

## **Good Things on the Rise: The One-Sided Worldview of Hans Rosling**

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**Charisma and positive messages about world development made Hans Rosling (1948–2017), a former professor of international health at the Karolinska Institute in Sweden, an international star. His posthumous gospel, *Factfulness* (1), which contains a collection of illustrative statistics and imaginative insights, has reached a global audience. In the United States, Bill Gates recently announced that he will hand out the book to all graduating university students, and 32 more translations are in the pipeline. An article in the science journal *Nature* praised the book in glowing terms: “This magnificent book ends with a plea for a factual world view. ...Like his famous presentations, it throws down a gauntlet to doom-and-gloomers in global health by challenging preconceptions and misconceptions.” (2) However, *Factfulness* actually employs a biased selection of variables, avoids analysis of negative trends, and does not discuss any of the serious challenges related to continual population growth. A policy based on the simplistic worldview presented in *Factfulness* could have serious consequences.**

Who will dare stand up to media sensation Hans Rosling? This question asked by four writers in a leading Swedish daily in October 2015. Their criticism of his cavalier attitude toward the rapid rise in Africa’s population went unanswered. Perhaps the famous lecturer was leery of entering into a dialogue that might reveal the weaknesses of his analysis. Despite his position as a professor at the Karolinska Institute, Rosling’s research production was meager. Instead, he had become what he called an “edutainer”, specializing in lectures that mixed shows with novel ways of displaying publicly available statistics. As reported in *The Economist*, “He became a regular at gatherings of the great and the good, presenting talks at TED (a series of conferences supposed to give novel ideas an airing; his were much better than most) and attending Davos, an annual gathering of the masters of the universe in Switzerland” (3).

Rosling’s first TED talk in 2006, which used “the best statistics you’ve ever seen,” reached a big audience, widely spreading his message about positive global development. A stream of

TED lectures on the same theme followed, and he consolidated his international reputation as a fact-based truth speaker. These lectures were an effective but problematic form of communication, as they gave the audience little room to check, question, and reflect on Rosling's words. He escaped the grueling review process required for publication in academic journals, so his statements were never tested by knowledgeable colleagues.

During the refugee crisis in Europe in 2015, Rosling became a frequent television guest. He welcomed refugee smugglers and pleaded for the opening of borders through the cancellation of the so-called transporter's responsibility (the requirement that flight and ferry passengers have valid entry permits). Rosling's appeal received a widespread positive response, but he failed to discuss the potential consequences of an open border for Sweden's reception capacity, which was already strained to its limits.

In a famous interview on the Danish television program *Deadline* on September 3, 2015, Rosling scolded the journalist Adam Holm for his ignorance of global development. **(4)** When Holm claimed, "Europe is pressured by the refugee crisis", Rosling replied: "Excuse me, what did you say? Pressured? We are not pressured. In relation to what we can receive, not many refugees have arrived." **(5)** As soon became apparent, it was that "ignorant" Danish journalist who had it right. Refugee and migrant issues have created social and political pressures across Europe, boosted rightwing populism, and threaten to permanently fragment the European Union (EU).

It is hard to critically review the content of public lectures. With the posthumous publication of Rosling's *Factfulness: Ten Puzzles That Help You Understand the World*, with Ola Rosling and Anna Rosling Rönnlund, readers will now be able to do just that. Rosling himself described the book: "This book is my very last battle in my lifelong mission to fight devastating against the devastating global ignorance. It is my last attempt to make an impact on the world." **(6)**

Leading newspapers in Sweden have praised the book lavishly: "*Factfulness* is an extremely good and entertaining self-help book for the world... The trio serves oceans of carefully analyzed knowledge in a condensed candy format, at a level that even a US president should be able to absorb. The overview becomes almost staggering." **(R7)**

The Nobel Prize Foundation, which is lobbying hard for the construction of a monumental Nobel Center in a culturally sensitive area of central Stockholm, has become one of Rosling's

cheerleaders. Together with Rosling's Gapminder—an organization described as a “fact-tank” with the mission of spreading statistics around the world—the center will “light up Stockholm every spring, in connection with the arrival of the light, with a new public education day in memory of Hans Rosling.” *Factfulness* will be the starting point for the first Hans Rosling Day, “a day that will be about enlightenment, facts and [the] truth of our time.” (8) By engaging in this activity, the Nobel Prize Foundation has stepped outside its role as a non-partisan promoter of scientific achievement and entered the very different field of popular education. However, if *Factfulness* is to be taken seriously, it is important to apply the standard scientific criteria of critical scrutiny and skepticism also to this book. This essay is intended as the start of such an examination.

### **Rosling's Positive Contributions**

We will begin with the book's positive contributions. In a time of gloomy reports, this is a text that persuasively demonstrates the impressive global achievements that have been made since the 1960s in infant mortality, education, and living standards. *Factfulness* forcefully attacks the media focus on accidents, diseases, and crimes at the expense of depictions of long-term improvements, as well as the disproportionate interest in spectacular news and the neglect of context and proportion. To illustrate this point, the authors compare the media coverage of deaths caused by swine flu with that of the fatalities in tuberculosis. In two weeks in 2009, 31 people died of swine flu, which was reported in 253,442 articles—more than 8,000 per death. During the same period, they calculated that 63,000 people died in TBC, with news coverage of 0.1 article per death. (9) Swine flu was a new epidemic and TBC had existed since ancient times, but the lack of balanced coverage is nevertheless striking.

During his lectures, Rosling repeatedly observed that his audience had a view of the world that dated to the 1960s: a small group of rich countries in Western Europe and North America were set in stark contrast to the overwhelming majority of poor developing countries throughout the rest of the world. *Factfulness* shows that this dichotomy is outdated; it proposes grouping countries into four income levels, where each level represents a fourfold increase in income over the previous level. The starting point is \$1/day at Level 1, then \$4/day at Level 2, \$16/day at Level 3, and \$64/day or more at Level 4. In the book, the levels are cleverly illustrated with a comparison with toothbrushing: from using two fingers (Level 1) to brushing with an electric toothbrush (Level 4). According to *Factfulness*, only a small part of the world's population—about one billion people—is today at Level 1 (living in

extreme poverty). The majority, three and two billion, respectively, are at Level 2 and Level 3, with access to electricity, education, and healthcare. One billion people live at Level 4.

In 2016 the World Bank officially accepted this grouping “after 14 years of my [Rosling’s] lectures.” **(10)** By the late 1980s and early 1990s, researchers studying emerging economies had already discarded the idea of a monolithic category of developing nations in favor of differentiated country studies and their institutions. **(11)** The United Nations (UN), however, still adheres to the dichotomy of developed and developing countries.

### **Lofty Claims**

In addition to important statistics, *Factfulness* provides advice to readers regarding, for example, the value of humility and self-examination: “Be humble about the extent of your expertise. Be curious about new information that doesn’t fit and information from other fields.” The book’s claim, however, are not humble “This is a book about the world and how it really is.” **(12)** Such claims demand correctness of charts, controls for bias and balance in selection and interpretation, and impartial analyses of key trends. However, selection is never discussed in *Factfulness*, and several of the analyses in the book raise a host of concerns. The purpose of this essay is to review *Factfulness* in light of its claims. My criticisms are distilled in the following four points:

1. The authors exhibit unbalanced optimism. World development is depicted using only positive trends and graphs.
2. There is a lack of interest in the material preconditions and ecological consequences of the current techno-economic trajectory and its global diffusion, which the authors tend to extrapolate without qualifications.
3. The authors take a cavalier attitude toward the continued global population increase, which is portrayed as both unproblematic and almost impossible to influence. As a result, they devote very little space to investments in family planning.
4. There is no discussion of migratory flows, their relationship to population growth, or the need for more thoughtful policies.

#### **1. The Best of All Worlds?**

*Factfulness* includes many graphs of “bad things in decline” and “good things on the rise” but not a single graph of problematic phenomena that are on the rise. For example, there is a graph depicting the reduction in oil spills at sea but no graph (or mention) of the growing accumulation of plastic debris in the oceans and its devastating effects on birds and fish. The book contains a graph showing the decrease in hunger around the world but no graph of the global increase in obesity, though it does at least mention this issue: “Our cravings for sugar and fat make obesity one of the largest health problems in the world of today.” (13)

Countering the graph presented in *Factfulness*, however, a report from UN World Food Program in September 2018 showed that the number of people suffering from hunger has increased in recent years, and it is now as high as it was ten years ago. This may be a temporary deviation from the trend of decreasing hunger, or it may suggest persistent problems related to sustainably feeding the increasing world population.

The authors report the reduction of smoke particles in the air as another positive global development. However, the graph used to illustrate this point only shows a decline in sulfur dioxide per person. Nitrogen oxides and particles are major problems in Europe and around the world due to the popularity of diesel cars, but there is no graph depicting the amount of nitrogen oxide in the air. Furthermore, no graph illustrates air pollution in industrializing Asia, although its “brown clouds” have been widely reported for over a decade. Indeed, in India alone, dangerous air particles are estimated to cause 1.1 million deaths annually, an increase of 50% since 1990. (14)

Increasing carbon dioxide emissions are mentioned in the book, but this issue is primarily used to critique the West. The authors criticize an EU environment minister for saying, “China releases more carbon dioxide than the United States, and India more than Germany.” Instead of discussing total emissions, the authors argue that our focus should be on carbon dioxide emissions per capita. This is certainly more constructive for discussions of the policy actions in different countries, but from the perspective of our planet’s well-being, only total emissions count—no matter how they are divided. The fact that China now releases more carbon dioxide than any other country is, therefore, a real problem. Furthermore, if the authors had examined per capita emissions, they would have found that China’s emissions have surpassed those of most EU countries: 7.45 tons of carbon dioxide emissions per person in China, compared to 4.5 tons in Sweden and 6.4 tons for the EU as a whole. (15) Still, the

EU is working to reduce its emissions, while China is not. The book's criticism of the EU environment minister thus falls flat.

The book's graphs of "good things on the rise" highlight the increase in protected nature and species around the world, but no figure or graph illustrates the drastic decline in global biodiversity, described by researchers as the sixth mass extinction. **(16)** There are also statistics on the decline in deaths related to war and natural disasters, yet no explanation of the fact that, according to the UN, the number of refugees is higher than ever before. On this worrying trend, there are no words, numbers, or graphs.

Another graph in this section illustrates "democracy on the rise." The international Varieties of Democracy project, which studies developments in democracy based on data from 150 countries, summarizes the real trend succinctly: "Key finding – Global levels of democracy remain high, but autocratization - the decline of democratic attributes – affects 2,5 billion people and is gaining momentum." **(17)**

In *Factfulness* the authors attack what they describe as the erroneous notion of income gaps between countries, arguing that there is an income spread in every country and thus overlap between countries at different income levels. Yet the existence of variation in social variables is well known in social science, and it does not prevent the existence of socioeconomic gaps between countries. Thus, for example, there is a significant gap between the average income in the United States (\$67/day) and Mexico (\$11/day). When the authors of *Factfulness* compare the two countries, they seek to visually eliminate this gap. Without warning or explanation, they insert a logarithmic income scale in which each step reflects a tenfold increase over the previous level. This, they argue, provides a better idea of the reality behind the numbers and triumphantly exclaim: "Now the gap has almost disappeared." However, this effect is trivial when a log scale replaces a conventional scale. The trick is reminiscent of the saying about three kinds of lies: lies, cursed lies, and statistics. The true difference between Americans' \$67/day and Mexicans' \$11/day remains, of course.

The authors' selection of indicators and efforts to obfuscate contradictory evidence reduce the credibility of the book and its important positive statistics.

## **2. No Discussion about the Material Preconditions of Present Progress**

The philosopher Wilhelm Friedrich Hegel is believed to have said, “You do not see with your eyes; you see with your interests.” This observation is repeatedly confirmed in *Factfulness*. Rosling’s interest in child mortality and public health and their relationship to education and global income growth permeates the book. The material basis for this growth in global income and its resource requirement is not discussed. A small team of authors cannot cover every topic, but to understand the trajectory of the current industrial civilizations it is necessary to examine resource use and man’s exchange with nature.

There is no shortage of relevant studies here. For example, there is an interdisciplinary field that explores the Anthropocene, the current planetary period in which human activities have increasingly shaped the earth’s land, sea, and atmosphere. Particularly relevant to *Factfulness* is the research by William Steffen and his colleagues on changes in a wide range of parameters related to industrial activities, resource use, and environmental impact since 1750. A remarkable finding of these studies is that all the parameters have experienced acceleration during the last half-century, the period at the core of the story of progress told in *Factfulness*. In Steffen’s words: “We expected to see a growing imprint of the human enterprise on the Earth system from the start of the industrial revolution onwards. We didn’t, however, expect to see the dramatic change in the magnitude and rate of the human imprint from about 1950 onward.” (18) The Great Acceleration, the name given to this period, was first identified in a book published in 2004 with a number of charts for the period 1750–2000 (19). The charts have since been updated to cover the decade up to 2010; it is the basis for the well-known video “Welcome to the Anthropocene.”

The diagrams in *The Great Acceleration* illustrate a number of socioeconomic trends—such as population growth, urbanization, energy use, water consumption, fertilizer consumption, and transport—all of which have accelerated since 1950 (not in straight lines, but in curves that bend strongly upward). The same applies to almost all the indicators that illustrate what researchers call “earth system trends”: carbon dioxide, nitrogen oxides, and methane emissions; marine acidification; loss of tropical forests; and degradation of agricultural biodiversity. Almost every one of these earth system trends seems to be accelerating in a negative direction. The only clear positive exception is stratospheric ozone; the previous declining trend in the ozone layer—the so-called Antarctic hole—ceased in the 1990s.

The Great Acceleration is reflected in our increasingly material-intensive civilization. As Staffan Laestadius emphasizes in a recent study on climate adaptation, “We do not live in any

post-industrial or post-material society, but build a global techno-industrial system that is getting heavier and heavier.” (20) This is illustrated by the production of three industrial metals: copper, aluminum, and iron. The production of copper rose from 2.4 million tons to 18.7 million tons in the period 1940–2015, doubling since 1990. Aluminum production rose from 0.8 million tons to 58.3 million tons in the same period, tripling since 1990. Iron production increased from 110 million tons in 1940 to 1,100 million tons in 2015, doubling in the last twenty-five years. At the same time, carbon dioxide emissions from coal, oil, gas, and cement production multiplied.

Researchers from the Global Footprint Network summarize our use (or abuse) of the planet’s resources by calculating Earth Overshoot Day. On this day, humans’ total consumption is considered to exceed the capacity of nature to rebuild the resources consumed during the current year. Thirty years ago, this day was calculated to be October 15. This year Earth Overshoot Day occurred on August 1. (21) There are several possible objections to this simple measure, but measurements of specific planetary boundaries arrive at similar results. (22) These studies raise an existential issue: How long can the increase in resource intake and environmental impact continue before living conditions begin seriously deteriorating? How many more times can resource exploitation and emissions double before Earth can no longer sustain this excess?

If the earth cannot tolerate more exploitation without incurring permanent damage that threatens continued life, is there a solution elsewhere in the universe? The interest in life in space has experienced a renaissance since the discovery of exoplanets, celestial bodies that gravitate around stars beyond our solar system. This has led to speculation about life in other places in the universe and about the possibility of extracting resources from other planets. Barry Macquire gave an earthly answer to these questions in his classic song “Eve of Destruction” (1965): “Ah, you may leave here, for four days in space, but when you return, it’s the same old place.” Garrett Hardin’s *Living within Limits* (1993) conveys a similar message. *Factfulness* does not suggest excursions to space, but the challenges of future resource needs and environmental impact are nonetheless central to the authors’ predictions.

A central assumption in *Factfulness* is that the technological civilization underlying the Great Acceleration will continue to spread globally during the twenty-first century, when the world’s population is expected to increase by fifty percent. Should everyone enjoy an income at Rosling’s Levels 3 and 4, these consumption-intensive classes will quadruple (from three

billion to about twelve billion) by 2100. In addition, the average resource consumption of the people in these classes will continue to increase as long as today's technological civilization continues. If material intensity continues to rise as it has in the last fifty years, this will result in an eight- to tenfold increase in resource consumption and emissions. Is this at all possible? Perhaps a better question: How long is it possible, and what are the likely side effects? For *Factfulness* these are not questions. According to the authors, the key challenge for Western companies is to take advantage of the new markets: "...if you work at a company based in the old 'West', you are probably missing opportunities in the largest expansion of the middle-income consumer market in history, which is taking place right now in Africa and Asia. [...] The Western consumption market was just a teaser for what is coming next." (23)

The core issue here is not the right of African and Asian countries to achieve the same standard of living as the OECD. These countries will catch up whether established economies like it or not. Instead, we must ask how our technological civilization can change tack in order to support a more sustainable future, one in which good health, safety, and life satisfaction are combined with decreasing resource utilization and environmental impact. This transition has not seriously begun to occur anywhere in the world, although there have been important attempts.

*Factfulness* extrapolates from historical statistics on global development. However, an intellectually credible analysis of global development cannot be built solely on a selection of positive facts that are extrapolated for the future. Such an analysis should also raise serious issues that challenge the reader to reflect and think independently. A good book leaves its readers with new facts. A really memorable one presents new and more difficult questions that readers will think about long afterward.

### **3. Continued Population Growth: Inevitable and Unproblematic?**

Global population development is an important theme in *Factfulness*. However, the book mixes incisive insights with several misleading statements. This counteracts its aim of spreading knowledge and may also impede needed international policy efforts.

The latest UN forecast, published in 2017, predicts that the world's population will rise sharply during this century: today's approximately seven billion people will probably grow to between ten and thirteen billion by 2100. According to *Factfulness*, this forecast shows that population growth will level off at the end of the century, which means that the world's

population will stabilize. The book identifies the current number of children in the world as the decisive factor affecting future population growth and points out that the number (two billion) is no longer increasing. Thus, the authors believe that the population will automatically first increase and then reach a steady state by the end of the twenty-first century. According to *Factfulness*, there is also a causal link between infant mortality and fertility: "More survivors lead to fewer people". (24)

All these theses—that the population will stabilize at the end of the century; that future population growth is determined by the current number of children in the world; that lower child mortality is causally linked to lower birth rates and population growth, and that the same transition from high fertility and mortality to low fertility and mortality occurs everywhere—are questionable. First, the UN's population forecasts are actually less stable than *Factfulness* suggests and have changed substantially since the beginning of the twenty-first century. This is especially true for the forecasts regarding Africa: in 2010 the UN predicted that the continent would have 3.6 billion inhabitants by the turn of the century; seven years later, this forecast had increased by 900 million to 4.5 billion. (25) This is equivalent to a fourfold increase in Africa's current population. Moreover, new calculations based on statistical probability estimates show that uncertainty over forecasts of the world's population in 2100 is greater than previously assumed. According to leading researchers, the likelihood of population stabilization is only thirty percent: "These predictions indicate that there is little prospect for an end to world population growth this century without unprecedented fertility declines in most part of sub-Saharan Africa." (26)

Second, the UN reports do not show that the current number of children in the world determines future population growth. On the contrary, the forecasts emphasize that future population growth is strongly dependent on how future fertility develops. In particular, they highlight that for countries with high fertility rates, "there is significant uncertainty in projections of future trends, even within the 15-year horizon of the 2030 Agenda for Sustainable Development.... Fertility declines that are slower than projected would result in higher population totals in all subsequent time periods." (27)

Third, there is no causal link between lower infant mortality and lower birth rates, as *Factfulness* claims. This can be shown with examples from a number of countries. In *Factfulness*, Egypt is presented as a "public health miracle," as child mortality fell from 30 percent in 1960 to 2.3 percent today. Then the authors argue: "Now that parents have reason

to expect that all their children will survive ... a major reason for having big families is gone.” (28) If the authors were correct that lower mortality leads to lower birth rates, Egypt’s population would have stabilized with this dramatic decrease in child mortality. Instead, the population increased from 70 million in 2000 to 97 million in 2017; it is expected to further increase to 200 million by 2100. (29) Other African countries display similar trends. In Niger, for example, child mortality has decreased by two-thirds since the 1980s; at the same time, birth rates have increased, leading to an expected population explosion (from twenty to an estimated seventy-two million by 2050). (30)

The combination of reduced infant mortality with higher fertility and continuous population growth in Africa (31) is an indication of the absence of any causal relationship between lower child mortality and lower birth rates. Many countries on this continent are expected to see fourfold population increases during this century. According to the latest UN forecast, Nigeria’s population will increase from 191 million in 2017 to 794 million to 2100, Tanzania from 57 million to 304 million, and the Democratic Republic of Congo from 81 million to 339 million. (32) How can this pattern with much higher birth rates compared to those in Asia during the corresponding development phase be explained? *Factfulness* provides no answers; the book does not even mention the problem. Independent observers point to local norms that promote large families, religious resistance to contraception, and political leaders’ tendency to see a large population as a source of political power. For example, Tanzania’s President John Mugufuli recently called on women to stop taking birth control pills, as the country needs more people. The president also said that women who use contraception are lazy. (33)

Other observers emphasize the reduced international support for effective family planning, which played such a big part in the decrease in birth rate in Asia—from Iran to China and Korea. Of the current development aid, only one percent goes to family planning today. (34) Unsurprisingly, the UN’s population reports emphasize the need to invest in reproductive health and family planning in the least developed countries and to make contraception more widely available.

A few years ago, Rosling was confronted with the upwardly revised population forecasts by a journalist from a leading Swedish daily. (35) In response to a question about the most significant effects of the population increase, Rosling replied: “But it will be as it happens. It’s like asking how the world will be if the sun rises tomorrow. People are free and decide themselves. There is an idea that population increase is the problem, but it is a constant, it is

impossible to do anything.” The journalist continued: “What needs to be done to cope with the effects of the increasing population?” Rosling answered: “If population growth is to be reduced, it would be best to do that in the richest country that gets the most children per woman. It’s Sweden.” Thus, the statistically minded Rosling claimed that population growth in Sweden (550,000 in 2000–2010, mainly as a result of immigration) have a greater impact on the global population than 3.2 billion people in Africa.

The notion that fertility declines when child mortality falls builds on previously observed patterns in Asia. In the 1960s, several Asian economies began to grow rapidly, healthcare improved, schools were expanded, and child mortality and birth rates decreased. However, this transition from high to low birth and death rates does not constitute a causal link where economic improvement leads to lower child mortality which leads to lower birth rates. (36) In China fertility was halved before economic development took off, contributing to the rapid improvement in productivity and the reduction of poverty. According to Guillebaud, lower birth rates usually precede improvements in prosperity, which, in turn, accelerate when birth rates continue to fall. (37)

*Factfulness* is ambivalent on this subject. On the one hand the authors argue that the number of children today determines future population growth; on the other hand, they say: “The only proven method for curbing population growth is to eradicate extreme poverty and give people better lives, including education and contraceptives.” (38) However, investments in education and contraceptives are no automatic consequences of reduced child mortality. At another point, the authors mention Iran’s “family planning miracle”: here birth rates decreased from more than six children per woman in 1984 to less than two fifteen years later. (39) According to *Factfulness*, this was related to investments in cheap contraceptives from the world’s largest condom factory and mandatory sexual education for young engaged couples. However, the authors do not draw any conclusions from this success, do not compare it with the so-called miracle in Egypt, and do not discuss how Iran’s strategy could be employed in other Muslim countries. The lack of interest in family planning is related to the authors’ view of population growth as fundamentally unproblematic. They never ask whether the increase in population will cause problems for resource use, biodiversity, or global emissions, although they strongly argue that everyone should have the same standard of living as today’s wealthiest billion.

The literature does not show the same reluctance to discuss the ecological consequences for rapid population growth, although much more remains to be done. Some scientists argue that the ecological consequences of population growth are insignificant, as the increase in population is occurring mainly in countries with modest consumption per capita. (40) Other researchers point out that increased food production and subsequent deforestation have serious consequences even when population growth occurs among people at low income levels. According to Crist et al., (41) the human population's scale and its current rate of growth are significantly contributing to biodiversity losses, which will increase as revenue and resource consumption expand in today's poor countries. Several researchers believe that, with climate change so close to a breaking point, it is necessary to reduce both our average (carbon-based) footprint and the number of new feet which will create new large footprints in the future. (42)

According to Paul Ehrlich, who together with Anna Ehrlich coauthored the often-misunderstood 1960s classic *The Population Bomb* (which the authors wanted to title *Population, Resources, and Environment*), the issue of population growth and resource extraction is not only about numbers but also about social equity. Increased inequality and growing numbers of superrich drive up resource consumption and make the transition to sustainable alternatives more difficult: "It is the combination of high population and high consumption by the rich that destroys the natural world." (43) *Factfulness* contains countless bubble charts on the diminishing differences between countries and continents, but it does not devote one chart to the growing inequality within countries, despite the abundance of statistics on this subject (such as the annual World Inequality Report).

During his life, Rosling was passionately interested in and committed to public health improvements and child mortality. Thus, it is sad and worrisome to note *Factfulness's* neglect of the historical successes in family planning and how these could guide future efforts.

### **The Absence of Migration**

In 2015 Rosling was a combative activist in the refugee and migration debate. Thus, it is strange that *Factfulness* does not address the current refugee/migration crisis, which according to the UN Refugee Agency (UNHCR) is the worst since World War II. This crisis is difficult to grasp from the book's celebration of positive trends. Is the data reported by the UNHCR inflated by misguided classifications of migrants as refugees (common in Swedish media)? Is it related to the massive increases in international mobility? For example, during

the United States' war in Vietnam, no refugees came to Europe, though the number of deaths was ten times greater than in Syria today. Or is the data a result of deeper problems that the statistics used in *Factfulness* do not capture?

The book highlights “deaths on the Mediterranean” and reiterates Rosling’s criticism of transporter responsibility as if there had been no change since 2015 and Syrian refugees were still the issue. In fact, since the flow of refugees from Turkey to Greece was blocked in 2016, the number of Syrian refugees to Europe has fallen sharply. After a peak in the same year, the number of drownings related to migration has also fallen (while the ratio of drownings in relation to the number in the boats has increased). Today a majority of those who cross the Mediterranean originate in Western Africa. Of the 103,000 who made this dangerous trip in the first half of 2017, the largest groups came from Nigeria, Guinea, and Côte d’Ivoire. (44) This means that the character of the flow is changing from primarily refugees to migrants seeking a better life in Europe.

The tightening of migration policies across Europe has temporarily pushed down the total number of migrants. But what does the continued population increase in Africa mean for migration pressures in the long term? Apart from the Syrian crisis, migration is not discussed in *Factfulness*, despite its importance for both countries of origin and countries of destination, and the availability of extensive statistics at the Global Migration Data Analysis Center. According to the center’s statistics from 2010 to 2015, of those people who expressed a wish to migrate, forty-one percent were located in Africa, and seven of the world’s ten countries with the highest proportion of their people with migration desire were African (45). Current polls support these findings. Thus, the Pew Research Center (46) recently reported that four out of ten respondents in sub-Saharan countries wished to migrate. In Nigeria and Ghana, thirty-eight and forty-two percent, respectively, stated they “planned to migrate within the next five years.” There is a big step from planning to realization, but with the expected fourfold increase of the population in Africa by 2100, it would be surprising if migration pressures do not increase. High birth rates result in more young people who are competing for work, and high youth unemployment tends to drive migration. To quote the *Kenyan Mail Guardian*: “An analysis of the migration pattern from Africa to Europe and the United States indicates that the number of migrants is expected to increase in the coming decades in view of the growing population of the continent.” (47)

Already the relatively modest migration figures in recent years have put considerable strain on cohesion in the EU, which is now discussing how to make it harder for migrants to cross the Mediterranean. In the Caribbean, the United States has shown that marine efforts can block unwanted migration (from Haiti). Australia has also been effective in its strategy of keeping unwanted migrants far from its continent. An EU-directed cordon sanitaire along the coast of North Africa would be logistically demanding but perhaps possible with a sufficient mobilization of political and marine resources. But is it a desirable solution? Would it not be preferable to try to reduce the pressure by initiating programs and incentives in Africa for economic development and family planning (information, education, counseling, cheap and accessible contraception, scholarship systems) in cooperation with states that have already made the journey from high to low fertility?

Long-term measures to address population and migration pressures rarely appear in today's European migration and development policies. *Factfulness* does not provide any ideas, despite the fact that Rosling's imprimatur would probably give them a greater appeal than that of EU white papers.

### **The Need for Comprehensive Perspectives and Ethics of Responsibility**

If reading *Factfulness* was to be summarized in a single word, it would be *ambivalence*. It is difficult not to be impressed by the energy and enthusiasm that permeates the book, with its stream of statistics regarding global improvements in health, education, and longevity. The authors really convince the reader of how outdated the dichotomy of developed and developing countries has become and how little we learn from the media's endless preoccupation with natural and manmade disasters. This message is not news for specialized researchers, but *Factfulness* gives the criticism renewed force. Unfortunately, however, countries still use the 'Development' flag when it is politically convenient. For example, the so-called G77 group of countries, which includes the rich Arabian Peninsula, has acted as a 'development country'-block during UN climate negotiations in order to minimize each country's commitments.

This example reveals the other side of *Factfulness*: the absence of nuances and of more complicated analyses that could provide a less appealing image. *Factfulness* claims to be a book about what the world really looks like. This makes its biased selection of data and trends a major problem, especially as the criterion for the selection is obscure. Why do the authors focus only on these questions and not others that are also relevant to understanding world

development? Had the title of the book been *Factfulness: A Book about the World's Positive Changes*, its one-sidedness would be less disturbing.

But *Factfulness* does not just suffer from a selection problem. On a central subject—the world's population growth—the book is positively misleading. The authors argue that the expected fifty percent increase in the world's population in the twenty-first century is determined by the current number of infants (and cannot be influenced by policy actions) and that the rate of growth will level off by 2100. These arguments are not supported by the reports *Factfulness* refers to or the research those reports are based on. The reports actually show that changes in birth rate over the next few decades, especially in Africa, will be very important for future population growth.

*Factfulness* vacillates between voluntarism and determinism. Voluntarism can be positive spur to action, as demonstrated by Rosling's admirable efforts during the Ebola epidemic. In the book, however, determinism of an economic type dominates. For example, the authors argue that the "male chauvinistic" values in Afghanistan and other Asian countries are "patriarchal values like those found in Sweden only 60 years ago, and with social and economic progress they will vanish, *just as they did in Sweden.*" (48) Culture, identity, tradition, historically based customs, legal systems, and religion have no meaning; the economy determines everything.

In *Factfulness* the authors convey experiences to support continued public health actions. For example, they reflect on an ethical dilemma Hans and Agneta Rosling faced in a hospital clinic in a poor district in Mozambique. According to the authors, a visiting doctor friend said: "You must always do everything you can for every patient who presents at the hospital" /to which Hans Rosling replied/. "No, it's unethical to spend all my time and resources trying to save those who come here. I am responsible for *all* the child deaths in the districts..."

Together, Agneta and Hans Rosling discovered that 52 children had died in their hospital during the current year, while approximately 3,900 children had died in the district as a whole. Instead of focusing on reactive interventions at the clinic, they started training people in the local villages to vaccinate as many as possible. The conclusion is formulated as: "Paying too much attention to the individual visible victim rather than to the numbers can lead us to spend all our resources on a fraction of the problem and therefore save many fewer lives. This principle applies anywhere we are prioritizing scarce resources." (49)

This is what Max Weber termed the ethics of responsibility (*Verantwortungsethik*) versus the ethics of conviction (*Gesinnungsethik*): Are we responsible for the foreseeable consequences of our actions, or should we stay true to a set of high moral values irrespective of the consequences? (50) From the ethics of responsibility follows that we must make difficult choices, as Hans and Anna Rosling discovered: they could not give visible individual patients all their attention, as this took resources away from the many more who were invisible. If this principle “applies everywhere,” it should also apply to organizations such as Medecins Sans Frontieres which have spent major reactive resources on rescue boats for migrants in the Mediterranean. Would MSF not be able to save and improve more lives through preventative efforts—for example, using its credibility to support sound family planning—which would also reduce the driving forces for migration? From the perspective of the ethics of responsibility, it seems misguided to ignore the importance of fertility rates and population pressures for migration issues.

### **A Nobel-Supported Education Day That Takes the Audience Seriously**

The popular reputation of the Nobel Prize has been tarnished by the scandals at the Swedish Academy in 2017–18, and the scientific and medical scandal with the deadly plastic windpipe transplantations at Karolinska. Now the Nobel Foundation seeks to improve its public profile by utilizing Rosling’s name and announcing a popular education day to celebrate him. It is easy to agree about the general importance of good public education. However, organizing education about global development is a very different task from the Nobel Foundation’s primary role of letting specialized scientific committees select and reward the best researchers in their academic disciplines. Albert Einstein once famously said: “Make it as simple as possible, but not simpler.” This also applies to public education. To be perceived as a serious, science-based organizer of popular education, the Nobel Foundation needs to avoid propagation of one-sided views and invite respected international researchers with different backgrounds to present and discuss multifaceted perspectives on global developments, positive trends as well as serious challenges, in a format that takes the audience seriously.

### **Notes**

(1) Rosling, H., Rosling, O., Rosling-Rönnlund, A. 2018. *Factfulness: Ten Puzzles That Help You Understand the World*. London: Sceptre.

- (2) O'Neill, J. 2018. Swansong of Hans Rosling, data visionary, *Nature* 556, 25-26.
- (3) Hans Rosling, statistician and sword-swallower, has died, *The Economist*, Feb. 9, 2017.
- (4) Rosling et al., 2018, p.28;
- (5) *Metro*, September 3, 2015.
- (6) Rosling et al., 2018, p. 15.
- (7) *Dagens Nyheter* (Daily News), April 23, 2018.
- (8) *Dagens Nyheter* (Daily News), May 21, 2018.
- (9) Rosling et al., 2018, 133-34.
- (10) Rosling et al., 2018, p.38.
- (11) Amsden, A. 1989. *Asia's next giant. South Korea and late industrialization*. Oxford and New York: OUP; Karabag, S.F. & Berggren, C. 2014. Antecedents of firm performance in emerging economies: Business groups, strategy, industry structure, and state support. *Journal of Business Research*, 67, 2212–2223.
- (12) Rosling et al., 2018, p.17.
- (13) Rosling et al., 2018, p. 15.
- (14) Anand, G. 2017. India's Air Pollution Rivals China's as World's Deadliest *New York Times*, Febr. 14.
- (15) World Bank 2014. *CO2 emissions*. <https://data.worldbank.org/indicator/EN.ATM.CO2E.PC>
- (16) Ceballos, G., Ehrlich, P., Barnosky, A., García, A., Pringle, R., Palmer, T. 2015. Accelerated modern human-induced species losses: Entering the sixth mass extinction, *Science Advances*, Vol. 1, no. 5, DOI: 10.1126/sciadv.1400253;
- Pennisi, E. 2016. We've destroyed one-tenth of Earth's wilderness in just 2 decades. *Science* Sept. 8.
- (17) The V-Dem Annual Democracy Report 2018, May 28.
- (18) Steffen, W., Broadgate, W., Deutsch L., Gaffney, O., Ludwig, C. 2015. The trajectory of the Anthropocene: The Great Acceleration. *The Anthropocene Review*, Vol. 2, 1, 81–98, p. 82.
- (19) Steffen, W., Sanderson, R. A, Tyson P.D. et al. 2004. *Global Change and the Earth System: A Planet under Pressure*. The IGBP Book Series, Berlin, Heidelberg, New Work: Springer-Verlag.

- (20) Laestadius, S., 2018. *Klimatet och omställningen* (The Climate and the Transition Challenge). Umeå: Borea Bokförlag, p.115
- (21) Watts, J. 2018. Study says the date by which we consume a year's worth of resources is arriving faster, *The Guardian*, July 23.
- (22). Steffen et al. 2015. Planetary Boundaries: Guiding human development on a changing planet. *Science*, 347 no. 6223.
- (23) Rosling, et al., 2018, p. 173.
- (24) Rosling, et al., 2018, p. 89.
- (25) UN 2017. *World Population Prospects, The 2017 Revision*, New York.
- (26) Gerland, P., Raftery, A., Ševčíková, H., Li, N., Gu, D., Spoorenberg, T., Alkema, L., Fosdick, B., Chunn, J., Lalic, N., Bay, G., Buettner, T., Heilig, G., Wilmoth, J. 2014. World population stabilization unlikely this century. *Science*, 346, 234 - 237. s. 234, 235.
- (27) UN 2017. *World Population Prospects, The 2017 Revision*, New York. p. 6.
- (28) Rosling et al. 2018. p. 92.
- (29) Nathans, J. 2017. Population growth: Help to make food go further in Egypt. *Nature* 546, p. 210.
- (30) Potts, M., Graves, A., Gillespie, D. 2017. Population statistics: Does child survival limit family size? *Nature* 542, p. 414.
- (31) Gerland, et al., 2014.
- (32) UN 2017, p. 30.
- (33) SVT News 2018, Sept. 11.
- (34) Bongaarts, J. 2016. Development: Slow down population growth, *Nature* 530, 409–412.
- (35) *Dagens Nyheter* (Daily News) 2014, Sept. 18.
- (36) Lam, D. 2011. How the World Survived the Population Bomb. Population Studies Center, Univ. of Michigan, *Report 11-743*; Lee, R. 2011. The Outlook for Population Growth. *Science* 333, 569 – 573.
- (37) Guillebaud, J. 2016. Voluntary family planning to minimise and mitigate climate change. *British Medical Journal*, 353, 2102.
- (38) Rosling, et al., 2018, p. 91.
- (39) Abbasi-Shavazi, M. J., McDonald, P., Hosseini-Chavosh, M. 2009. *The Fertility Transition in Iran: Revolution and Reproduction*. Heidelberg: Springer.

- (40) Satterthwaite, D. 2009. The implications of population growth and urbanization for climate change. *Environment and Urbanization* 21, 2, 299 - 319.
- (41) Crist, E., Mora, C., Engelman, R. 2017. The interaction of human population, food production, and biodiversity protection. *Science* 356, p. 260 - 264.
- (42) Guillebaud, 2016. Voluntary family planning to minimise and mitigate climate change. *British Medical Journal*, 353.
- (43) Carrington, D. 2018. Paul Ehrlich: Collapse of civilization is a near certainty within decades. *The Guardian*, May 11.
- (44) Migrationsinfo. 2017. Färre syrier och afghaner, men fler afrikaner flyr till EU (Fewer Syrians and Afghans but more Africans flee to the EU) (<http://www.migrationsinfo.se/farre-syrier-och-afghaner-men-fler-nordafrikaner-flyr-till-eu/>).
- (45) Laczko, F., Tjaden, J. and Auer, D. 2017. Measuring Global Migration Potential, 2010–2015. IOM *Global Migration Data Analysis Centre*.
- (46) Pew research center 2018. At Least a Million Sub-Saharan Africans Moved to Europe Since 2010, 22 March 22;  
Berrached, I., Reinhart, R.J. 2018. “Desire to Migrate Rises in North Africa.” *Gallup World Poll*, 14 April.
- (47) Kekana, M. 2018. Home away from home: The rise of immigration from Africa to Europe and the US. *Mail Guardian*, March 22.
- (48) Rosling, et al., 2018, p. 179, italics added.
- (49) Rosling, et al., 2018, p. 125-127.
- (50) Weber, M. 1921/2015. Politics as a Vocation. In *Weber's Rationalism and Modern Society*., translated and edited by Waters T. and Waters, D. New York: Palgrave MacMillan.