

# The Theory of Justice in a Warming Climate -- John Rawls' Theory Applied to Finland

Jan Kunnas

University of Stirling, Scotland, United Kingdom

## Abstract

This article tests, whether John Rawls' Theory of Justice is still relevant in a warming climate. The starting point is Finland, which is assumed as a useful example, as many social indicators suggest that Finland is close to Rawlsian egalitarian standards of distributive justice. The theory is brought to the globalized world of 21<sup>st</sup> century, by widening the perspective from the original society level to a global level. It can be argued that economic growth in developed countries benefits people in developing countries, as we can afford to give more development aid. I argue, however, that this has not been large enough to compensate for its negative side effects, most notably that of a warming climate. Furthermore, the costs of current carbon-fueled economic growth favouring present generations in the developed countries will mainly be paid by future generations of the poor in developing countries.

## Introduction

The purpose of this article is to examine whether further economic growth can be justified in a warming climate in the light of John Rawls' Theory of justice. To be justified, it should be to the benefit of the least advantaged, which I argue to include those with social problems.

According to John Rawls (1971), the principles presented in his Theory of Justice could also work as a part of economic theory. Unfortunately, its use has mainly been restricted to the use of the second principle of justice as a justification for maintaining current inequalities in income and wealth. In this article, I will show that we end up with a quite different result if we take the thought process, described by Rawls properly through. This way, we also avoid G. A. Cohen's (2000) critique, in his aptly named book *If You're an Egalitarian, How Come You're So Rich*, of the use of the Theory of Justice as a factual defense of inequality. Similar critique has also been presented by Sirkku Hellsten (1997).

I start with a brief presentation of the two principles of justice for institutions that would be formed behind the veil of ignorance. I pass the discussion about the justification of this original position and the principles of justice formed there, and take its justification for granted. The Theory of Justice is the source of such a large amount of literature that it is impossible here to cover this.<sup>1</sup> Instead, I assume that the participants in the original position want to do a test run on the principles of justice and make adjustments thereafter if needed. The starting point for this test run is Finland, which is assumed as a useful example, as many social indicators suggest that Finland (like other Nordic states) is close to a Rawlsian egalitarian standards of distributive justice (Føllesdal 2002). Any other affluent country could, however, act as the starting point for repeated test runs.

I bring the Theory of Justice to the globalized world of the 21<sup>st</sup> century, by widening the perspective from the original society level to a global level. I take into account the concept of environmental space and global climate change caused by carbon dioxide and other greenhouse gas emissions (Compare to Singer 2002: 8-9). Finally, I suggest a way to achieve economic growth that can be justified from a Rawlsian perspective in a warming climate.

### **The veil of ignorance and the difference principle**

According to Rawls (1999a: 118), a genuine ethical discussion is possible only if people at least for a moment forget their own advantage and commit themselves to consider matters merely from a general view:

Somehow we must nullify the effects of specific contingencies which put men at odds and tempt them to exploit social and natural circumstances to their own advantage. Now in order to do this I assume that the parties are situated behind a veil of ignorance. They do not know how the various alternatives will affect their own particular case and they are obliged to evaluate principles solely on the basis of general considerations.

According to Rawls (1999a: 266) two principles of justice for institutions would be formed behind the veil of ignorance:

#### *FIRST PRINCIPLE*

Each person is to have an equal right to the most extensive total system of equal basic liberties compatible with a similar system of liberty for all.

#### *SECOND PRINCIPLE*

Social and economic inequalities are to be arranged so that they are both:

- (a) to the greatest benefit of the least advantaged, consistent with the just savings principle, and
- (b) attached to offices and positions open to all under conditions of fair equality of opportunity.

In an article about the reception of Rawls in the Nordic countries, Andreas Føllesdal (2002: note 5) express his surprise that:

Rawls has been appealed to against economic egalitarianism. One academic and political debate has concerned whether salaries have become more equal than the difference principle warrants. Thus Rawls' arguments have been used in support of counter-egalitarian conclusions – a somewhat unusual role for his theory.

These counter-egalitarian appeals based on the second principle or the difference principle usually goes with the current high taxation (in Nordic countries) that takes away incentives to work and would thus decrease the economic growth and accordingly, the total tax revenue. In that way easing of the taxation would increase the tax revenue improving the possibilities to maintain our welfare state and its services. In that way easing of the taxation would be advantageous for people in an economically stressed situation and could be justified using the second principle of justice even though it would increase economic inequality in the society.<sup>2</sup>

The evidence for these arguments is divided, and depends among other things on the assumptions of the elasticity of the labour supply (Hansson 2000: 139 - 82; Eckstein and Paunonen 2001: 278 – 282). For the argument sake, let us, however, assume that these claims hold. Even then we have two more fundamental problems left with these arguments:

- (1) Welfare depends not merely on income but also on other variables (See, for example, Sen 1976). Economic growth does, for example, not necessarily decrease social problems, even though increased tax revenues could be used for income transfers or social services.
- (2) It does not take into account external effects of our economic growth.

I will go through these problems in a numerical order using the Finnish experience as a starting point.

### **Economic growth and social problems**

I argue that, in the Rawlsian framework, people with social problems can be defined as belonging to the group of "the least advantaged." Thus, if economic growth would reduce social problems, it would fulfill principle 2a above. The notion that economic growth would reduce social problems has, however, been criticized in several Finnish studies:

Jukka Hintikka et al. (1999: 85-88) conclude that, "suicide mortality in both males and females increased during an economic upswing from 1985 to 1990, and decreased during an economic recession from 1990 to 1995.

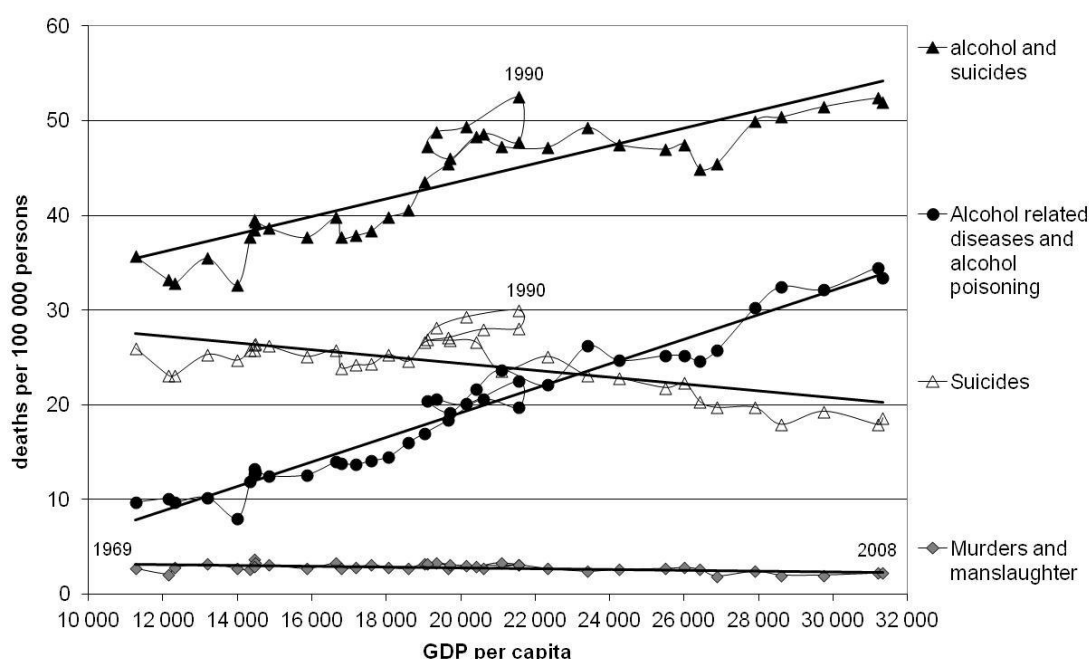
Matti Heikkilä (1995) got contradicting results in his study about the relation between social problems and economic changes during the period 1980–1994. When Finland's GDP turned downwards in the 1990s' also matters, like forced auctions, evictions and unemployment, describing the economic hardship of households increased. On the contrary, psychosocial problems increased during the preceding period of economic growth and decreased during the recession. As indicators for psychosocial problems, Heikkilä used deaths caused by alcohol, divorces, suicides, the involuntary taking into care of children, murders, manslaughters and robbery.

Lauri Narinen (1993 and 1995) got similar results to Heikkilä in his pro gradu –thesis examining the period 1972–1992. During economic upswings, social problems increased and during recessions they decreased. Larinen explains this development with the concept of relative deprivation: The more and bigger rewards people from the reference group get (or is believed to get) compared to the person himself, the bigger is the relative deprivation and the frustration and aggression it creates. During a recession, one's own situation is not felt to be relatively that bad as one can hear everywhere about the universally bad situation. This also lessens the foundation for self-accusation.

A decade earlier, Kyösti Raunio (1983) published a study on the same subject for the period 1950–1977. He divides this period into two parts according to the consciousness of growth. As a turning point he regards the beginning of the 1960s, when economic growth was taken as the main socio-political goal. In the 1950s, which he calls the maturation period of growth policy, there was no growth in the main part of psychosocial problems and in the indicators for asocial behavior, there was no growth. However, during the period of expansionary economic policy 1960–

1977 psychosocial problems grew fast. Behind this development, he regards the structural changes done to achieve economic growth.<sup>3</sup>

Let us finally take a closer look at the indicators for premature deaths, the most extreme of the indicators for social problems used above. In Figure 1, is depicted the changes in murders and manslaughters, alcohol related diseases and alcohol poisoning and suicides related to the changes in GDP from 1969 to 2008. We can see that, the trend line for murders and manslaughters is flat; there is no correlation to the level of GDP. The suicide death ratio peaked in 1990 and has thereafter decreased 38 percent by 2008. The trendline is slightly decreasing although the slope is close to nil. There seems to be no clear correlation between GDP level and suicides; more important is probably the nationwide suicide prevention project implemented in Finland from 1986 to 1996 (Upanne, Hakanen and Rautava: 1999).



**Figure 1:** Deaths per 100 000 persons caused by suicide, alcohol, murders and manslaughters in Finland related to GDP per capita (Euro at reference year 2000 prices), 1969 - 2008.

Source: Statistics Finland, National accounts Updated 15.7.2010 [www.stat.fi](http://www.stat.fi)

On the other hand, there is a steep increase in the deaths due to alcohol related diseases and alcohol poisoning as the GDP grew, indicating a strong correlation between alcohol related deaths and the GDP level. Interestingly though the deaths caused by alcohol stagnated during the recession from 1990 to 1995, similarly to deaths by suicide. After that the deaths due to alcohol have, however, increased dramatically.

The steep increase from 2003 to 2004 was by no means a surprise, as the consumption of alcohol calculated in pure alcohol increased in 2004 from 9.4 litres to 10.3 litres per inhabitant, i.e. a 10 per cent increase in comparison with the previous year. This steep increase was largely due to three factors. The temporary exception restricting travellers' imports of alcohol from the European Community area expired 31.12.2003 and the neighbor country Estonia, with considerably lower prices on alcohol, became the member of EU 1.5.2004. Finally, Finland took measures to be prepared for these changes by reducing the excise duty on alcohol and alcoholic beverages by an average of 33 per cent on the 1<sup>st</sup> March 2004. In order to save

employment related to the production and sale of alcohol the tax rebates were concentrated on products easy to transport and where the price differential between Finland and Estonia were the largest. Thus, the largest tax rebates were directed to spirits and strong liquor. In other words: economical considerations overplayed health considerations (Alkoholijuomaveron epävirallinen seurantaryhmä 2005).

Summing up the deaths due to alcohol related diseases and alcohol poisoning and those due to suicide gives and steeply increasing trend as the GDP grows. A darker explanation for the decline of suicide mortality might be that the greater availability of alcohol makes it easier to take your life indirectly through drinking than by a direct suicide.

As a summation of the data presented above, some of the indicators for social problems show an increasing linear relationship to GDP some don't. I do not claim that GDP growth itself causes social problems, but I suspect that the structural changes done to achieve economic growth might have some influence. On the other hand, none of the indicators presented seems to support the claim that economic growth would reduce social problems. Thus, the figures presented here do not support the thought that economic growth would have benefited "the least advantaged" in Finland.

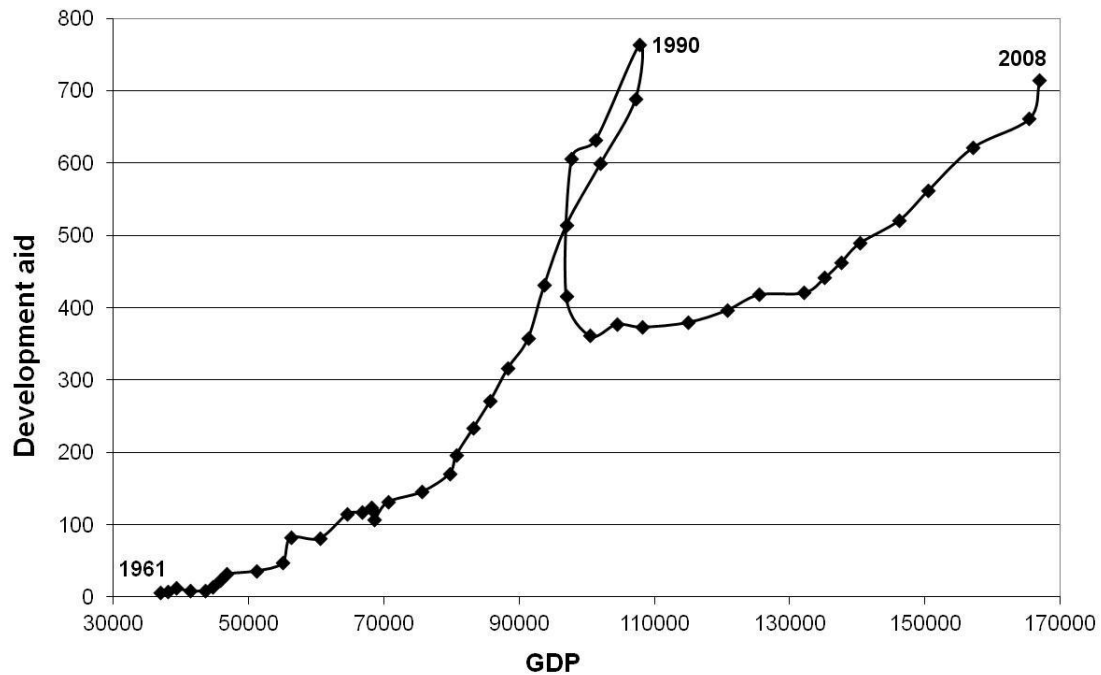
### **The difference principle in a finite world**

The least advantaged people are, however, not living within Finnish borders. Therefore, we have to widen our test run to include developing countries and the external effects of Finland's economic growth they are receiving. Following Rawls and Charles Beitz (1999, 133) we can do this by reinterpreting the original position as a sort of international conference:

Now at this point one may extend the interpretation of the original and think of the parties as representatives of different nations who must choose together the fundamental principles to adjudicate conflicting claims among nations. (Rawls 1999a, 331.)

Just like Brian Barry (1989: 189), I see no reason why the same arguments valid on a domestic level would not compel the representatives of countries to choose a global difference principle to govern the relations between countries.

It can be argued that economic growth in Finland would also be of benefit to people in developing countries, as we could afford to give more development aid.<sup>4</sup> The development of Finland's development aid until 1990 clearly supports this argument. From 1961 to 1990, Finland's development aid increased along with the economic growth from 6 million to 765 million euro (measured by the 2000 price level), as we can see from Figure 2. During the following economic recession, it dropped to 372 million euro in 1994. The 1990 level was almost reached by 2008, but reaching that meanwhile the gross domestic product had grown by 55 per cent larger. In other words, the share of our affluence devoted to developing aid almost halved, from 0.71 per cent of our gross domestic product to 0.45 per cent. We feel poorer despite our continuous GDP growth. (Ministry for Foreign Affairs of Finland 2010; Massa and Einola-Head 2007).

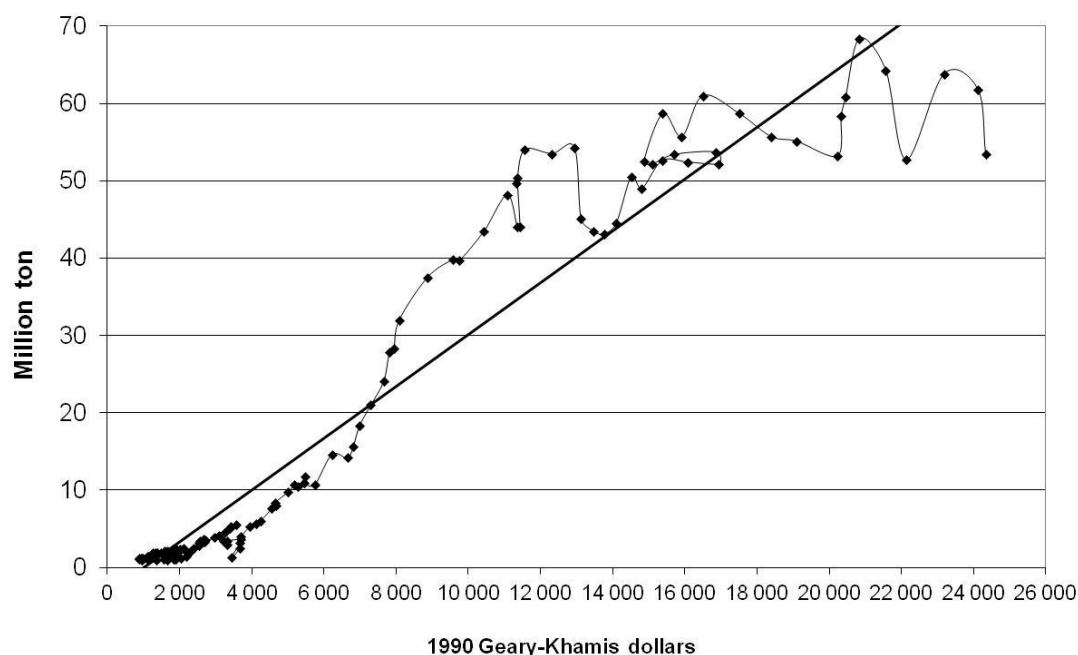


**Figure 2.** The correlation between Finland's GDP and development aid 1961 –2008 (Million euro, price level 2000)

Source: Ministry for Foreign Affairs of Finland & Statistics Finland.

We have also to take into account external environmental effects of our economic growth. One of the most prominent effects is the global climate change caused by carbon dioxide and other greenhouse gas emissions. As we can see from Figure 3, Finland's carbon dioxide emissions have grown linearly along with the GDP growth ( $R^2=0.93$ ). In 148 years, from 1860 to 2008, GDP per capita has grown by the factor of 25, while carbon dioxide emissions have increased by the factor of 53. (Kunnas and Myllyntaus 2007 & 2009). A similar development can be found for most developed countries (Marland, Boden, and Andres 2005).

The costs of this carbon-fueled economic growth favoring present generations in the developed countries will mainly be paid by future generations of the poor in developing countries. According to the Intergovernmental Panel on Climate Change, the projected distribution of economic impacts of climate change is such that it would increase the disparity in well-being between developed countries and developing countries, with disparity growing for higher projected temperature increases. The highest human costs will be borne by the poorest poor, as they have lesser capacity to adapt and are more vulnerable to climate change damages. Even in regions with higher adaptive capacity, such as North America, Australia, New Zealand and the Nordic Countries there are vulnerable communities, such as indigenous peoples. (IPCC 2007a; ACIA 2004.)



**Figure 3** The relation between Finland's carbon dioxide emissions and GDP per capita, 1860 – 2008

Source: Kunnas & Myllyntaus (2007&2009); Maddison (2010); Statistics Finland, [www.stat.fi](http://www.stat.fi) (accessed 2.12.2012)

According to a report by FAO sixty-five developing countries, home to more than half of the developing world's total population, risk losing about 280 million tonnes of potential cereal production as a result of climate change by 2080. This loss would have a yearly value of \$56 billion, and would alone almost completely offset current yearly development aid of \$70 billion. (FAO 2005; World Bank 2005.)

According to Rawls (1999a: 119) the participants in the original position must choose principles the consequences of which they are prepared to live whatever generation they turn out to belong to. Based on this notion and the preceding discussion, I claim that the second principle that would be formulated behind the veil of ignorance would not focus solely on economic inequalities, but would also include the concepts environmental space and the affiliated equity principle. Thus, we are able to avoid the ethical problems caused by resource depletion, which is brought up by Brian Barry (1991: 270-71).

*Environmental space* is the total amount of pollution, non-renewable resources, agricultural land and forests that can be used globally without impinging on access by future generations to the same resources (Friends of the Earth Netherlands 1990.) I argue that the environmental space should be included as a primary good into the Rawlsian framework. Primary goods are goods that normally have a use whatever a person's rational plan of life. For simplicity, Rawls (1999a, 54) assume that primary goods at the disposition of society are rights liberties, and opportunities, and income and wealth. I argue that the lack of environmental space might be detrimental to all the other primary goods.

The *Equity principle* related to Environmental space claims that all people on the earth have an equal right to use the environmental space. Thus, the one person's environmental space can be calculated by dividing the total environmental space with the earth's population. (Friends of the Earth Netherlands 1990.) In a Rawlsian

framework, eventual inequalities in the distribution of the rights to environmental space should be to the greatest benefit of the least advantaged, consistent with the just savings principle.

According to Joan Martínez-Alier (1998) developed countries have accumulated an ecological debt through their overuse of their environmental space. One of the main single sources of the accumulated ecological debt is disproportionate emissions of carbon dioxide and other greenhouse gases by industrialized countries. According to estimates by Christian Aid, G7-countries are running up carbon debts in economic efficiency terms of around \$13 trillion each year (Simms, Robins & Meyer 1999). A more modest estimate of the carbon debt is presented by Vinod Raina (2000). With a price tag between 10 and 20 American dollars per tonne of excess emissions, he ends up in a yearly carbon debt for the G7 countries between 15 and 30 billion dollars a year and for all northern industrial countries between 30 and 60 billion dollars. Most recently, Olivier Ragueneau (2009) has estimated that the carbon debt equals the total external debt of developing countries.

A revised version of the second principle would transfer the burden of proof to industrialized countries. To justify the present distribution of raw material use, we should be able to show that the present distribution is in the favour to those least advantaged. The least advantaged people would then always have a veto right, as we started from an equal distribution in the original position. An unequal use of the ecological space would thus only be justified if it would be to the greatest benefit of the least advantaged. This would also mean changes to the “just savings rate” to include natural resources and environmental degradation. (Compare to Rawls 1999b: 262 and Barry 1989: 193.)

The participants in the original position might reach a mutual understanding of a transition period towards a level of resource use within the environmental space. A motivation for this transition period could be that a sudden transition might cause unrest and disorder harming the common good.

### **Just savings rate and an uncertain future**

Since people feel moral responsibility for succeeding generations, a chain of justice between all generations is guaranteed. Rawls argues that under these circumstances a just savings principle would be chosen. People would agree on sacrifices of the current generation in order to benefit the successors. Rawls suggests that an appropriate savings rate should be chosen according to the stage of development of society. He assumes that the worst-off group will be in the first generation due to positive economic growth and technological development over time. (Rawls 1999a: 251-8; Wall 2003: 85.)

In a finite world with resource depletion and environmental pollution, this assumption does not necessarily hold. If we continue to live beyond our environmental space, the situation might be reversed such that the worst-off group will be in future generations. According to Brian Barry (1999: 106) justice requires that future generations be at least no worse off than those in the present. Securing this requirement is, however, no easy task in the presence of complex environmental problems such as global climate change, loss of biodiversity or GMO-contamination (Gardiner 2006; Carolan 2008, Dodds 2005).

Marcel Wissenburg (1998 and 1999: 173-98) suggests as a solution an interpretation of the just savings principle taking into account also environmental issues: a restraint principle demanding:

...no goods shall be destroyed unless unavoidable and unless they are replaced by perfectly identical goods; if that is physically impossible, they should be replaced by equivalent goods resembling the original as closely as possible; and if that is also impossible, a proper compensation should be provided.

This principle would help if a proper compensation could be provided. One obvious problem is that we would have to calculate compensations for possible future losses. Another problem is that necessarily compensation might be astronomical (Lenton et al. 2008).

In such complex questions, I would support the use of the maximin rule as the decision rule, as Jon Barnett and W. Neil Adger (2003) propose for climate change. According to Rawls (1999a: 133):

The maximin rule tells us to rank alternatives by their worst possible outcomes: we are to adopt the alternative the worst outcome of which is superior to the worst outcomes of the others.

In the case of climate change, we can for example choose between different levels of greenhouse gas abatement measures and corresponding probabilities of sea level changes due to melting of polar ice and glaciers due to the warming of the climate. The decision to do no abatement would be economically the best option in a circumstance, that the majority of climate scientist turn out to be wrong and no climate change and corresponding sea level change occur, as we could avoid all abatement expenses. In other circumstances this could lead to a sea level rise with 60-70 cm by 2100 (The maximum sea level changes of different scenarios in the IPCC Climate Change 2007 report) (IPCC 2007a).

John C. Harsanyi (1976: 37-63) criticises maximin principle as the decision rule for the participants in the original position as it can have highly paradoxical implications. He illustrates this with an example where a person living in New York City cannot accept a well paid job in Chicago as there is a small possibility that he might be killed in a plane accident. Instead of the maximin principle, he proposes the use of *expected utility maximization* as the decision rule under uncertainty. There are, however, at least two fatal problems with this proposed rule in such a complex case as global warming:

- (1) We do not know either the probabilities for different outcomes or the costs related to them. Available information is restricted to the knowledge, that the more greenhouse gases we emit the more the climate is likely to warm and sea-levels to rise. For each greenhouse gas concentration level a range of potential changes in the global mean temperature is predicted, and for each change in global mean temperature a range of potential changes in average regional temperature, precipitation, and extreme weather events. (IPCC 2001b: 918.)
- (2) Even maximization of expected utility would lead to the same paradoxical implications in the case of greenhouse emissions. This is due to the possibility of triggering runaway carbon dynamics, for example due to large releases of methane due to thawing permafrost and/or destabilised methane clathrates due to warming oceans (Hadley Centre 2005; IPCC 2001a). This could make the whole world uninhabitable causing infinite

economic cost. Thus even with a minimal probability it would generate infinite disutility in maximization of expected utility.

Even without these two fatal problems expected utility maximization would not be chosen in the original position. It is a gamble on the expense of the least advantaged for the benefit of the wealthier ones, and would therefore, only be chosen if all the participants in the original position would be willing to gamble on the prospect of being the wealthier ones. For example, Bangladesh, which is causing only 0,06 per cent of global carbon dioxide emissions, might lose 11 per cent of its land area with a sea-level rise of 45 cm and 21 per cent with a sea level rise of 1 meter, and the population exposed to sea-level rise would be 5,5 respective 15 million. Bangladesh faces the costs of gambling that there will be no climate change and sea-level rising, but the saved abatement costs would mostly benefit the industrialised countries responsible for most of the greenhouse gas emissions. (IPCC 2001b.)

The advantage of the maximin criterion is that much less information is needed, thus it avoids the first problem facing expected utility maximization. The paradoxical implications mentioned by Harsanyi just shows that the maximin criterion does not work on a single event level but on a more generalised level. In Rawls' (1974) own words: "Maximin is a macro not a micro principle". The person in Harsanyi's example might indeed die in a plane accident if he accept the well paid job in Chicago, but he might as well be run over by a cab while staying in New York.

Following the maximin criterion, we should limit the climate change at a modest level as it cannot be stopped altogether due to accumulated emissions in the atmosphere. According to the mitigation assessment by IPCC Working Group III it is, for example, possible to stabilize carbon dioxide concentrations in the atmosphere at well below doubling of CO<sub>2</sub> above pre-industrial levels (at or below 450 ppm) at a cost no more than around a one-tenth percent decline in the average yearly global GDP growth. In this case, the temperature change from 1990 to 2100 could probably be limited to around two Celsius degrees and the temperature change in equilibrium around 3°C. In this case, the expected average sea-level change by 2100 could be reduced below 30 cm. (IPCC 2007b and 2001c.)

This stabilization level would require, in addition to emission reduction in the developed countries, technology transfer to developing. Equity concerns would also require compensation payments for past and future emissions to the victims of climate change. An extreme case is climate refugees, who Sujatha Byravan and Sudhir Chella Rajan (2010: 241) argue to be allowed refuge in a manner that is proportional to a host's cumulative emissions of greenhouse gases.

### **What are we aiming at?**

Based on the foregoing discussion, I claim that economic growth cannot be taken as the ultimate policy goal. I am, however, not claiming that economic growth itself is the problem; the problems related to economic growth seems to stem from the subordination of all other policy goals to it. In the extreme case, the "social basis of self-respect" of some citizens is offered to achieve fast economic growth (section 3 above). Economic growth might still be a proper means, especially in poorer countries, but is not a good goal itself. The relevance of intelligently setting our goals gains further importance as we strive to drop our consumption to the level required to stay within our environmental space.

Utilitarians might seek guidance from the increasing number of papers going back to Bentham, asking the question: "What makes people happy?" (See Gowdy 2005: 211-2 and the references cited there.)

Those inclined towards virtue ethics might strive to seek for good life. According to Sirkku Hellsten (1997, 66), we need, however, some definition of the "good life":

Without any common definition of "the good life", without any public consensus on "the well-being" that is to be achieved and that is to be provided by the state, there is no end to the demands of the citizens. ...The just society described by Rawls and sought after by modern welfare democracies is therefore doomed to grow in the shape and pattern of the advancement of one's own interests.

Rawls (1999a, 380) defines a person's good as the successful execution of a rational plan of life. Freedom and a fair division of resources are needed so that all people have a chance to execute their own rational plan of life:

Indeed, with certain qualifications (§83) we can think of a person as being happy when he is in the way of a successful execution (more or less) of a rational plan of life drawn up under (more or less) favourable conditions, and he is reasonably confident that his plan can be carried through. (Rawls 1999a, 359.)

Here Rawls is close to the opinion of J.S. Mill (1909-14):

The only freedom, which deserves the name, is that of pursuing our own good in our own way, so long as we do not attempt to deprive others of theirs, or impede their efforts to obtain it.

If we live by drawing on more than our fair share of the environmental space, we deprive forthcoming generations their freedom to pursue happiness, a good life and their own good, or impede their efforts to obtain it.

### **Settling the scores**

A major scientific meeting on climate change, preceding the Copenhagen climate conference in 2009, collecting 2 000 delegates from nearly 80 countries called for a deal on 80 percent emission cuts in the developed countries by 2050 to pave the way for a global emission cut by 50 percent. This would enable us to stay below a two Celsius degree global warming, which is what would be necessary to avoid the direst prognoses related to climate change.<sup>5</sup>

The Copenhagen conference did not deliver the deal, and three years later the global community remains at large in the same trenches. Developed countries call for emission reductions also in developing countries, while the latter argues that the developed countries had caused this mess in the first place, and should also be responsible for the cleanup. Both sides of the trench line are to some degree right. The climate goal cannot be achieved by the developed world alone. Developing countries are, however, rightly arguing that the global warming is due to historical emissions by the developed countries. The mutual indebtedness described in chapter 4, developed countries ecological debts vs. developing countries conventional monetary debts, provides an opportunity to settle the scores. Considering this mutual debt, all

developing countries joining a global climate treaty should get their debt cancelled. Then we can leave the dispute about historical responsibility behind, and start from a clean table.<sup>6</sup>

It should be noted that I am not suggesting debt forgiveness, but a mutual debt swap. Thus, the discussion around debt forgiveness does not apply here — we do not have to consider how the accumulated debts were used on either side on the debt swap. It does not matter whether the money lent by developing countries were wasted because of fraud and corruption. Neither does it matter whether the money saved by developed countries through excess emissions of carbon dioxide were used for productive investment, to the benefit of the whole society or for luxury consumption by the elite. This debt swap is though no excuse for reckless lending and spending or excess emissions in the future.

A further incentive for the cancellation of the debts is that it would help restoring the crumbling banking system by cleaning the balance sheets from unrealistic and non recoverable claims. The investments in energy savings and green energy necessary to reach the climate goal again would provide economic stimulus and much needed employment. The economic growth achieved as a by-product of an improved financial market and job creation could be justified even from a Rawlsian perspective.

In chapter 4, I argued that the participants in the original position might reach a mutual understanding of a transition period towards a level of resource use within the environmental space. The gentler the slope the longer it would take to reach the sustainable emission level and the more additional warming we commit the planet to. As the highest human costs of additional warming would be borne by the poorest poor, we would need to accompany such a design of an emission path towards sustainable emission, with a system to collect funds for the needs of adaptation to the adverse impacts from climate change. The total amount of funds collected should cover the needs for adaptation needs created by the further climate change the chosen emission path would lead to. Following the 'polluter pays' principle the funds should be collected in proportion to the responsibility for proceeding climate change and redistributed in proportion to the needs for adaptation.<sup>7</sup>

## **Conclusions**

The purpose of this article was to examine whether further economic growth can be justified in a warming climate in the light of John Rawls' Theory of justice. The focus was on the second principle arguing that social and economic inequalities are to be arranged so that they are to the greatest benefit of the least advantaged. I argued that, in a Rawlsian framework, people with social problems can be defined as belonging to the group of "the least advantaged." Thus, economic growth could be justified if it reduces social problems. Finnish data does, however, not support the thought that economic growth would reduce social problems.

It can be argued that economic growth in developed countries benefits people in developing countries, as they can afford to give more development aid. I showed, however, that this has not been large enough to compensate for its negative side effects, most notably that of a warming climate. Furthermore, the costs of current carbon-fueled economic growth favoring present generations in the developed countries will mainly be paid by future generations of the poor in developing

countries. The highest human costs will be beard by the poorest poor, as they have lesser capacity to adapt and are more vulnerable to climate change damages.

The problems related to economic growth seems to stem from the subordination of all other policy goals to it. In the extreme case, the “social basis of self-respect” of some citizens is offered to achieve fast economic growth. Thus, I claim that economic growth cannot prevail as the ultimate policy goal. The relevance of setting our goals gets further importance as we strive to drop greenhouse gas emissions to a “secure” level.

This climate goal cannot be achieved by the developed world alone. Developing countries are, however, rightly arguing that the global warming is due to historical emissions by the developed countries. The mutual indebtedness, developed countries ecological debts vs. developing countries conventional monetary debts, provides an opportunity to settle the scores. Considering this mutual debt, all developing countries joining a global climate treaty should get their debt cancelled. Then we can leave the dispute about historical responsibility behind, and start from a clean table our shared pursue for happiness and a good life for all.

## References

- ACIA (2004). *Impacts of a Warming Arctic. Arctic Climate Assessment*. Cambridge: Cambridge University Press, <http://www.acia.uaf.edu> (Accessed 2 December 2012).
- Alkoholijuomaveron epävirallinen seurantaryhmä (2005). *Alkoholiveron alentamisen ja matkustajatuontimääräysten muuttamisen vaikutuksia*. Helsinki: Valtiovarainministeriö Vero-osasto: Tutkimukset ja selvitykset 1/2005, [http://www.vm.fi/vm/fi/04\\_julkaisut\\_ja\\_asiakirjat/01\\_julkaisut/075\\_verotus/94080/94079\\_fi.pdf](http://www.vm.fi/vm/fi/04_julkaisut_ja_asiakirjat/01_julkaisut/075_verotus/94080/94079_fi.pdf) (Accessed 2 December 2012).
- Barnett, J. and Adger, W. N. (2003). Climate Dangers and Atoll Countries. *Climatic Change* 61(3): 321-37.
- Barry, B. (1989). *Theories of Justice. A Treatise on Social Justice, Volume 1*. Berkeley: University of California Press.
- Barry, B. (1991). *Liberty and Justice, Essays in Political Theory 2*. Clarendon Press.
- Barry, B. (1999). Sustainability and intergenerational justice. In A. Dobson (ed.) *Fairness and Futurity*. Oxford: Oxford University Press.
- Beitz, C. (1999). *Political Theory and International Relations*. (Revised ed.). Princeton, New Jersey: Princeton University Press 1999.
- Byravan, S. and Chella Rajan, S. The Ethical Implications of Sea-Level Rise Due to Climate Change. *Ethics & International Affairs*, 24, no. 3 (2010), pp. 239–60.
- Carolan, M. S. (2008). The Multidimensionality of Environmental Problems: The GMO Controversy and the Limits of Scientific Materialism. *Environmental Values* 17(1): 67-82.
- Cohen, G.A. (2000). *If You're an Egalitarian, How Come You're So Rich*. Cambridge: Harvard University Press.
- Daniels, N. (1975). (ed.). *Reading Rawls - Critical Studies of A Theory of Justice*. Oxford: Basil Blackwell.
- Dodds (2005). The Commons, Game Theory, and Aspects of Human Nature that May Allow Conservation of Global Resources. *Environmental Values* 14(4): 411-425.
- Eckstein, T. and Paunonen, H. (2001). Suomen Laffer-käyrä. *Kansantaloudellinen aikakauskirja* 2: 278 – 282.
- FAO (2005). *Impact of Climate Change and of Pests and Diseases on Food Security and Poverty Reduction*, Background Document for the 31st Session of the

- Committee on World Food Security 23-26 May 2005. Rome: FAO, <ftp://ftp.fao.org/docrep/fao/meeting/009/j5411e.pdf> (Accessed 2 December 2012).
- Friends of the Earth Netherlands (1990). *Action Plan for a Sustainable Netherlands*. Vereniging Milieudefensie.
- Føllesdal, A. (2002). Rawls in Nordic Countries. *European Journal of Political Theory* 1(2): 181-98.
- Gardiner, S. (2006). A Perfect Moral Storm: Climate Change, Intergenerational Ethics and the Problem of Moral Corruption. *Environmental Values* 15(3): 397-413.
- Gowdy, J. (2005). Toward a new welfare economics for sustainability. *Ecological Economics* 53(2): 211-222.
- Hadley Centre (2005). *Stabilising climate to avoid dangerous climate change – a summary of relevant research at the Hadley Centre*. Hadley Centre 2005, <http://www.consciousclimate.com/pdfs/Dangerous%20Climate%20Change%201.pdf> (Accessed 2 December 2012).
- Hansson, Å. (2000). *Limits of Tax Policy*. (Doctoral Dissertation). Lund Economics Studies 90. Lund: Lund University.
- Harsanyi, J. C. (1976). *Essays on ethics, social behaviour, and scientific explanation*. Dordrecht: D. Reidel Publishing Company.
- Heikkilä, M. (1995). Sosiaalisten ongelmien ja taloudellisen muutoksen välisestä yhteydestä. *Talous- ja yhteiskunta* 3.
- Hellsten, S. (1997). *In Defense of Moral Individualism*. Acta Philosophica Fennica 62. Societas Philosophica Fennica.
- Hintikka, J., Saarinen, P. I., and Viinamäki, H. (1999). Suicide mortality in Finland during an economic cycle, 1985-1995. *Scandinavian Journal of Public Health* 2: 85-88.
- IPCC (2001a). *Climate Change 2001: The Scientific Basis. Contribution of Working Group I to the Third Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge: Cambridge University Press.
- IPCC (2001b). *Climate Change 2001: Impacts, Adaption, and Vulnerability. Contribution of Working Group II to the Third Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge: Cambridge University Press.
- IPCC (2001c). *Climate Change 2001: Mitigation. Contribution of Working Group III to the Third Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge: Cambridge University Press.
- IPCC (2007a). *Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge: Cambridge University Press, 2007.
- IPCC (2007b). *Climate change 2007: Mitigation. Contribution of Working group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge: Cambridge University Press.
- Kukathas, C. and Pettit, P. (1990). *Rawls – A Theory of Justice and its Critics*. Cambridge: Polity Press.
- Kunnas, J. (2013). "An Outline for Funding Adaptation and Disaster Management Schemes", *Part 3, Pages 427-436* in Walter Leal Filho (ed.) *Climate Change and Disaster Risk Management*. Springer-Verlag, Berlin, Heidelberg, 2013. DOI: 10.1007/978-3-642-31110-9
- Kunnas, J. (2011). "How to Proceed After Copenhagen." *Electronic Green Journal*, 1(31), 2011. <http://escholarship.org/uc/item/6bf2k0dz#>
- Kunnas, J. and Myllyntaus, T. (2009). Postponed Leap in Carbon Dioxide Emissions: Impacts of Energy Efficiency, Fuel Choices and Industrial Structure on the Finnish Energy Economy, 1800 – 2005. *Global Environment* (3): 154 - 189.

- Kunnas, J. and Myllyntaus, T. (2007). The Environmental Kuznets Curve Hypothesis and Air Pollution in Finland. *Scandinavian Economic History Review* 55(2): 101 – 127.
- Lenton, T. M., Held, H., Kriegler, E., Hall, J. W., Lucht, W., Rahmstorf, S. and Schellnhuber, H. (2008). Tipping elements in the Earth's climate system. *PNAS* 105(6): 1786-1793.
- Maddison, A. (2010). Statistics on World Population, GDP and Per Capita GDP, 1-2008 AD, <http://www.ggdc.net/MADDISON/oriindex.htm>. (accessed 2 December 2012).
- Marland, G., Boden, T.A. and Andres, R. J. (2005). *Global, Regional, and National CO<sub>2</sub> Emissions. In Trends: A Compendium of Data on Global Change. Carbon Dioxide Information Analysis Center, Oak Ridge National Laboratory, U.S. Department of Energy.*
- Martínez-Alier, J. (1998). *Ecological Debt vs. External Debt, A Latin American Perspective*. Quito: Acción Ecológica.
- Massa, S., Einola-Head, O. (2007). (eds.). *Suomen Kehitysyhteistyö 2006*. Helsinki: Ulkoasiainministeriö.
- Mavrotas, George and McGillivray, Mark (2009). (eds), *Development aid : a fresh look*. Basingstoke: Palgrave Macmillan.
- Mill, J. S. (1909-14). *On Liberty*. The Harvard Classics Vol. XXV, Part 2. P.F. Collier & Son. <http://www.bartleby.com/25/2/>, (accessed 2 December 2012).
- Ministry for Foreign Affairs of Finland (2010). *Appropriations for development cooperation*. Helsinki.
- Narinen, L. (1993). *Taloudellinen muutos ja sosiaaliset ongelmat Suomessa 1972–1991*. Pro gradu –thesis. Helsinki: Helsingin kauppakorkeakoulu.
- Narinen, L. (1995). "Taloudellinen muutos ja sosiaaliset ongelmat Suomessa". *Dialogi* 2.
- Pursiainen, T. (1993). *Kriisiajan etiikka*. Polemia-sarja nro 3. Helsinki: Kunnallisan kehittämissäätiö & Gummerus.
- Pursiainen, T. (1995). *Nousukauden etiikka*. Polemia-sarja nro 9. Helsinki: Kunnallisan kehittämissäätiö & Gummerus.
- Ragueneau, O. (2009). CO2 arithmetics and geopolitics, Poster presentation P11.12. *Abstract Book. Climate Change, Global Risks, Challenges & Decisions, Copenhagen 2009, 10-12 March*. International Alliances of Research Universities & University of Copenhagen, 2009.
- Raina, V. (2000). *Ecological Debt, An enormous Debt the North owes the South*. Jubileesouth-Asia/Pacific & BGVS, 2000.
- Rawls, J. (1971). *Theory of Justice*. Oxford: Oxford University Press.
- Rawls, J. (1974). "Some reasons for the Maximin Criterion" *The American Economic Review* 64(2): 141-46.
- Rawls, J. (1999a). *Theory of Justice (revised edition.)* Oxford: Oxford University Press.
- Rawls, J. (1999b). *Collected Papers*. (Samuel Freeman ed.). Cambridge: Harvard University Press.
- Raunio, K. (1983). *Hyvinvointi ja taloudelliset muutokset. Tutkimus suomalaisen yhteiskunnan hyvinvoinnin sisällöstä ja taloudellisten muutosten hyvinvointivaikutuksista vuosina 1950-1977*. Sosiaalipoliittisen yhdistyksen tutkimuksia 41
- Sen, A. (1982). *Choice, welfare and measurement*. Oxford: Blackwell.
- Sen, A. (1976). Welfare Inequalities and Rawlsian Axiomatics". *Theory and Decision* 7: 243-262.
- Simms, A., Robins, N. & Meyer, A. (1999). *Who owes who - Climate change, debt, equity and survival*. London: Christian Aid.
- Singer, P. (2002). *One World – the ethics of globalization*. New Haven: Yale University press.

- Upanne, M., Hakanen, J., Rautava, M. (1999). *Can Suicide Be Prevented? The Suicide Project in Finland 1992-1996: Goals, Implementation and Evaluation*. Helsinki: STAKES National Research and Development Centre for Welfare and Health, <http://www.stakes.fi/pdf/mentalhealth/mu161.pdf> (accessed 2 December 2012).
- Wall, S. (2003). Just Savings and the Difference Principle. *Philosophical Studies* 116(1).
- Vanderheiden, S. (2008). *Atmospheric Justice*. New York: Oxford University Press.
- Wellbank, J.H., Snook, D. and Mason, D.T. (1982). *John Rawls and his critics: an annotated bibliography*. Garland reference library of the humanities; vol. 303. New York: Garland.
- Wenar, L. (2003). What we owe to distant others. *Politics, philosophy & economics* 2(3).
- Wissenburg, M. (1998). *Green Liberalism: The free and the Green Society*. London: University College of London Press.
- Wissenburg, M. (1999). An Extension of the Rawlsian Savings Principle to Liberal Theories of Justice in General. In A. Dobson (ed.), *Fairness and Futurity. Essays on Environmental Sustainability and Social Justice*. Oxford: Oxford University Press.
- World Bank (2005). *Global Development Finance – Mobilizing Finance and Managing Vulnerability, I: Analysis and Statistical Appendix*. Washington DC: World Bank.

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<sup>1</sup> A Google Scholar search (5.10.2012) with the key words Rawls and "Theory of Justice" returned about 50 600 results. A Rawls bibliography from 1982 lists 2512 articles and books published in English which refers to the works of Rawls, and of these most refers to the Theory of Justice (Wellbank, Snook, and Mason 1982). For concise overviews of the discussion, see Daniels (1975), or Kukathas and Pettit (1990). A collection of Amartya Sen's (1982) writings *Choice, welfare and measurement* includes several papers dealing with Rawls.

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<sup>2</sup> See for example the editorial by Niklas Ekdal in the Swedish newspaper *Dagens Nyheter* 1.12.2002, one week after Rawls death and Pursiainen (1993 & 1995).

<sup>3</sup> As indicators for psychosocial problems Raunio used asocial behaviour and passive disorder. As indicators for asocial problems he used the amount of divorces, assaults, people treated for drug use and the use of alcohol per capita. As indicators for passive disorder he used suicides and people taken into psychiatric institutions per capita.

<sup>4</sup> I am not going into the lengthy discussion about the effectiveness of development aid, for that see for example Mavrotas and McGillivray (2009) and references 22-44 in Wenar (2003).

<sup>5</sup> Climate Change, Global Risks, Challenges & Decisions, Copenhagen 2009, 10-12 March. [www.climatecongress.dk](http://www.climatecongress.dk)

<sup>6</sup> For further discussions on historical responsibility see Vanderheiden (2008, 188-192) and Kunnas (2011).

<sup>7</sup> See Kunnas (2013) for a further discussion on this issue.

Jan Kunnas <[j.g.kunnas@stir.ac.uk](mailto:j.g.kunnas@stir.ac.uk)>, Stirling Management School – Economics, University of Stirling, FK9 4LA Scotland, United Kingdom