some respects we can trace this transformation in the "attempt of the mainstream to marry traditional theology to the new philosophy", which "constrained its critique of old social forms and beliefs" (Malik, 2013a; citing Israel, 2002). As Bronner (2004) notes: messianic visions of Christian destiny have always intoxicated the advocates of both racism and the Counter-Enlightenment" (p. 88). And this is certainly apparent in the Counter-Enlightenment resistance to the Enlightenment's radical political theory, which, at its core, valued the idea of universal emancipation (Bronner, 2004).

It is fair to say, too, as Bronner acknowledges, that the Enlightenment was always open to distortion (Bronner, 2004). It is clear that "the eighteenth century, Enlightenment philosophes judged people largely according to their moral capacities". And yet:

By the second half of the nineteenth century, biology determined identity and fate. It was, in the words of historian Nancy Stepan, 'a move away from an eighteenth century optimism about man, and faith in the adaptability of man's universal "nature", towards a nineteenth century biological pessimism.' And such biological pessimism marked a shift 'from an emphasis on the fundamental physical and moral homogeneity of man, despite superficial differences, to an emphasis on the essential heterogeneity of mankind, despite superficial similarities.' (Malik, 2013b)

The enlightenment is not to blame for this turn, as so much of the leading scholarship makes clear. Indeed, contra to the postmodern and poststructural critique which lays blame at the feet of the enlightenment for a whole list of things, the core problem really is a betrayal of this important historical project.

3. The Enlightenment and its Betrayal: A Critique
i) Introduction

So what of this idea of the betrayal of the enlightenment? The work that seems to most closely touch on this issue (outside of more contemporary literature) can perhaps be found in a critical and advancing reading of *Dialectic of Enlightenment*.

Originally published in 1964, Adorno and Horkheimer's text remains one of the more widely read critical surveys in relation to the Enlightenment and social development. Tracing the roots of "the self-destruction of enlightenment" (p. xvi), their research can be described as "an interdisciplinary experiment", not unlike the research presented in this paper. "Neither a work of history, anthropology, sociology, nor politics", Adorno and Horkheimer "instead combined these disciplines to remarkable effect" (Bronner, 2004). Providing one of the deepest accounts of society's long-standing entanglement in blind domination (Adorno and Horkheimer, 2002, p. xviii), or what we might more accurately nail down in

terms of a study of social pathology, they essentially "turned the accepted notion of progress upside down" (Bronner, 2004). Bronner writes:

The scientific method of the Enlightenment, according to the authors, may have originally intended to serve the ideals of human liberation in an assault upon religious dogma. Yet the power of scientific reason ultimately wound up being directed not merely against the gods, but all metaphysical ideas—including conscience and freedom—as well. "Knowledge" became divorced from "information," norms from facts, and the scientific method, increasingly freed from any commitment to liberation, transformed nature into an object of domination, and itself into a whore employed by the highest bidder. (Bronner, 2004)

It's hard to know what to make of the dialectic of enlightenment. On my reading of the scholarship, Adorno and Horkheimer essentially sought in this widely reference book to contribute a critical account toward dispelling the myth of a clean and linear form of progress (Allen, 2016), or, at least, to provide an extra layer of nuance that progress has not been without human sin. But it should be understood that, as alluded earlier, while they offered a critique of the Enlightenment, at no point did they seem to aim to do away with the Enlightenment (Adorno and Horkheimer, 2002, pp. xvi, xviii). In fact, it is stated quite clearly that the authors sought to work through the betrayal of the enlightenment for the benefit of the enlightenment (Bronner, 2004; Sherman, 2007; Smith, 2015a; Allen, 2016). Adorno and Horkheimer aimed to expose how the Enlightenment had been betrayed, even indicating their intention to "prepare the way for a positive notion of enlightenment, which will release it from entanglement in blind domination" (Adorno and Horkheimer, 2002; p. xvi). Oftentimes their language can appear confusing, as they speak of "enlightenment regress" and "the self-destruction of the enlightenment" and the regress of "enlightenment reason to myth", which I tend to read as the regress of society to myth and not the actual regress of "enlightenment reason" (Sherman, 2007). As Bronner points out, the authors also talked about writing a sequel that would have carried a title something like "Reclaiming the Enlightenment" (Bronner, 2004; p.9), and one could take this to support the claim that the best or most progressive reading of their popular critique is one that is in no way "anti-enlightenment", but rather one that tries to explain how the enlightenment was betrayed, which, for Adorno and Horkheimer, eventually leads to a critique of capitalism, its internal rationale and cultural industries.

For the purpose of this paper, I do not intend to offer a comprehensive engagement with this book and it numerous theses. My interest is primarily in the notion of regression, ethics and on Adorno and Horkheimer's "domination of nature" thesis. For a fuller treatment of the book, its main arguments, as well as an analysis of legitimate and illegitimate criticisms, a selection of quality scholarly texts have been published in recent years (Brunkhorst, 1999; Bernstein, 2001;

Sherman, 2007; Zuidervaart, 2007; Cook, 2011; Leiss, 2011; Vogel, 2011; Smith, 2015a). More recently, Allen (2016) offers a summarily introduction to Horkheimer and Adorno's *Dialectic of Enlightenment* in relation to a study of the alternative histories of Enlightenment modernity.

ii) Social development entwined with power? – Dialectic of Enlightenment

One of the more basic arguments presented in *Dialectic of Enlightenment* and, too, in Adorno's own analysis with regards to the psychology of civilization, has to do with the author's well-known thesis concerning "the domination of nature". Here we understand in particularly existential terms (Smith, 2015a) that irrational fear or anxiety not only once drove Myth but also the betrayal of the Enlightenment in terms of society's regress to irrationality. According to Adorno and Horkheimer, the domination of human beings' natural environment was made possible by controlling human beings' inner nature – what we may also equate to psychological repression – which thus is said to ultimately lead to a limitation of the human horizon to cycles of self-preservation and power (Adorno and Horkheimer, 2002; Sherman, 2007; Zuidervaart, 2007; Cook, 2011; Smith, 2015a).

In psychological terms it seems that one could speculate a link between fear-driven social drives and the pathology of development (Smith, 2016), as there are a number of psychological theories that discuss a certain hardening effect of "the ego" which has subordinated itself to the specific socio-economic system in the interest of individual self-preservation. Or so goes the argument. In this sense perhaps a constructive reading of *Dialectic of Enlightenment* is one which combines Adorno and Horkheimer's social philosophical theses with contemporary research in psychology, wherein the author's "domination of nature" thesis – including a critique of the modern genesis of what they term instrumental reason – refers simultaneously to the systemic or structural workings of capitalism as well as to a radical existential thesis (Smith, 2015a) based on the notion of 'self-preservation gone wild' (Cook, 2011) that affirms the capitalist structure-agency relation? This is of course philosophical speculation, but it is interesting to think about: that is, the relation between social structures and systems and the development of the subject.

Understanding the problem of regress as a continuation of the impulse toward absolute identity and mastery – the epistemology of myth – which is rooted in the existential thesis of irrational self-preservation drives (Smith, 2015a), the argument seems how the basic impetus of "instrumental rationality" is to essentially attack the very thing it is supposed to serve. For the authors, it seems to make the most sense to read their argument in terms of how instrumental reason is in a sense a regressed form of the aspirations of enlightenment rationality in which society has regressed to myth coupled with the hardened,

closed nature of "constitutive subjectivity" (Adorno, 1992; Sherman, 2007). As we read in the more anthropological part of the book, the authors reflect on what they hypothesize about the association between the domination of the object and of one's self for the benefit of increasing control of (internal and external) nature.

…the justifying idea of a divine commandment to subdue the earth and to have dominion over all creatures reduces the sensitivity of civilized humans for the conditions of their violent domination of nature organized in and by society. Finally, the internalized violent domination of nature also facilitates the use of force in social life. (Fischer, 2011)

If the Enlightenment was about liberating life, society, culture, and our common human values from the authority and control of the Church and the closed structure of medieval society (Bronner, 2004; Pagden, 2013), society has regressed – or, more accurately, has the tendency to regress – to replicating now global trends of domination (Zuidervaart, 2007). The God-ordained order of the universe mediated by the church might have been sought to be broken through the earliest philosophical and practical developments of the free flourishing of the human subject – human freedom, initiative, discovery, exploration and egalitarianism**.**However, as we learn, these ultimately humanistic values were eventually betrayed (Adorno and Horkheimer, 2002). Instead of genuinely serving to liberate the person and society from external authority and oppressive governments, how enlightenment values are realized today are said to have been increasingly appropriated by dominant, controlling and exploitative ideologies. The clearest and most direct example can be found in the contemporary context of global capitalist ideology.

"Instrumental reason" was seen as merging with what Marx termed the "commodity form" underpinning capitalist social relations. Everything thereby became subject to the calculation of costs and benefits. Even art and aesthetic tastes would become defined by a "culture industry"—intent only upon maximizing profits by seeking the lowest common denominator for its products. Instrumental rationality was thus seen as stripping the supposedly "autonomous" individual, envisioned by the philosophes, of both the means and the will to resist manipulation by totalitarian movements. Enlightenment now received two connotations: its historical epoch was grounded in an anthropological understanding of civilization that, from the first, projected the opposite of progress. This gave the book its power: Horkheimer and Adorno offered not simply the critique of some prior historical moment in time, but of all human development. This made it possible to identify enlightenment not with progress, as the philistine bourgeois might like to believe, but rather—unwittingly—with barbarism, Auschwitz, and what is still often called "the totally administered society." (Bronner, 2004)

Adorno and Horkheimer seem to offer a number of explanations as to where things have gone wrong. One such explanation concerns the critical analysis of the emergence of a certain analytic structure (Sherman, 2007) that exists as the inner most logic or epistemology of capitalism. One could also describe the issue

along the lines of a critique of a certain cognitive paradigm (Cook, 2004; Smith, 2015e). Tracing the general tendency of the social regress to myth, of society's regress from reason to irrationality, this analytic structure or cognitive paradigm is particularly dominating and coercive, driven to reduce everything to the realm of profit by way of exploiting scientific and technological means (Sherman, 2007; Zuidervaart; Cook, 2011; Smith, 2015a, 2015e; De Graaff, 2016). However, Adorno and Horkheimer seem to argue that these issues didn't start with the Enlightenment, as they trace the problem back to "primitive objectification" (Smith, 2015a). Moreover, along anthropological and epistemological lines, the example of how certain nature religions, in response to nature as fate, deified a particular dimension of life in attempt to obtain mastery of nature seems particularly apt (Smith, 2015a, 2015e; De Graaff, 2016).

… Dialectic of Enlightenment is best read as an account of the human inclination to constantly drive toward establishing a sense of (existentially-centered) dominant security in the name of the absolute, there is no better example of primitive objectification than in how certain nature religions, especially those who, in response to nature as fate, deified "fertility". In this case, "fertility" was made absolute – it was universalized as an absolute faith-based principle – while the other dimensions of life were perceived as inferior or secondary. The objective of such deification? To master nature, or, at least, achieve a sense of mastery over nature. Was it possible that nature be actually mastered? No. But the existence of the drive to do so is precisely what is important to acknowledge. Moreover, the mythic concept of fertility in the past was really an effort to obtain a (false) sense of control over pure fate, not only in terms of pregnancy and childbearing, but also in terms of an attempt to control the fate of future harvests, and so on. Thus human beings turned the concept of fertility into the god of Fertility – into an Idol, an absolute or "totalized experiential orientation" in order to achieve a (false) sense of ultimate security in the midst of extremely precarious life. […] In the same way that the deification of the concept of fertility resulted in the securing of a "totalized experiential orientation", so too does the drive of abstract [economic] reason aim toward a certain analytical and explanatory schema which, in turn, fosters a totalized and reductionistic approach to the phenomenal world. Adorno's critique of the principle of "universal exchange" is more than telling in this regard. In the case of both myth and instrumental reason, it has already been described how everything tends to get reduced to the status of mere 'object' which can therefore be manipulated and controlled – where everything can be absolutely accounted for. Thus the statement by Horkheimer and Adorno that the enlightenment confuses "the animate with the inanimate, just as myth compounds the inanimate with the animate". (Smith, 2015a)

Some thinkers have recently criticized Adorno and Horkheimer's "domination of nature" thesis. William Leiss, focusing on a passage by Horkheimer's, reflects how for the author the problem of "primitive objectification" relates to the "disease of reason" insofar "that reason was born from man's urge to dominate nature" (Horkheimer, 2003), claiming that this formulation leaves "no exit" (Leiss, 2011). Additionally, another problem seems to be that Adorno and Horkheimer's

arguments can often also be interpreted as saying that reason itself is the disease. This strikes a similar point as Habermas' critique (Zuidervaart, 2007; Sherman, 2007). To be sure, it is true that, while Adorno and Horkheimer wish to preserve some hope for a positive conception of enlightenment (Adorno and Horkheimer, 2002, pp. xvi, xviii), they ultimately seem to leave us with few glimpses as to what this positive conception might look like (Bronner, 2004; Zuidervaart, 2007; Smith, 2015a; Allen, 2016). The reason for this, Bronner speculates, "is that the logic of their argument ultimately left them with little positive to say. Viewing instrumental rationality as equivalent with the rationality of domination, and this rationality with an increasingly seamless bureaucratic order, no room existed any longer for a concrete or effective political form of opposition" (Bronner, 2004, pp. 3-4). There would certainly seem to be an element of truth to this observation.

What is most interesting about this book, and perhaps what remains relevant, is its notion of regression and its sense of betrayal.

Though the book lacks nuance and certainly makes some questionable claims, it would seem that accepted scholarship leans toward the idea that a correct or progressive reading is one which understands that at no point do Adorno and Horkheimer claim power and reason are absolutely identical (Sherman, 2007; Zuidervaart, 2007; Cook, 2011; Allen, 2016). One of the basic theses at the core of the book concerns how reason becomes entwined with, if not in the service of, power. In truth, we could probably substitute the use of "power" with the basic thesis regarding social pathology and the problem of how values are realized and formed within a pathological society.

At the same time, Adorno and Horkheimer seem to be proponents of enlightenment reason and of the value of objectivity. To make matters more confusing, they use the notion of "instrumental reason" to describe what seems to be a particular form of rationality that has been brought into the service of dominating social systems and drives. Philosophically, as we read, it is no longer reason as a means itself; rather it is reason bound to dominant ends. In other words, the argument seems to be that reason is being pulled into the service of less than rational ends. Perhaps, in this sense, the main point of Adorno and Horkheimer's analysis, as David Sherman (2007) highlights, is that the relation between reason and domination is firstly socially focused and secondly it is historically contingent. Indeed, Allen (2016) writes: "If, however, the relationship between reason and domination is historically contingent, and if it doesn't involve a reduction of reason *per se* to domination, then the paradox emerges from a certain process of rationalization and is not internal to reason as such" (Allen, 2016, p. 170). In this sense, it is a certain form of social reason – a certain use of human rationality that is no longer rational. In other words, there has been a

social regress to myth or irrationality, which perhaps attests to Axel Honneth's use of the phrase the "deficit of reason" in contemporary society.

This is exactly what was meant earlier in reference to a critique of a certain analytic structure or cognitive paradigm. In the same sense that the author's critique of scientism is not the same as a critique of science, it is particularly fruitful to read relevant sections of *Dialectic of Enlightenment* as a critique of the betrayal of reason as both conceptual and historically contingent (Allen, 2016, p. 170). This is what gives possibility to the hope of a positive conception of enlightenment from within the context of the dialectic of enlightenment; because the focus of study is a particular deformation of reason. As Allen summarizes: "In this sense, Horkheimer and Adorno do posit an essential tension between enlightenment rationality in the broad sense and power relations understood as the control or domination of inner and outer nature" (Allen, 2016, p. 171).

The source of the fascist and totalitarian regression to barbarism that Horkheimer and Adorno witnessed as they wrote this text in the early 1940s, against the backdrop of the war and the horrors of Nazism, is not merely the concrete historical or institutional forms of enlightenment thinking: it appears to be enlightenment rationality itself, which they describe as "corrosive" and "totalitarian". The key to this shocking claim lies in the meaning of the term "enlightenment". It refers not – at least not exclusively and not even primarily – to the historical epoch of European Enlightenment that began in France and flowered in Germany in the eighteenth century, but rather to a more general process of progressive rationalization that enables human beings to exercise greater and greater power over nature, over other human being, and over themselves. It is the latter meaning of "enlightenment" that allows Horkheimer and Adorno to link enlightenment rationality with the will to mastery, control and the domination of inner and outer nature; this will to mastery comes to fruition in the historical period known as the Enlightenment, but it does not originate there. (Allen, 2016, p. 167)

What motivates such social regression from the positive, enlightenment, critically self-reflective, and emancipatory reason to a negative, totalitarian, and dominant form is thought to be revealed from deep within. Adorno and Horkheimer offer one interesting site of examination: what motivates today's blind pattern of domination is irrational fear (Zuidervaart, 2007). "The gods cannot takeaway fear from human beings, the petrified cries of whom they bear as their names. Humans believe themselves free of fear when there is no longer anything unknown. […] Enlightenment is mythical fear radicalized. […] Nothing is allowed to remain outside, since the mere idea of the "outside" is the real source of fear" (Adorno and Horkheimer, 2002, p.11).

According to Horkheimer and Adorno, the source of today's disaster is a pattern of blind domination, domination in a triple sense: the domination of nature by human beings, the domination of nature within human beings, and, in both of these forms of domination, the domination of some human beings by others. What motivates such triple domination

is an irrational fear of the unknown. […] In an unfree society whose culture pursues so-called progress no matter what the cost, that which is "other," whether human or nonhuman, gets shoved aside, exploited, or destroyed. The means of destruction may be more sophisticated in the modern West, and the exploitation may be less direct than outright slavery, but blind, fear-driven domination continues, with ever greater global consequences. (Zuidervaart, 2011)

Adorno and Horkheimer's task, then, was to hold a mirror up to societies that like to make claim to the enlightenment; thus to think through the pathological regression for the sake of the enlightenment. More clearly put: the aim is to hold up "a mirror" so as to "become aware of" such "regressive tendencies" (Allen, 2016, p. 168).

However, where Adorno and Horkheimer fail, I think, concerns firstly the lack of identifying of the underlying existential aspect of this drive to dominate nature (Smith, 2015a) and the historical contingency of the betrayal of the enlightenment in relation to a deeper notion of social pathology and pathological social development. Secondly, while Adorno in particular offers many elaborate analyses, not least in *Negative Dialectics*, when it comes to the tension between what is called instrumental rationality and power relations, he never quite gets to the core of the issue and in many ways his account seems to lack differentiation (Zuidervaart, 2007).

"If the relationship between reason and domination is a conceptual aporia, and if this means that reason is reduced to domination, then either there is no rational way out, in which case the way out can only be found through a nostalgic return to a romanticized understanding of magic or mimesis, or the way out can only be found by articulating an alternative conception of reason". (Allen, 2016, p. 170)

On this reason, Adorno and Horkheimer do not disentangle this counterfeit form of social-economic rationality and its thirst for power once and for all, so as to then highlight a positive value of a revived enlightenment reason. But they do leave us with a sense of direction. They leave us, in other words, with a critical examination which renders social rational capacity self-aware of its entanglement with power (Allen, 2016, p. 172). This entanglement is not inevitable; it is a trend or tendency (Zuidervaart, 2007; Smith, 2015a), and in this sense their "domination of nature" thesis should be understood as preparing the way for potentially radical reflection on a fundamental alternative paradigm (Smith, 2015e). "On their understanding, the concept of enlightenment is not in itself barbaric or totalitarian; rather, it is deeply ambivalent, in the sense that it contains the potential to descend into barbarism and totalitarianism" (Allen, 2016, 173). I would personally be inclined to offer the caveat that this potential is not of the enlightenment itself, but, to clarify, is the risk of pathological society in which the most positive of values can be realized in the most distorted of ways.

iii) "Domination of Nature" – Moving the debate forward

In Christoph Görg's (2011) article, "Societal Relationships with Nature: A Dialectical Approach to Environmental Politics", we read in parts an argument toward how, as humans, we cannot avoid exploiting and transforming nature. Presenting an account of the reality that society has always had to extract from nature – that, in systems terms, there has always been a degree of entropy (Prew, 2015) – Görg offers a critical intervention against the extremist views represented in Deep Ecology or in anti-extractivist movements. He explains that a certain degree of exploitation and transformation of nature is a "natural" aspect of human society. This view would certainly also be backed by science. In light of Adorno and with *Dialectic of Enlightenment* in mind, Görg asserts that, if contemporary critical theory is going to grasp a critical ecology, we must understand that: "society is […] always dependent on its material conditions of existence, which are anchored in nature" (Görg, 2011, p.49). He then presents a striking discussion on how society can no longer ignore that such dependencies exist (Görg, 2011, p.49), calling, in turn, for a more advanced understanding of the mastery of nature, which, fundamentally speaking, requires that we "distinguish among the appropriation of nature for human needs" , the "destruction of nature", and the "mastery of nature" (Görg, 2011, p.49). For Görg, "the former two are to some degree necessary", "whereas the mastery of nature refers to a neglect of the non-identity of nature" (Görg, 2011, p.49).

It should be stated explicitly that Görg's philosophical reflections correlate with scientific approaches to the issue of natural extraction. As we learn in systems analysis, for example, the problem isn't entropy *per se* but the rate of entropy (Prew, 2015). Regarding this last point, the "non-identity of nature" that Görg describes is in reference to Adorno's negative dialectics. What is important to note is that, what Görg is pursuing in his application of Adorno is a critique of the "total subsumption" of nature under societal aims (i.e., under capitalist forms of appropriation), which essentially functions without respecting that nature has its own meaning. This is a very similar reading of Adorno and Horkheimer's "domination of nature" thesis as found in Lambert Zuidervaart's *Social Philosophy after Adorno* (2007).

In short, for Görg, we can effect change within our current sociohistorical-cultural circumstances and, indeed, we must alter our way of doing things (Görg, 2011, p. 49). However, the fundamental issue we face today – or at least one of the fundamental issues we face – does not necessarily pertain to the will to dominate or master nature; rather, Görg sees the problem as being in the pervasive manner in which capitalism drives to accumulate. It is hard to argue against this claim. One of the most destructive parts of capitalism, as we increasingly witness, is its lack of concern with regards to natural limitations. Hence one of the

basic arguments by green movements regarding the insanity of 'pursuing constant growth on a planet of finite resources'. The logic of critique here speaks clearly for itself – as does the science.

For Adorno as well as other philosophers that I have read, a critique of the "domination of nature" seems to indicate an critique of epistemology, wherein resides the disputed philosophical relation between subject and object. In considering this disputed relation, "the question of normative judgements about economic systems" comes to the fore (Zuidervaart, 2007, p. 120). As Zuidervaart asserts: "the subject-object relation and the question of normative critique are at work in "The Concept of Enlightenment"" (Zuidervaart, 2007, p. 120), which is the first essay in *Dialectic of Enlightenment*. Zuidervaart goes on to explain:

This can be seen from the prominence given to a pattern of blind domination when Adorno and Horkheimer explain the "disaster triumphant" that has befallen "the wholly enlightened earth." In their account, blind domination occurs in three tightly interlinked modes: as human domination over nature; as domination over nature within human existence; and, within both of these modes, as the domination of some human beings by others. To provide terminological markers for these three modes of domination, I shall use the terms "control", "repression," and "exploitation," respectively. Critics of Adorno either downplay one of these modes or argue that they are not tightly interlinked in the manner he suggests. My own response is that all three modes do actually characterize modern Western societies and that understanding their interlinkage is crucial for a transformative social theory. (Zuidervaart, 2007, p. 121)

In pursuing his analysis of these three interlinked modes of domination, Zuidervaart claims that each requires its own form of normative critique (Zuidervaart, 2007, p. 121). Indeed, if *Dialectic of Enlightenment* "hovers near the trap of totalizing critique", this is because "it does not differentiate sufficiently in its critique of domination" (Zuidervaart, 2007, p. 121). Accordingly, Zuidervaart, a notable Adornian scholar, aims to contribute constructively to the retrieval and advancement of *Dialectic of Enlightenment* by showing why:

1) For Adorno and Horkheimer, violence is systemic, particularly insofar that "this systemic violence has emerged in a specific configuration, namely, in the imbrication of control (Naturbeherrschung) with repression and exploitation (Zuidervaart, 2007, p. 121).

2) Why the differentiation of cultural spheres, and particular advances within science, art, and morality, are neither separate from nor reducible to societal tendencies (Zuidervaart, 2007, p. 121).

3) If developments within the cultural sphere are to "deliver what they promise – for so-called progress not to be cursed with "irresistible regression" – systemic violence needs to be recognized and resisted", a point which, for Zuidervaart, is the truth to Adorno's "remembrance of nature" (Zuidervaart, 2007, p. 121).

Zuidervaart's analysis seem to allow for a more fine philosophical intervention in a critique of control in relation to the need for control (that is, the difference of self-preservation drives being realized in an irrational way or a rational way). Moreover, in return to Görg's article, his argument could be strengthened by Zuidervaart's sufficient differentiation in his analysis of Adorno's critique of domination (Smith, 2015a). As Zuidervaart also argues, not all control of nature is illegitimate (Zuidervaart, 2007, p. 121). "In fact, [Adorno] regards some control to be necessary if human freedom is to be possible" (Zuidervaart, 2007, p. 121). But, as in Görg's essay, the question that ultimately arises concerns, "how the distinction should be drawn between legitimate and liberating control, on the one hand, and illegitimate and destructive control, on the other" (Zuidervaart, 2007, p. 121).

Zuidervaart offers one possible solution. He argues that if the hope of modernity and the enlightenment gets distorted in a regress driven by fear, then an alternative to this fear would presumably be a form of recognition, which Adorno's *Eingedenken der Natur* suggests (Zuidervaart, 2007, p. 121). And yet, as Zuidervaart reflects, "it cannot be a straightforward recognition of "nature" as "other" (Zuidervaart, 2007, p. 121). Nor can this recognition "be merely a recognition of nature's power as the object of fear" (Zuidervaart, 2007, p. 121). Instead, Zuidervaart argues, this recognition must be a form of "mutual intersubjectivity of human beings with other creatures in the dimensions of life they share" (Zuidervaart, 2007, p. 121).

The control of nature becomes violent when it does not promote the interconnected flourishing of all creatures but promotes human flourishing at the expense of all other creatures. The formation of the self becomes violent when it represses urges and desires that would lead to the satisfaction of basic needs. And the social distribution of power becomes exploitative, and therefore illegitimate and destructive, when it persistently promotes the apparent flourishing of one group at the expense of another (Zuidervaart, 2007, p. 124).

4. The complex relation between science and society

To consider the lengths of such philosophical debates and reflection is challenging, stimulating and cause for reflection (regardless of whether one agrees or disagrees with the conclusions or arguments). When it comes to science, what is one to make of the argument that society and its rationale can or does become entwined with domination?

As a young scientist, what concerns me most is the status of society in relation to the health of science. As individual scientists, we each belong to this social world to whatever extent and in spite of how much one may try to distance oneself from it or to try to intervene rationally, one cannot fully escape it. Thankfully, though,

the natural sciences are not without reflecting on the issue of objectivity and the need to constantly defend scientific practices against cognitive biases, and this remains an important normative site of defense. This struggle and concern can be evidenced for instance in an article by physicist Sabine Hossenfelder, where she reflects:

To me, our inability — or maybe even unwillingness — to limit the influence of social and cognitive biases in scientific communities is a serious systemic failure. We don't protect the values of our discipline. The only response I see are attempts to blame others: funding agencies, higher education administrators or policy makers. But none of these parties is interested in wasting money on useless research. They rely on us, the scientists, to tell them how science works.

I offered examples for the missing self-correction from my own discipline. It seems reasonable that social dynamics is more influential in areas starved of data, so the foundations of physics are probably an extreme case. But at its root, the problem affects all scientific communities. Last year, the Brexit campaign and the US presidential campaign showed us what post-factual politics looks like — a development that must be utterly disturbing for anyone with a background in science. Ignoring facts is futile. But we too are ignoring the facts: there's no evidence that intelligence provides immunity against social and cognitive biases7, so their presence must be our default assumption. And just as we have guidelines to avoid systematic bias in data analysis, we should also have guidelines to avoid systematic bias stemming from the way human brains process information.

This means, for example, that we shouldn't punish researchers for working in unpopular fields, filter information using friends' recommendations or allow marketing tactics, and should counteract loss aversion with incentives to switch fields and give more space to knowledge not already widely shared (to prevent the 'shared information bias'). Above all, we should start taking the problem seriously.

Why hasn't it been taken seriously so far? Because scientists trust science. It's always worked, and most scientists are optimistic it will continue to work — without requiring their action. But this isn't the eighteenth century. Scientific communities have changed dramatically in the past few decades.

I don't have nearly as much experience yet as Sabine and other physicists, who will no doubt be able to offer much more substantiated analysis. Perhaps in years ahead as I become a more seasoned physicist I will be able to reflect more on practice and the nuances of the issues. Over the years, however, I have had the opportunity to survey quite an extensive body of literature, and one of the things that seems clear to me in my current readings is that the relation between society and science is nothing short of complicated. Cognitive bias is something that science must constantly defend itself against. But what, also, of the social status of scientific outputs? Perhaps this is a question for moral and ethical philosophy, but it doesn't seem to be taken seriously enough as a site for deep reflection.

And this is the lesson I take from an engagement with the philosophical discourses described above.

Moreover, there seems to be a lot of evidence that scientific knowledge, as it *enters* into the social world (which is not to say scientific knowledge itself), can be used for destructive purposes – that the output of science, as it becomes mediated by irrational social forces, can be used to serve systems of political bias, economic exploitation, among other things. This is a really difficult issue to nail down. On the one hand, science and scientific practice exists generally within a special epistemological space. It generally does possess a certain autonomy that we really don't see in many other parts of society, thanks largely to the many safeguards in place that ensure the objective rigour of scientific knowledge and practice. But what about the social factor external to science and thus the mediation of scientific advancement within the context of the social world? There is also, too, a question here about the status of reason and objectivity within the industrial sciences.

In critical philosophy, there seems to be a lot of confused literature and perspective that conflates the social and thus also pathological influence placed on scientific outputs with a critique of the whole modern scientific enterprise. It is quite a minefield and difficult to navigate. But from the perspective of moral and ethical philosophy, perhaps the question concerns how values are realized in an irrational society?

One of the most pertinent questions I've come across in recent time asks: In an age of great scientific achievement and technological advancement, "why does needless social suffering persist?" Science is the driving force of progress, but as the philosopher Adorno reflected, "can there be a good life in a bad society?"

Maybe there is a deeper truth about a certain contradiction or antagonism that science faces external to science, in terms of its ethical position within a less than ethical society? Consider studies which have expressed concern about the links between scientific output and how these outputs are exploited to serve the military-industrial complex, whose rationale is often systemically linked to exploitative political economy. It is at least worth raising the question, and it is at least worth reflecting on whether there is a real ethical problem about how, as we read in philosophy, the positive value of science is always under threat in terms of its output in an irrational social world (not to mention also in terms of anti-science political movements). For example, think of the development of lifesaving medicines such as penicillin, and yet the logic of modern society – its political and economic systems and structures – enforces in many countries a financial barrier that blocks a lot of people from accessing such an important form of antibiotics. The other day I read a story about an individual in the U.S. who turned down needed medical treatment because they couldn't afford it. Similarly,

there's a well-documented case currently unfolding where the drug Sofosbuvir, a cure for hepatitis C, is caught in the grips of a patent war. It has been estimated that there are currently 80 million people with hepatitis C, and only 5.4m have access to sofosbuvir. If this patent war goes to the side of pharmaceutical giant Gilead, millions of people will likely continue to not have access to this important drug.

In relation to the above engagement with the dialectic of enlightenment, perhaps this is the more constructive and lucid meaning that can be deduced from the philosophical argument about the betrayal of the enlightenment; about the advent of a systemic instrumental economic rationality that in essence signifies a regress to myth; and about society's entwinement with domination. To word it differently: is there value in thinking about how scientific outputs can or do (to whatever extent) become entwined with systems and forces of domination? If this question is considered valid, then the next question would likely concern how might we go about an empirical study and assessment of the issue.

5. Grounding normativity

I think another lesson that I've been able to derive from critical social philosophy, particularly in relation to the above, concerns the question of how normative universal values are realized. This may seem like a simple realization, but the main takeaway I think is the need for critical and ethical reflection on the status of core values. That also includes the question of how human rationality is realized in society. These ethical and moral philosophical reflections extend beyond the limits of this article, but what I would like to start thinking about is according to what ethical criteria might we normatively judge and assess the status of important humanistic values. Consider "democracy", for example. Many of the prevailing forms of capitalistic democracy don't actually seem that democratic in structure and practice, if one weighs the actual content of the value of democracy against today's popular standard. There are many insightful studies about this, and how the mainstream standard of democracy today is positioned quite far from the actual critical normative (enlightenment) value of democracy, conceived primarily as an egalitarian principle.

In recognizing basic core enlightenment and humanistic values – like democracy, reason, equality, egalitarianism or even more practically, such as in ecological sustainability and community – one of the goals I think should be to ground these ideals in an objective and evidenced-based framework. The universal normativism of enlightenment values already begins to provide a foundation according to which one can assess and judge the status of society. The principle of egalitarianism, both in terms of social relations and how we relate to the natural world, which implies among other things that needless social suffering ought to be diminished if not eradicated altogether, this already helps keep in

check the value of democratic systems. If modern political economy does not contribute to an increase in equality, to the diminishing of needless suffering, to an increase in democratic relations, and to economic sustainability, then we know something is wrong. On the basis of these ethical considerations, the goal would then perhaps be to ensure a normative theory of values in which the assessment of the development of those values is predicated on an open, rational form of critical consideration. Rather than any current system or cultural value-formation being hypostatized and made absolute, and thus non-negotiable, normative values are, well, critical and normative. They are also open to positive future development, to the fluid process of change and creation. Anyone familiar with the Enlightenment philosophes will recognize the general direction of such an argument. More practically put: values are unfolding, changing, negotiable, and yet they are also universal. Thus, in my own words, they are always subject to critical thinking and reflection, to non-bias, non-partisan mediation. If our current form of economy or democracy is no longer considered adequate when weighed against the objective demands of universal health and well-being, then perhaps there is a better form? Economic democracy is a good example.

In some sense, the lesson is very much indebted to the scientific mindset: if a theory no longer coincides with the evidence, with the empirical data, then it must be discarded. Phenomena keep unfolding, we continuously learn more about the social and natural world, and thus also our historical circumstances keep changing and call for new responses or perspectives.

Basic values like freedom, justice, solidarity, etc. are perceived not as abstract values given by god, authorized by the church, or as part of an abstract theoretical and political framework; but as a fundamental "life direction" which speak to us throughout human history. Rather than maintaining an abstract status as core values tend to in a lot of political social theory, perhaps what is called for is a much more open evidence-based process. It would seem, at least from everything that I've read, that an evidence-based approach is really the only foundation from which one can rely on and start moving forward and building from.

But an evidence-based approach must also be objective, unbiased and non-partisan, otherwise people can tailor their facts and even what evidence they look for in terms of their own political prejudices. Additionally, an evidence-based approach to policy and to social debate must surely be grounded in reason and the value of rational thought, investigation and deliberation. Perhaps I am wrong, but I consider reason and rationality – the process of rational investigation and consideration – to be a complex form enquiry that considers the object, phenomenon or situation in its complexity and integrality. Take, for instance, evidence-based approaches to policy concerning poverty. Research might find

that a certain policy for longer working hours reduces poverty. Thus, that policy might be deemed economically successful. But what about the effect on individual health and well being? What effect does it have on family life and relationships? On this point, an evidence-based approach should consider the holistic reality and not just a one-dimensional perspective of investigation. It is about thinking of issues in their integrality and multidimensionality; it's about thinking of reality in its complexity as opposed to the purely economic for instance. Another example concern disability policy. Government policy regarding cuts to disability benefits might evidence incentive for more people to work. But what about individual health and well being? Is it for the benefit of the individual? Lots of people with disabilities struggle to work, and what if they're forcing themselves to work against the betterment of their well being due to the threat of economic precarity? In many ways it is about asking the right questions, openly enquiring and surveying, and most of all it is about thinking of the issues, of reality, in all its complexity.

Maybe I am wrong to raise the question: but does a purely economic-bound approach to policy and governance signal a rational approach? An integral and holistic approach can be learned from science. I think science teaches more than it does not about how nature is not just something distinct from or over against humans and human society (Görg, 2011). In some of my first environmental science classes I learned about our understanding of the integral unity and inter-connectedness of all of life and about the sensitive interconnectedness of eco-systems. For me, science helps reinforce the sensibility that we are an inseparable part of the ecological embeddedness of all life on earth, including human life, health and well-being. To this point, one of my favourite contemporary physicists, Brian Cox, recently commented: "Science is not a collection of absolute truths. Scientists are delighted when we are wrong because it means we have learnt something." The deeper lesson, he suggested, is that "the scientific way of thinking is the road to better politics. The value of science is in embracing doubt." In its rational openness and process of unbiased critical objectivity, the scientific mindset could inform an approach to public affairs "not by saying 'this is absolutely right' but by saying this is the best thing to do based on what we currently know".

Democracy, respect, equality, science, community, horizontal leadership – they are what Arnold De Graaff calls "guideposts", and they reverberate across time and "speak" in our experience with one another, especially when we look at things as objectively and with as little bias as possible. I would be inclined to argue that issues speak very objectively. Climate change is very clear and so are issues of sustainability. But such a lucidity so easily gets blocked in a social world defined by prejudiced subjectivity and ideological politicians. The ailing reverberates.

Ultimately, perhaps a reclaiming and re-energizing of the enlightenment also goes to help support the deepening of important humanistic values that also help foster a sensitivity about how we can no longer distance ourselves from the world of inanimate objects and living creatures. There is hardly an area of the earth – some pristine natural world – that is not touched by human activities. Even those wild, unexplored areas that may still exist in the world are subject to the consequences of changing jet streams and ocean currents, of air and water pollution, of the loss of hundreds of thousands of species of plants and animals, of northward and southward shifting populations of many creatures as a result of warming temperatures. Everything is inter-connected with everything else through a complex of ecological systems, sub-systems and feed-back loops. Perhaps this is one of the greatest lessons of the science of systems theory. Nothing exists just by itself. When one species of fish in the ocean is overfished, it can have radical effects on an off-shore fishery somewhere else. When trees are clear-cut in a particular mountainous area, it has drastic consequences for the whole eco system, the watersheds down the valley and mud slides covering whole villages. The emissions of coal generated power plants on one continent may result in air pollution and smog on another continent, as well as adding to the average rise of CO_2. Some of the most isolated and 'uninhabited' polar regions are also some of the most polluted areas with rising temperatures and melting perma-frost. The examples are evident everywhere. The human community is inseparably intertwined with all the other non-human communities. Climate change and global warming have greatly underscored this inter-relationship.

The importance of protecting endangered species in different countries, for example, is not just about preserving one particular species of birds, animals, or plants, or even about protecting biodiversity in general, even though that is a serious issue in itself. Each species has its own worth and integrity that deserves protection. However, it helps our understanding even more when we become aware of the crucial role each species plays in the whole of the ecological system (De Graaff, 2016). Protecting plants and animals is about maintaining the integrity and ecological sustainability of the environment as a whole, including the human species. It means that we cannot think about the ocean, the air, the global wind and ocean currents, the fresh water supply, the soil, the land, the forests, or any particular species of animals or the inorganic world apart from the function they have in the total ecological system (De Graaff, 2016). There are many sub-systems and feedback loops that interact with each other. Drastically reducing one species of fish by overfishing or the decline of one kind of seagrass can mean the collapse or decline of an entire fishery. When we destroy, exploit, or pollute one ecological system or region, or one particular species, we often have no idea what the consequences will be until much later, when it may be too late (De Graaff, 2016). At some point there is the danger of the 'tipping points' where

even two or three relatively minor changes can set off a chain reaction that is irreversible.

To gain an understanding of the environmental decline it is not sufficient to focus on one aspect or another or even a few aspects like global warming and climate change. All the ecological systems and subsystems seem to be interlinked and work in tandem. Temporary changes and fluctuations do not change the basic picture. Variations and some temporary 'slowdowns' in temperature, for example, are primarily related to oscillations in atmospheric and ocean currents. They do not change what is happening to the soil, or the fish stocks in the oceans or the decline and pollution of fresh water, or how long some glaciers will take to disappear. It is our human activities that have brought us to this crisis point.

In this context, maybe one is not too far off to suggest that we need an anthropology and an evolved enlightenment social epistemology that takes its starting point in the *inextricable ecological unity and intertwinement of the inorganic, organic and human world*. Considering "nature" as something separate that can be talked about apart from the human interaction and impact on "nature", perhaps this leads to too much of removal of the interconnection between social and natural environments. It is one of the ways in which humans take control of and exploit the earth's resources outside of reasonable limits and within evidenced based and informed systems. By contrast, many present-day ecologists and environmental scientists have adopted a holistic and integral viewpoint that is based on systems thinking and evolutionary processes. They use such concepts as 'social-ecological systems' that look at people and nature operating as interdependent systems (De Graaff, 2016). Journals like *Ecology and Society* and *Conservation Biology are* illustrative of this approach. This multi-dimensional unified perspective is also evident in the contributions of eco-socialists that start from the inseparable connection between eco-justice and social justice and the development of a multi-dimensional view of life (De Graaff, 2016).

This systemic ecological founding of all life means we are pursuing an enlightenment social philosophy judged by its egalitarian content and the not the mere form of a claim to values. The cosmos and our planet with all that it contains is living, developing, changing, intricate, and appears to still have many unexpected and unknown dimensions. There are many complex interconnections and dimensions that we are only beginning to understand. Along with an enlightenment view of epistemology and anthropology, this perspective has radical implications not only for our view of the earth and life beyond earth (cosmology) but also for our sense of normativity and morality as well as a phenomenological ('lived') ethics. Basing cosmology in the fundamental unity of

life without artificial separation has far-reaching implications for our use of nature and the economic reduction of nature.

The argument that 'we cannot avoid exploiting and transforming nature', or that 'not all control over nature is illegitimate' can detract from moving our insight forward. All creatures, including the human species, 'use' other creatures and 'transform' their natural habitat. There are parasitic insects and birds, symbiotic relations that use each other, predators of all kinds, and so on. Different creatures transform their environment and use materials in all kinds of complex and intricate ways. In many ways 'controlling', 'exploiting' and 'transforming' is not an issue in itself. The problem is not whether we can use nature; all creatures do in a manner of speaking. Even posing the question of 'good or bad' and 'legitimate or illegitimate' use can be limiting if it is not followed by an extensive discussion of normative objective criteria for *how* we use the earth's resources and creatures. The point, again, in systems language, is not that entropy exists, it is the rate of entropy that is the problem.

The primary question, then, is whether *we are providing for our different needs in an ecologically sustainable way;* that is the first and foremost issue with regard to the 'use of nature' (De Graaff, 2016). What effect does providing for our physical and social needs have on the total ecological system and the maintenance of the ecological balance? In our 'control and use of nature' are we respecting ecological boundaries, at least in as much as we have come to know them? Many, if not most industrial practices are not in harmony with these boundaries. Stabilizing the emission of greenhouse gasses by itself will likely not restore this balance. A second question, closely related, is *what needs and wants do we try to meet and satisfy,* primarily material ones or all human needs, from emotional, social, recreational, creative, relational, and explorative? (De Graaff, 2016). For me, these questions are rooted in and can also be guided by the foundational basis of enlightenment values.

In this sense most industrial farming, forestry, and fishing practices, fossil fuel extraction, mineral mining, manufacturing of steel, building materials, and cement, production and use of many chemicals, shipping and air freight systems, etc. are unsustainable ecologically (De Graaff, 2016). For each of these practices viable alternatives are available or being increasingly developed and progressed. However, without a *radical systemic change* there will be more disintegration, extinction, pollution, poisoning, devastating shortages, and a host of other consequences, like erratic and violent weather, global loss and decline of topsoil, depletion of fresh water, acidification of the oceans, further loss of biodiversity, climate and food refugees, 'overpopulation' and much more (De Graaff, 2016). This is the legacy of our un-economic and exploitative use of natural resources that disregards ecological boundaries and inter-connections.

By now it should be clear that what I am promoting is a scientific vision for a rational society.

What about technology? I, for one love technology, from building my own computers to keeping up with all of the amazing technological advancements. Is there a way we can conceive of technology within an enlightenment frame of reference that can serve and open up technological advancement to all of life? There are a lot of books and studies which discuss how, when technology is liberated from the straightjacket of one-dimensional economic practices, then perhaps it is allowed to foster a very different vision. Here durability, practicality, usefulness, simplicity, elegance can guide technological creativity and innovations instead of obsolescence and the constant pressure of developing 'new products' in the quest for more profits. Even from a material sciences perspective, the development of new sustainable building materials and intriguing new ways of constructing is exciting and inspiring. From smart homes and solar roof panels, small projects and models have been developed in different countries and have been shown at different international exhibitions. This is just a fragment of the rich technological movement currently unfolding.

New technologies and ways of manufacturing are there for us to see. People are doing some amazing things. If the normative principle of understanding resource limits is grounded for technology and manufacturing in terms of sustainability, durability, practicality, simplicity, comfort, elegance, and even democracy, then it is not hard to envision an even more exciting technological future.

In the end, if contemporary society is deprived of decency, justice, health, solidarity, democracy and egalitarianism, enlightenment values can also help guide how we move forward (Bronner, 2004). A fundamental and rational ethics in this regards represents a radical objective and scientific sense of direction that honours the very best of the Enlightenment philosophes while also seeking to contribute to them and the evolution of the enlightenment project as a whole. Informing a philosophy of history and social development, we have discussed how the enlightenment approach is a constant process of enquiry, debate, renewal and development (Bronner, 2004). A phenomenological ethics, in this sense, too, is expressed in a positive notion of enlightenment reason as being non-absolutizing. Concepts, theories, identities, are not static. Moral and ethical direction, too, is not hypostatized but subject to constant reflection and engagement in relation to unfolding reality, the obtaining of new facts and insights, and the changes realized in the process of time, duration and development. At the same time, science teaches us that there is objective reality and that truth must be striven for. On the bases of the lessons of the successes of the modern scientific endeavour, we might begin to develop a progressive and rational sense of social objectivity. In the spirit of the words by Cox: It is the

overall direction that counts, step by step, and our willingness to retrace our steps and change course when needed. What this requires is an open, fluid, multidimensional view of change (Smith, 2014) that is principled on reason instead of its deficit. It requires the notion of Enlightenment reason as normative, practicing, critical, exploring and democratic.

Think, for instance, on a macro level: it is as simple as when our agricultural practices lead to ecological disintegration and climate change, we need to retrace our steps and make a radical change in agricultural practices. We can substantiate this need through our research and our scientific and empirical observations, which tells us something is wrong – the critical realities reveal that practice has gone terribly astray (Smith, 2015e). If our mining practices and the burning of fossil fuels lead to global warming, social injustice and crimes against humanity, we need to stop and come to our senses. If our oceans are acidifying and our fish stocks are depleting, we need to transform our economy. One can see in every aspect of the process that science and reason are at the heart of such a radical enlightenment social philosophy. The same is true on a micro-level. If local people don't have a voice in what happens to their community, or if they can't provide for themselves, or are dispossessed, or can't use the food from their forests, or are deprived of clean water, we can know that something is drastically wrong and that there needs to be a structural change. The very enlightenment principle of democracy – let alone justice, human rights, and egalitarianism – has been betrayed. When a village cooperative becomes dictatorial and does not share equally, we know some fundamental directive for egalitarian relations has been violated. That does not mean that some situations can't be complex and difficult to resolve, but the key directions are usually very clear. This is the point of a phenomenological ethics and the principle of rational, science-based, evidence-based, unbiased social objectivity and enlightenment epistemology.

Concluding thoughts

During the Enlightenment leading scholars not only started to oppose the political, economic, social and moral power of the Church and tradition, but, even more fundamentally, they rejected the *foundation* of the Church's authority. One of the great achievements of the Enlightenment project was that it made a radical break with a supernatural source of Revelation as the ultimate authority, power and norm for all of life. Even though many maintained a belief in God as the originator of the world that set things in motion, they held that it is up to humankind to discover the laws that govern life.

In re-enlivening the notion of universal enlightenment normativity, hence the Enlightenment concept of progress referenced earlier that is seen as open and unfolding, the grounded basis of the normativity of core humanistic values is in

the constant openness and enquiry about their status, about the health and well-being of people and the planet, and about constantly surveying better possibilities and potentially more reconciled alternatives. Rather than protecting the status quo even if all the evidence points against it, a rational and enlightened society would be based on the foundations of the critical meaning of progress. And this, again, returns us to the importance of the value of reason and of the modern scientific endeavour. In spite of the many misinformed and inaccurate accounts of Enlightenment history, reason was never an enemy of progress (Bronner, 2004, p.20). Nor was science. Instead in almost every case the enemies of reason and knowledge were also the enemies of progress (p. 20) and science. Bronner writes more to the point that, "Unreflective passion offers far better support than scientific inquiry for the claims of religion or the injunction of totalitarian regimes. The scientific method projects not merely the "open society", but also the need to question authority" (p.20).

Returning to some of the challenging questions posed earlier, the first and most important answer is to reiterate a science and evidence-based ethics not founded in an external authority. It should be an ethics that is safeguarded as best as possible from bias and prejudice. The objective 'value' of critical assessment speaks in non-biased and rational investigation. And here, perhaps, my own opinion may be further asserted: objective reality, bit by bit, is expressed when we no longer approach the world in a prejudiced way. But it also requires the complexity of holistic, integral and systemic consideration. It requires a fundamental sensibility with regards to the status of epistemology. It requires, too, an openness and sensitivity toward the intricacies of the rigors of complex rational enquiry. Scientific study of the natural world teaches us fundamental lessons as to how we might approach the social world. Suffering, like health, has an objective component. Sustainability and systemic environmental degradation, too, convey distinguishable objective realities. If moral and ethical progress means anything, surely it is the lessening of needless social and environmental suffering and surely this presents one of many objective criteria when it comes to gauging the current status of social development? In countless ways there is an overwhelming body of scientific research and empirical evidence of millions of 'free flourishing human and non-human subjects' being violated to a greater or lesser degree. Their inherent subjectivity, and genuine objective reality, tells us what is 'right and wrong' about their situation and about what needs to change. This argument, I think, would seem to represent the basis of an advancing and holistic conception of enlightenment reason. It calls for a return to a scientific vision of society and not a purely one-dimensional economic view – it calls for serious reflection on the level of epistemology as well as for an evidenced-based and objective approach to how we think about society, its complex relationships and integral developments.

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