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Published in:
Organization & Environment

DOI:
10.1177/1086026606288227

2006

REDUCING ASYMMETRIES IN INTERGENERATIONAL JUSTICE

Descent from Modernity or Space Industrialization?

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Normally, contractual conceptions of intergenerational justice regard the responsibility held by each generation as symmetrical. This article argues that the late modern society has created an asymmetry because of its unprecendented instrumental and destructive capacity. Historically unique risks such as thermonuclear destruction, global ecological deprivation, and resource depletion all point at this asymmetry and unequal distribution of responsibility between generations. Extending one contractual device used by John Rawls in line with what Brian Barry has suggested, this article analyzes the roots of the asymmetry and presents two political strategies to end it. The first strategy resembles the traditional deep ecological programme whereas the second holds an imaginative vision of a human future in space. Both strategies seek to reduce the influence present generations exercise on the level of opportunity available to future generations. The key normative argument is that intergenerational justice requires spatial and temporal limits on political action.

Keywords: *intergenerational justice; sustainable development; deep ecology; space industrialization*

The fundamental difference between present generations and those of historical times is one of instrumental capacity. The current condition derives its exclusivity from our unprecedented capability of transforming the physical world, a capability that reverberates into the future and dramatically affects not only contemporaries but also generations to come. Historically unique risks such as thermonuclear destruction, global ecological deprivation, and resource depletion all point at this unequal distribution of responsibility. This article in a normative manner analyzes this asymmetry, or critical phase, from within a contractual conception of justice, arguing that it is unjust that certain

Author's Note: *I would like to thank Marcel Wissenburg, Piers H. G. Stephens, Åsa Mattsson, and an anonymous referee from* Organization & Environment *for helpful comments on earlier versions of this article.*

Organization & Environment, Vol. 19 No. 2, June 2006 233-250
DOI: 10.1177/1086026606288227

generations are allowed to (a) make irreversible decisions about resource allocation and (b) undertake actions that could undermine the opportunity of future generations to maintain what John Rawls (1999) defined as "a state of society with a material base sufficient to establish effective just institutions within which the basic liberties can all be realized" (p. 256). Accepting this line of argument, intergenerational justice seems to require that we seek some sort of "exit strategy" capable of reimposing spatial and temporal limits on political action. In the concluding sections of the article, two such strategies are presented and also briefly evaluated.

RAWLS AND INTERGENERATIONAL JUSTICE

It is an immediate observation that the current level of human welfare owes no small part to the work of our ancestors. Although perhaps not teleological in nature, as Immanuel Kant (2003) suggested when he saw earlier generations carrying out toilsome labour only to prepare a "foundation on which the later generations could erect the higher edifice which was Nature's goal" (p. 39), we still cannot deny that many institutions and modes of social interaction that we today take for granted are only possible to imagine based on earlier historical achievements. Naturally this is the case with scientific knowledge; however, the same logic seems to apply equally well to the accumulation of physical capital, especially infrastructure. Seen as an aggregate, each generation is naturally confronted with the question of how to allocate its time and resources. Just as in the case with a single individual, a trade-off between immediate and future rewards is to be sought. Every generation, with the exception of the first, will be better off if the previous decides to accumulate physical capital, theoretical knowledge, and practical experience. This accumulation, however, does not have to be deliberate in nature. Already from Adam Smith we recall that self-interested micromotives may lead to unintended yet desirable outcomes on the macro level. Naturally, the same logic applies between generations. For instance, demand for immediate consumption may lead to the establishment of new trade routes that, in turn, generate future economic growth (Cosimo, 2004). Nevertheless, the classic dichotomy of saving versus consuming remains applicable to most intergenerational distributive conflicts as later generations will indeed benefit if earlier generations decide to invest in physical capital or new knowledge instead of merely maintaining a steady state. Finally, we must keep in mind that saving also comes in a negative sense, meaning not harming future generations.

For Rawls the purpose of intergenerational accumulation was rather straightforward, namely, to bring forth the material conditions required to support just institutions according to what the parties would agree on in the original position. Starting at a very primitive level, this is self-evident. To be at all able to talk about "justice" we have to move beyond genuine conflicts of interest (as when two sailors are stranded on a deserted island with just enough food to support one of them). Genuine conflicts of interest, as in starvation or access to medical treatment, cannot be resolved through deliberation. However, the required level of material resources is not necessarily one of affluence; Rawls (1999) held that beyond some point, great wealth is "more likely to be a positive hindrance, a meaningless distraction at best if not a temptation to indulgence and emptiness" (p. 258) on the way to a just society (Barry, 1978, p. 210). As actual exchanges between generations are possible only in one direction because of the time arrow,

Rawls (1971) found that the difference principle, stating that injustices are allowed only if they benefit the worst off, could not apply to the problem of savings between generations (p. 291). Unfortunately, the argument behind this conclusion is rather unclear. Apparently Rawls believed that the difference principle would require later generations to improve the situation of the least-fortunate first generation and because this is impossible he held the difference principle was inapplicable as it "would seem to imply, if anything, that there be no saving at all" (p. 291). I believe that other interpretations are possible, for instance that the worst-off generations instead risk being those at the end of the human lineage. Finding the difference principle insufficient, Rawls in the original edition of *A Theory of Justice* from 1971 invented the "just saving principle" that he regarded as an expression of the "natural duty to uphold and to further just institutions and for this the improvement of civilization" (p. 293). The principle entrusts each generation with the task of contributing to an intergenerational process of accumulation that enables closer and closer approximation of the just society (Fitzpatrick, 2001, p. 231).

The key contractual device of Rawls's theory is the veil of ignorance. Its alchemy forces us to agree on institutional arrangements being unaware of our own place in society, our natural talents, or our social status. Much criticism has been articulated against this device, saying that without knowledge of our social background and without access to our personal identity we can not give moral judgements either, and thus the device fails. However, as Will Kymlicka (2002) pointed out,

> the veil of ignorance is not an expression of a theory of personal identity. It is an intuitive test of fairness, in the same way that we try to ensure a fair division of cake by making sure that the person who cuts it does not know which piece she will get. (p. 63)

In the original edition from 1971, the parties are drawn from one single generation in what Rawls called "the present time of entry interpretation" (p. 140) and they also know that they are contemporaries. By the second edition of 1999 and, in fact, already in *Political Liberalism* from 1993 (Rawls, 1993, p. 273), Rawls had, in response to criticism primarily from Jane English, modified his argument (Paden, 1997):

> Now when the parties consider this problem they do not know to which generation they belong or, what comes to the same thing, the stage of civilization of their society. They have no way of telling whether it is poor or relatively wealthy, largely agriculture or already industrialized, and so on. (p. 254)

With these additional restrictions to the original position Rawls hoped to achieve an ideal democratic decision because no one knows to which generation he or she belongs, the saving principle adopted, and the schedule of rates agreed on will be "fairly adjusted to the claims of each generation" (Rawls, 1999, p. 256). Still Rawls maintained the interpretation of the present time of entry, meaning that even if the parties do not, the reader knows that they are, in fact, contemporaries drawn from the same generation (Rawls, p. 254). It is clear from the text that this was not an easy decision for Rawls, and sometimes he comes close to other interpretations. A fundamental problem for Rawls was the motivational forces driving

the parties behind the nonhistorical veil of ignorance (de-Shalit, 1995, pp. 99-111); in short, why should they agree on saving at all? Here I, together with Brian Barry (1989), believe that Rawls was unable to "pursue the logic of his own analysis more rigorously" (p. 505). As the quotation above from Kymlicka argued, the veil of ignorance is most of all about sharpening our moral intuitions, independently of how we came to hold these intuitions originally. In line with Barry, I therefore extend the veil of ignorance so that all generations are present behind it and thus scrap "the part of the construction specifying that all the people in the 'original position' are contemporaries" (Barry, p. 506). Adopting such an inclusive view on temporal location makes it rather inevitable to comment on the spatial dimension as well. Siding with the cosmopolitical criticism of Rawls's *The Law of Peoples* (Caney, 2002), I affirm the moral standing of all persons and see no reason—at least prima facie—why the scope of justice should recognize arbitrary national boundaries (Gosepath, 2001).[1] Refraining from the perennial temptation of further arguing the cosmopolitical case, I instead focus on the philosophical implications that follow from the notion of a transgenerational community. As we extend the scope of justice beyond the present we are confronted with a key puzzle of intergenerational justice, namely the "nonidentity problem." First thoroughly voiced by Derek Parfit in *Reasons and Persons* (1984), contractual conceptions of *justice* are often thought to be especially vulnerable to this problem. In short, the nonidentity problem stems from the fact that any long-run social policy will affect not only the number of people living in the future but also their identity, and thus: "We cannot then say that any individual would have been better, or worse off, given different policies, since the policy populations have no members in common" (Dobson, 1998, p. 114).

Severe as this problem may be for any ethical theory, I believe that its importance for contractual conceptions of justice has been somewhat exaggerated in the literature (Page, 2006). To see why I think so, we have to remember that even a meeting solely of contemporaries behind the veil of ignorance is not about dictating individual choices but about agreeing on overall institutional arrangements. The same is of course true for any hypothetical intergenerational meeting, outside space and time. During such a meeting, the different policies suggested would represent different timelines—in each timeline different individuals would come into being. Restating that individual characteristics are concealed anyway behind a "thick" veil of ignorance,[2] the state of nonidentity would not in itself undermine the contractual device.[3] As soon as a policy, for instance a saving principle with a corresponding schedule of rates, is adopted by the meeting, the manifold of timelines would vanish because of the singularity of the future. Then, with only one timeline, people living in the future would be able to rightfully claim that we fulfil our moral obligations to them. In fact, I now try to show that if we accept this solution, the adoption of Rawls's own just saving principle follows more naturally. We recall that the purpose of the just saving principle was not to go on maximizing indefinitely but only to save as far as the realization and preservation of a just society requires (Rawls, 1999, p. 257). Rawls repeatedly emphasized that even if savings between generations are perceivable for numerous reasons, the just saving principle only applies until just institutions have been established. From a teleological utilitarian point of view it could be argued that harsh demands of savings should be imposed on generations living early along the time continuum as generations living later (the majority, because of resulting population growth) would benefit greatly from this. However, from a contractual

perspective this is not a valid argument because the hardship imposed would violate what is reasonable to believe that the parties would accept in good faith (Kukathas & Pettit, 1990, p. 51), "should their society turn out to be the poor" (Rawls, 1999, p. 256). This argument, in favour of the just saving principle, comes to life first when the parties truly represent different generations. This, in turn, underlines the genuine symmetry characteristic for Rawls's theory: Each generation is obliged to contribute their fair share, according to what would reasonably be agreed upon in the original position.[4] Just as between contemporaries, the hypothetical original position thus strengthens our moral intuitions as it opens for deliberation on principles of justice that are valid beyond our contingent position in the space-time continuum.

MODERNITY AS AN ASYMMETRICAL CRITICAL PHASE

Human beings, as all biological life forms, exist in interaction with their surrounding physical environment. As we grew in our understanding of this external world we learned that it was but a tiny stage in a vast cosmic arena; that we were, in fact, stranded on a small habitable island amid a dark ocean. Here we were endowed, or rather perceived ourselves as endowed, with a limited amount of resources found in a complex ecological system of which we originally only made up a negligible part, not unlike our closest relatives the chimpanzees. For millennia, this order prevailed. Although humans were capable of influencing their local environment most substantially, as for instance the deforestation of the Mediterranean area in ancient history illustrates, we remained but one species on this planet. However, as our technological capacity increased we became capable of recasting the rules of interaction. We could spread ourselves to previous uninhabitable parts of the planet, multiply our numbers exponentially as agricultural techniques improved, and start to harvest resources at levels that no longer were negligible, not even on a global level. About 200 years ago this development triggered a rapidly self-reinforcing feedback loop in which scientific progress and economic growth unleashed an unparalleled transformative force, radically altering the biosphere and the social institutions of this planet. Although it remains contested, I find it semantically appropriate to use the concept of *modernity* to describe this process. First it may seem as if, for the purpose of this article, a narrow definition of this concept, basically equalling it with increased instrumental capacity, would be sufficient. Still, given its contested position within the contemporary sociological discourse, the normative component of the concept must be addressed prior to discussing whether it causes a historical asymmetry of the kind suggested in the opening lines of this article. I now make yet another modification to Rawls's original position; though this time the modification will merely be temporary and carried out with a pedagogic purpose. By doing this temporary modification, I am able to raise a number of questions about preferences on historical location. As stated before, the original position is situated outside the space-time continuum. Just as it is essential for the argument that the parties do not know their future social position, I argue that it is essential that they do not know what temporal frame they will occupy when the veil of ignorance is lifted. Disclosure of such information would allow them to tailor institutions that they personally would benefit from (at the expense of the other parties). Let us now temporarily modify the original position so that the parties, when lifting the veil of ignorance, can decide when, along the timeline of human history, they

would like to live. By doing so, we arrive at some strangely familiar problems but also at a new and rather intriguing dilemma. Approaching these matters from an intuitive point of view we see that opting for a time frame in the distant past, as for instance during the European medieval times, would be much like gambling in the unaltered original position (Kymlicka, 2002, p. 66). Although Rawls suggested that the parties would prefer a "maximin" strategy—that is, maximizing what they get if they wound up in the minimum—it is possible that some individuals would instead prefer to take risks to reach a yet-higher level of welfare, even if the distributive scheme of that time frame could backfire on themselves. Living in 14th-century Europe as a healthy monarch or even nobleman is probably preferable to living at the bottom of the social ladder today. Still there is a substantial risk that, when opting for an earlier time frame, one ends up in extreme poverty as this was the condition under which the majority lived in premodern societies. Even if such odds could be regarded as acceptable for some people, the dimension of physical health and life expectancy would in any case leave anyone opting for historical time frames disturbingly dependent on contingent factors as strength of immune system and genetic profile. In fact, a person who is moderately risk averse would solely on these grounds avoid any time frame without antibiotics, dental care, and basic sanitary conditions. Even when we move closer to our own time, every year sees higher average life expectancy on the planet. Although especially the African continent seems to be stuck in a gridlock of starvation and suffering, it is obvious that so far humanity's lot in general has continuously and vastly improved, in relative and absolute numbers (Lomborg, 2001, p. 4). Not only does the modern industrial state protect its citizens from hardship (through, e.g., housing, medicines, and welfare plans) it also enables historically unique features, including the widespread liberal freedom. Even if we accept this analysis it is reasonable to ask why anyone, with the exception of a few hard-line idealists, would prefer any time frame other than the present.

With Barry's (1989) extension of the original position, this means that when the veil of ignorance is lifted, many people may reasonably feel disadvantaged. Even if calculations suggest that as many as 10% of all people who ever have lived are alive today that still leaves out 90% who, I argue, would have preferred to live today. However, if the present is preferable to the past, the future may in turn be even more preferable. Yet, as we all know, this is not so by necessity but only as far as certain futures are realized and others are not. For instance, if we imagine a future in which the whole of humanity lives at a material standard comparable to the one that the Western world experiences today, that future would then undoubtedly be a most-preferable choice of time frame as the risks of ending up underprivileged are kept at a minimum. Here however, we touch on the classical problem of what makes up informed preferences. As the future remains open to both opportunities and contingencies, it only makes sense to judge what constitutes an informed choice based on the historical development leading up to the present. Beyond that we are left with mere speculations. As recent events in Asia and the southern United States have shown, we are still very much at the mercy of the elements. Natural disasters such as earthquakes, tropical hurricanes, or asteroid impacts as well as man-made nuclear cataclysms still hold the potential of dramatically altering which time frame that is "preferable," at least within certain spatial limits.

Returning once more to the temporarily modified original position, we seem to have encountered an ethical problem dictated by iron-hard utilitarian logic,

namely how can anyone be made to voluntarily allocate his or her own time frame to a past of hardship and physical suffering, even if this is necessary to maximize overall welfare? However, it is easy to see why this problem is illusory. As time is only flowing in one direction and as consequences of political actions follow the time arrow, we can only make sense of justice and responsibility when dealing with either the present or the future. Although the past may contribute to our understanding of certain historical mechanisms, as why it is reasonable to adopt the just saving principle, it simply has no normative significance for our understanding of justice today.[5] Nevertheless, undoing the temporary modification of the contractual device and finally returning from this philosophical experiment we have obtained a solid case for believing that the present, despite all its shortcomings and risks, is the most preferable time frame known to human beings, given the uncertainty of personal identity behind the veil of ignorance.

This leads us to believe that "modernity" is not only a measurement of increased instrumental capacity but also a process that (so far) holds an intrinsic positive normative value, meaning that when agreeing on a saving principle the parties would decide on a principle capable of bringing about modern society, a view consistent with the just saving principle.[6]

However, this is only true as far as the present modern condition is, at least to a minimum, sustainable. If we have reasons to believe that the entry into modernity, with correspondingly unprecedented high levels of human welfare, is only a short transitional phase the picture may look somewhat different. Moreover, if we even have reasons to believe that the current condition (with its consumption of finite resources and its destruction of biodiversity) may condemn future generations to lower standards of living, modernity as a project becomes possible to challenge on grounds of intergenerational distributive justice (Beckerman, 1999, p. 71). Already today it has become obvious that invaluable habitats have been destroyed and thousands of species made extinct because of human activity. Considering global climate change, the ongoing toxification of the biosphere and other risks associated with the industrial life form, a growing concern seems to be warranted.

However, as Bryan Norton (1999) showed, there is another way of reading the environmental discourse than in terms of conservation of endangered natural capital, namely in terms of distribution of opportunities between generations (pp. 118-150). Contextualizing such a reading within a Rawlsian framework we can define the currency of justice (what we seek to distribute across generations) as the level of opportunity necessary to achieve and/or maintain a just society. This is preferable to any list of "primary goods" as such lists are most likely to change over time (de-Shalit, 1995, p. 102).

When entering modernity, new modes of social and economic interaction become possible as functional differentiation increases exponentially. Unfortunate as an anthropocentric outlook on nature may be, these new modes allow us to perceive the planet as a common pool of resources and sinks (Spaargaren, Mol, & Buttel, 2000). The pool includes different high-grade minerals, easily accessible sources of energy, and a given ecological space that is available to human activity. Some of these resources are truly nonrenewable whereas others may be available indefinitely as long as they are not overexploited; fish is a good example of the latter category (Daly, 1990). In the modern world, streams of material and energy flow from the planetary sources through the economic system to the planetary sinks where wastes and pollutants end up (Meadows, 2004, see Figure 1).

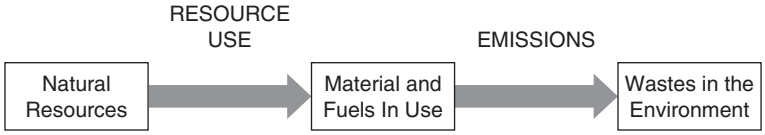

FIGURE 1: Earth's Sources and Sinks
Source: Adapted from Meadows (2004).

The finite stock of nonrenewable resources enables different political, economic, and social projects depending on the technological knowledge available at each time. It is reasonable to believe that, when first entering modernity, the stock of nonrenewable resources, and the ecological carrying capacity, was roughly equivalent to what it had been during all preceding human history. If we disaggregate the stock of nonrenewable resources, we see that some assets, such as coal, are extremely valuable in earlier phases of modernity whereas others, such as uranium, require a higher technological level to be at all utilizable. Roughly the same goes for the sinks when disaggregated; although the biosphere's capacity to absorb carbon dioxide has been important ever since industrialism started, it is first during the past 50 years or so that its ability to deal with chlorofluorocarbons (CFCs) or nuclear radiation becomes essential.

As modernity propagates and becomes radicalised, the stock of nonrenewable resources is lowered; minerals are turned into steel, coal is combusted, and so on. Many of these processes are irreversible, as when fossil fuels are consumed and cannot be regenerated within a meaningful time frame. The relationship between the remaining stock of nonrenewable resources and the level of opportunity is, as shown above, however not of a simple linear kind. Nevertheless, it makes sense that if nonrenewable resources are consumed and neither substituted with renewable resources nor transformed into technological knowledge, the level of opportunity is lowered. Although human activity spreads and multiplies, it also slowly approaches the ecological carrying capacity, which is itself in turn lowered because of the expansion of human settlements and increased interference with different ecosystems (through, for instance, agriculture, mining, and forestry). The World Wildlife Foundation has calculated that by the mid-1980s humanity's ecological footprint surpassed the productive capacity of the planet. This overshoot depletes the planet's natural capital and is, therefore, sustainable only for a limited amount of time (World Wildlife Fund, 2004). Other researchers have discussed the long-term consequences of such an overshoot and the uncontrolled decline in per-capita food output, energy use, and industrial production it may eventually cause (Meadows, 2004). Here it is worth restating the fundamental difference between income and capital. We all know that our monthly expenses can exceed our monthly incomes for a long time, as long as we have capital saved up. However, at some time, unless our incomes raise or our expenses drop, bankruptcy is inevitable. The same logic essentially applies to our ecological space, there bankruptcy translates into "severe and permanent danger to the resource base" (Meadows, 2004, p. 139).

For the generations coming after us, the diminishing stock of resources and the loss of ecological carrying capacity combined with a world population of maybe eight billion intuitively mean a substantially narrower range of opportunities

(Barry, 1978, p. 243). I now try to qualify this statement through a general theory of critical phases, providing an argument for why this uneven distribution of opportunities (a) is rather probable to occur and (b) why it remains ethically problematic unless an exit strategy is sought.

CRITICAL PHASES AND TEMPORAL CHAUVINISM

Let me first sum up a few thoughts leading here. I started off by recapturing the notion of intergenerational justice as we originally found it with Rawls and then extended it so that all generations are present behind the veil of ignorance. After that I turned to the current historical condition that, I argued, would be favoured in a hypothetical situation of time-frame allocation. The present state may nevertheless have serious negative implications for the opportunities available to future generations. This led me to believe that modernity has created an asymmetry in terms of historical responsibility. As strange as such a thought may sound, we may consider the opposite, namely that responsibility for coming generations is evenly distributed over the time continuum.

An even distribution of responsibility would mean that any generation has the same opportunity to change the future as any other. Expressed in practical terms, this would mean that "primitive" civilizations thousands of years ago, having only limited contact with each other, possessed, among other things, the same destructive capacity as we do today. In a world with nuclear weapons, this is obviously not the case. For more than 60 years nuclear devices, capable of extinguishing all sentient life, have become a constant reminder of our unique responsibility. Naturally, these weapons of mass destruction add to the above-mentioned asymmetry. Although conflicts between humans may be as old as humankind itself, modernity transformed their scope and effect beyond recognition. Solely for these reasons the idea of late modernity as an asymmetrical, or critical, phase in the history of humanity must be vindicated. Such a conclusion is further strengthened by (a) the irrecoverable nature of many decisions made regarding resource allocation and (b) the possible overshoot of human activity beyond the planet's ecological carrying capacity. Still, the notion of a critical phase should warrant a sound scepticism. The attribution of special historical significance to the present, especially in combination with visions proclaiming the imminent end of the world, is a recurring theme in Western philosophy of history, deeply entrenched in the Judeo-Christian cosmological framework (Herman, 1997). It is a belief likely to emerge in transitional times, ranging from the eschatological teachings of the medieval world to the more secular dystopias of the interwar period (Fisher, 1991). It is easy to seek comfort in such historical parallels. Yet, for many of us, that comfort is not enough. We share a constant fear that the current condition will not prove sustainable, and that we accordingly should seek some kind of "exit strategy."

I now further comment on the universality of this dilemma. Thereafter, I sketch a graphical representation of the historical asymmetry it creates and relate the resulting model to contractual conceptions of intergenerational justice as I present what two, from each other most different, exit strategies could look like.

Just as we are inclined to accept the notion that historical responsibility is unevenly distributed between generations when considering the opposite (a perfectly even distribution) we may better understand the origins of modernity by considering the alternatives. Instead of perceiving modernity as a historical exception

growing out of a particular social context it is warranted to ask if not any civilization, which sets out to systematically learn about nature and then apply that knowledge to produce artefacts, eventually will face many of our current difficulties. Even when siding with what Andrew Feenberg (2002) called an instrumental theory of technology (the belief that technology is ethically neutral), it has become obvious that certain institutional arrangements are necessary if we are to successfully contain the risks that our scientific advancements spawn. Indeed, this last observation takes us to the verge of speculation; projecting a cosmic scene, the late astronomer Carl Sagan (1994) once wrote: "maybe civilizations arise all the time, but wipe themselves out as soon as they are able" (p. 287).

With such perspectives, the notion of modernity as an asymmetrical, or critical, phase does not seem to be a mere outbreak of temporal chauvinism. Instead it must be regarded as a natural result of a relative autonomous scientific, technological, and economic development. This historical development started off in what, from a Rawlsian perspective, was a symmetrical situation, meaning that every generation living had roughly the same historical responsibility. Decisions made about, for instance, resource allocation were essentially reversible, and although wrongdoers in one generation could cause great harm, their actions were nevertheless temporally and spatially limited. Yet one could argue that the seeds of change leading to modern society were visible already hundreds of years ago, and that those then living had a choice on whether to suppress or support them. Recalling astronomers such as Galileo Galilei this seems to be, at least partially, a valid objection. Thus, we cannot precisely determine the extension of the historical asymmetry without risking deeper philosophical waters and puzzles on topics as determinism and causation. However, on a general level it is worth arguing that the asymmetry widens significantly as potentiality is transformed into actuality. In practical terms, this means (for instance) that the responsibility falls heavier on generations actually deploying nuclear weapons than on generations that merely contribute to the underlying scientific research. Following this line of reasoning, we can approximate that humanity entered into its critical phase during the second half of the 20th century.

Now, let T_1 denote the point in time when we left the symmetrical baseline on which humanity had existed ever since our species first emerged. As we move right in the diagram (closer to the present) the asymmetry widens as material and energy flows are increased and weapon technology advances. This process is not linear, some innovations (as the hydrogen bomb) meant a radically increased asymmetry whereas others (the introduction of new sustainable patterns as recycling) may, in fact, slow its growth.

When entering the present, T_2, the critical phase is in full duration causing an asymmetry between generations. The timing is by no means precise nor is it suggested that the asymmetry cannot widen further. It is an empirical question, far beyond the scope of this article, to determine to what extent the present asymmetry is sustainable into the next decades or even centuries. This is symbolized by the question mark at the right end of the critical phase (see Figure 2).

However, the argument plays on a somewhat different level. If we are ready to accept the notion that this asymmetry is unjust because it deprives coming generations of opportunities that they rightfully are entitled to (according to what we ourselves would demand beyond a veil of ignorance not knowing which generation we will belong to) we can perceive the present as a bifurcation. It is a bifurcation in which, at least, two distinct strategies can be discerned. In the name of

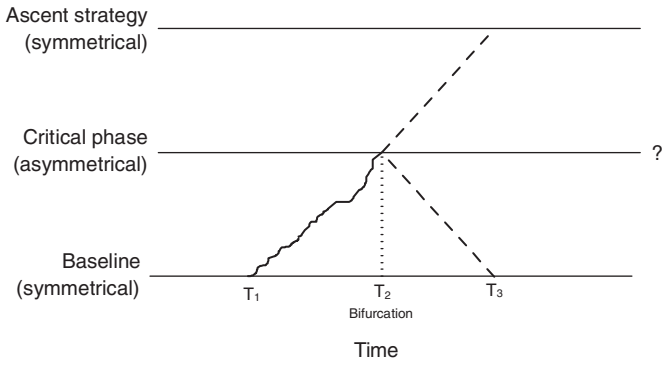

FIGURE 2: The Extent of Asymmetries Over Time

simplicity I call these two strategies (a) descent and (b) ascent respectively, with reference to the figure above. Both strategies span a longer time frame and address where humanity is supposed to find itself at T_3.

The strategies should not be considered as constitutive plans but as tentative regulative ideas (Karlsson, 2005). As such they are Weberian ideal types, drawn from theoretical reasoning without any claim of being exhaustive. They are unified in the concern that, if left unchecked, current trends could lead to a frightening future in which all finite high-grade resources are used up, the ecological systems are in a state of collapse, and humanity is left with nothing but a metaphorical landfill of no-longer-working consumer goods.

DESCENT FROM MODERNITY

The first strategy is, in fact, already well known to any reader moderately familiar with the deep ecological movement (Pepper, 2005). Its fundamental rationale is the perceived incompatibility between the industrial life form and the external environment. It holds that the flourishing of human life requires a radically different society living in an enduring, dynamic equilibrium with other forms of life. In its philosophical foundations this strategy may challenge anthropocentrism but as a political response to the asymmetry of the critical phase it is primarily concerned with the welfare of future human generations. To achieve this end, the strategy looks away from the growth economy and seeks dramatically reduced material and energy flows, a decentralization of the political sphere, and the emergence of strong local self-reliant communities on a global scale (Naess, 1989, p. 143).

As a strategy it differs from the school of ecological modernization on whether the "greening" of society can be done in time to avoid an irreversible ecocatastrophe but also on whether an environmental friendly global consumer society is at all possible to achieve (Sachs, 1993). Answering *no* to the second question and having strong doubts about the first, the political activism of this scenario projects profound changes to production and consumption, including the limitation of human population. As trade is to be built down, the old system that

whatever is consumed is produced within the horizon is to be restored, reducing global interdependence and thus also the amount of energy and material required.

The purpose of this strategy of "demodernization" is straightforwardly defined as bringing human activity back within the limits of this planet. Disarmament is thought to follow from decentralization as democratic participation increases, giving way to local defence patterns and nonviolent groups (Næss, 1989, p. 99). The historical asymmetry between generations in terms of responsibility will thus narrow as the instrumental capacity is reduced and eventually lowered to a level consistent with the premodern world.

ASCENT FROM MODERNITY

I now experiment with the thought that there is another aperture to a significant future for mankind. If the first strategy contains some ideas and concepts that are already discursively established, this second strategy forces us to rethink our very images of the future. At first it may seem as if this strategy is nothing but naïve technological optimism once again; the same spell that originally created the historical asymmetry, but this time more forcefully pronounced. However, it is already here worth stressing that the optimism of this strategy is conditional and dependent on institutional arrangements significantly different from those currently existing. Before going any further I want to start by, once again, rather dispassionately going through what caused the historical asymmetry of modernity. Within the spatial limits we used to define our pool of resources and sinks, the scarcity has made decisions on resource allocation irreversible and thus no longer open for coming generations. This was, in turn, regarded as unjust from the standpoint of intergenerational distributive justice. Our unique historical responsibility was then further reinforced by the existence of a weapon technology capable of annihilating humanity, even by mistake (Blair, 1993).

Forty years ago the first of these problems was significantly differently perceived. As the optimism of the space programme peaked, the whole solar system was seen as the land of opportunity on which the future of humanity would be built. Since then manned missions to the moon, astronomical observations of the asteroid belt, together with unmanned probes to our nearby planets, have indeed shown that the resources available are almost unlimited (Zubrin, 2000). This is especially true for high-grade minerals and rare nuclear isotopes as H_3. If we use our imagination we also see that it, in theory, would be possible to move many environmentally dangerous industries and processes off the planet's surface and into orbit, something that would finally given substance to the Environmental Kuznets Curve. Today however, the mere suggestion of these kinds of ideas provokes, at best, a condescending smile. On a more-articulated level, such projects are considered impossible, mostly for economic reasons but also of course based on current technological level. Among more progressive thinkers there is also a widespread belief that we have more-pressing questions to attend here on Earth before we can even voice such matters. It is indeed true that the economic costs related to historically unique projects of this kind would be far beyond what any now-existing state can muster. Moreover, diverting money from other civilian programmes, as social welfare, would not only cause tremendous hardship but would also prove insufficient.

According to the Stockholm International Peace Research Institute, world military expenditures amounted to a conservatively estimated U.S. $1035 billion

in 2004 (Stockholm International Peace Research Institute, 2005). This works out to $2.8 billion each day—more than $100 million an hour. Of this, the United States alone accounted for 47%. Confronted with such figures, especially in comparison with the estimated $19 billion required to eliminate starvation and malnutrition worldwide, it is easy to become disillusioned (Worldwatch Institute, 2003). At the same time, we have to remember that all these resources are used to protect us, not from any external threat, but from ourselves. Thus, within an entirely different global institutional framework, nearly all this money could be directed to other purposes. Here we begin to discern how the two dilemmas, the scarcity of resources and weapons of mass destruction, causing the asymmetry may be possible to solve through one common strategy. If a significant part of the $1035 billion spent on military funding yearly could be directed to space industrialization, research in the high-energy field (Hoffert et al., 2002), and global redistribution of wealth, a number of positive outcomes might be within reach. We would (a) avoid depletion of many nonrenewable resources as the present and all future generations would have access to nearly unlimited sources of energy and material. We would also (b) be able to store pollutants and toxic waste outside the boundaries of our own planet. Finally, if some of the reduced spending on military purposes is indeed used to lessen the global inequalities we would (c) be able to start building a sufficiently stable global community for which (d) the complete disarmament of weapons of mass destruction would be the ultimate goal. If all this could be achieved, then we would no longer, to once again speak with Sagan, have "all our eggs in a single stellar basket" (Sagan, 1994, p. 319) nor would the eggs stand any particular risk of being smashed (we are tempted to add). The historical asymmetry would thus be discontinued as generations coming after us would have, not a smaller, but an enormous range of opportunities, including the colonization of other solar systems (Prantzos, 2000). Although the instrumental capacity is dramatically increased in this strategy, political actions would become less irreversible as the expansion unfolds.

EVALUATION

Of course it is impossible to exhaustively evaluate two such grand macro-level schemes as the strategies presented above. Nevertheless, it is my conviction that at least the first strategy is continuously evaluated among policy makers worldwide, but then as a mere antithesis, representing what no sensible person is ready to sacrifice for the survival of the ecological systems, no matter what remote gain future generations may claim it would give them. It is something paradoxical with the suggestion that neither strategy would begin to surface politically until the present situation has become critical. At such a moment, it is worth noting that the first strategy would have to be even more radical as "the longer we wait the more drastic will be the measures needed" (Naess, 1989, p. 31). Somewhat of the opposite is true for the second strategy, it requires an early inception to be at all possible. Naturally, if nonrenewable resources really become scarce then space industrialization would be economically and practically unfeasible. Thus the current path may first lead to an emphasized bifurcation as technology develops (i.e., the ascent strategy becomes more feasible) before merely one option, the first strategy, remains. Of course, it could in theory be possible that neither strategy will be necessary at all. Other voices, as Bjørn Lomborg's (2001), argue that the whole idea of a looming ecological crisis "does not seem to be backed up by the

available evidence" (p. 4) and thus no problem of intergenerational distributive justice exists either. According to Lomborg, nonrenewable resources are not limited at all since we always will find new deposits as prices increase (pp. 147-148). Historical data for reserves of oil, coal, and iron ore also support this claim. Yet, together with Donella Meadows (2004, p. 89) and others I believe that much of the debate on this topic has been confused by an inability to discriminate between resources and known reserves; resources denote the total quantity of a material in the crust of the earth, reserves are the amount of the material that has been discovered or inferred to exist. Reserves may go up as prospecting technology improves or prices increase; resources on the other hand only, and inexorably, go down (while limiting the discussion to this planet).

So far, the environmental movement has primarily described the road to a sustainable society as a matter of different policies of conservation combined with a reduction of energy and material flows, most recently expressed as virtues characteristic of an "ecological citizenship" (Dobson, 2003). Intuitively there is something deeply normatively agreeable with such an approach and the restoration of the balance between humankind and its environment that it offers. However, scratching beneath the glossy surface of ecotopia, doubts seem warranted about (a) whether a democratic transition to such a state is at all feasible and (b) to what extent the descent strategy is compatible with the "just saving principle."

First addressing the transition process, it is clear that any attempt to disentangle the thick interdependent web of global transactions would have numerous unintended and probably catastrophic consequences. Considering its revolutionary scope, it would also face many of the problems endemic to what Karl Popper (2002) termed "utopian social engineering." By imposing its comprehensive conception of the good it would risk violating fundamental democratic values and individual rights. Contemporary green authors such as Robin Eckersley (2004) may reject all notions of eco-authoritarianism with its "strict regime of ecological controls and resource rationing" (p. 1). Yet it is hard to see exactly how individuals resisting changes in lifestyle are to be made to comply. Marcel Wissenburg (1998) well captured this dilemma: "liberal democracy is totally incompatible with attempts to dictate people's tastes and preferences, yet we may reasonably assume that preferences are one of the determining factors of sustainability" (p. 7).

Moreover, this dilemma of compliance is likely to reappear on the international level, effectively creating a classic game of prisoners' dilemma. We know that only if globally orchestrated does the descent strategy make sense. Otherwise, without a global span, the question "why should we lower our welfare in favour of environmental sustainability if others don't?" would immediately arise. Yet, even with such a global covenant, the temptation for any state or group to "cheat" would be tremendous. Naturally, the most-obvious possible gains from cheating are military and strategic. Any geographic territory that would reject the antimodernistic creed would pose a severe threat to all of its neighbours, effectively creating a security dilemma. The problem would be further emphasized by the fact that the countries that today contribute the most to environmental degradation, and whose participation is thus most needed, are also those which would see the largest relative reduction in their military capacity.

If the road toward environmental sustainability seems to be bumpy from a democratic and a military strategic perspective, what do we have to say about the destination? Recalling Rawls, the picture is not unambiguous. On one hand it

seems clear that a just society requires a certain material base but, on the other hand, that base cannot be bought at the expense of future generations. In theory it could be that the limits of growth are so definite, and the ecological carrying capacity so limited, that a decentralized, low-energy society with minimal instrumental capacity is indeed the optimal long-term configuration; and thus, a hypothetical intergenerational meeting would agree to a corresponding saving principle. Then modern society, as we know it, would represent nothing but an unsustainable overshoot.

The political problem is that, for the present, the discourse of reduction, conservation, and moderation appeals merely to a few idealists among whom I cannot even count myself. The majority of us are simply not prepared to abandon the modern path, unless forced to do so by nature itself. In fact, witnessing the massive opposition against, for instance, the Kyoto Treaty (which in itself was watered down and most moderate), any dramatic reduction of global economic activity seems rather implausible. Accepting this state of affairs, the article presented a radically different strategy that tried to reconcile the politics of scarcity with the kind of technological optimism normally found only among those who hold that no resource scarcity whatsoever exists (Salmon, 1977). Instead of trying to reverse the motivational forces underpinning modern society, a conscious ascent strategy would build directly on the Enlightenment legacy. Yet the idea that radical modernization should substitute meaningless private consumption and armament is however possible to challenge on several grounds. The criticism mostly comes down to one thing, it is naïve.[7] The strategy rests on the (unrealistic?) assumption that the global system could somehow be recast so that a vastly different resource allocation becomes possible. World federalism has perhaps never been further away, with the war in Iraq and the growing criticism toward the United Nations (Baratta, 1999). However, if anything, history has proven to hold a capacity for change (Kuran, 1995). As the European Union (EU) is enlarged and further integrated it is worth quoting in length what the British federalist Henry Brailsford wrote on the brink of the Second World War 1939:

> What shall we have gained if we can realise anything resembling this project of Federation? Firstly and chiefly we shall abolish internecine war in Europe, the homeland of our civilisation. . . . In the positive sense we shall achieve vastly more: we shall rescue the priceless value of civilisation itself. . . . If we abandon the old concept of the Sovereign State, it will not be because we have changed our view about a legal theory. It will be because we have reached an ideal of human fraternity that embraces our neighbours, who in other languages think the same civilised thoughts. We can end war only by widening. (cited in Mayne & Pindar, 1990, p. 81)

Today, this then utopian idea has been realized. War between the countries of the EU is no longer imaginable. Thus it may be premature to declare that the same development could not take place on a global scale, if merely the political will existed. For centuries, the United States of America has made it evident that human beings from all over the planet can come together and unite under new ideals, consequently proving essentialistic conceptions of irreconcilable differences between human races wrong.

Considering to what extent critique of utopianism has become part of a contemporary reflexivity, it is still unclear if such observations suffice to convince us about the plausibility of the ascent strategy. Yet it is important to stress that the image of a technological advanced world society of international peace does not have

to be interpreted as a static utopia of complete harmony. Radical as it may seem, the ascent strategy is nothing but a political and institutional response to certain risks posed by modernity. Just as the EU hardly has resolved all political tensions within Europe, world federalism would not be a panacea for all human conflicts. However, it would substantially change the means used to settle these conflicts.

CONCLUSIONS

I would like to finish this article by returning to the original question of asymmetries in contractual conceptions of intergenerational justice. This is an idea that I believe has not been widely discussed. Much debate on for instance Rawls's just saving principle is located either on a philosophical or an economic level without drawing out the possible political implications. The same goes for theories of how distributional conflicts between generations should be resolved (Asheim & Tungodden, 2004). This being a political interpretation I admit that, just as "for each traditional conception of justice there exists an interpretation of the initial situation in which its principles are the preferred solution" (Rawls, 1971, p. 121), there are other ways of interpreting what an asymmetry means and what actions it may motivate. However, my foremost normative concern has been that the present generations exercise a disproportional influence on the opportunities available to future generations. If responsibility is asymmetrical, accountability is even more so; though future generations may benefit or suffer from our political decisions they cannot hold us accountable nor do they possess any bargaining power when it comes to influencing our actions. In fact they are only "virtually" represented as far as our moral sentiments permit. Thus, any contractual theory aimed at enhancing those sentiments and intuitions becomes a priority. Unfortunately, as ethical theories increasingly have taken the standpoint that obligations to others only arise from actual relations with them (Dobson, 1998, p. 65), a universalistic theory that even strives for temporal and spatial neutrality is likely to come under heavy fire. There is something deeply regrettable and paradoxical with the fact that as our responsibility is growing we tend to seek moral theories stating that no such responsibility exists. Still I want to share the hope of Sagan that one day our descendents will "marvel at how vulnerable the repository of all our potential once was, how perilous our infancy, how humble our beginnings, how many rivers we had to cross before we found our way" (Sagan, 1994, p. 334).

NOTES

1. Although such a universalistic stance may be compatible with one reading of *A Theory of Justice* it is definitely at odds with the later, more "political", Rawls who rejected the possibility of finding "a conception of justice suitable for all societies regardless of their particular social or historical circumstances" (Rawls, 1980, p. 518).

2. This corresponds closely to the statement that "the parties are to be understood so far as possible solely as moral persons and in abstraction from contingencies" (Rawls, 1993, p. 273).

3. Acknowledging the profound complexity of the nonidentity problem, I admit that this "solution" is not exhaustive. Although unresolved identity is one aspect, the number of parties behind the veil of ignorance is another, and I fear, much more difficult aspect of the same problem. Considering that this number is dependent on which institutions and policies are adopted by the meeting and vice versa, we are faced with a classic chicken-or-the-egg

paradox (Barry, 1989, p. 506). To make things even worse, a third mind-bending complication is to draw neat cut-off lines for when the human lineage starts and ends respectively.

4. The resulting theory of justice is thus not one of mutual advantage or reciprocity (as the unidirectionality of time makes all such arrangements impossible) but rather one based on the formulation of impartial principles to which no generation reasonably would reject.

5. This is not to say that we may not feel ethically obliged to honour the reputation or legacy of long-dead generations.

6. Although it may be theoretically possible to imagine premodern societies capable of establishing and preserving just institutions and the fair value of liberty, it seems as if the modern welfare state is more in line with Rawls's notion of the just saving principle, especially considering the capacity of a well-ordered society to provide education and more advanced distributive schemes (Rawls, 2001, pp. 184-188).

7. Another line of criticism says that the military-industrial complex plays a pivotal role in the economic systems of advanced industrial countries and that reducing its funding could have serious negative social economic implications and slowing innovation. The criticism is not unreasonable, and I believe that simply discontinuing the flow of money and instead allocating it to, for instance, social welfare (ultimately private consumption) could do serious harm to the economic system. However, transferring it to space research, which in fact shares much of the high-tech nature of advanced weapon systems, would not have such negative external effects and is, in fact, likely to increase the number of spin-offs to other sectors compared with the armament industry.

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