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# Poverty, Population, Inequality, and Development in Historical Perspective

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*The rich nation is the novelty, and the development  
that makes entire nations rich is itself the pivotal  
development of modern history*  
(Asa Briggs, British historian, 1963)

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## Abstract

Seen in historical perspective the main economic issues of the present world (such as poverty, inequality, backwardness) appear in a somewhat different light than in many current discussions. The achievements of the modern age, and in particular of the post- World War II period, are considered in the perspective of economic and demographic history, and in their relations with the contemporary systems of production and of international relations.

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## 1. Introduction

We live in a very unequal world plagued by poverty. Overall, economic progress is perceived as too slow, as the advance of “globalization” renders the inequalities and miseries of the world less tolerable than in the past. There is a widespread rejection in some quarters (radical economists and political scientists in particular) of the economic institutions of the modern world (identified under the garb of “capitalism” and “globalization”).<sup>1</sup> However, from the perspective of economic history, the present state of the world appears in a different light. A rather uncontroversial fact is that never in the history of mankind have there been so many paupers as in the present times. But the

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<sup>1</sup> For a sympathetic survey of those opinions see Zolo (2007). For a confutation of all sort of widespread anti-globalization prejudices and conventional opinions see Bhagwati, 2004. For a forceful defence of capitalist globalization see Norberg (2003).

reason for this is that there have never been so many people around. Indeed never in the history of the world has the percentage of (absolutely) poor people been so low. Moreover, quite recently even the absolute number of world paupers has kept decreasing. Economic inequality in the world as a whole has probably never been so high, but the reason is not, as sometimes hinted, that the lot of the poorer has worsened (“exploitation”), but the dramatic, albeit unequally distributed, economic improvement of the many. At the same time the propensity towards economic inequality (as captured by the extraction ratio, defined below) has probably never been so low. The agricultural revolution and technological progress have contributed to decisively overcome the Malthusian trap and bring about an impressive demographic explosion. Indeed, never in the history of the world has economic and demographic growth been so rapid as after WWII, greatly favoured by the absence of major wars,<sup>2</sup> of the sort that were endemic in the past, and by the extraordinary expansion of international exchanges. Global overall peace can be obviously attributed to the mutual threat of atomic destruction, but also to a change of perspective in international relations against the respectability of wars of aggression and conquest, leading to a change in the rules of the game, that was already attempted, but utterly failed, after the first World War. The price to pay has been the lingering of the world on the brink of a global nuclear catastrophe, as well as the freezing of frontiers and national aspirations (which have surged again with a vengeance after the end of the Cold War). But Malthusian traps, and different forces leading to destabilization of relatively peaceful world coexistence (such as the inevitable diffusion of nuclear capabilities and the raise of nationalism in some quarters) are looming, with the possibility of drawing the post-war period of overall peaceful economic and demographic growth eventually to a close.

## 2. Poverty

Historically world population has been increasing at a very slow pace, amounting to near stagnation, held in check by high mortality rates, especially of child mortality. Per capita incomes have been mostly at what we would regard utter poverty levels, and whenever they have increased they have done so at a very slow pace, amounting, in the long run, to some small fraction of one percent yearly. Following the industrial revolution things have started radically to change. But never have world population and world income increased so tumultuously as after the Second World War; indeed, the explosion both in wealth and population in this post-war period has been an historical unicum. Scientifically speaking, from the perspective of the history of mankind, the anomaly to be explained is not backwardness and poverty, but development and wealth. The brakes that in the previous epochs constrained the growth of world population, and which started to slacken following the Industrial Revolution,<sup>3</sup> have apparently been swept away by the progressive lengthening in life expectancy, leading to unprecedented demographic growth, which has been accompanied by unprecedented economic growth.

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<sup>2</sup> This means all-out wars between major military powers.

<sup>3</sup> Or more exactly, following the scientific revolution of the sixteenth and seventeenth centuries that has led first to the Industrial Revolution and, subsequently, through the medical and public hygiene innovations it was able to conjure, to the Mortality Revolution of the second half of the nineteenth century and later, coinciding with the times of what has been dubbed the Second Industrial Revolution (cf. Easterlin, 1996, pp. 7-9, 23-29, 69 f.).

Still, a large part of humanity lives in appalling poverty conditions. Indeed, **there has never been such a high number of poor people in the world as in the post WWII period.** If conventionally (very conventionally, indeed) we define, following the World Bank, as (absolute)<sup>4</sup> poverty a daily consumption of less than two dollars,<sup>5</sup> in 2001 their number was estimated as 2.7 billion,<sup>6</sup> more than the entire world population in 1950.<sup>7</sup> The number of extreme poor consuming less than one dollar a day in 2001 is reckoned to have been close to 1.1 billion, about the same as the entire world population in 1820 (which may be conventionally taken as the year of the coming of age of the Industrial Revolution in the UK and of its spreading outside); the number of the extreme poor in previous years is estimated to have been even higher, about 1.6 billion around 1980 (before the recent tumultuous growth of the economy of China). Most of them are concentrated in third world countries, but a few millions are living in (and a number of them leaving from) Eastern Europe and Central Asia (the so called transition countries).<sup>8</sup> See the data in the following tables:<sup>9</sup>

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<sup>4</sup> Relative poverty depends on distribution. Then there is subjective poverty that depends on habits and aspirations, where the latter increase with the diffusion, facilitated by the means of mass communication, of the consumption models of the better off. We shall be concerned only cursorily with these issues.

<sup>5</sup> Or rather 2.15 dollars a day at 1993 purchasing power (somewhat less than 800 dollars a year), corresponding to 2 dollars of 1985 international purchasing power. According to the World Bank definition 1.08 dollars of 1993 purchasing power a day (somewhat less than 400 dollars a year), corresponding to 1 dollar at 1985 international purchasing power, characterize extreme poverty. In the text we use the colloquially usual distinction of 1 and 2 dollars a day. (For the definition of the international poverty line see World Bank, 2005, table 2.5, "Poverty", [http://devdata.worldbank.org/wdi2005/Table2\\_5.htm#definition](http://devdata.worldbank.org/wdi2005/Table2_5.htm#definition); see also UNPD, 2007, p. 367).

<sup>6</sup> Source: World Bank (2005), table 2.5 "Poverty", at [http://devdata.worldbank.org/wdi2005/Table2\\_5.htm](http://devdata.worldbank.org/wdi2005/Table2_5.htm). It should be noted that there has been actually a decrease (estimated at about 400 million) in the number of the extreme poor (less than 1\$ a day) during the 20 years from 1981 to 2001, but only because of the reduction of extreme poverty in China, and some further decrease in the amount of the less extreme poor seems to be happening in the more recent years. For some recent discussion on world poverty estimates and some updating, see Chen and Ravallion (2004) and (2007) and Ravallion, Chen and Sangraula (2007). Taking into account the overall number of the world poor, one can appreciate the enormous migratory potential towards the more prosperous (or even the less poor) countries in a shrinking world, with potential far-reaching social and political consequences (for more on this point see Chilosi, 2002). Countries of emigration can at the same time become countries of immigration from even poorer countries, such as notably in the case of Eastern Europe as a whole, or parts of North Africa. (On South-South migrations see Hujo and Piper, 2007.)

<sup>7</sup> See Table 1. We refer to the World Bank data as the most authoritative, even by no means uncontroversial, source. The accuracy of World Bank data is challenged in particular by Dhalla (2002) who estimates a significantly lower number of absolute poor and a much faster decrease in poverty in the two decades of accelerated globalization, between 1980 and 2000.

<sup>8</sup> The above data refer to Europe and Central Asia, but the poor in the area are essentially concentrated in the transition countries of Eastern Europe (including South-Eastern Europe) and of the former Soviet Union.

<sup>9</sup> The figures are expressed in millions, the data are extracted from World Bank, 2005, table 2.5.

**Table 1. Number of people living with less than 2\$ a day<sup>10</sup>**

Region	1981	2001
East Asia & Pacific	1,170	864
of which China	876	594
Europe & Central Asia	20	93 (113 in 1999)
Latin America & Caribbean	99	128
Middle East & North Africa	52	70
South Asia	821	1,064
Sub-Saharan Africa	288	516
Total	2450	2735
Excluding China	1,574	2,142

**Table 2. Number of people living with less than 1\$ a day<sup>11</sup>**

Region	1981	2001
East Asia & Pacific	796	271
China	634	212
Europe & Central Asia	3	17(30 in 1999)
Latin America & Caribbean	36	50
Middle East & North Africa	9	7
South Asia	475	431
Sub-Saharan Africa	164	313
Total	1,482	1,089
Excluding China	848	877

It is notable that the number of the poor in transition countries as a whole has reached a peak in 1999, just a visible sign of the hardship engendered by the transition process during the nineties, but since then it has started to decrease. The same applies to the percentage of the poor in the population, increasing, according to World Bank data, from 0.4 in 1987 to a peak of 6.3 in 1999, decreasing to 3.6 in 2001 (for those living with less than 1\$ a day); increasing from 3.3 in 1987 to a peak of 23.8 in 1999, decreasing to 19.7 in 2001 (for those living with less than 2\$ a day).<sup>12</sup>

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<sup>10</sup> Source: World Bank (2005), table 2.5 "Poverty", at [http://devdata.worldbank.org/wdi2005/Table2\\_5.htm](http://devdata.worldbank.org/wdi2005/Table2_5.htm).

<sup>11</sup> Source: ibidem.

<sup>12</sup> Source of the data in the following table: ibidem.

**Table 3. Percentage of the poor in Eastern Europe (in 2002)**

	Below1\$ a day	Below 2\$ a day
Albania	<2	11.8
Belarus	<2	<2
Bosnia	nd	nd
Bulgaria	4.7	16.2
Croatia	<2	<2
Cz. Rep.	<2	<2
Estonia	<2	5.2
Hungary	<2	<2
Latvia	<2	8.3
Lithuania	<2	6.9
Macedonia	<2	4
Moldova	22	63.7
Poland	<2	<2
Romania	<2	14
Russia	<2	7.5
Ser. Mon.	nd	nd
Slovenia	<2	<2
Slovakia	<2	2.9
Ukraine	2.9	45.7

### 3. The world poor as a percentage

But on the whole the share of the poor in the human population has never been so low.<sup>13</sup>

According to the historical estimates reported in Bourguignon and Morrison (2002, pp. 731-732), and taking into account the number of conventional poor people in 2001, estimated by the World Bank, as well as the estimate of the size of world population in 2001, reported in table 4, the share of world population living in poverty diminishes from 94,4% in 1820 to 44% in 2001, that of those living in extreme poverty from 83,9 in 1820 down to 18% in 2001. In the end, taking into account the fact that in the period the share of the poor has been greatly reduced, the fundamental explanation of why there are so many poor people in the world is that there are so many people around. Indeed, human population has increased steadily and dramatically in the last two centuries, and in particular in the last few decades. Some relevant data are reported in table 4.

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<sup>13</sup> Of course this depends crucially on the definition of the poor. Here we use the World Bank definition, whereby the poor are defined in terms of absolute purchasing power. This may not well correspond to a subjective, socially and environmentally conditioned, definition of poverty, in the sense of deprivation (see on this point, in particular, Kenny, 2006). Subjective deprivation may be a function of achieved living standards, and increasing expectations (cf. Easterlin, 1996, pp. 131-144). All this is perfectly true, but without a common measure one could hardly make intertemporal comparisons. Of course, in making the latter one should ideally go into detail as to the specific relevant circumstances of the various cases (possibly extending the narrative to the whole range of Sen's capabilities). Here we may be content to note that the trends in average incomes are corroborated by comparable trends in life statistics (see below).

Table 4<sup>14</sup> Human population in the course of history (in millions) <sup>15</sup>

8000 BC	5
1000 BC	50
500 BC	100
1 AD	231
1000	268
1500	438
1600	556
1700	603
1750	790
1800	980
1820	1,041
1870	1,271
1913	1,791
1950	2,535
1960	3,032
1970	3,699
1980	4,451
1990	5,295
1995	5,719
2001	6,148
2005	6, 515
2008	6,641, the 1/1/2008, as projected according to the <a href="#">World population clock</a>

To grasp the extent of the dramatic acceleration of population growth in recent times one may notice that the increase in population in the ten years between 1995 and 2005 (796 million) is more or less the same as that in the 10,000 years or so from the start of the agricultural revolution to the dawn of the industrial revolution (for which we may conventionally take year 1750).

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<sup>14</sup> The sources of the data are as follows: 8000 BC, Haub, 1995, p. 5, quoted in US Census Bureau (2007a); 1000 and 500 BC, McEvedy and Jones, 1978, pp. 342-351, quoted in US Census Bureau (2007a); 1-1700 and 1820-1913, Maddison (2006), p. 636; 1750 and 1800, United Nations, 1999; 1950-2005, United Nations, 2006, with the exception of 2001, taken from US Census Bureau 2007b. The data from 1800 in Europe and from 1900 in the other continents are regarded, by and large, to have a fair degree of reliability. The data concerning the previous years are just estimates or, even, more or less wild guesses. They should be considered to give an order of magnitude, rather than provide reliable data with any degree of precision (on this see Caldwell and Schindlmayr, 2002). Indeed, this applies even more to the estimates concerning national income in the tables that follow.

<sup>15</sup> Looking at the first lines of the table, comparing them with the last ones, one is forced to come to terms with the fact that the momentous historical events of our distant past, recollected and magnified in history books, involved such comparatively insignificant numbers of people.

If we concentrate our attention to Eastern Europe and the former Soviet Union in the periodization of table 6 below, we can see that the highest rate of population growth in history has taken place in the years 1950-73, slightly less but still remarkable was the rate of growth of population in 1870-1913, while the low rates in the period 1914-1950 were certainly due to the impact of two world wars and of their aftermath. The negative rate of growth in the latest period can be fairly attributed to the social and economic disruptions following the fall of the communist regimes.

### 3. An unequal world

While a considerable share of the world population still lives in poverty, world income and wealth are very unequally distributed. A recent research by *Wider*, the ONU economic research centre on poverty and development<sup>16</sup> (Davis et alii, 2006a), shows the extent of world inequality in the distribution of personal wealth:<sup>17</sup>

The 24 richer OECD countries own 83% of world private wealth (64% at PPP\$) with only 15% of world population and a per capita wealth of \$116,000 (114,000 at PPP\$). The 64 poorest countries with 40% of world population own 2% of world personal wealth (8% at PPP\$), with a per capita wealth of 1000\$ (5000 at PPP\$)<sup>18</sup>

In 2000 the 1% richest adults owned the 40% of overall private wealth (32% in PPP\$ terms)<sup>19</sup>; the richest 10%, 85%; the poorest 50%, 1% (4% in PPP\$ terms).<sup>20</sup>

The Gini index of inequality of overall world wealth distribution (calculated using current exchange rates) is given as 89 (80 in PPP\$ terms)<sup>21</sup>, the same as that of a group of 10, where 1 has 1000, and 9, 1 each.<sup>22</sup>

Income is distributed less unequally than wealth, but still in a markedly unequal way. According to most estimates, reported in Milanovic (2006, p. 8), the Gini

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<sup>16</sup> World Institute for Development Economics Research: <http://www.wider.unu.edu>.

<sup>17</sup> Where personal wealth is defined as “the value of physical and financial assets less liabilities” (Davies et alii, 2006a, p. 1). The data refer to the year 2000. Methodology: “average wealth level: based on household balance sheets and wealth survey data for 38 countries (56% of the world population and 80% of wealth) extended by regression methods to most other countries region--income class averages imputed to remaining countries...distribution of wealth: based on distribution data for 20 countries wealth concentration estimated from income distribution for most other countries region--income class averages imputed to remaining countries” (Davies et alii, 2006b). The data considered refer to the year 2000, and are either measured in dollar terms at the current exchange rates or in Purchasing Power Parity dollars (PPP\$; this means that all values are converted in dollars using exchange rates, such that the purchasing power of the dollar will be more or less the same once transformed in the various world currencies). It must be noted that passing from current dollars to PPP\$ reduces somewhat world inequality, since the dollar purchasing power is usually higher in poorer countries, but it does not alter substantially the global picture. It should be noted that an inquiry such as the one referred to above is based on limited data and fraught with methodological difficulties; therefore one should stress that, as is always the case with statistics, but much more in the present instance, the data should be considered to give some order of magnitude rather than to be taken at face value. For a detailed explanation of the methods used in the inquiry one may refer to the above source.

<sup>18</sup> *Ibidem*, Table 8.

<sup>19</sup> “37% reside in the US, 27% in Japan” (Davies et alii, 2006b).

<sup>20</sup> Davies et alii, 2006a, Table 10, and Table 11a.

<sup>21</sup> *Ibidem*, Table 12.

<sup>22</sup> Davies et alii, 2006b, p. 9.



coefficient of world income distribution is around 65% in the contemporary world.<sup>23</sup> To make a comparison, the Gini index of the distribution of family incomes of Italy is reported as 36, that of the USA 45, that of Sweden 25.<sup>24</sup> The state where the Gini index appears to be highest, among those reported in CIA's *World Factbook*, is Namibia with 71, but probably only because in other, even more unequal, third world countries no statistical data allowing its calculation are available.<sup>25</sup>

**Table 5. Poverty and income distribution in recent world history<sup>26</sup>**

year	Gini coefficient of world income distribution	Percentage of the population living in Poverty	Percentage of the population living in extreme poverty
1820	0.500	94.4	83.9
1850	0.532	92.5	81.5
1870	0.560	89.6	75.4
1890	0.588	85.7	71.7
1910	0.610	82.4	65.6
1929	0.616	75.9	56.3
1950	0.640	71.9	54.8
1960	0.635	64.3	44
1970	0.650	60.1	35.6
1980	0.657	55	31.5
1992	0.657	51.3	23.7
2001	0.657 (0.699) <sup>27</sup>	44	18

<sup>23</sup> The paper by Milanovic contains an interesting critical review of the different methodological approaches used to get those values. From the historical viewpoint it is believed that in the past income differences inside nations were relatively more relevant than nowadays in the determination of global inequality. In the pre-industrial world more than half of global income inequality could have been due to inequality in income distribution **inside** nations, while today the prevailing component, about 70%, is deemed to be due to differences in average per-capita incomes **between** nations (Milanovic, 2006, p. 9) On the other hand in more recent times, in the eighties and nineties, the weight of the inside nations component seems to have somewhat increased: (cf. Nel, 2006, p. 697.) The greater growth rate of less developed countries as a whole should be a factor leading to the reduction of the between nations component, while increased inequality inside developed countries would be a factor contributing to the increased inside inequality component. According to the data reported in Bourguignon and Morrison (2002, p. 731) there has been an increase through time in the world Gini coefficient, from 0,50 in 1820 up to the present values (see table 5). But values for so far away periods seem to be rather speculative estimates, even more daring than the speculative estimates needed to arrive at an aggregate measure for the contemporary world as a whole. On the other hand it seems plausible that the differences in incomes should have been lower in the past, owing to the fact that the great bulk of the population was living close to subsistence level, and the low overall average per capita incomes.

<sup>24</sup> The Gini coefficients above are taken from CIA (2007).

<sup>25</sup> Such as Equatorial Guinea that, according to CIA (2007), has the "fourth highest per capita income in the world" but where the great bulk of the population allegedly lives in desperate conditions with less than a dollar a day (cf. also "Playboy waits for his African throne", *Sunday Times*, 3/9/2006, available at: <http://www.timesonline.co.uk/tol/news/world/article626511.ece>).

<sup>26</sup> Data taken from Bourguignon and Morrison (2002, p. 731); the data of the last row are calculated from population data in table 4 and Word Bank poverty data.

<sup>27</sup> Calculation from 2002 Word Income Distribution Database in Milanovic (28/12/2007). The figure between brackets refer to a recently revised set of PPP\$ exchange rates (ibidem).

#### 4. What is the source of the present high inequalities and what can we do about it

##### 4.1 Poverty, inequality, and maximum potential inequality

According to the previous table, while world inequality, as measured by the Gini coefficient, has steadily increased since 1820 (an increase of about 31% in Table 5), the proportion of paupers in the world has steadily decreased. In more recent times the inequality of income distribution inside nations seems on average to have somewhat increased, but the trend is not uniform in the different regions of the world.<sup>28</sup> At the same time the changes in the world Gini coefficient of the present in relation to the more recent past are of a quite different order of magnitude as compared to the dramatic increase in per capita incomes. This signifies that the rate of surplus extraction (“the inequality extraction ratio”) has dramatically decreased, where the inequality extraction ratio is defined as the share of maximum potential inequality reached by actual inequality, given the relative size of the elite (where the actual size of the elite appears to have relatively minor practical importance in the determination of the Gini coefficient).<sup>29</sup> In this perspective, the maximum of potential inequality depends on average income and subsistence income: if the incomes of the masses are maintained at physical subsistence level the surplus that is left corresponds to the rate of maximum potential extraction. The higher per capita income, the higher is the extent of maximum potential extraction. If the degree of statistical inequality is constant, an increase in average income translates into a lower rate of extraction, revealing a lower degree in the actual pursuit of inequality. This indeed is what has historically happened: the overall extraction rate has steadily decreased, a trend which could have been a consequence of the changed nature of political and economic institutions and of greater economic and social complexity.<sup>30</sup> In the end, seen in an historical context, the extent of present inequality appears not to depend on the paupers of the world being worse off, since an increasing proportion of the worse off are lifted from their state of absolute poverty, but on the fact that on the whole the lot of humans has dramatically, albeit unequally, improved.<sup>31</sup> To some extent inequality may be a consequence of the rules of economic organization (the economic system) that allow the attainment of the given level of production (as argued, with some exaggeration, by Marx, 1875: “any distribution whatever of the means of consumption is only a consequence of the distribution of the conditions of production themselves. The latter distribution, however, is a feature of the mode of production itself”). Thus it is conceivable that under real circumstances inequality could not be reduced below some level (such as operationally measured by Gini coefficient) without bringing about a reduction of income produced, and of its growth.<sup>32</sup> At the same time too much

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<sup>28</sup> See IMF (2007a, pp. 138 f).

<sup>29</sup> Cf. Milanovic et alii, 2007, p. 10.

<sup>30</sup> See Milanovic et alii (2007). An instance of a recent reverse trend towards an increase in the rate of surplus extraction could have been the steep increase of chief executives compensations in some advanced economies, which may amount to a sort of surplus extraction engineered by collusive behaviour.

<sup>31</sup> As Milanovic (2004, p. 24) puts it: “Average income levels also set an upper boundary on inequality. ... As societies develop, income inequality has the ‘space’ to grow simply because there is a surplus which can be appropriated or redistributed among members of the society.”

<sup>32</sup> “An artificially compressed distribution of income differs from the optimal distribution based on differences in talent, merit, and effort, and for this reason inhibits growth by affecting incentives, labour

inequality can have a negative impact on income and growth.<sup>33</sup> One could then modify the concept of extraction rate as referring to the additional inequality above the minimum level compatible with the production of at least the given per capita income. (Operationally one could, for instance, take as an upper bound to the minimum amount of inequality compatible with the sustainable production of the given per capita income, the minimum inequality presented by comparable economies having similar levels of per capita income.) The above modification would strengthen the conclusion that overall the rate of surplus extraction is lower nowadays than in the past.<sup>34</sup>

As a consequence of the unprecedented economic progress and of the diffusion of medical and hygiene innovations from the West to the Rest of the world, the rate of growth of world population has never been so high as after WWII (see Table 6). Among the regions of the world the highest growth rate has been that of Africa, the poorest region with the least economic growth.<sup>35</sup> From this it is immediately evident that the strongest factor explaining the demographic explosion is the diffusion of medical innovations rather than economic growth *per se*.<sup>36</sup> The population explosion, together with the composite ethnic structure of the artificial political divisions left over from colonial times, replicated in the post-colonial state boundaries,<sup>37</sup> and the low educational attainments, contribute to explain the tensions and bloody conflicts that have engulfed that unfortunate continent.<sup>38</sup>

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shirking, and free-riding behaviour” (Cornia, 2004, p. 9), where the implied optimality presumably refers to fostering growth, and perhaps to some implied social welfare function.

<sup>33</sup> Cf. Milanovic et al. (2007, pp. 29-30): “More political power and patronage implies more inequality. The frequent claim that inequality promotes accumulation and growth does not get much support from history. On the contrary, great economic inequality has always been correlated with extreme concentration of political power, and that power has always been used to widen the income gaps through rent-seeking and rent-keeping, forces that demonstrably retard economic growth.” For the relationship of inequality and growth, and the hypothesis that could be u-shaped (too little as well as too much inequality being adversary to growth) see Cornia et al. (2004).

<sup>34</sup> Obviously one thing is inequality of incomes, another inequality of welfare. The latter is a very elusive concept, but it is what really matters. The first is at best a proxy. In considering how does income inequality translate into inequality in welfare it seems reasonable to assume decreasing utility of income, appraised for instance through “extended sympathy” (putting oneself in somebody else’s shoes). And this too could strengthen the conclusion that overall the rate of surplus extraction (this time in welfare terms) has become lower.

<sup>35</sup> The extreme poverty rate in Sub-Saharan Africa is 41% (IMF October 2007b, p. 20). On the whole the post-independence economic performance of African countries (with some exceptions, notably Botswana) has been dismal: “on average, over the period 1960–2000 Africa’s population-weighted per capita annual growth of gross domestic product (GDP) was a mere 0.1%” (Collier, 2007a, p. 16763). But African economic performance has much improved since the late nineties (cf. IMF, 2007a pp. 9, f.; IMF, 2007b); in Sub-Saharan Africa, in particular, per capita growth runs at about 3% a year, not a bad performance considering the very high population growth rate (World Bank, 2007, p. 3).

<sup>36</sup> A reductionist stance on the impact of economic growth on the Mortality Revolution, and hence on demographic growth (before fertility controls step in) is taken by Easterly (1996, pp. 69-93).

<sup>37</sup> This does not mean that “natural” state boundaries would have existed anyway, given the patchwork distribution of ethnicities in the African continent.

<sup>38</sup> For a recent in-depth assessment of Africa’s economic predicaments see Collier, 2007a, and more amply, Collier 2007b.

## 4.2 What can be done

As to the concretely implementable measures for bringing about a more equal distribution, and reducing poverty, without affecting the unique engine of growth and welfare that has been running in the last sixty years or so of world history, there is no much clarity of thought. As is often the case, what appears at first sight, is not what really is, if one looks rationally at the implications.

### 4.2.1 Globalization, poverty and distribution

For instance the various proposals for limiting the extent of the liberalization of the world market, such as advocated by the various anti-WTO and trade-unions inspired movements, would probably hamper a main source of growth and economic improvement of the enterprising poor.<sup>39</sup> Indeed, it appears that for reducing the plight of the poor more globalization is needed, not less.<sup>40</sup> Globalization improves the welfare of the worse off essentially because it is conducive to greater growth<sup>41</sup> that spills over to the very poor.<sup>42</sup> However not necessarily globalization and growth, considering also the impact of technical progress, lead to an improvement of the worse off in relative terms<sup>43</sup> and inequality increases could contribute to offset the positive impact on welfare of the increases in real incomes.<sup>44</sup> As to the trend in income distribution, apparently the main culprit of recent increases in economic inequality in some areas of the planet seems to have been technological progress, by demanding skills and qualifications and substituting

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<sup>39</sup> For the negative overall impact of protectionism on growth, see the quantitative inquiry in Milanovic (2005). Cf. also IMF (2007a, p. 157) for the favourable impact of international trade on the relative position of the lower quintiles.

<sup>40</sup> For data on trade and financial globalization accompanying the high growth performance of developing economies in more recent times, especially since the nineties, see IMF (2007a, pp. 135-139). Trade globalization can be measured in terms of the increasing ratio of imports and exports to GNP, financial globalization as cross-border assets and liabilities as a ratio to GDP. Of course globalization is more than that, and includes globalization in technical knowledge, information, travel and contacts across countries, regions and continents. Technical progresses in communications and transportation, together with international trade and financial liberalization, have much contributed to all aspects of globalization.

<sup>41</sup> On the role of international trade and openness in conjuring development and economic progress see Dollar and Kray (2004) and the literature referred there. For a contrary, if rather unbalanced, view, see Milanovic (2003).

<sup>42</sup> "Evidence suggests that better growth is translating into declining poverty levels... for a sample of 19 low income countries, 1 percent of GDP growth was associated with a 1.3 percent fall in the rate of extreme poverty and a 0.9 percent fall in the \$2-a-day poverty rate" (World Bank, 2007, p. 3). "Across all regions, the evidence therefore suggests that in an absolute sense the poor are no worse off (except in a few post-crisis economies), and in most cases significantly better off, during the most recent phase of globalization ... over the past two decades, income growth has been positive for all quintiles in virtually all regions and all income groups during the recent period of globalization" (IMF, October 2007a, p. 141).

<sup>43</sup> Whether globalization leads to a reduction or to an increase in inequality is a contentious issue. See on this point Milanovic (2006) and the literature quoted by him.

<sup>44</sup> Milanovic, 2006, p. 13: "the process of globalization by itself changes the perception of one's position, and even if globalization may raise everybody's real income, it could exacerbate, rather than moderate, feelings of despondency and deprivation among the poor." This could contribute to create the motivation for migrating towards more affluent countries, while increasing incomes can supply the resources for meeting the costs of migration, often a costly business in relation to the scant resources of the poorest of the earth.

less skilled labour.<sup>45</sup> On the other hand economic “globalization” (in the sense of increase of trade and financial flows,<sup>46</sup> with the first having an overall equalizing, the second a disequalizing effect) appears to have had a different impact in the different areas of the world. According to IMF (2007a) economic globalization is seen to increase inequality somewhat in developed countries (because of the prevailing impact of financial liberalization, while trade liberalization is seen to exert an equalizing impact anyway<sup>47</sup>) and decrease inequality in the less developed ones (because of the prevailing impact of trade liberalization).<sup>48</sup> At the same time the diffusion of technological advances all over the world is obviously itself a manifestation of “globalization” and could hardly be isolated from the other intervening factors (such as for instance financial liberalization, since foreign direct investment in particular constitutes an essential vehicle for international technological transfers).

#### 4.2.2 Aid and transfers

As to transfers, it is hardly possible that transfers of the size needed to really bring about a significant reduction of world inequality in per capita income and wealth could be acceptable to the public opinions of better off countries;<sup>49</sup> in general, the propensity to aid the poor of the world is quite widespread, especially in the “development buzz ... generated by rock stars, celebrities and NGOs”<sup>50</sup>, but with somebody else’s money and resources.<sup>51</sup> As a prominent example we can mention the movement for international debt relief, where the proponents do not appreciate that the only radical way to suppress debt is to suppress credit, while insolvency makes international debt more risky, and therefore more onerous, and this not necessarily is in the interest of poorer countries.<sup>52</sup> None of the vocal members of the debt remission campaign seems to have started an international voluntary subscription for paying off poorer countries’ debt by reimbursing the creditors, or advocating that government

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<sup>45</sup> Cf. IMF (2007a, pp. 139-141).

<sup>46</sup> This corresponds to the World Bank’s narrow definition of globalization as the “freedom and ability of individuals and firms to initiate voluntary economic transactions with residents of other countries” (cf. Milanovic, 2002, p. 3).

<sup>47</sup> This appears to be contrary to what is implied by the Stolper-Samuelson theorem, but it may be explained by the reduction in the price of basic wage goods imported from developing countries, in particular, and by the reduction in the relative importance of worse paid manufacturing jobs (ibidem pp. 155-156). As to the impact of financial liberalization in increasing inequalities both in developed and in underdeveloped countries this is attributed to the fact that “higher FDI inflows have increased the demand for skilled labor, whereas outward FDI in advanced economies has reduced the demand for relatively lower-skilled workers in these countries” (ibidem, p. 159).

<sup>48</sup> Cf. IMF, 2007a, ch. 4, pp. 135-170.

<sup>49</sup> The schemes that have been proposed in regard, reviewed by Milanovic (November 2007), seem utterly unrealistic.

<sup>50</sup> Collier, 2007b, p.4.

<sup>51</sup> As a prominent historical representative of the “somebody else’s money handouts” school we may mention Jeffrey Sachs. After all it is very easy for a practicing development economist to become popular with one’s charges by generously advocating the pledging of somebody else’s money. For a comprehensive criticism of past experience of aid and its bureaucratic implementation see Easterly (2006). For a hefty criticism of Easterly’s standpoint, and Easterly’s reply, see Sachs (2006) and Easterly (n.d).

<sup>52</sup> For the ambiguous aspects of debt relief, in particular by the International Financial Institutions, see Easterly (2006), pp. 230-236.

create an international special fund for the same purpose with taxpayers' money, in order to eliminate, or reduce, the debt without worsening the credit rating of poorer debtors.<sup>53</sup> Nevertheless the worsening of credit rating, and the consequent reduction in the capability to borrow, of poorer debtors could have some positive side.<sup>54</sup> Often the debt problem arises from the propensity of populist and/or corrupt governments to overborrow for financing consumption expenditures (the onus and unpopularity of servicing the debt will then fall on future governments), or the outright siphoning out of hard currency into the foreign bank accounts of the leaders. But a worsening of credit rating could also jeopardize the ability to borrow in an emergency or an economic downturn or for financing productive investment projects. An obvious fact that is overlooked by the debt remission campaign is that whenever the funds that have been borrowed are not repaid less is available for lending to other borrowers in need, and this is especially obvious with the International Financial Institutions.<sup>55</sup>

None of the many who deem just and natural that the pharmaceutical industry renounce exploiting the intellectual property of Aids drugs, meritoriously discovered at the cost of huge investments, has proposed to start a subscription, or to pressurize governments for purchasing the corresponding patents at market value, in order to make them free for mankind, and in particular for the poorest and most affected by the disease section of world population, such as in Africa.<sup>56</sup> An alternative, more practical, way to overcome the issue of the excessive cost of patented drugs would be for poorer countries not to adhere to the international conventions protecting intellectual property rights, but this would put them outside the WTO, since TRIPS (Agreement on Trade Related Aspects of Intellectual Property Rights) has become a part of WTO agreements.<sup>57</sup> As a matter of fact underdeveloped countries have little to gain and much to lose from the degree of protection of intellectual property rights contemplated by TRIPS. Even if they do not comply, still a large market (that of developed countries), where intellectual rights are protected, and innovation is financed by market proceeds, would remain.<sup>58</sup> With the Doha Declaration the extent of TRIPS has been attenuated, and some further development in this direction could be contemplated in future WTO negotiations.<sup>59</sup> In theory a possible way to reconcile the objective of maintaining

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<sup>53</sup> On the other hand the creation of such a special fund would bring about an obvious moral hazard problem.

<sup>54</sup> On this see Stiglitz, 2007, pp. 216 f.

<sup>55</sup> Cf. Stiglitz, 2007, p. 228: "Today, the developing countries that have repaid what was owed ... worry that debt relief is commandeering money that might otherwise have been available to them".

<sup>56</sup> However some feasible projects of financing private or public medical research of specific relevance for poorer countries, and insufficiently financially rewarding for unfounded private medical research, with suitable contracts allowing poorer countries taking advantage through free access of the innovations thus produced, have been proposed. This kind of schemes would have the advantage of helping poorer countries with aid expenditures bypassing corrupt and inefficient governments, helping, at the same time, the production of public goods useful for the whole of mankind. In general aid expenditure resulting in the creation of public goods that are of particular interest for poorer countries (for instance producing information or educational material) could by-pass their government and administrations and remedy at the same time the inefficiencies deriving from the insufficient provision of public goods.

<sup>57</sup> See the entry TRIPS in Wikipedia, and the sources there listed.

<sup>58</sup> On TRIPS and intellectual property issues concerning less developed countries see Stiglitz, 2007, pp. 103-132.

<sup>59</sup> An issue in this respect would be competitive export of goods benefiting of lack of intellectual protection to developed economies. But this may not be insurmountable, since the developed economies

revenues and private production incentives for intellectual production with that of helping the less developed countries could be to transfer part of development aid expenditures to national producers of intellectual public goods (preferably through some general measures such as tax rebates), while allowing the underdeveloped economies (or some of them) their free utilization. The downside is that lack of protection for intellectual goods could dampen their production in the underdeveloped world: at a certain stage of their development even less developed countries may decide that protection is worth the while. In practice it is hard to expect that the developed countries, and especially the USA, could allow an attenuation of the protection of intellectual goods, owing to the intensity of the lobbying by the industries concerned. Indeed, the latter have already succeeded to extend the protection to much higher levels than what appears reasonable and economically justifiable.<sup>60</sup>

As far as aid in general is concerned there is the issue of the lasting effects of the culture of dependency in perpetuating the poverty trap, by facilitating the survival of corrupt and inefficient governments,<sup>61</sup> and the old saying that international aid amounts to taking away from the poor of the donor countries for giving to the rich of the receiving countries, which, in its apparent paradox, may capture a relevant aspect of international aid.<sup>62</sup> What is sometimes overlooked is that aid usually does not directly transfer resources to the poorer of the world, since it is governments that act as representatives of the inhabitants of a country, and governments in poorer countries are often comparatively more corrupt and inefficient.<sup>63</sup> There is the damaging possibility that aid be simply wasted away and siphoned off by corrupt regimes, or, even worse, spent in

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could agree to undertake far-reaching specific import controls. Of more practical relevance may be the lack of actual enforcement of the discipline concerning protection of intellectual property, whatever the theoretical obligations associated to the underwriting of TRIPS, and the legal measures implemented.

<sup>60</sup> For instance the extension of the economic protection of copyright after 50 years at least after the death of the author, contemplated by TRIPS (not to speak of the 70 years of the US or European legislation; see [http://en.wikipedia.org/wiki/List\\_of\\_countries%27\\_copyright\\_length](http://en.wikipedia.org/wiki/List_of_countries%27_copyright_length), and the sources listed there) does seem hardly to be required to stimulate the production of intellectual works. How reasonable is it to expect that the motivation of an author towards intellectual creation be influenced by the economic property rights somebody else may have after his own death (not to speak 50 and more years after)?

<sup>61</sup> According to Knack (1999) "Aid dependence can undermine institutional quality by weakening accountability, encouraging rent seeking and corruption, fomenting conflict over control of aid funds, siphoning off scarce talent from the bureaucracy, and alleviating pressures to reform inefficient policies and institutions." And "analyses of cross-country data provide evidence that higher aid levels erode the quality of governance, as measured by indexes of bureaucratic quality, corruption, and the rule of law."

<sup>62</sup> For the tendency of aid to benefit corrupt and undemocratic governments, see Easterly, 2006, p.133: (according to him "aid shifts money from being spent by the best governments in the world to being spent by the worst"). For a discussion of this issue and of the way to overcome it see Milanovic (October 2007). To his plea for taking into account, in directing aid, the degree in inequality of income distribution in the receiving countries, "penalizing countries with highly unequal distribution" one may add that the degree of inequality may be seen as an indicator of the extraction power of the elite in a receiving country, and of its power to appropriate the advantages of transfers, increasing the probability of the latter acting regressively.

<sup>63</sup> We may refer in this respect to the classification of Transparency International. An extreme case is mentioned by Collier (2007b, p. 66): only 1% of the funds spent by the Government of Chad for financing rural health clinics actually reached them. Another less extreme case relates to Uganda, where "only around 20 percent of the money that the Ministry of Finance released for primary schools, other than for teachers' salaries, actually reached the schools" (p. 150).

armament feeding third world wars.<sup>64</sup> It is argued that aid, analogously to natural resources windfalls, weakens the determination to reform and to combat corruption and may hamper growth through the so-called Dutch disease, by increasing prices and wage costs.<sup>65</sup> Analogously to the rents from oil and natural resources, and even more than them, aid has been found to have a negative impact on democracy.<sup>66</sup> Theoretically speaking aid could aid reform and better governance through ex-ante conditionality, but, besides being strongly resented as a violation of sovereignty, and sometimes as a plot of richer countries to the detriment of aid receivers, ex-ante conditionality apparently does not work in practice, at least with respect to the poorer countries with worse governance.<sup>67</sup> It is also doubtful whether massive aid transfers, as proposed by some, could raise the long term growth prospects, even if they could certainly increase the short-run *average* incomes (but not necessarily the incomes of the poor) of the recipient countries.<sup>68</sup> According to Boone (1995) “Aid does not significantly increase investment and growth, nor benefit the poor”.<sup>69</sup> On the other hand there is a specific type of aid that the more prosperous countries are giving freely and massively, and mostly unintentionally. Through the scientific progress and the technological advances they produce, they create public goods that deeply affect the economic and social fabrics of less developed countries. This is probably the fundamental explanation of the great economic and demographic advances of most less developed countries in relation to their past.<sup>70</sup> The same applies to the example provided by the economic, social and political institutions of more advanced countries, in particular to the basic idea of democracy, according to which governments should be changed by the ballot, rather than through civil strife and violent means. The latter have the fundamental disadvantage, in comparison to the ballot, to be usually much more expensive in terms of wasted economic resources, not to speak of the other, non-economic, profiles.

#### 4.2.3 Changing the basis of the international economic order

As to changing the basis of the international economic order from free exchange and market to planned allocation and material barter, even aside from the concrete issue of its (in)feasibility, the Comecon experience of planned material exchanges is not really enticing; the same applies to the other historical instances where barter exchange prevailed, with consequent high transaction costs and greatly reduced gains from trading. To some extent distribution is internationally, as well as inside nations, a consequence of the institutions that regulate and, directly or indirectly, affect production and exchange. The institutions that may favour high levels of productivity and growth (such as the remarkable performance of the developing countries, aside from the unfortunate

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<sup>64</sup> According to Collier (2007b, p. 103) “something around 40 percent of Africa’s military spending is inadvertently financed by aid”.

<sup>65</sup> Collier, 2007b, pp. 40 f. According to Collier (ibidem, p. 102) “large inflows of money without any restrictions do not seem to be well spent in many of the countries of the bottom billion.”

<sup>66</sup> See Djankov et alii (2006).

<sup>67</sup> Collier (2007b), pp. 109-110. For a consideration how aid could be tailored to really help the development of “the bottom million”, see chapter 7, pp. 99-123.

<sup>68</sup> For a sceptical view on the ability of aid to raise growth of the recipient countries, see in particular Easterly, 2006, ch. 2, pp. 60-55.

<sup>69</sup> For the discussion following Boone’s controversial paper, and further interesting contributions on the issue, see Easterly (2006), pp. 45-50.

<sup>70</sup> See below, tables 5 to 9.



“bottom billion”, reaching in the last two decades of the century the unprecedented rate of 4 per cent per capita, and even more in the first years of the new millennium)<sup>71</sup> have some distributional consequences that only partially can be mitigated without affecting economic outcomes. Thus to radically change those institutions could be against the interest of the world poor, despite the deep injustice of a world where at least 60% of one’s position in the global personal income distribution can be explained by the accident of being born in a country instead than somewhere else, and a good deal of the rest by the accident of having been born in a family rather than in another.<sup>72</sup> In reality the greatest practical opportunities for redistribution appear to lie inside countries through reform of their institutions and the political process. In lower and middle income countries, with good natural resource endowments in particular, the specific extractive nature of the institutions, enhanced by the absence of checks and balances, often leads to the formation of high incomes based on rents, whereby the resulting high degree of inequality (at a Gini coefficient of 40 and above) represents a brake to growth rather than a by-product of growth-enhancing institutions and social processes,<sup>73</sup> not to speak about the much higher risk of civil war and instability associated with “dependence upon primary commodity exports”.<sup>74</sup>

The most radical way to overcome this issue would be the cosmopolitan one to make of the world a single country, with the power and responsibility to decide and enact redistribution policies. One could only (idly) speculate about the kind of institutions and economic governance such a cosmopolitan world would have; not necessarily the best ones, owing to the actual composition of its potential citizenship. But for good or for worse humanity is divided into separate territorial states and solidarity towards the citizens of other states is much lesser than solidarity towards fellow citizens, or even more, wherever there are strong ethnic divisions inside states, towards one’s own ethnic community. Moreover measures of solidarity are also the outcome of the fact that citizens, however destitute, are partaking into, and therefore have some scope for influencing, through collective action, the political process, albeit with quite different degrees, according to its specific characteristics. Thus “the state is, for the time being, the only legitimate context within which relative deprivation can be addressed through redistributive policies and practices”, and “it is at the level of states only that the principles of distributive justice can and may apply, as it is on this level alone that we have the institutional means to legitimately take from the rich and give to the poor”. For good or for worse, people will belong to separate states for a long time to come, rather than being simply citizens of the world, and this will limit the degree of

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<sup>71</sup> Collier, 2007b, p. 8. This finds a counterpart in the transformation of trade and the economic basis, whereby actually “80 percent of developing countries exports are manufactures, and service exports are also mushrooming.” (Ibidem, p. 81.)

<sup>72</sup> See Milanovic (2008).

<sup>73</sup> See Nel (2006), pp. 697-698 and the literature quoted there.

<sup>74</sup> Collier 2007b, p. 21. According to Collier some international charter agreed among all main industrial partners requiring greater transparency in the conditions of the exploitation of natural resources and the utilization of the rents thereof would be of great help in improving the way in which those revenues are spent. To the obvious objection that China’s unconditional scrambling for the underdeveloped world’s natural resources would break any conceivable charter, Collier’s rather unpersuasive counterargument is that “The West has to offer China greater inclusion in power in return for adherence to international standards.” (Ibidem, p. 146.)

solidarity and redistribution at the world level.<sup>75</sup> John Lennon's utopia of *Imagine there's no countries .... Nothing to kill or die for -- And no religion too* is unfortunately very far off.

#### 4.2.4 The problem of the "fragile" states

A related problem to which no easy solution can be seen is that of the so-called fragile states, "countries with particularly weak governance, institutions, and capacity...often in conflict"<sup>76</sup> (where either internal or external conflicts are often at the origin of "fragility"), which did not partake of recent world economic growth, and are plagued by particularly high problems of extreme poverty, high child mortality, and illiteracy. Short of neo-colonialist endeavours, which could hardly be a choice, the only way seems to hope that, favoured by the impact of globalization and institutional imitation, and possibly through the help of the international community, their internal dynamics could evolve so as to bring about a more favourable environment, in particular through the overcoming of the violent conflicts often at the origin of "fragility". Indeed, a greater participation in peace keeping by the international community in order to reduce the probability to conflict reversion could be the best form of aid.<sup>77</sup> As to peace enforcing, and nation and institution building, this is a much more tricky issue, because of its neo-colonialist connotations and implied violation of national sovereignty, lack of consensus by the international community, and lack of volunteers to offer the needed resources and face the inevitable losses and expenditures. One may just be left with the solution to end the patronizing approach,<sup>78</sup> and to leave fragile states to do their own experiences, as everybody else has done in the past, and learn through generations how to progress, forming and changing their own institutions. But our world has become much more impatient with historical time, and a country's internal disturbances may severely impact on their neighbours, not only as a consequence of the collapse of trade following the collapse of the economy, but particularly by originating massive sudden migrations, and the spreading abroad of internal disturbances, as well as diseases.<sup>79</sup> We may just remind the disastrous consequences of Ruanda's internal conflicts on Congo/Zaire or, quite recently, of Mugabe's follies for the internal peace of South Africa. The consequences of failed states can be indeed very severe, even if only the economically measurable aspects are taken into consideration.<sup>80</sup>

#### 5. Soul-searching and self-bashing

How much are the plight of poorer countries and the affluence of richer ones due to colonialism? And how much is the misery of Africa in particular a consequence of the transatlantic slave trade? How much does the responsibility of the latter fall on

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<sup>75</sup> Cf. Neal, 2006, pp.702-703.

<sup>76</sup> World Bank (2007, pp. 2-3).

<sup>77</sup> As advocated notably by Paul Collier.

<sup>78</sup> Exposed and lamented by Easterly and others (Easterly, 2006, pp. 26-27).

<sup>79</sup> Cf. Collier, 2007b, p. 31.

<sup>80</sup> According to a rough estimate by Collier (2007b, p.103) the "costs of a typical civil war" are around \$ 64 billion. Collier's quantitative analysis, as well his favourable attitude to peace keeping and peace enforcement are severely criticized by Easterly (2007), according to whom "If Collier's statistical analysis does not hold up under scrutiny, unfortunately, then his recommendations are not a reliable guide for deploying foreign aid, technical assistance, or armies. Economists should not be allowed to play games with statistics, much less with guns" (p. 1476).

European shoulders? Branko Milanovic has recently produced an interesting inquiry into the first issue (Milanovic, 2005). According to his quantitative analysis on a large historical statistical data base, colonialism has not appreciably helped nor damaged on balance the economic development either of colonial powers or of colonies.<sup>81</sup> One may add that however repulsive for our modern sensibility is the imperialist idea to conquer a militarily weaker country and rule it by force in the interest of the conqueror, the countries that were conquered and subjected were not usually peaceful prosperous heavens. By and large the West and the Rest were players of the same historical game, of violent territorial expansion and domination, war, plunder, and conquest, that only quite recently has been relinquished and declared illegal by most part of humanity (see below).<sup>82</sup> In the history of humanity evil has always been banal, or, even more, evil (what we moderns consider evil) was often not seen as such, or was simply cloaked under false pretensions.<sup>83</sup> As is often the case in what we may see as the progress of the moral awareness of humanity, some activities that in an epoch are considered as legitimate, come up to be subsequently perceived as crimes. The history of mankind is a dense collection of actions of the kind that nowadays are defined as crimes against humanity, and even in sacred books genocides can be extolled as acts of pious obedience to God.<sup>84</sup>

Tied to the issue of the evaluation of the present economic order is the issue of the historical responsibility of the West in the plight of the Rest. Overall the impact of the West has been mixed. On the one hand it has played with greater efficiency, owing to its recent technological superiority, the same deadly games that most of humanity has played for most of the time (contrary to some idealistic visions, the Rest was not usually populated by pacific savages). On the other it has spread modern social and technological innovations, with dramatic consequences in terms of improvement of the economic and living standards of most of the Rest. It has also spread its germs, with a deadly impact for some populations, in particular in South America.<sup>85</sup> But in the historical interaction of peoples it is difficult to do cherry picking: the same technological and organizational dominance that has made the West deadly for some has brought about the improvement of the living standards of the many through almost universal imitation. This is not to deny the terrible crimes associated with slave trade or colonial domination. But in this the West has shared the crimes of the Rest, only taking advantage of its better technological and organizational capabilities. Slavery has been almost universal institution of human civilization. If the ... the West has brought about

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<sup>81</sup> This is consistent with the fact that “colonies accounted for only a minor share of the trade and investment of developed countries in the nineteenth century, and most of the greatly expanded world trade and investment was carried on within the developed bloc itself” (Easterlin, 1996, p 2). “In the half century before World War I the market for developed countries’ exports were chiefly in other developed countries, and the principal suppliers of primary products requirements of the developed countries were other developed countries...Considering Great Britain, France, and Germany together, on the eve of World War II their own Third World colonies accounted for only 11 percent of their merchandise trade and 12 percent of their foreign investment” (ibidem, p. 43).

<sup>82</sup> For an outline of the history of African autochthonous kingdoms and empires and of their wars, see Collins and Burns (2007).

<sup>83</sup> Such as saving through conversion the souls of the infidels, as in the 1455 Papal Bull *Romanus Pontifex*, legitimizing the slave trade (Maddison, 2006, p 60), or King Leopold’s pretension to administer Congo for exclusive humanitarian purposes.

<sup>84</sup> Such as the story of Saul and the Amalekites in the Bible.

<sup>85</sup> See Diamond (1997).

its demise. Thus, while considering the overall impact of the West on the Rest, one cannot separate the negative aspects of its interrelation from the positive impact that the diffusion of western technological advances has had on the demographic and economic expansion of the Rest as a whole. Let us turn now to the specific responsibility of the West on slavery. Slavery has been practiced by humanity from time immemorial, and probably very few parts of the earth have been immune. Africa has certainly been no exception.<sup>86</sup> Trans-Saharan slave trade in particular was practised to a large scale before the encroachment of the Europeans, but also slave trade towards Asia was substantial.<sup>87</sup> With the advantage of European technology and organization, and pulled by the demand of the new plantation economies of the New World, slave trade reached from the sixteenth century onward unheard of dimensions. But in partaking blames and responsibilities one should consider that European traders were taking care of transport and marketing, while the actual production of slaves was the domain of the Africans themselves and, even before the transatlantic trade, the capture and trade of slaves was one of the main economic activities of Sub-Saharan Africa. If to the demerit and shame of the Europeans should be ascribed the massive extent of the transatlantic trade, to their merit and honour it must be attributed having made slave trade and slavery illegal, extending the prohibition of slavery to their colonial domains, thus bringing to an end a time immemorial historical tradition of slavery and slave trade.<sup>88</sup>

## 6. The population explosion

In a secular (or rather millennial) perspective, before the Industrial Revolution population growth was held in check by high mortality rates, accompanied by high birth rates. The source of high mortality rates in a classical Malthusian perspective could have been the limitation in the amount of available agricultural resources, either continuously, leading to poor nutrition (and therefore to higher morbidity and premature deaths), or episodically, through famines. But there were also other forces at play. First of all very high rates of child mortality, either through systematic infanticide (itself probably a function of available resources), especially of females, or as a consequences of neglect and of poor living, childbearing, and childrearing conditions. Second, possible neglect of the elders, the disabled and the infirm. Third the spread of epidemic diseases (which was favoured by overcrowding and poor living conditions in the cities of agricultural societies). Then, endemic warfare, between tribes, nations or individuals, leading to direct deaths, as well as to misdirection and destruction of the resources otherwise available for survival.<sup>89</sup> Still, following the improvements of agricultural technology in particular, there was some population growth at a very slow pace, slightly accelerating in

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<sup>86</sup> The oldest documentation of slavery in Africa dates back to 2900 BC (Collins and Burns, p. 202).

<sup>87</sup> Cf. Collins and Burns, 2007, pp. 202-247; Maddison, 2006, pp. 574-575. Helle, 2007.

<sup>88</sup> Notable were in particular the British 1807 "Act for the Abolition of the Slave Trade" and 1833 "Slavery Abolition Act". For a more comprehensive picture see *Wikipedia's* entry "Abolition of Slavery Timeline".

<sup>89</sup> According to Ember (1978) about 60% of the societies of hunter gatherers of which there is documentation were recorded to be at war at least once every two years. As to pre-industrial civilizations it is enough to recall world and European history (for instance, considering European history immediately preceding the Industrial Revolution, in the 16<sup>th</sup> century 95% of the time there were wars involving the major European powers, 94% in the 17<sup>th</sup> and 78% in the 18<sup>th</sup> century; cf. Eloranta, 2005). For the issue of population control in pre-industrial societies, with a survey of the relevant literature, see Caldwell and Caldwell (2003).

time, as shown in table 6.<sup>90</sup> Later on, especially since the half of the nineteenth century, the decrease in mortality rates (a true “mortality revolution” “which has resulted in doubling or more of average life expectancy at birth”<sup>91</sup> and has been the direct consequence of the diffusion of medical knowledge and discoveries that has followed with some delay the Industrial Revolution) has led to a much faster population growth, while the demographic consequences of two world wars and related upheavals are shown in a temporary decrease of growth rates. The post World War II period has seen an unprecedented population explosion, with some signs of abating however following increasing living standards and progresses in the technology of birth control, spreading from the more advanced countries to the lesser developed areas of the world, leading to a forecast of about 9.2 billion around the year 2050.<sup>92</sup>

What have been the causes of the post World War II world population explosion? Essentially the reduction in mortality rates and the increase in life expectancy (see the tables in the Statistical Appendix at the end). The birth rate has on the whole decreased in the post-war period, but the increase in life expectancy has been stronger; 17 years between 1950 to 1999 in the world as a whole, more or less the same as in the first half of the twentieth century, three times more than the increase of life expectancy in the crucial eighty years of the spread of the industrial revolution, from 1820 to 1900. One may also note that all the areas of the world have partaken in the great advance in life expectancy,<sup>93</sup> while the present inequality in average life expectancy between the different areas (about 50% between the highest, Western Europe, and the lowest, Africa), is much lower than either in wealth or in income (see the Statistical Appendix; with respect to some other life statistics, however, the picture is more extreme). Moreover, “differences in lifetime survival rates between rich and poor countries and between rich and poor individuals within countries were much higher two centuries ago than they are now”.<sup>94</sup> One of the reasons of the population explosion in the post WWII period lies in the impact of the Green Revolution in third world countries, such as Mexico and India, leading to the strong growth of agricultural production, as well as in the improvements in transportation.<sup>95</sup> There was no major demographic catastrophe, of

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<sup>90</sup> The relation between population growth and agricultural technology was stressed by Boserup (1965), even if in Boserup’s work the causal relation was supposed to act in the contrary sense than the one implied above; the crucial element being the density of population affecting the length of fallows. However this could be the case if a complete blueprint of alternative agricultural techniques were to exist at any given time, not if alternative agricultural techniques had to be discovered, or rediscovered, in a lengthy historical process. For a critical assessment of Boserup’s work, see Federico (2001). On the other hand Boserup’s argument could be reinterpreted as pointing towards endogenous technological progress in agriculture being stimulated by demographic conditions (see on this Cuffaro, 2001, pp. 67 f.).

<sup>91</sup> Easterlin, 1996, p. 1.

<sup>92</sup> Cf. United Nations, 2006.

<sup>93</sup> Cf. tables 4A and 5A.

<sup>94</sup> Milanovic et alii, 2007, p. 28.

<sup>95</sup> With the “Green Revolution” modern agricultural techniques and high productivity seeds were imported from the developed world into developing countries through organized efforts spurred first by the Rockefeller Foundation (starting from Mexico in 1944), to which the Ford Foundation later joined forces. The result was that “the adoption of High Yielding Varieties (HYVs) enormously increased the productivity of land and labor” (Federico, 2005, p. 214). For comprehensive statistical data on agricultural growth see *ibidem*, pp. 233 f. However in a number of areas, in particular in Africa, and Latin America, the methods of the Green Revolution have encountered fundamental organizational and environmental obstacles (on this see Cuffaro, 2001, chapters 5 and 6, in particular pp. 117 f.). But taking

the kind that in the old times were blocking demographic advance in a secular perspective.<sup>96</sup> (For some relevant demographic data we may refer to the statistical appendix at the end.)

**Table 6. Yearly average rates of population growth 1-2007<sup>97</sup> (in percentages)**

	1-1000	1000-1500	1500-1820	1820-1870	1870-1913	1913-1950	1950-1973	1973-2001	2001-2007
Western Europe	0.06	0.16	0.26	0.69	0.77	0.42	0.71	0.32	0.26
Eastern Europe	0.03	0.15	0.31	0.77	0.92	0.26	1.01	0.32	-0.03
Former USSR	0.06	0.17	0.37	0.97	1.33	0.38	1.44	0.54	-0.15
Western offshoots <sup>98</sup>	0.05	0.07	0.44	2.86	2.07	1.25	1.54	1.09	0.94
Latin America	0.07	0.09	0.07	1.25	1.63	1.96	2.73	1.96	1.3
Japan	0.09	0.14	0.22	0.21	0.95	1.32	1.14	0.55	0.06
Total Asia excl. Japan	0.00	0.09	0.29	0.15	0.55	0.92	2.19	1.80	1.29
Africa	0.07	0.07	0.15 <sup>99</sup>	0.40	0.75	1.64	2.37	2.69	2.36
World	0.01	0.10	0.27	0.40	0.80	0.93	1.93	1.62	1.20

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into account the increasing integration of the world food market, productivity advances in some countries can have a favourable impact on the food balance in others through their effect on world prices anyway.

<sup>96</sup> Such as in the case of the Black Death. The only globally relevant demographic catastrophe in the post War II period could have been a population deficit of an undetermined (and undeterminable) few tens of millions Chinese as a consequence of the famine following Mao's Great Leap Forward: "a dip in the growth rate from 1959-1960... was due to the Great Leap Forward in China. During that time, both natural disasters and decreased agricultural output in the wake of massive social reorganization caused China's death rate to rise sharply and its fertility rate to fall by almost half" (US Census Bureau, 18/7/2007; the dip could be graphically seen in the sudden fall in the line of the population growth rate reported in the site of the [World Population Clock](#)). According to Yao (1999) the demographic deficit in the three years 1959-61 was somewhat higher than 49 million, of which about 18.5 million extra deaths and the rest lost births. Not a big difference anyway to the size of world population at the time, of about 3 billion. For other estimates one could refer to the literature quoted by Yao, in particular Peng Xizhe (1987).

<sup>97</sup> Source of the data of the last column: U.S. Census Bureau, International Data Base, at <http://www.census.gov/cgi-bin/ipc/aggggen>; the remaining data are taken from Maddison (2006), p. 637.

<sup>98</sup> USA, Canada, New Zealand, Australia.

<sup>99</sup> One may be puzzled by the acceleration of the demographic development of Africa in a period of massive slave transatlantic trade. The answer seems to lie in the fact that "although some areas of Africa were depleted by slave raiding, on balance the African population grew after the establishment of the transatlantic slave trade because of new food crops introduced from the New World, particularly manioc, corn (maize), and possibly peanuts" (Hellie, 2007). Cf. also Collins and Burns, 2007, pp. 198-199, 311 (p. 199: "The introduction of New World and Asian crops transformed many African agricultural societies, enabling them to expand into the vast unpopulated lands of the continent."); Maddison, 2006, p. 569. The demographic consequences of the new crops were somewhat compensated however by the spread of new diseases brought by the Europeans (Collins and Burns, pp. 199-200).

## 7. Maddison's statistical summing-up of world economic growth

Even in the poorest of continents, Africa, per capita income has strongly increased (about three times; an unheard of performance in the past) since the spreading to the whole world of the present mode of production that followed the industrial revolution (see Table 7). This has taken place notwithstanding the rapid population growth, which in the post World War II years has become the highest in the world (2.69% yearly in the period 1973-2001, somewhat decreased to 2,36% in the last six years; cf. Table 6).

According to Maddison's statistical account (somewhat daring, owing to the length of the historical period covered), per capita income has decreased in Western Europe during the first 1000 years of our era, from 450PP\$ to 400 (where 400 stays for the physical subsistence level), reaching a nadir around 600 AD, and then starting a very slow recovery.<sup>100</sup> In that period the rest of the world fared slightly better, per capita incomes being throughout the period somewhat higher in Africa (430 at 1AD, 425 at 1000AD), and in Asia (450 in both years), while the remaining areas were still at low subsistence level (400). Five hundred years later the world as a whole had made some modest progress (from 436 to 566). Italy was by far the richest country with 1100PPP\$, but was stagnating until the Industrial Revolution (1820). The territories that were to become the Western Offshoots were the poorest at 400, Africa had somewhat declined at 414, stagnating until the colonial conquests of the nineteenth century, China had progressed from 450 to 600, staying at that level until 1820 and declining afterwards, down to 439 in 1950, Japan also progressed reaching 737 in 1820. At the threshold of the Industrial Revolution, in 1700, the richest world country were the Netherlands with 2130, Western Europe was somewhat lower than 1000PPP\$ on average.<sup>101</sup>

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<sup>100</sup> The data for the year 1 in Western Europe and Asia are considered implausibly low by Federico (2002, p. 115). Federico's viewpoint is consistent with Milanovic (December 2004) estimate of 840 (p. 22) or between 800 and 900 1990 PPP\$ (p. 23) as the average per capita income of the Roman empire at the times of Augustus.

<sup>101</sup> For the detailed country data one is referred to Maddison (2006, p. 639).

Table 7. World Per Capita GDP, Regional Averages, 1-2001 AD<sup>102</sup> (1990 international Geary-Khamis dollars)<sup>103</sup>

	1	1000	1500	1600	1700	1820	1870	1913	1950	1973	2001
<b>Western Europe</b>	450	400	771	890	998	1 204	1 960	3 458	4 579	11,416	19,256
<b>Eastern Europe</b>	400	400	496	548	606	683	937	1 695	2 111	4 988	6 027
<b>Former USSR</b>	400	400	499	552	610	688	943	1 488	2 841	6 059	4 626
<b>Western Offshoots</b>	400	400	400	400	476	1 202	2 419	5 233	9 268	16,179	26,943
<b>Latin America</b>	400	400	416	438	527	692	681	1 481	2 506	4 504	5 811
<b>Japan</b>	400	425	500	520	570	669	737	1 387	1 921	11,434	20,683
<b>Asia (excl. Japan)</b>	450	450	572	575	571	577	550	658	634	1 226	3 256
<b>Africa</b>	430	425	414	422	421	420	500	637	894	1 410	1 489
<b>World</b>	445	436	566	595	615	667	875	1 525	2 111	4 091	6 049

Economic growth has been accompanied, wherever data are available, by a great reduction, in many cases almost a halving, since 1870, of labour time (Maddison, 2006, p. 347). And hence by an enormous growth of hourly labour productivity (p. 351). Notwithstanding the reduction in labour time, production per worker has greatly increased (about ten times since 1870 in Western Europe: Maddison, 2006, p. 349).

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<sup>102</sup> Maddison, 2006, p. 642.

<sup>103</sup> For a definition of Geary-Khamis dollars cf. United Nations, 1992. Perusing the above data it becomes obvious that at the time Marx was writing *Das Kapital* no amount of redistribution could have ever brought about the dramatic improvement in the living standards of the masses that technical progress and development (“the development of productive forces”) would have brought about in less than a life-span. Thus Marx (1875) was right in downplaying the issue of distribution as such. Distribution may be important in the short-run for allowing some of the worse-off to improve their lot. In the long run for the worse off it is more important the relation between distribution, technical improvements, production and accumulation.



Table 8<sup>104</sup> Growth of Per Capita GDP by Major Regions, 0–1998 (annual average compound growth rate)

	0–1000	1000–1500	1500–1600	1600–1700	1700–1820	1820–1998
Western Europe	-0.01	0.13	0.14	0.15	0.15	1.51
Western Offshoots	0	0	0	0.17	0.78	1.75
Japan	0.01	0.03	0.03	0.09	0.13	1.93
Group A	-0.01	0.11	0.13	0.12	0.18	1.67
Latin America	0	0.01	0.09	0.19	0.19	1.22
Eastern Europe & former USSR	0	0.04	0.1	0.1	0.1	1.06
Asia (excluding Japan)	0	0.05	0.01	-0.01	0.01	0.92
Africa	-0.00	-0.01	0	0	0.04	0.67
Group B	-0.00	0.04	0.02	0	0.03	0.95
World	-0.00	0.05	0.05	-0.00	0.05	1.21

Table 9.<sup>105</sup> Growth of Per Capita GDP by Major Region, 1820–2001 (annual average compound growth rate)

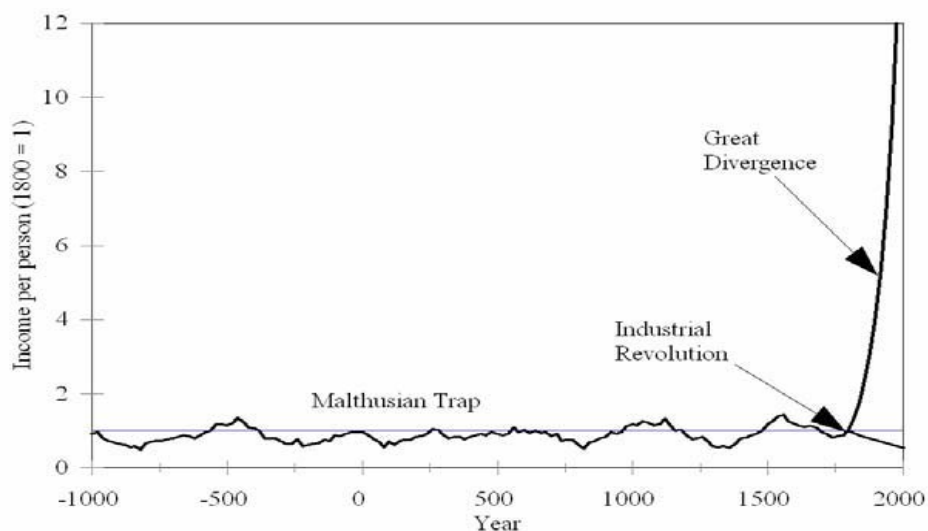
	1820–70	1870–1913	1913–50	1950–73	1973–2001
Western Europe	0.98	1.33	0.76	4.05	1.88
Eastern Europe	0.63	1.39	0.60	3.81	0.68
Former USSR	0.63	1.06	1.76	3.35	-0.96
Western Offshoots	1.41	1.810	01.56	2.45	1.84
Japan	0.19	1.48	0.88	8.06	2.14
Latin America	-0.03	1.82	1.43	2.58	1.84
Asia (excluding Japan)	-0.10	0.42	-0.10	2.91	3.55
Africa	0.35	0.57	0.92	2	0.19
World	0.54	1.30	0.88	2.92	1.41

<sup>104</sup> Source: Maddison (2006, pp. 30; 643).

<sup>105</sup> Data taken from Maddison (2006, p. 643).

## 8. The very long perspective of the world economic history according to the Malthusian viewpoint

Fig. 1 The Malthusian trap (“world economic history in one picture” ), according to Gregory Clark<sup>106</sup>



A possible interpretation of available historical evidence is the Malthusian view. Up to the dawn of industrial revolution the great majority of humans were on the brink of physical survival. In a very long perspective there was by and large a Malthusian equilibrium between population and resources, with a very weak long run growth, amounting to near stagnation, of world population.<sup>107</sup> Under such circumstances distribution of income and wealth affects in the long run the size of the population (because unequal distribution uses up resources that could allow a larger population to subsist), not the living standards of the masses. At the same time the existence of privileged strata, which in the short run at least are somewhat out of the Malthusian trap, can affect the well being of the worse off through the externalities they generate. These could be negative (envy and the sense of relative deprivation) or positive (the hope, however slim, to be able to raise among the privileged, some identification with their interest and life experience).<sup>108</sup> Their relative impact may depend, among others, on the

<sup>106</sup> Fig. 1.1 in Clark (2007).

<sup>107</sup> Clark's 2007 book is a recent representation of this viewpoint.

<sup>108</sup> According to Kenny (2006), and the empirical enquires reported by him, economic and social inequalities can have a powerful negative effect on subjective measures of poverty and deprivation, so their impact in the past, when they were associated with even greater differences in status and rights than in the present times, could have been more devastating than nowadays. Kenny also underlines the negative impact of increasing expectations and new consumer goods on welfare or happiness. But happiness is a rather subjective matter, as is well expressed by the Italian poet Metastasio: “Se a ciascun l'interno affanno si leggesse in fronte scritto, quanti mai, che invidia fanno, ci farebbero pietà!” (If everybody's internal pain were written on their forehead, many who are envied now, would be pitied instead.) As economists, we may content ourselves of dealing with per capita incomes, but with a lot of

degree of mobility in the society concerned. Religion could surrogate mobility in this world with a belief in mobility in the afterworld. Even in the slave society of ancient Rome slaves had some degree of hope to be liberated, and even to become affluent or, in Christian times, to earn after death, alike their rich masters, and ever more than they, the Kingdom of Heaven. Moreover the existence of some strata that were able to enjoy a surplus over subsistence could have been an engine (however very inefficient) of progress in living patterns, and an instrument for providing the resources for some to devote themselves to art, technology and science, with eventual long run benefits for average living standards, as well as cultural benefits for mankind. Other utilizations of surplus were for collective purposes, such as building cathedrals or waging wars, the latter possibly being in itself one of the principal instruments, through their disruptive consequences, of population control. The working of Malthusian limits could have affected economic progress negatively, pushing living standards down; however greater population density could have led to more advanced production techniques and modes of organization, in particular through the division of labour and increasing returns to scale.<sup>109</sup> Moreover, even if the Malthusian trap had worked in the very long-run, in the shorter run there may have been long periods (such as after the Black Death) when population growth was compatible with some improvement in average living standards. Thus in the shorter run how wealth (land ownership in particular) was distributed could have made a great deal of difference for the well being of the bulk of the population. The pressure of population on resources could have been reduced by reducing the tendency to demographic growth either by decreasing natality or by increasing mortality. Historically speaking the increase of mortality and reduction in life expectancy would first of all be based on infanticide, but also on high propensity to accidental death in later ages. In particular looser or absent organized political power under pre-agricultural conditions could have made life more precarious and insecure, leading to higher adult mortality, and lower pressure on resources, thus allowing higher living adult standards than in later more densely populated agricultural societies. This could be the reason explaining the paradox of the alleged lower living standards in agricultural in relation to hunter-gatherers societies.<sup>110</sup>

#### 9. The take off from the Malthusian Trap, the Industrial Revolution, Socialism and Transition

Thus for almost the totality of human history poverty and starvation have been the rule, wealth and affluence a tiny exception in a sea of misery and precarious lives. So the real historical singularity that must be explained is not poverty and backwardness, but development and wealth. If the issue of relative poverty and underdevelopment arises from the economic development of the countries that have become well off rather than from some countries having made worse off in an absolute sense, it is to the development of poorer countries that one should turn for getting rid of the issue, as well as for reducing, and one day perhaps eliminating, absolute poverty. In a number of

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caveats, among others of the kind argued by Kenny. On happiness and economic growth see also Easterlin, 1996, pp. 131-144.

<sup>109</sup> In the development of agriculture this is stressed by Boserup (1965).

<sup>110</sup> On this see Ember (1978); Diamond (1987); Caldwell and Caldwell (2003).

countries, particularly in Asia, the take-off has succeeded, in others, particularly in Africa, seems to have failed.

The gigantic increase in population and wealth in the last two centuries, and the very rapid (historically speaking) decrease in the proportion of the poor have been the outcome of a mode of production characterized by the systematic application to production of scientific principles, and organized pursuit of scientific and technological progress, dramatically improving the living prospects of billions of men and women, as a consequence of the basic “idea of the world as open to transformation by human intervention.”<sup>111</sup> According to conventional wisdom its ultimate sources may be found in the Renaissance and the Enlightenment, tied together by the Reformation’s critical discussion of traditional received faith. Until the Soviet Revolution this mode of production took the organizational form and vehicle of transmission of the internal and international capitalist market. This does not detract anything from the role performed by the state, in particular as provider of public goods and infrastructure, but the basic principle of economic functioning was voluntary exchange, and it is on voluntary exchange, and the creation and expansion of markets, as made possible by the creation of a mercantile economy and the gradual establishment of the rule of law and clear attribution of property rights, that the success of the Industrial Revolution and its aftermath can be attributed. According to conventional wisdom in this lies the difference with other environments of the past (such as historical China or the Arab world at its apogee) where scientific progress and innovations did not translate into sustained economic and technological progress. Real socialism can be seen just as a specific variety of this mode of production whereby the fundamental aspects have been upheld through a sort of rough extension of the rational organizing principle to the whole of society, and accumulation and innovation have been organized from the centre rather than having been the outcome of the working of market forces. Eventually this daring experiment has encountered a bitter dead end, but in the process it has partaken both of the increase in population and the increase in aggregate production. Its failure has been a comparative failure, but still its achievements in aggregate economic and life statistical terms may be seen as substantial in relation to pre-industrial epochs. If we are willing to indulge a little bit in counterfactuals, suppose that real socialism had prevailed throughout the world by way of revolution and/or military conquest, destroying the international market system in the process. It is conceivable that after the initial disruptive consequences of the change of system some process of increasing world wealth and population would have persisted anyway. Of course there is the issue as to the extent to which the survival of Soviet type socialism would have been helped in practice from the contemporary existence of an international capitalist economy, from which to draw technology, as well as goods (such as foodstuffs) for whose production Soviet-type socialism was utterly less proficient, and an international price system easing the difficult task of evaluating economic opportunities. But let us abstract from the latter point. Would it have been enough to argue that no better system is possible and to ascribe to the very nature of real socialism the economic and demographic outcomes? In this respect two viewpoints seem to be equally objectionable: that a really existing, and therefore highly imperfect, system of production must be rejected because its performance is seen as defective, and another abstractly implementable system (socialism

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<sup>111</sup> Giddens and Pierson, 1998, p. 94.

vs. capitalism) should do better; as well the opposite contention that no better system of organization (in our counterfactual example capitalism vs. Soviet-type socialism) is possible.<sup>112</sup> A further consideration refers to the heavy cost of transition, as borne out in what follows by life statistical data. If compared with the case of China's transition away from the Maoist system, this may exemplify the heavy toll of revolution as compared to evolution. Indeed transition in the former socialist camp has amounted to a, by and large pacific, but on the whole very disruptive, revolution led by institutional constructivism, the idea that everything can be explained by legal institutions, irrespective of the social and historical environment where these institutions are nested.<sup>113</sup> One may also think in this respect of a second best theorem (as a consequence of institutional complementarity): whenever institutions from a superior environment (in the sense that on its whole it brings about superior results) are introduced in an environment where the complementary institutions (which may well be of a tacit nature) are missing this can actually lead to a worsening, rather than to a betterment, of performance, until the complementary institutions are introduced, or a suitable adaptation of the overall institutional framework takes place.

#### 10. Post-war development and the Malthusian trap

As we have already mentioned, a most remarkable fact is that the world has never grown so fast, as to population and wealth, as in the post World War II period.<sup>114</sup> We have considered the possible causes: globalization (in particular the great intensification of international trade and investment), technical progress (and the progress of medicine), originating in the European countries and Anglo-European offshoots; in particular progress in transportation and agriculture,<sup>115</sup> and the absence of devastating conflicts at the global level (the world has been on the brink of a nuclear global disaster, but it didn't fall into the precipice, yet).

Notwithstanding the above successes, for the world as a whole the Malthusian trap is still lurking. But rather than decreasing agricultural returns, as in the classical explanation, it may be here relevant the pressure on scarce natural resources, and in particular the retroaction, on development and living standards, of the possible "tragedies of the commons", including climate change.<sup>116</sup> The industrial and demographic developments that have accompanied the present relative prosperity have taken place at the cost of world's commons, in particular at the cost of the decumulation in the span of two hundred years of huge reserves of fossil fuels, the leftovers of

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<sup>112</sup> Following Demsetz (1969) economists dubb the first of the two views as Nirvana fallacy.

<sup>113</sup> The issue of the best strategy of transition is a complex and most debated one. A crucial factor constraining transition strategies was of course the fact that the economic and political system in the European ex-communist countries was rotten from the inside, and its credibility and social support was low, rendering a path of gradual economic reform difficult to follow.

<sup>114</sup> This is epitomized by the title of Easterlin 1996 book: *Growth Triumphant*.

<sup>115</sup> Of particular importance for the provision of the basic means of survival have been the progresses in transportation and agriculture. For the remarkable performance of world agriculture in modern times, but especially in the post-second world war years, when agricultural output growth was exceeding the most exceptional growth of population, see Federico (2005, p. 19). For the role of agriculture spearheading, alongside industry, modern economic growth, see Easterlin, 1996, p.5.

<sup>116</sup> According to a plausible view, very specialized life stiles, such as in the contemporary world, increase population vulnerability to dramatic environmental changes; see Chu, 1998, pp. 193-194.

hundreds of millions of years of life on earth.<sup>117</sup> To this one may add the destruction of forests and pristine habitats, the pollution of air and water, and, last but not least, CO<sub>2</sub> emissions. The plunder has mostly taken place to the advantage of industrialized countries, and of countries provided with large reserves of raw materials (in particular hydrocarbons), appropriating the rents of their exploitation. On the other hand the overall balance for poorer and energy poor countries cannot be considered as negative, since in the process their average living standards (considering both per capita income and life statistics) have greatly improved all the same, as a consequence of the diffusion of the technological advances of the West, notwithstanding the colonial domination to which most of them had been subjected in the past. But as more and more countries successfully pursue the type of industrialization and economic development that has made rich the West and better off the emerging economies, the pressure on resources and the enhanced generation of externalities may exert a negative feedback elsewhere, especially on the living standards of the countries deprived of natural resources, with potential destabilizing consequences on the economy and the peace of the world.<sup>118</sup>

Extrapolating historical experience, the way out the Malthusian trap could lie on the one hand in the enhancing of technological progress, and on the other in population containment, lessening the pressure on the resource base (including world commons). Population containment could be the outcome of a voluntary process, either at the individual and family level, following the demographic pattern of reduction of natality accompanying the development of the presently more developed countries, or it may be favoured by public policy; the possible alternatives are the usual ones that have constrained the development of population in history. Once demographic developments are considered an object of policy, some delicate philosophical problems present themselves: Is it better in presence of limited resources to have many overlapping generations with short lives, or fewer generations with longer lives? How short or how long, and how many generations? How many people for each generation? Many people with low living standards, or few ones with higher living standards? And how low or how high?<sup>119</sup> In this respect one should be reminded of the old saying “more souls more joy”. *Ceteris paribus*, the larger the population the greater the number of possible originators of new ideas and discoveries, from which the progress of humanity (however conceived) ensues, and the greater the number of possible contacts and personal interactions, favouring the development of ideas. At the same time there may be some trade-off between quantity and quality: a smaller better educated population could be more conducive to economic and intellectual progress than a larger uneducated one living at the margin of survival. Theoretically speaking we can have a dynamic equilibrium

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<sup>117</sup> In this perspective the long run survival and spreading to the rest of humanity of the high living standards of the most developed world crucially depend on the successful untapping of relatively clean and plentiful new sources of energy, such as nuclear energy either in the development of its fission or even more, perhaps, in its elusive fusion form.

<sup>118</sup> Among the important externalities associated to the growth of production there is the global warming that would damage some countries while favouring other ones. This could be another important destabilizing factor.

<sup>119</sup> These dilemmas can be seen as brought to their extreme consequences in Asimov's utopian world of the *Foundation* series (cf. in particular Asimov, 1986): As an alternative model to the crammed world of Trantor, the capital of the Galactic Empire, where 40 billion humans live in artificial domes, we have the very sparsely populated Solaria, where the population is controlled by strict demographic planning, with few (mutated) humans living very comfortably in very large estates worked by armies of robots.

whereby high population growth spurs fast technological progress, the latter higher per capita incomes, which would retroact in maintaining the momentum of technical progress and of demographic and economic growth, compensating Malthusian static decreasing returns.<sup>120</sup>

#### 11 The limits to population growth: natality, mortality, and catastrophes

It is obvious however that a demographic explosion such as that of the last decades cannot last forever. Carlo Cipolla (1974 [1962], p. 86) quotes “an exercise in astronomical arithmetics” by C.P. Putnam (the inventor of the first windmill generation turbine), according to which “if the [human] race had sprung from a couple living not long before agriculture was discovered—let us say 10,000 B.C.—and if its members had expanded at the rate of one per cent per year since then [which is lower than the present rate of growth of world population], the world population would form today a sphere of living flesh many thousand light years in diameter, and expanding with a radial velocity that, neglecting relativity, would be many times faster than light.”

A correction to the process of world overpopulation could be found in a decreasing birth rate, as a by-product of per capita income growth, and in the extension of social security systems into the countries where the survival of the elderly is otherwise dependent on family ties, as well as in the improvement and diffusion of the technology of birth control. Thus, according to Easterlin (1996), p. 112, “both theory and evidence indicate that the population explosion is a transient phase of contemporary development experience”, since in developing countries “the more rapid the Mortality Revolution, the more rapid is the transition to lower fertility”, replicating, albeit with different speed and modalities, the demographic transition of present developed countries. But can one really discount the possibility that the Mortality Revolution could intensify as a consequence of further medical discoveries after the transition to lower fertility is over, or that preferences regarding procreation could differ as a consequence of different culture in developing countries, or preferences regarding procreation could change even in the developed world, altering the dynamic demographic balance? Preferences and science cannot really be considered as given in the long-run.

The shape of a future long-run population equilibrium, absent a sudden demographic catastrophe, could entail a low mortality rate, a low birth rate, a long life span, and a marked increase in the average population age. Perhaps a senescent population will be less dynamic but wiser.<sup>121</sup> While we can think of demographic policies affecting the size of a population at the country level (even if a country could represent an important part of the world population, such as China), it seems hardly possible that demographic policies could be devised and implemented at the world level (such as advocated notably by Julian Huxley<sup>122</sup>) in order to take into account the important

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<sup>120</sup> On the relation between population growth, technical progress, and per capita incomes see Kremer (1993).

<sup>121</sup> And more endowed by experience. On the quality advantages of a more aged labour force see Easterlin, 1996, p. 124. For the economic consequences of population aging see *ibidem*, pp. 113, f.

<sup>122</sup> Cf. Julian Huxley (1964). Huxley is rather vague however on the instruments. Apparently the main instrument of population control that he envisages is the diffusion and promotion of the technology of birth control (p. 248: “When I say a population policy, I don’t mean that anybody is going to tell how many children she may have... It means that you recognize population as major problem of national life, that you have a general aim in regard to it, and that you try to devise methods for realizing this aim. And

externalities that individual decisions regarding procreation have for the world as a whole.<sup>123</sup> In the past demographic control, contrasting the operation of the Malthusian trap, was often ensured by custom, involving habits such as organized celibacy (as in monastic orders), repression of sexuality, and late marriages (the way out praised by Malthus himself), systematic infanticide, or belligerent habits leading to an increase of adult mortality.<sup>124</sup> Under conditions of progressively increasing life expectancy demographic control could assume the form of some limitation to the length of life, if not explicitly and legally binding as in the dystopian world of the *10-th Victim*,<sup>125</sup> in the more subtle form of denying life supporting medical treatment and, possibly, the economic means of survival, to the elderly.

Of the three factors that have historically contributed to held populations in check through recurrent catastrophes: epidemic diseases, famines, and war, the impact of epidemic diseases has been greatly reduced by the progresses of medicine, and even the definitive cure or prevention through vaccination of the AIDS epidemics appears only question of time. Of course the possibility of the surfacing of some new epidemic disease, such as aviary influenza, is always possible, but only with temporarily limited consequences, until, presumably, medical research comes to grip with it. Mass starvation as a consequence of famine has been largely overcome by progresses in transportation and agricultural technique, with the possible exception of countries plagued by war and heavy internal disturbances. Even if at the moment tensions are re-surfacing on the international food market, following increased demand and the ill-advised subsidization of fuel producing crops, another agricultural revolution is in progress through the development of OGMs, which, notwithstanding misgivings and preconceived hostilities, seems essentially a foregone development. The impact of the new revolution appears more far-reaching and of potentially much greater impact than the previous one, because of the much faster process of scientific plant breeding, and the much greater potential of invention of new varieties suitable for the most various environmental conditions.<sup>126</sup> However, alike the Green Revolution, and even more than the latter, the OGMs revolution also presents specific problems of compatibility to the various natural and institutional environments, especially in less developed countries. Obstacles to its spreading are presented by the specific nature of its associated private property rights, and consequent hindrances to imitation of privately owned know-how.<sup>127</sup> The latter aspect could be partly overcome through internationally concerted public action, involving in particular public, instead of private, funding of research. Moreover public international funding could be provide an opportunity to direct research in areas which,

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if you have an international population policy, again it doesn't mean dictating to backward countries or anything of that sort; it means not depriving them of the right ... to scientific information on birth-control, and it means help in regulating and controlling their increase and planning their families.") Fictionally, there is far-reaching demographic planning in Julian's brother Aldous Huxley dystopian novel *Brave New World* (1932).

<sup>123</sup> A rather provocative and thought provoking discussion of the externalities generated by individual population decisions and the (un)suitability of a deliberate public policy aimed at affecting them is Friedman (1972).

<sup>124</sup> For an account of various methods of population control in different historical and anthropological contexts, see Caldwell and Caldwell (2003).

<sup>125</sup> Petri (1965).

<sup>126</sup> See Cuffaro, 2001, p. 139

<sup>127</sup> Ibidem, pp. 136-144.



while privately unprofitable, may contribute to stave off humanitarian crises, and help development, of poorer countries subject to environmental degradation. All in all the potentially most destructive factor, besides some sudden environmental disaster, could be eventually war, as a consequence of the spreading of atomic technology and of international tensions building up in an increasingly overcrowded and progressively shrinking world.<sup>128</sup>

## 12. War, peace, the Bomb, and their economic consequences

### 12.1 The economic consequences of war and peace in historical perspective

The game humanity played in the past, when conquest, plunder, territorial expansion and domination, slavery, torture and mass killings were respectable endeavours and part of the rules of the game, and mass murderers acquired the status of national heroes, still remembered and glorified in monuments and history books, has led on the whole to very poor results, as measured at least in terms of demographic and economic growth.<sup>129</sup> However the real extent to which wars were contributing to hold in check the progress of humanity is difficult to gauge. A strict Malthusian could object that living standards and population would have been held in check by Malthusian factors anyway. But certainly wars brought about untold suffering and destructions both of physical and, even more, of human capital, subtracting resources which could have been better used in principle towards economic and cultural progress. At the same time they tended to bring to the fore populations and civilizations notable for their destructive and coercive power rather than for their peaceful achievements. Whatever the reasons until recent times the progress of humanity, both in terms of population and of productive achievements, was so slow as to amount, in our present perception of time, more to stagnation than to growth, with long spans of regression. The first millennium of the vulgar era was for Europe a lost millennium: the decadence and fall of the Roman Empire and the dislocations following the barbaric invasions left Europe worse off economically in the year 1000, at the dawn of the new Christian nations, than at the time of the birth of Jesus Christ. Real sustained progress, meaning a substantial overcoming of the Malthusian trap (or anyway, whatever the interpretation, of the near long run stagnation, according to a modern perspective, in world population and economy), had to wait until the Industrial Revolution gradually spread all over the world. But it has been the peace period after the Second World War (localized conflicts notwithstanding) that has led to the greatest acceleration in the speed of demographic and economic advance the world has ever known in its history.

Following the tragedy of two world wars the international community refuses in principle the model of wars of aggression directed to the enlargement of national borders and the acquisition of new territories.<sup>130</sup> In the post war period these have been

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<sup>128</sup> It is well known that overcrowding is a factor of aggressiveness in animal populations. Some tendencies of this sort could apply to human populations as well, especially if overcrowding leads to tension building processes such as massive migration flows and increasing pressure on natural resources and the environment.

<sup>129</sup> For a quantitative assessment of the negative impact of war on growth in modern times, see Milanovic (2005).

<sup>130</sup> Waging a war of aggression, in particular, has been made an international crime in the charter of the United Nations (art. 39). It is not particularly tranquillizing however that this provision had a precedent

very limited: Tibet's conquest by Mao's China, Timor-Leste's conquest by Indonesia, Western Sahara's annexation by Morocco, Saddam Hussein's expansionary wars aimed to acquire new territories, in Iran first, and through the annexation of Kuwait later, and the wars of Yugoslav succession, renovating the old bloody Balkan wars.

In the past a war of conquest had some rationality since the natural productive foundations on which to re-start a growth process were largely unaffected by catastrophic events, as the foundation of wealth and survival was agriculture. Things appear differently with the drastic change in the economic basis and the advances in military technology. The prosperity of the advanced countries relies on very delicate social and economic mechanisms and a much greater surplus could be enjoyed through voluntary exchange than through conquest and enslavement. This was the point raised by Angell (1913) on the eve of the First World War, declaring its impossibility on rational economic considerations.<sup>131</sup> Eventually, the "impossible" war broke out, with catastrophic economic (not to speak of the non-economic) consequences for everybody concerned, putting a halt to the successful economic progress of the "belle époque". War is indeed an eminently destructive endeavour that not always can be avoided on the basis of strictly rational considerations. Moreover "not the facts, but men's belief about facts, shapes their conduct".<sup>132</sup>

## 12.2 The economic consequences of the Bomb

The economic argument against war becomes much more compelling with nuclear technology. The spreading of nuclear armaments brings about a reduction in the propensity towards armed regional conflicts. After India and Pakistan had acquired nuclear status there have been moments of acute tension, but, unlike in the past, none of these tensions has led to open war. Since it has become a nuclear power, Arab countries have ceased to wage open war to Israel. At the same time, in case an open conflict between atomic powers were to erupt, the consequences could be disastrous, and not only for the countries concerned. In the present world the victory in a nuclear war would be a Pyrrhic one, since the conquered territories would stay contaminated and unproductive for the foreseeable future,<sup>133</sup> and the wealth of the defeated would be destroyed with their physical destruction, not to speak of the losses of the victor. Until now this entirely rational consideration (as well as the fear for the enormous losses of a nuclear war) has prevented wars between nuclear powers. But unfortunately hate, which may be totally destructive, can be a stronger motivation than greed.<sup>134</sup> Moreover the return to the old days when the balance of power was ensuring a precarious equilibrium

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in article 10 of the Covenant of the League of Nations but this did not hinder Nazi Germany and the Soviet Union attacking Poland in September 1939, thus triggering the Second World War!

<sup>131</sup> "It is impossible for one nation to seize by force the wealth or trade of another -- to enrich itself by subjugating, or imposing its will by force on another" (Angell, 1913, p. ix).

<sup>132</sup> Ibidem.

<sup>133</sup> But the above does not apply to the neutron bomb!

<sup>134</sup> Indeed, the object of hate is in damaging or destroying the other, greed amounts to benefiting themselves irrespective of the welfare of the others, but it does not necessarily imply their destruction. Sometimes it may even imply caring for the welfare of the others, if their survival or collaboration is to the advantage of the greedy.

between “conservative” and “revisionist” powers<sup>135</sup> would entail enormous dangers: an international equilibrium based on the balance of powers, rather than on commonly shared values, may lead to war whenever the balance is altered, or seen in the process of being altered. Moreover, the future may bring about the impossibility of having a balance of military power because of the net economic and military dominance of some large and assertive, potentially “revisionist”, and expansionist, actors. Poison pills by weaker powers, such as the potential of derailing a conventional war into a nuclear war, with terrible consequences for the stronger aggressor, even in case the weaker is defeated, could in the future restrain military aggression by dominant powers, albeit not some kind of suicidal attacks by those motivated by hate and unrestrained by the prospects of their own destruction. But also stronger powers could be tricked in gambling from their position of strength, and their delusion could bring about untold consequences on economic and demographic progress.

### 13. Conclusion

Our generation has had the privilege of living in a very special period in the history of mankind. Never in history have material conditions progressed at the rate to which we have become used to in the post-war years and the different parts of the globe and the different populations become so close. Never has world population increased at a faster rate. Never have overall life statistics improved in such a substantial way. Still, an important part of humanity lives precarious lives under appalling conditions of absolute poverty, but its relative share, and in more recent times even its absolute numbers, have steadily decreased. In the continuation, and possibly the intensification, of this process may lie the hope to eventually overcome world poverty (at least in absolute terms). At the basis of those achievements there has been a system of production and of organization (whatever its specific variations in the different countries and the different times) that has put to the fore the systematic pursuit of technical progress, and its utilization in all aspects of economic life, while providing the drive and the incentives to do so. A contributing factor has been the intensification and acceleration of world economic and non-economic exchanges (“globalization”). But this same system has also brought about the utilization of technical progress for making increasingly more destructive the technology of warfare. For the first time in history mankind has produced the military technology that has the potential to lead to its own demise. The danger of global thermonuclear warfare has kept the world by and large at relative peace for more than sixty years, quite an unprecedented achievement that has presumably very much contributed to the overall positive results. But even if the danger appears to have decreased with the end of the Cold War, the potential for large scale destruction remains, and may increase with the spreading of nuclear technology in presence of persisting or even increasing nationalistic drives, especially by resurging old imperial powers. As always has been the case in history, prosperity and economic progress are by no means foregone conclusions.

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<sup>135</sup> Such as seemingly aimed for by Russia, striving to build up a security alliance with China against the West.

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## STATISTICAL APPENDIX: LIFE STATISTICS

**Table 1A<sup>136</sup>** Yearly births per 100 population

	1820	1900	1950	1999	2007
Italy	3.9	3.3	1.94	0.93	0.85
West European Average	3.74	3.08	1.83	1	1(EU)
East European Average					0.99 <sup>137</sup>
United States	5.52	3.23	2.4	1.44	1.42
Japan	2.62	3.24	2.81	0.95	0.81
Russia	4.13	4.8	2.65	0.88	1.09
Latin American Average			4.19	2.51	
China		4.12	3.7	1.6	1.75
India		4.58	4.5	2.8	2.27
Asian Average (without Japan)			4.28	2.3	
African Average			4.92	3.9	3.8
World			3.74	2.3	2.02

**Table 2A. Average Life Expectancy for Groups A and B, 1000–1999<sup>138</sup>** (years at birth; average for both sexes)

	1000	1820	1900	1950	1999
<b>Group A</b>	24	36	46	66	78
<b>Group B</b>	24	24	26	44	64
<b>World</b>	24	26	31	49	66

<sup>136</sup> Source: Maddison, p. 32 (some of the values refer to slightly different years: see the notes in the source); for the year 2007: CIA (2007), and, for the African average, PRB (2007). The data reported in the World Factbook for 2007 range from 0.73 (Hong-Kong) to 5.0. It is notable that among the 223 countries whose data are reported, 9 of the first 10 positions belong to African countries.

<sup>137</sup> Simple average of 17 East-European countries, with values ranging from 8.8 (Bosnia) to 1.2 (Macedonia).

<sup>138</sup> Source: Maddison, p. 33. Group A: Western Europe, Western Offshoots (USA, Canada, Australia and New Zealand), and Japan, Group B is the rest of the world.



Table 3A.<sup>139</sup> Life expectancy at birth

	1820	1900	1950	2007
<b>Italy</b>	30	43	66	79.9
<b>Western Europe</b>	36	46	67	79.5
<b>Eastern Europe</b>				74.5
<b>Russia</b>	28	32	65	65.9
<b>United States</b>	39	47	68	78
<b>Japan</b>	34	44	61	82
<b>Latin America</b>	27	35	51	72.8
<b>China</b>	na	24	41	72,9
<b>India</b>	21	24	32	68.6
<b>Asia</b>	23	24	40	69
<b>Africa</b>	23	24	38	52,2
<b>World</b>	26	31	49	65.8
<b>More developed countries</b>				76.7
<b>Less developed countries</b>				64.6

Sources: Maddison, 2006, p. 32; for 2007 U.S. Census Bureau, International Data Base, at <http://www.census.gov/cgi-bin/ipc/idbagg>.

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<sup>139</sup> In order to understand the implication of the data one should consider that the data concerning life expectancy are affected for pre-modern and modern backward societies by very high child mortality rates, while adult life expectancy can be much higher. For instance in a demographic regime such as in the Mopti district of Mali in 1957-58 with a total fertility rate (average number of live birth per woman) of 7.5, life expectancy was 18, but life expectancy at 20 was 48, while in another one, corresponding more or less to the demographic regime of 1650-1750 England, with fertility rate 4 life expectancy was 33, but life expectancy at 20 was 55 (Caldwell and Caldwell, 2003, p. 210).

Table 4A. Some life statistics from WHO, year 2005<sup>140</sup>

	Life expectancy at birth		Healthy life expectancy at birth		Adult mortality rate <sup>141</sup>		Under 5 mortality rate <sup>142</sup>	Infant mortality rate <sup>143</sup>	Neonatal mortality rate <sup>144</sup>	Maternal mortality rate <sup>145</sup>
	male	female	male	female	male	female				
<b>Italy</b>	78	84	71	75	89	46	4	4	3	5
<b>USA</b>	75	80	67	71	137	81	8	7	4	14
<b>Japan</b>	79	86	72	78	92	45	4	3	1	10
<b>Russia</b>	59	72	53	64	470	173	14	11	7	65
<b>India</b>	62	64	53	54	280	207	74	56	39	540
<b>Brazil</b>	68	75	57	62	225	118	33	28	13	260
<b>China</b>	71	74	63	65	155	98	27	23	18	56
<b>South-East Asian Region</b>	62	65	54	55	272	207	68	51	35	460
<b>African Region</b>	48	50	40	42	480	438	165	99	40	910
<b>World</b>	64	68	56	59	233	164	74	51	28	400
<b>European Union<sup>146</sup></b>	76	82						5		

Some interesting extreme values (giving the existing range), from CIA *Factbook* (2007): Birth rate (births/1000) 50 (Niger)--7,34 (Hong-Kong); death rate (deaths/1000): 30.35 (Swaziland<sup>147</sup>)--2.16 (United Arab Emirates); Infant Mortality Rate: 184.84 (Angola)--2.3 (Singapore); Life Expectancy at Birth: 83.52 (Andorra)--32.23 (Swaziland); Total Fertility Rate (children born/woman): 7.38 (Mali)---0.98 (Hong-Kong) (1.50 EU).

<sup>140</sup> WHO, 2007. For a definition of the different indicators and the methods used in their assessment, see WHO, *National Burden of Disease Studies: A Practical Guide*. Geneva; WHO, 2001.

<sup>141</sup> Probability of dying aged 15–60 years per 1000 population.

<sup>142</sup> Probability of dying aged < 5 years per 1000 live births.

<sup>143</sup> Per 1 000 live births. Mortality in the first year of life.

<sup>144</sup> Per 1 000 live births. Mortality in the first 28 days of life.

<sup>145</sup> Per 100,000 live births.

<sup>146</sup> From CIA (2007).

<sup>147</sup> In the case of Swaziland the very high mortality rate and the the very low life expectancy can be related to a HIV/AIDS adult prevalence rate of nearly 40% (cf. CIA *Factbook* , 2007)..

Table 5A. Some life statistics of Eastern Europe from WHO, year 2005<sup>148</sup>

	Life expectancy at birth		Healthy life expectancy at birth		Adult mortality rate <sup>149</sup>		Under 5 mortality rate <sup>150</sup>	Infant mortality rate <sup>151</sup>	Neonatal mortality rate <sup>152</sup>	Maternal mortality rate <sup>153</sup>
	male	female	male	female	male	female				
Albania	69	73	59	63	167	98	18	16	9	55
Belarus	63	75	57	65	366	133	9	7	3	36
Bosnia	70	77	62	66	186	88	15	13	10	31
Bulgaria	69	76	63	67	213	92	15	12	7	32
Croatia	72	79	64	69	166	65	7	6	5	10
Czech Rep	73	79	66	71	156	70	4	3	2	9
Estonia	67	78	59	69	281	100	7	6	4	38
Hungary	69	77	62	68	256	107	8	6	5	11
Latvia	65	76	58	68	314	114	10	8	6	61
Lithuania	65	77	59	68	326	109	9	7	5	19
Poland <sup>154</sup>	71	79	63	68	208	79	8	6	5	10
Romania	68	76	61	65	230	102	19	16	10	58
Russia	59	72	53	64	470	173	14	11	7	65
Serbia	70	75	...	...	192	98	9	8	...	...
Slovakia	70	78	63	69	201	77	9	7	4	10
Slovenia	74	81	67	72	152	67	4	3	2	17
Ukraine	61	73	55	64	403	150	17	13	7	38

<sup>148</sup> *World Health Statistics*, WHO, 2007. For a definition of the different indicators and the methods used in their assessment, see WHO, 2001.

<sup>149</sup> Probability of dying aged 15–60 years per 1000 population.

<sup>150</sup> Probability of dying aged < 5 years per 1000 live births.

<sup>151</sup> Per 1 000 live births. Mortality in the first year of life.

<sup>152</sup> Per 1 000 live births. Mortality in the first 28 days of life.

<sup>153</sup> Per 100,000 live births.

<sup>154</sup> From CIA (2007).