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Had we but world enough, and time: integrating the dimensions of global justice

Author Information:

Tim Hayward

School of Social and Political Science, University of Edinburgh, Edinburgh, UK

3.09 Chrystal Macmillan Building, 15a George Square, Edinburgh, EH8 9LD, UK

+44 (0)131 650 4238

Email: tim.hayward@ed.ac.uk

Yukinori Iwaki [**corresponding author – Please use the email address as the primary means of contact.**]

School of Social and Political Science, University of Edinburgh, Edinburgh, UK

19/1 Bristo Place, Edinburgh, EH1 1EZ, UK

+44 (0)758 346 2511

Email: s1000816@sms.ed.ac.uk

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Had we but world enough, and time: integrating the dimensions of global justice

Abstract:

Requirements for a decent life are to be found in the dimensions both of human *time* and ecological *space*. While the latter has attracted attention from some global justice theorists, the former is a comparably neglected matter. This paper aims to integrate temporal and ecological perspectives in order to provide an enriched conceptual framework for grasping what global justice means today. We begin by showing that while contemporary political philosophy tends to assume a somewhat undifferentiated conception of time, treating temporal justice as a future-oriented concern distinct from issues of intra-generational justice, there are richer understandings to be found in some influential schools of critical social theory. Drawing then, particularly, on Alf Hornborg's theory of 'unequal exchange of time and space', and supplementing this with insights from David Harvey, we analyse three ways in which disadvantage can be perpetrated in the dimension of time. We then show how those categories of temporal disadvantage broadly correspond with the three basic rights identified by Henry Shue. On this basis, we claim there is a strong argument for regarding temporality as an integral aspect of global justice here and now, for the generation already – although too often precariously – living.

Keywords: global justice; time and space; ecological space; time-space compression; unequal exchange; basic rights

Introduction

There are dramatic inequalities globally. Within political theory there are different views on whether or how this might be a matter of injustice. In this paper we focus on an aspect of inequality that involves people being advantaged or disadvantaged in relation to each other. We take one party to be advantaged in relation to another if the one enjoys a net balance of benefits over burdens arising from a common set of

circumstances while the other bears a net balance of burdens over benefits. We do not assume that one party being advantaged over another is in itself necessarily unjust, for we do not assume that any kind of inequality is necessarily unjust. The only kind of situation we do consider presumptively to require redress as a matter of justice is one of common circumstances in which some people have less than sufficient access to the means for a decent life while others have more than enough. In what follows we contribute to a framing of those circumstances that focuses the question of justice in a distinctive way.

Our aim is not to specify in close particulars the sufficient conditions for a decent life, but to highlight in more general terms how these can be conceptualised in the distinct yet intimately interconnected dimensions of space and time. The need for space, and space with certain qualities, to live in, is generally recognised as of fundamental significance for political philosophy, as are questions of justice in relation to the spatial dimension of resources: for material resources physically occupy space, and rights in relation to them are understood to involve various kinds of spatial distributions, including territorial and ecological. The dimension of time, by contrast, has figured less prominently in discussions of political theory, particularly in relation to theories of global justice. Yet everything that exists exists in time, and just as we can distinguish different kinds of space, so we can also think in terms of different temporalities: not only are there different scales along which time has significance for us – e.g. the geological, the historical, the generational, the annual, and the momentary – there can also be significant nonsynchronicities within and between societies that affect different people in normatively significant ways.

So when we speak of sufficient access to the means of a minimally decent life we understand these not only in terms of the ecological space that furnishes our

material requirements but also in terms of the comparably neglected matter of human time. However, we do not assume that there is some uniquely determinate way of saying if or when a person has sufficient time, and we do not assume time is plausibly regarded as a ‘metric’ of justice. Nor do we assume that human temporality, any more than ecological space, can be reduced to mere physical dimensionality.

A question, accordingly, is how temporal considerations can appropriately be integrated into an account of global justice.

This question has not figured prominently in the philosophical literature. However, as we show in Section 1, some helpful insights are to be found in the work of critical social theorists, including David Harvey and Alf Hornborg, who integrate spatial and temporal dimensions into their conceptual framework. Such work yields a basis for understanding relationships between different temporalities and appreciating how in social relations there can be significant sorts of interchangeability between space and time insofar as questions of social access and control are concerned. On that basis we can appreciate the pivotal role, in linking to normative concerns about advantage and disadvantage, played by the idea of unequal exchange of time and space. Thus, as we discuss in Section 2, although the idea of unequal exchange has no place within mainstream economics, it can meaningfully be applied to aggregate movements of energy and materials in the context of time-space compression that technological advances have brought into being. We integrate Hornborg’s account of this with the conceptualisation by David Harvey of how the territorial logic of unequal exchange relates to the distinct capitalist logic of accumulation. We are thereby able to appreciate how global inequalities can involve disadvantages in the dimension both of ecological space and human time.

While the question of what it means to be disadvantaged with respect to ecological space has been discussed extensively elsewhere (cf. Hayward 2006, 2008, 2009), the question of how global inequality manifests injustice with respect to time has received less attention. The analysis we offer in Section 3 suggests that there are at least three distinctive ways in which disadvantage or exploitation can be perpetrated in the dimension of time. We then show, in Section 4, how those three concepts of disadvantage in time broadly correspond with the three kinds of basic rights identified by Henry Shue (1996) that mark the threshold the sinking below which triggers a requirement of justice to redress.

Our argument is thus that by analysing the different ways in which time is important for the quality of a life, and, indeed, constitutive for the experience of life at all, the framing of questions of global justice can be enriched with its inclusion. In conclusion we emphasise a practical motivation for this argument. When political philosophers think about temporality, it is most often as a question concerning responsibilities with regard to the future – a question of *intergenerational* justice. Our emphasis is on how temporality should be regarded as an integral aspect of global justice here and now, for the generation already living, and prematurely dying.

1. Conceptualising the circumstances of global injustice: recognising the role of temporality in a dynamic account

In this section we consider, in general terms, how temporality can be brought to figure in a characterisation of the circumstances of global justice, or injustice. The dimension of space standardly forms part of the characterisation, featuring in ideas of rights over territory, for instance, and in a more general acknowledgement that benefits and burdens relating to spatial distribution of resources provide part of the

subject matter for an account of justice. The dimension of time, by contrast, has been less fully integrated. The contemporary philosophical literature on global justice does not accord particular prominence to the question we are addressing here. When the dimension of time does figure, this is most often in relation to concerns about the rights or welfare of future generations, or about obligations with regard to the future. Relatedly, we find some critical discussion of whether future costs and benefits can justifiably be discounted relative to present values. Recently, concerns about the potential threats that our technological interventions in the natural order may be creating have led to questions being asked about whether a precautionary principle in regard to future-orientated actions might be appropriate. The problem of climate change, furthermore, has been seen to highlight how temporal delays between the causes and the effects of serious harms can result in asymmetries – between causing or benefiting from carbon gas emissions and bearing the burdens or paying the costs of their effects – that have implications for distributive justice.

In all such discussions, however, a quite simple conceptualisation of temporality is assumed: discussions are framed in terms of what happened in the past, what is happening now, and what we should ethically aim to do in the future. In one way, this might seem entirely unremarkable: time is a constitutive condition of the existence of all of us, its flow carries us all along together, and its arrow is in a single direction: there is a past, when our ancestors lived; a present, when we live; and a future, when our descendants will live. Furthermore, it is also assumed that questions of intergenerational justice are distinct from those of contemporary global justice, because in the one case the people concerned are separated in time and in the other they are separated in space. These two assumptions, namely, that time can be regarded as a unitary flow carrying all along with it in contemporaneity, and that

temporal relations are entirely distinct from spatial ones, are subject to interesting kinds of scrutiny in the traditions of critical social theory that we shall draw on. But we will first establish why there is a need for scrutiny.

To understand better what the concern is we shall introduce it by way of its analogue in the dimension of space; on that basis we will go further to note also the substantive connection between the two.

Space, purely as a dimension, is probably of little interest to anyone except some advanced physicists. Although we all ‘need space’ in a variety of contexts, each of the needs is for something other than the empty dimensionality of pure extension. There is enough physical space on the surface area of Los Angeles to fit all the people alive today. Pressed into that space we would no longer be alive, of course, but nor would we remain alive if we were relocated to the more ample territorial space of an inhospitable region like Antarctica or the Sahara. The point is that it is not extensionality, but the resources and ‘ecological services’ required for human survival and flourishing that really matter. This is to refer to the cluster of ideas developed more fully elsewhere in terms of a concept of ‘ecological space’ (cf. Hayward 2013). This is defined in terms not of homogeneous three-dimensional extension but of the various functionalities nature furnishes in various configurations that constitute ‘niches’ for different species populations, any number of which might be found within a single three-dimensional space. The ‘realised niche’ of humanity – i.e. the actual totality of ecological space humans have come to utilise – now far exceeds what would constitute our ‘fundamental niche’ absent the extraordinary enhancement of our natural powers to adapt our environment through technological developments. This has now happened to such an extent that not only do we seriously encroach on the niches of other species – driving multitudes of them to extinction through habitat

loss and other deleterious ecological changes – but we also become increasingly reliant on technology to cope with our own changing environment. Space as it concerns social scientists or political philosophers, then, is not simply a container for human activities; the space that matters to us is constituted by specific valuable functionings; because these are not inexhaustibly abundant, there is competition for access to them. For this reason, access to ecological space is a matter of justice.

So how is temporality a matter of justice? The first thing to note is that any functionally describable kind of space is itself temporal. Thus ecological space is inherently temporal in all its constituent processes. In fact, these processes unfold with myriad differentiated temporalities, from sub-atomic events, through the reproduction of cells, to the life cycle of an organism, the succession of ecological communities, and developments of planetary cycles such as carbon and water, and the climate conditions as a whole. Thus, a human life – which exists in a complex metabolism of all such processes together with further complex processes of psychology and social relationships – can be looked at from a variety of temporal perspectives. This means that different aspects of human life and flourishing are subject to different temporalities. Questions of justice can potentially arise whenever choices have to be made between different actions that involve different temporal advantages and disadvantages for different people.

We can build the account further by referring to two kinds of insight that are in fact well developed within literatures of critical social theory. These relate to what we shall refer to as ‘temporal differentiation’ and ‘time-space interchangeability’.

The general idea of temporal differentiation can apply in a variety of more complex ways, but at its simplest the idea is that some people will be ‘ahead’ and some ‘behind’ with regard to any tangible criterion of temporal development.¹ Quite

typically, the criterion will be the degree of technological advance availed of. Today, for instance, while developed countries are dominated by the motor car, many people elsewhere still depend on draught animals, if they are even lucky enough to have these, while others are already living in a post-petroleum future of solar-powered vehicles. Temporal differentiation, in this sense of ‘non-synchronicity’, can involve quite significant asymmetries – in terms of access to basic goods and discretionary time – within global generations.

A question is whether these asymmetries can amount to differences of advantage and disadvantage that come within the purview of justice and even human rights concerns. Taken in isolation, they might not. The simple fact that some achieve a particular development prior in time to some others can be regarded not only as unobjectionable but even as positively desirable insofar as it may open opportunities for others to follow or, indeed, leapfrog. What can be more problematic is the sort of situation in which the good achieved by the first developer is zero sum or even negative sum: in such situations, those who would follow can be impeded from pursuing their own development path, or even set back. The question of whether and when temporal differentiation prompts concerns of justice, then, is sensitive to such empirical matters. While a normative theorist cannot be expected to settle empirical questions, it does behove us to reflect on the empirical assumptions we make when setting out a theory that is intended to have some potential application in real contexts of global justice.

To this end, it is appropriate also to integrate the second key insight from the critical literature. This is that at a certain level of generality, and for certain purposes, space and time can be regarded as *interchangeable*. If this is illustrated by the thought that, for instance, one might go from the horse-drawn age to the motor age by, say,

moving from rural Azerbaijan to America, the theoretically significant point concerns the more fundamental circumstances that make this possible. For whether we regard such a transition as spatial or temporal – which, in a sense, is a matter of a kind of Gestalt shift – what is substantively significant is one's altered collocation within a global configuration of social relations. Alterations of social relationships can be brought about in many different ways, and with different distributions of satisfaction, welfare, and so on. Technology, as it becomes more sophisticated, facilitates ever more dramatic alterations that can be tracked in both temporal and spatial dimensions. An influential version of this general thesis is provided by David Harvey's (1989) concept of *time-space compression*, referring to how the temporal acceleration of economic activity diminishes spatial barriers and distances. This is especially evident in global markets for commodities, currencies, and financial products, where movements at the speed of electrons can alter the basic conditions of livelihoods of masses of people. While global markets allow capital movement to be synchronised to the nano-second, lived realities do not share in this unified temporality. Yet the massive transfers can have extensive implications for real people living in real ecological space: fluctuations in commodity prices, for instance, can make the difference between a thriving livelihood and poverty for many people engaged in primary production. Extensive command over ecological space, and thereby also over the livelihoods of people, can thus be concentrated in the relatively few hands that control global movements of capital.

Even the fact that social arrangements can exploit the interchangeability of space and time is not in itself necessarily problematic, however, for it can be regarded as a potential source of considerable benefit to humans. The inequality that is stimulated along with it can be seen as a natural tendency of global economic

arrangements because of their inherent *dynamic*. Since innovation leads to advantage, unevenness of prosperity is a straightforward consequence. This in itself does not preclude the innovation yielding a positive sum outcome so that even the less advantaged do better than they did before. Hence the standard liberal view on global inequality is that there is nothing inherently wrong with it, and correctives to it only need to be applied when an inequality is also *unjust* in some more specific way. Time-space compression, then, is in principle something that all people might benefit from, for it opens the possibility that we all might get more out of the natural conditions of our existence, thanks to our technological leveraging of its capacities, than we otherwise would. This, indeed, is what is generally meant by *progress* in our culture. Hence the role for normative theory, on this view, is to suggest adjustments to distributive outcomes where the benefit to humans in aggregate does not quite conform to what a theory of justice would commend, while, of course, examining in detail what theory of justice should be the basis of the commendation.

But if we cannot assume time-space compression necessarily leads to injustice, we should also not simply assume the contrary. Particularly because of the possibilities of leverage it exploits, differences of advantage that may initially seem innocuous can be compounded into much more egregious differences. Insofar as such a process is dynamic and systematic, there is a possibility of its being impervious to attempts at amelioration that do not get to its roots. We therefore cannot rule out the possibility that temporal differentiation – as manifest especially in uneven development – can be unjust, and in systematic ways, as a result of time-space compression. We certainly need to avail of a theoretical perspective that allows us to comprehend such potential circumstances of injustice. Since Alf Hornborg offers a

helpful outline of such a perspective, we shall draw on that in the account offered in the next section.

2. The unequal exchange of time and space

A critical perspective on the circumstances of global justice that allows integration of the dimensions both of space and time in an account of social relations has at its core the idea of unequal exchange. This is an idea that does not have a place in mainstream economic thinking: the exchange of socially productive resources cannot be thought of as ‘unequal’ as long as it is conducted on the basis of parties’ free agreement and price is understood to be the value defined by the free play of market forces.

Hornborg (2003, pp. 5R-6L) recognises that ‘there is no specifiable relation between the amount of productive potential that has been invested in a commodity and the way it will be evaluated on the market’. However, he believes unequal exchange can be conceptualised without recourse to the notion of value, if we step back and observe the geographical movements of the usable energy and material resources that are vital for economic development and our life-support systems. What such observations can reveal is how, when savings of space and time, made possible by technology, are experienced in one part of the world, someone else in the world system can be losing time or space in the process. The phenomena of time-space compression that Harvey observes, claims Hornborg (2006, p. 80R), presuppose a process of ‘time-space appropriation’. Time-space *compression* in one region of the world requires time-space *appropriation* elsewhere. On this basis we are able to conceptualise uneven development not just as a matter of differential lead-times in reaching certain milestones of development but as a more structural kind of inequality.

From the perspective developed by Hornborg, through the inter-societal exchange of hours of labour (human time), on the one hand, and access to raw materials, energy, hectares of land/water and waste sinks (ecological space²), on the other, affluent industrialised societies are seen to gain ever greater command over these socially productive resources while poor underdeveloped societies are, to that extent, left with less development potential. In explicating this process, Hornborg draws on the work of ecological economist Nicholas Georgescu-Roegen (1975) to highlight the significance of what the Second Law of Thermodynamics tells us about entropy as an index of disorder and (un)available energy: higher entropy means greater disorder and lower productive potential, while lower entropy means greater order and higher productive potential. Configurations of matter, too, can be more or less ‘orderly’ – and thus conveniently available for human productive use – and their dissipative transformations in processes of industrial production are analogous to the increase of entropic energy. Since production processes are subject to the Second Law of Thermodynamics, finished products represent an increase in entropy and disorder, compared to the resources they are produced from. Thus what is thought of from an economic perspective as an *investment* of human time and ecological space can be seen, from the material perspective, to involve the *dissipation* of energy and order: the productive potentials brought into use in production processes cannot be employed again.

Hornborg claims that if the industrialised economies of affluent societies, characterised by their ‘dissipative structures’, have been able to seem immune to entropic consequences such as environmental degradation, this is because their internal order is maintained by importing low-entropy matter-energy (in the form of various raw material resources) from, while exporting high-entropy matter-energy (in

the form of industrial commodities and waste) to, the less developed parts of the world. A key point is that the price of finished products does not reflect an evaluation of what it would take to restore the original productive potential that has been dissipated through production processes. In fact, he argues, if we take a longitudinal view of the transformation of natural resources into marketable industrial products, there appears, in aggregate, to be an *inverse* correlation between price and productive potential: the higher entropy and the greater disorder products/commodities generate through their production processes and the lower productive potential is left in them, the higher market price they gain:

‘in order to stay in business, of course, every industrialist will have to be paid more money for his products than he spends on fuels and raw materials. At an aggregated level, then, this means that the more resources that have been dissipated by industry today, the more new resources it will be able to purchase tomorrow.

(Hornborg 2001, p. 45)

Hornborg thus believes that, as an inevitable consequence of the entropy law and market exchange, ‘industrial centers exporting high-utility commodities will automatically gain access to ever greater amounts of available energy from their hinterlands’ (2003, p. 6R), while those ‘hinterlands’ that are more directly involved in resource extraction, on the other side of the story, are exploited both as sources of productive potentials (human time and ecological space) and as sinks of entropy (industrial commodities and valueless waste).

Hornborg’s concern is to lay bare the basic mechanism that generates an *inter-societal* exchange of human time and ecological space. His analysis helps us appreciate, in general terms, how geographical movements – particularly between affluent societies and poor societies – are generated through processes of

accumulation. In doing so, he sets out what David Harvey refers to as the ‘territorial logic’ of global capital accumulation. This, however, as Harvey (2005, pp. 91-92) emphasises, is one of two distinct logics that are intertwined in the process of global capital accumulation – namely, a *territorial* logic and a *capitalist* logic. Under the territorial logic, political governments strive to ‘take advantage of the asymmetries that arise out of spatial exchange relations’ (p. 92) for the collective advantage of the national society: this means aiming to attract material benefits to the nation’s territory. The working of this logic results in the unequal inter-societal exchange of socially productive resources. Under the capitalist logic, those with command of capital deploy it wherever profit is best attained, because they ‘seek individual advantage and are responsible to no one except themselves and (to some degree) shareholders’ (p. 91). Following this logic, the economic power to command the productive infrastructure accumulated through the inter-societal exchange transcends the territorial borders of societies and concentrates into the hands of those who command capital.

The two logics do not generate identical incidences of advantage and disadvantage. Due to the territorial logic, there are workers, in affluent and rapidly developing societies, who – as long as capital finds propitious domestic outlets – can be seen as beneficiaries of the global economy. Due to the capitalist logic, there are affluent minorities in poor countries, and the individuals concerned may or may not be drawn from previously dominant territorial elites. Meanwhile, the majority of workers in poor and developing societies are on the disadvantaged side of both logics and make up the mass of the global poor.

It makes sense, then, to understand as the Global Affluent those who are advantaged by either the territorial or the capitalist logic, and to see the Global Poor

as those who are disadvantaged by both. In keeping with other normative approaches that aim to protect the least advantaged, our main focus of moral attention is on those who are so disadvantaged as to be compromised in the enjoyment of the most basic human rights. (Hence we are not concerned here to offer fine-grained analysis of economic strata that might be regarded as marginally advantaged or disadvantaged.) Insofar as severe disadvantage is manifest in inadequate access to resources – which we understand comprehensively in terms of ecological space, and thus as including environmental conditions as well as more conventional social goods – the relevant thresholds have been quite thoroughly discussed in the literature of global justice. Exactly how the temporal dimension should figure, though, is not so well understood.

3. Three categories of global time injustices

We have acknowledged Hornborg's suggestion that time-space compression presupposes time-space appropriation, but while we have understood what it means for the tangible components of ecological space to be subject to appropriation, it remains to clarify how time enters a picture that can be normatively assessed. We referred earlier to temporal differentiation, but we need to consider more carefully now what this might mean.

Something about inequality in relation to time is that we should not expect it to show up as conspicuously and clearly as inequality in relation to tangible resources can. Therefore situations of temporal injustice may be harder to recognise and diagnose. The richest person alive can make only marginally more of their allotted time on this earth than the average person can; but the worst off can have an unutterably miserable time on earth. These observations point to an extraordinary asymmetry: however many millions or even billions of people might be driven into

effective servitude with all prospect of any free or rewarding time removed from them, the rich minority can never make a remotely equivalent gain for themselves. As with the unacknowledged damage to ecological systems, there is a sheer waste of lived temporality under conditions of extreme time-space inequality.

Our aim in this section is to set out more explicitly what we mean by deprivation in relation to time. We shall highlight three broad categories of global time injustices that can arise under the existing global system. Doing so will enable us to grasp a fuller picture of the current circumstances of global inequality.

(a) Deprivation of a source of social wealth: Two sources of social wealth that are potentially conducive to the end of human well-being (e.g. continued life, bodily health, bodily integrity, etc.) are ecological space and the time people spend for socially productive purposes, i.e. labour time.

As we explained above, the inter-societal exchange of ecological space and labour time is governed by the dynamic mechanism through which industrialised societies gain ever greater access to those resources while underdeveloped societies are left with less development potential. The ultimate beneficiaries of this exchange process are those who gain the economic power to use/occupy/command the fruits of the resources under the existing economic system. Meanwhile, the poor are liable to be excluded from the benefits of ecological space or/and exploited as sources of cheap and long labour. Under the existing global system, in short, labour time is exchanged in such a way as to benefit the Global Affluent while leaving the Global Poor without material means adequate for subsistence.

(b) Deprivation of discretionary time: Besides the economic aspect as a potential source of social wealth, human time has another important – personal – aspect as a prerequisite for a person to lead an autonomous life. ‘Autonomy’ – the

human capacity to choose one's path through life in accordance with one's own life plans, projects or goals – is an important human value, not simply because the empirical evidence shows that many people actually desire to lead an autonomous life (cf. Peterson 1999; Veenhoven 1999), but also because the possibility of doing so allows humans to develop and reflexively apply their highest emergent faculties and capacities. Therefore, societies should not suppress such fundamental human capacities but aim at supporting a state of affairs in which individuals can lead an autonomous life that allows their full unfolding.

Time has an important implication for this central human value of autonomy and the capacities of practical reasoning. As Robert Goodin (2010, p. 2) points out, 'whatever plans or projects one might care to pursue, without time to devote to them an absolutely essential input would be missing'. So, a person needs a certain amount of time that is not dictated by such 'necessities of life' as personal care, labour for the accumulation of social wealth, etc., i.e. what Goodin calls 'discretionary time'; and those who are substantially (or even completely) deprived of 'discretionary time' can be said to lack an important aspect of autonomy, i.e. what Goodin calls 'temporal autonomy' (one's discretionary control over one's own time) (cf. also Goodin *et al* 2008, pp. 27-36).

Under the existing global system, people in one class, the Global Affluent, are gaining extensive command over material means of life, while those in another class, the Global Poor, are exploited as sources of cheap and long labour or deprived otherwise of their secure access to ecological space, and thereby left without material means adequate for subsistence. Those who lack material means of subsistence are *temporally* disadvantaged too, because they are in the position where they need to devote most of their time to trying to eke out any means of life and thereby lose a

decent amount of discretionary time. Meanwhile, those who have extensive command over material means of life are able to employ those means to fill the time they have under their discretionary control; in this sense, they have extensive temporal autonomy.

(c) *Deprivation of the physical requirements for human life in time:* The most basic relation to time for human beings is their physiological dependence on the time necessary for a broad range of reproductive processes, from the reproduction of individual body – i.e. the maintenance of physical well-being (continued life supported by bodily health and integrity) – to reproduction in the generative sense. A person, more specifically, needs time for personal care (e.g. resting, eating, bathing, procuring material means of subsistence, etc.), on the one hand, and time for familial care (e.g. birthing and rearing of a child, caring activities for other dependants, etc.), on the other. Also, another temporal factor to consider in relation to the physical well-being of humans is that they, as mortal beings, live temporal lifespans of certain length. Deprivation of the time necessary for these activities affects the poor in many ways, including the following ways.

First, the poverty and environmental degradation attributable (at least partly) to the existing global system can affect the time the poor need for the maintenance of their physical well-being by increasing the time they need for procuring means of subsistence, or, in the worst case, by reducing the length of their lifespan. This seems to be the case in the current global state of affairs in which a large number of people lack secure access to food, clean water, basic sanitation, adequate shelter and essential medicines (or medical care), or die as a result of poverty or air pollution (UNDP 1998, p. 25; 2006, pp. 33, 174; WHO 2014; cf. also Pogge 2008, pp. 2-3).

Secondly, some of those industrial commodities from which we are benefiting as consumers may be produced through such processes that impose unhealthy or unsafe working conditions upon the poor.³ These working conditions are likely to cause time deprivation by prolonging the time the victims will need for personal care (and thereby also reducing their discretionary time as well): those who suffer ill health or bodily damage have to spend more time (and energy) on sleep, curing, recovery, medical care, rehabilitation, etc., than they would otherwise need to. Also, because humans are sentient beings, damage to bodily health and integrity can shorten the victims' temporal lifespan.

Thirdly, many of those in extreme poverty are subject to such inhumane working conditions as forced labour or child labour. According to ILO reports (2010, p. 13; 2012, p. 1; 2013, p. vii), the total number of forced labourers globally amounts to 20.9 million, while 168 million children are the victims of child labour.⁴ Forced labourers and child labourers are particularly vulnerable to such physical threat that can prolong the time they need for personal care or cut short their temporal lifespan, since they lack any choice (and voice) with regard to their working conditions. Noteworthy is that the temporal disadvantage of forced or child labourers can be compounded by the lack of choice about their occupations (i.e. the lack of temporal autonomy about the activities to which they will direct their labour time in the first place), and the deprivation of their labour time in such a way as to leave them without sufficient means of subsistence. In addition to these, child labourers are also deprived of a temporal precondition necessary for their enjoyment of a fulfilled life in adulthood: the time they need for developing their mental and emotional faculties and the skills they can rely on for future occupations (i.e. time for play, education, etc.).

Finally, with regard to the use of time for familial care, there is an issue of gender inequality that should not be overlooked. Women, in pretty much every culture, rich or poor, have to spend far more time than men engaged in activities necessary for the well-being of their children and other dependants. Also, because the less infrastructure, technology, and resources there are at one's disposal, the more one has to do oneself; the harder are the conditions, the more there is to do in the first place. It is possible, then, to argue that, while women will generally have more of their time put to the end of familial care than men, poor women are liable to fare even worse than poor men. This is also likely to register in stresses on mental health for people who quite literally spend all their time worrying about how their families are going to get by from one day to the next.

We see categories (a) through (c) as describing the circumstances of 'time injustice', the injustice which occurs through the mediation of time deprivation in various forms – among which we focused on (a) deprivation of labour time, (b) deprivation of discretionary time (necessary for an autonomous life), and (c) deprivation of the time necessary for the physical well-being of humans. These are circumstances of time *injustice* since, as we shall see shortly, these infringe upon Henry Shue's tripartite set of basic human rights that we take as the benchmark of justice and injustice.

4. How the temporal perspective deepens the understanding of the human rights that provide criteria of global justice

The temporal perspective, we would therefore argue, is no less important than the ecological perspective for understanding the circumstances and requirements of justice. By adding temporal considerations into the analysis of the conditions of

justice and injustice, in the circumstances of radical inequality and ecological overshoot globally, we may attain a more complete picture of how the compound advantages of some are pressed and enjoyed at the expense of corresponding compound disadvantages endured by others. In particular, the analysis helps deepen the conceptual link between the substantive purposes of human rights and the more impersonal demands of justice. For while the ecological perspective allows us to theorise how institutionalised norms of rights regimes can favour mere rights of property over human rights, the temporal perspective allows us to see more fully what those claims of human right are grounded in and consist of.

We may take as a moral benchmark for identifying the wrongness of the various kinds of temporal deprivation the idea of basic rights as influentially presented by Henry Shue in terms of rights whose enjoyment is a precondition for any other rights at all. We will show that the three kinds of temporal deprivation closely map onto the three areas of human need and well-being that Shue categorises as subsistence, liberty and security.

(a) *Deprivation of a source of social wealth*:- The use of time in contributing to social production relates to basic rights of *subsistence*: time is expended on these activities by an autonomous agent in order to provide (at least) subsistence for him/herself and those he/she has responsibilities for or towards. In more affluent economies, people may labour to achieve a quality of life well above subsistence, but the human rights issue concerns preventing people from falling below that line: when the fruits of their labour are expropriated to leave them below that line, there is a violation of human rights and an injustice. This deprivation can also materially occur through the medium of ecological marginalisation: the more marginal one's subsistence conditions, the more time one has to devote to trying to eke out any kind

of living at all. In that case, the rights violation is not a result of direct expropriation of fruits of labour but it may be mediated through the property relations that allow occupation by others of needed access to ecological resources.

(b) Deprivation of discretionary time:- The value of time for the exercise of individual autonomy relates to the basic rights associated with liberty. Empirical research into the nature of poverty tends to emphasise the importance of autonomous time for the living of even a minimally decent human life (Boltvinik 1998). In that respect, the deprivation of temporal autonomy over discretionary time is a consequence, or part, of the deprivation of time as a source of social wealth. More directly, for people to be kept in conditions where they have no freedom at all from demands of labour is already recognised to be a violation of human rights as through slavery or servitude. Understanding the integral and constitutive significance of time for the exercise of autonomy helps in understanding, substantively, what makes a circumstance bad in such a way that we may regard it as a violation of human right.

(c) Deprivation of the physical requirements for human life in time:- Time necessary for individual health and survival relates to basic rights of personal security. The amount of time in a lifespan that an individual has for the leading of a minimally decent and healthy life is something that is strongly influenced by social and ecological conditions, and certain minimal conditions of health and welfare are already recognised as human rights. Lives that are cut short through violence or preventable disease may be subject to violations of subsistence and liberty rights, but there is additionally a dimension of personal security that is thereby violated.

So we believe that consideration of the temporal dimension contributes to fleshing out the requirements of human rights, particularly in establishing thresholds for basic rights. This framing would also support further analysis addressing

problematic questions. For instance, we know that people who live in affluence may often be time-poor but we would not want to say they are victims of radical inequality, inequality of an egregiously unjust kind: by distinguishing the various ways in which temporality can affect individual well-being and be affected by social relations, a suitably nuanced approach can be taken towards such questions.

Conclusion

We have argued that injustices relating to unequal access to material means of life can be compounded by temporal injustices. Advantages with respect to the use, occupation or command of ecological space can be leveraged to secure advantages over others with respect to time; meanwhile, disadvantages of time can lead to further disadvantages of access to ecological space, and thus there is a vicious circle. Such a dynamic appears actually to be at work in the world today; at the very least, it seems to us, those who think normatively about global justice should take seriously the possibility that this is so. When theorising global justice, we certainly suggest, the problem of temporal justice should not be siloed off as a question predominantly concerning responsibilities of this generation with regard to the future: it is a problem of the reality and trajectory of the contemporary dynamic relationships of advantage and disadvantage in the global economy. We believe there is good reason to be cautious about the prospect of economic and technical progress being the basis for a more just future for the world's population. The dynamic of that progress could conceivably lead to future people benefiting from the human ingenuity that goes into converting ecological processes into human-constructed assets, and in perpetuity; but whether that will happen is another matter. Meanwhile, temporal justice is not only about the future, and we know that time will run out for individuals on the wrong end

of global inequality before any benefit might ensue, and their children will be orphaned into poverty. We know this, because it is already happening.

Were there but world enough, and time, the worst off could perhaps wait for the promised effects of trickle down that provide the only warrant for suggesting that the global economy is merely imperfectly just rather than profoundly unjust in its core structures. The problem is, there is not.

Notes

1. The term ‘temporal differentiation’ is intended here to indicate an area of inquiry rather than to name a component of a theory. There are more specific concepts that would be instances of such inquiry, an early influential one being the *Ungleichzeitigkeit* of Ernst Bloch (1962).
2. Hornborg uses the term ‘natural space’, but we go with the term ecological space for reasons set out in work by Hayward (e.g. 2013, 2014). With the renaming we do not intend any significant amendment of Hornborg’s argument.
3. Recently, UNIQLO has been reported to have imposed such unfavourable working conditions on its factory workers in China (Nikkei Asian Review 2015).
4. We are aware, for instance, that some multinational corporations such as NIKE, Gap and Nestlé are alleged to have employed child labour or forced labour at some points in their production chains (BBC 2000, 2010).

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