Familiarity with German, English, Spanish, French and Italian is no longer sufficient for anyone wanting to keep abreast of modern civilisation... The tendency is for the world to have a single civilisation; but there is a multitude of languages of civilisation' (Antoine Meillet, 1918).

'What the world needs most is about 1000 more dead languages - and one more alive' (C.K. Ogden 1934) … and guess which one he meant...

'[L]inguistic diversity begins next door, nay, at home and within one and the same man' (Martinet 1967: vii)

1. Introduction: we are ruining the planet, and ourselves

I shall in this paper discuss the future of the planet in terms of ecosystem health. We people are but one small part of the planet's ecosystem, but we have done more than any other part of this system to harm and destroy its health. We are today killing both biodiversity and linguistic and cultural diversity, and through this forced homogenisation ruining the planet.

Luisa Maffi starts her Introduction to her new edited book On Biocultural Diversity. Linking Language, Knowledge and the Environment (2001) with a quote from Diane Ackerman (1997: xviii-xix). The quote sums up the seriousness with which we should take this catastrophe that we are causing ourselves:

'We are among the rarest of the rare not because of our numbers, but because of the unlikeliness of our being here at all, the pace of our evolution, our powerful grip on the whole planet, and the precariousness of our future. We are evolutionary whiz kids who are better able to transform the world than to understand it. Other animals cannot evolve fast enough to cope with us. It is possible that we may also become extinct, and if we do, we will not be the only species that sabotaged itself, merely the only one that could have prevented it.'

My first question to you is: are we going to prevent it? Or are we part of the problem? It is our choice. Whether or not we have a planet in a hundred years' time depends on you and me.
Now if we people were only going to destroy ourselves, I would possibly not be so worried - the planet has, after all, had people on it for only a tiny fraction of its existence. The planet is necessary for us, but we people are by no means necessary for the planet. But we are today through our actions - and our non-action too - harming the planet itself - we are making the whole planet, including all other parts of the ecosystem, ill.

Compared to the billions of years that our planet has existed and even the 500,000 years that our species, Homo sapiens, has been on earth (Cavalli-Sforza 2001: 59), one year is nothing. Still, my claim is that last year has seen more decisions being made that negatively affect the health of the whole ecosystem than any other year in the history of the planet. I shall towards the end of the paper sketch some of these, to give you the broader context. This includes a discussion about the security of life that we are rapidly losing, and the risks that we are taking today in order to regain the lost security.

2. The paradox: languages are part of the heritage of humanity - but we are killing them as never before

I start with a paradox: languages are said to be part of the heritage of humanity - but we are killing them as never before. There is a lot of beautiful UNESCO, UN and national rhetoric about the importance of maintaining all the world's languages. They are part of the heritage of humanity. With the death of every language, a vast library dies. True. UNESCO's recently adopted Universal Declaration on Cultural Diversity (adopted: at the 31st session of UNESCO's General Conference, Paris, France, October 15-November 3, 2001) calls for action against the homogenisation that is a result of languages disappearing:

Cultural diversity is as necessary for humankind as biodiversity is for nature. In this sense, it is the common heritage of humanity and should be recognised and affirmed for the benefit of present and future generations. (Article 1)

Stephen Wurm sums up many of the arguments for the need of linguistic diversity:

"Each language reflects a unique world-view and culture complex, mirroring the manner in which a speech community has resolved its problems in dealing with the world, and has formulated its thinking, its system of philosophy and understanding of the world around it. In this, each language is the means of expression of the intangible cultural heritage of people, and it remains a reflection of this culture for some time even after the culture which underlies it decays and crumbles, often under the impact of an intrusive, powerful, usually metropolitan, different culture. However, with the death and disappearance of such a language, an irreplaceable unit in our knowledge and understanding of human thought and world-view is lost forever. (Wurm, ed. 2001: 13).

But despite all the nice rhetoric about the value of every single language, linguistic homogenising efforts seem to be gaining strength, judging by the actions of governments and the corporate world. Homogenising control can be achieved in several ways, physically and mentally (Table 1).

Table 1. How to achieve homogenising control

1. People can be bombed to submission, as, for instance, the USA is doing all the time (and Israel is trying).
2. Prisons can be used for homogenising behaviour and values, including use of languages. In the USA, black and Latino males, meaning minorities, are over-represented in jails. 1,965,495 people were in custody in federal and state prisons and local jails in June 2001. 13,4% of black males, ages 25-29, were in prison or jail. In comparison, same ages: 4,1% of Latino males, and 1,8% of white males were in prison or jail. In Turkey, even today while we are discussing language policies at the congress, Kurdish children and youngsters are in prison and being tortured, only because they want Kurdish taught as a subject in schools and at universities (e.g. IMK 2002).

3. Economic sanctions work to force people to embrace certain values.

4. Symbolic violence homogenises people too - if what they represent is absent from important fora, it is made invisible, or even seen as a handicap. Some of the latest changes in the names of US educational offices or organisations are excellent examples of this (Table 2; emphases added).

Table 2 Renaming used for stigmatisation and invisibility

<table>
<thead>
<tr>
<th>Old name</th>
<th>New name (2001-2002)</th>
<th>Consequences/What has happened</th>
</tr>
</thead>
</table>
| The US Department of Education, Office of Bilingual and Minority affairs | Office of English Language Acquisition, Language Enhancement and Academic Achievement for Limited English Proficient Students, OELALEAALEPS | 1. Bilingual (implying resources and two languages) and Minority (implying rights in international law) have disappeared.  
   Result: invisibility  
   2. Students are now defined negatively (limited) and in term of what they do NOT yet know (English).  
   Result: stigmatization.                                                                                   |
| The US’ National Clearinghouse for Bilingual Education | National Clearinghouse for English Language Acquisition & Language Instruction Educational Programs | Bilingual (implying resources and two languages) has disappeared; only one language, English, is left. Minority students’ mother tongues have disappeared.  
   Result: invisibility and stigmatisation.                                                                   |

Even if I concentrate on languages in this presentation, I shall take examples from the other homogenising areas too, because they are interconnected.

Back to languages. With the death of every language, a vast library dies. But the vast libraries of specific local knowledge that disappear with every vanishing language do not just disappear: the libraries are set on fire; we are talking about arson. Languages do not commit suicide, even if it sometimes looks like the speakers are voluntarily leaving their languages; what we experience is linguistic and cultural genocide (Table 3).
Table 3. Language death or language murder?

<table>
<thead>
<tr>
<th>Language death</th>
<th>Language murder</th>
</tr>
</thead>
<tbody>
<tr>
<td>Languages just disappear naturally…</td>
<td>Arson: the libraries (of specific local knowledge encoded in each language) are set on fire!</td>
</tr>
<tr>
<td>Languages commit suicide: speakers are leaving them voluntarily for instrumental reasons and for their own good</td>
<td>Educational systems, mass media, etc participate in committing linguistic and cultural genocide</td>
</tr>
</tbody>
</table>

Languages are today being murdered faster than ever before in human history, and many more are threatened.

A language is threatened if it has few users and a weak political status, and, especially, if children are no longer learning it, i.e. when the language is no longer transmitted to the next generation.

Even the most 'optimistic realistic' linguists now estimate that half of today's oral languages may have disappeared or at least not be learned by children in a 100 years' time (e.g. Wurm, ed., 2001), whereas the 'pessimistic but realistic' researchers estimate that we may only have some 10% of today's oral languages (Krauss 1992) (or even 5%, some 300 languages, Krauss 1995) left as vital, non-threatened languages in the year 2100.

The most important direct agents in language murder are the media and the educational systems. Behind them are the real culprits, the global economic, military and political systems. When languages are learned subtractively (at the cost of the mother tongues, replacing them) rather than additively (in addition to the mother tongues), they become 'killer languages'. Killer languages pose serious threats towards the linguistic diversity of the world. Even if all official languages are threats to non-official languages, English is today the world's most important killer language.

3. We do not have the basic facts needed for language planning and policies

If we want to do global language planning, as a prerequisite for sensible world language policies, we need minimally to know the basic facts about the world's languages. Today we do not have these facts. I shall give some examples.

We do not know how many languages are there in the world. There is one acceptable and one regrettable reason for our ignorance. The acceptable reason is of course the fact that there are and cannot be any precise definitions for what a language is, as opposed to a dialect or other varieties. Structural similarity and mutual intelligibility do not differentiate well enough. The border between languages and other varieties is political not linguistic: A language is a dialect with an army and with state borders or the dialect of the elites (see the discussion about this in Skutnabb-Kangas 2000a Chapter 1).

The unacceptable reason for our ignorance is lack of resources for the study of languages. In Denmark where I live there are some 24 million pigs and some 5 million people. At any one point there is exact information about each pig, their age, weight, life-span, etc. But there is NO idea of how many languages people in Denmark speak and who speaks them. Bacon is a major export item in Denmark but people's linguistic capital in languages other than Danish and English has so far been treated as invisible or even as a handicap. It has thus been invalidated.
and constructed as not convertible to other types of capital, e.g. symbolic capital in Bourdieu's terms (e.g. 1992) (or national capital in Beverly Skeggs' terms (2002)).

Most linguists say that there are around 6-7,000 languages. The Ethnologue (<http://www.sil.org/ethnologue/>) lists over 6,800 languages in 228 countries. But there might be even twice as many languages. There are deaf people in all societies, and where hearing people have developed spoken, oral languages, the Deaf have developed Sign languages, fully-fledged, complex, abstract languages (see Branson & Miller 1998, 2000, for brilliant analyses of the treatment of Sign languages and Jokinen 2000, Krausneker 1998, Lane 1992 and Skutnabb-Kangas 2002 for the (lack of) LHRs of Sign language users). Those who speak about 'languages' but in fact mean spoken languages only, participate through invisibilising Sign languages in killing maybe half the linguistic diversity on earth. In this paper I discuss only oral languages - we still know too little about Sign languages even if the literature is growing fast (see the web sites of the European Union of the Deaf, EUD (www.eudnnet.org) and the World Federation of the Deaf (www.wfdnews.org)).

Neither do we know exactly where the languages of the world and their speakers and signers and users are. What is clear, though, is that just as Europe is genetically the world's most homogenous, i.e. poorest part (Cavalli-Sforza 2001: 23), Europe is also the poorest one on linguistic diversity. If we discount recent immigrants but count in ex-Soviet Union, we have only some 3% of the world's oral languages (see Price (ed.) 2000 for these). Middle East is also extremely poor on linguistic diversity. The Ethnologue (14th edition http://www.ethnologue.com/ethno_docs/distribution.asp) downloaded 23-01-02), gives the following figures and distribution: Europe 230 languages, 3%, the Americas (South, Central and North) have 1,013, 15%, Africa 2,058, 30%, Asia 2,197, 32%, and the Pacific 1,311, 19% (Table 4).

**Table 4. The distribution of languages (The Ethnologue, 14th ed.)**

<table>
<thead>
<tr>
<th>Area</th>
<th>How many languages</th>
<th>Percentage of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe</td>
<td>230</td>
<td>3%</td>
</tr>
<tr>
<td>The Americas (South, Central, North)</td>
<td>1,013</td>
<td>15%</td>
</tr>
<tr>
<td>Africa</td>
<td>2,058</td>
<td>30%</td>
</tr>
<tr>
<td>Asia</td>
<td>2,197</td>
<td>32%</td>
</tr>
<tr>
<td>The Pacific</td>
<td>1,311</td>
<td>19%</td>
</tr>
</tbody>
</table>

In Table 5 I use several other sources. (In general, where no source is mentioned for a Table in this article, it comes from Skutnabb-Kangas 2000, or has been compiled for this paper). Even here we can see how shaky our figures are.

**Table 5. Distribution of the world’s languages**

<table>
<thead>
<tr>
<th>Area</th>
<th>Percentage of the world’s languages</th>
<th>Approximate number of languages</th>
<th>Source</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe</td>
<td>3-4,0%</td>
<td>Fewer than 275</td>
<td>Krauss 1992; Price (ed.) 2000</td>
<td>Gunnew Mark 1991 Europe excl USSR: over 40; USSR over 100; Price (ed.) 2000: Europe, both extent and extinct 275; Wrauss Europe and Middle East 4%</td>
</tr>
</tbody>
</table>

Two countries, Papua New Guinea with over 850 languages and Indonesia with around 670, have together a quarter of the world's languages. When we add those seven countries which have more than 200 languages each (Nigeria 410, India 380, Cameroon 270, Australia 250, Mexico 240, Zaire 210, Brazil 210), we get up to almost 3,500 languages, i.e. 9 countries have more than half of the world’s oral languages. With the next 13 countries, those with more than 100 languages each (the Philippines, Russia, USA, Malaysia, China, Sudan, Tanzania,
Ethiopia, Chad, Vanuatu, The Central African Republic, Myanmar/Burma and Nepal), 22 mega-diversity countries. Some 10% of the world's countries, have around 75% of the world's languages (and not one of them is in Europe if Russia is not counted as a European country) (Table 6; these figures were from the Ethnologue's 12th edition).

Likewise, we do not have reliable figures for how many users/(native) speakers the various languages have. Even a list of the top 10 or 20 languages varies greatly, depending on which source and year one uses. Many of the figures (and even names) are, even for these big languages, less than accurate (see my discussion about the reliability of the statistics, 2000a, Chapter 1). The world's top 10 languages in terms of the number of speakers represent only 0.10 - 0.15% of the world's oral languages, but these big 'killer languages' account for approximately half the world's population.

I shall demonstrate the unreliability of our figures even for these big languages. Table 7 shows the top 20 languages by population in the February 1999 13th edition of the Ethnologue. Here Spanish has for the first time passed English in terms of mother tongue speakers. Hindi, rank 5, and Urdu, rank 20, are separated, as they should. Arabic does not figure on the list at all, because it has been separated into various Arabic languages and none of them are big enough to make it to the top 20 list.

Table 6. The 22 most linguistically diverse countries in the world (in terms of number of languages)

<table>
<thead>
<tr>
<th>OVER 500 LANGUAGES</th>
<th>OVER 200 LANGUAGES</th>
<th>OVER 100 LANGUAGES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Papua New Guinea</td>
<td>459</td>
<td>1. Philippines</td>
</tr>
<tr>
<td>2. Indonesia</td>
<td>670</td>
<td>2. Russia</td>
</tr>
<tr>
<td><strong>TOTAL 1,520</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Nigeria</td>
<td>410</td>
<td>2. USA</td>
</tr>
<tr>
<td>2. India</td>
<td>360</td>
<td>3. Australia</td>
</tr>
<tr>
<td>3. Cameroon</td>
<td>270</td>
<td>4. Malaysia</td>
</tr>
<tr>
<td>4. Australia</td>
<td>250</td>
<td>5. People's Republic of China</td>
</tr>
<tr>
<td>5. Mexico</td>
<td>240</td>
<td>6. Sudan</td>
</tr>
<tr>
<td>6. Zaire</td>
<td>210</td>
<td>7. Tanzania</td>
</tr>
<tr>
<td>7. Brazil</td>
<td>210</td>
<td>8. Ethiopia</td>
</tr>
<tr>
<td><strong>subtotal 1,970</strong></td>
<td></td>
<td>9. Chad</td>
</tr>
<tr>
<td><strong>TOTAL 3,490</strong></td>
<td></td>
<td>10. New Hebrides</td>
</tr>
<tr>
<td></td>
<td></td>
<td>11. Central African Republic</td>
</tr>
<tr>
<td></td>
<td></td>
<td>12. Myanmar (Eunni)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>13. Nepal</td>
</tr>
</tbody>
</table>

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Table 8 shows my latest attempt at counting, on the basis of several sources, detailed under the Table. Hindi has passed Spanish and English in terms of mother tongue speakers and is very close to English even in terms of all speakers. We have put back Arabic again on the list, with a figure counted on the basis of all mother tongue speakers on the Ethnologue 14th edition list.

### Table 7. The top 20 languages by population

<table>
<thead>
<tr>
<th>Rank</th>
<th>Language name</th>
<th>Primary country</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Chinese, Mandarin</td>
<td>China</td>
<td>185,000,000</td>
</tr>
<tr>
<td>2</td>
<td>Spanish</td>
<td>Spain</td>
<td>332,000,000</td>
</tr>
<tr>
<td>3</td>
<td>English</td>
<td>UK</td>
<td>322,000,000</td>
</tr>
<tr>
<td>4</td>
<td>Bengali</td>
<td>Bangladesh</td>
<td>169,000,000</td>
</tr>
<tr>
<td>5</td>
<td>Hindi</td>
<td>India</td>
<td>182,000,000</td>
</tr>
<tr>
<td>6</td>
<td>Portuguese</td>
<td>Portugal</td>
<td>170,000,000</td>
</tr>
<tr>
<td>7</td>
<td>Russian</td>
<td>Russia</td>
<td>170,000,000</td>
</tr>
<tr>
<td>8</td>
<td>Japanese</td>
<td>Japan</td>
<td>125,000,000</td>
</tr>
<tr>
<td>9</td>
<td>German</td>
<td>Germany</td>
<td>88,000,000</td>
</tr>
<tr>
<td>10</td>
<td>Chinese, Wu</td>
<td>China</td>
<td>77,175,000</td>
</tr>
<tr>
<td>11</td>
<td>Japanese</td>
<td>Indonesia</td>
<td>75,540,000</td>
</tr>
<tr>
<td>12</td>
<td>Korean</td>
<td>South Korea</td>
<td>75,000,000</td>
</tr>
<tr>
<td>13</td>
<td>French</td>
<td>France</td>
<td>72,000,000</td>
</tr>
<tr>
<td>14</td>
<td>Vietnamese</td>
<td>Vietnam</td>
<td>69,642,000</td>
</tr>
<tr>
<td>15</td>
<td>Telugu [tel]</td>
<td>India</td>
<td>66,370,000</td>
</tr>
<tr>
<td>16</td>
<td>Chinese, Yue</td>
<td>China</td>
<td>66,000,000</td>
</tr>
<tr>
<td>17</td>
<td>Marathi</td>
<td>India</td>
<td>64,723,000</td>
</tr>
<tr>
<td>18</td>
<td>Tamil</td>
<td>India</td>
<td>63,075,000</td>
</tr>
<tr>
<td>19</td>
<td>Turkish</td>
<td>Turkey</td>
<td>59,000,000</td>
</tr>
<tr>
<td>20</td>
<td>Urdu</td>
<td>Pakistan</td>
<td>58,000,000</td>
</tr>
</tbody>
</table>


### Table 8. The top 21 languages in the world

<table>
<thead>
<tr>
<th>Rank in 2001</th>
<th>Rank in 1999</th>
<th>Language</th>
<th>Country of origin</th>
<th>Mother Tongue Population in millions</th>
<th>Speakers in millions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>CHINESE, MANDARIN</td>
<td>China</td>
<td>1,032</td>
<td>1,032</td>
</tr>
<tr>
<td>2</td>
<td>5</td>
<td>HINDI</td>
<td>India</td>
<td>487</td>
<td>487</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>SPANISH</td>
<td>Spain</td>
<td>417</td>
<td>417</td>
</tr>
<tr>
<td>4</td>
<td>3</td>
<td>ENGLISH</td>
<td>United Kingdom</td>
<td>508</td>
<td>508</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>BENGALI</td>
<td>Bangladesh</td>
<td>211</td>
<td>211</td>
</tr>
<tr>
<td>5</td>
<td>6</td>
<td>PORTUGUESE</td>
<td>Portugal</td>
<td>191</td>
<td>191</td>
</tr>
<tr>
<td>6</td>
<td>7</td>
<td>ARABIC</td>
<td>Russia</td>
<td>175</td>
<td>175</td>
</tr>
<tr>
<td>7</td>
<td>7</td>
<td>RUSSIAN</td>
<td>Russia</td>
<td>277</td>
<td>277</td>
</tr>
<tr>
<td>9</td>
<td>8</td>
<td>JAPANESE</td>
<td>Japan</td>
<td>125</td>
<td>125</td>
</tr>
<tr>
<td>10</td>
<td>9</td>
<td>GERMAN, STANDARD</td>
<td>Germany</td>
<td>128</td>
<td>128</td>
</tr>
<tr>
<td>11</td>
<td>17</td>
<td>KOREAN</td>
<td>Korea, South</td>
<td>128</td>
<td>128</td>
</tr>
<tr>
<td>12</td>
<td>10</td>
<td>CHINESE(VU)</td>
<td>China</td>
<td>175,000</td>
<td>175,000</td>
</tr>
<tr>
<td>13</td>
<td>13</td>
<td>FRENCH</td>
<td>France</td>
<td>128</td>
<td>128</td>
</tr>
<tr>
<td>14</td>
<td>14</td>
<td>JAPANESE</td>
<td>Indonesia, Japan,</td>
<td>128</td>
<td>128</td>
</tr>
<tr>
<td>15</td>
<td>15</td>
<td>TELUGU</td>
<td>India</td>
<td>75</td>
<td>75</td>
</tr>
<tr>
<td>16</td>
<td>14</td>
<td>VIETNAMESE</td>
<td>Vietnam</td>
<td>85</td>
<td>85</td>
</tr>
<tr>
<td>17</td>
<td>17</td>
<td>CHINESE, YUE</td>
<td>China</td>
<td>66</td>
<td>66</td>
</tr>
<tr>
<td>18</td>
<td>17</td>
<td>MALAYI</td>
<td>India</td>
<td>64,383,000</td>
<td>64,383,000</td>
</tr>
<tr>
<td>19</td>
<td>18</td>
<td>TAMIL</td>
<td>India</td>
<td>63,675,000</td>
<td>63,675,000</td>
</tr>
<tr>
<td>20</td>
<td>19</td>
<td>TURKISH</td>
<td>Turkey</td>
<td>59</td>
<td>59</td>
</tr>
<tr>
<td>21</td>
<td>20</td>
<td>URCU</td>
<td>Pakistan</td>
<td>38</td>
<td>38</td>
</tr>
</tbody>
</table>

*The Table is based on my recalculations of 1) the data in The Ethnologue, 13th edition; 2) information given in an email 23 January 2002 by Pam Etherod of the Summer Institute of Linguistics team on the top 14 languages which she has updated from the Ethnologue 14th edition for her personal archives; thanks! and 3) Luca Maffi's count for our booklet for UNESCO (Maffi, Sturtz-Kange & Kehm, forthcoming), on the basis of the Ethnologue 13th edition data, of Arabic. Just like Chinese, Arabic has in the recent Ethnologue data been divided into various Arabic languages (the division is based on countries and dialects languages). This has meant that Arabic only figures as number 25 in the top 26 languages (25) (Arabic Arabic), 11 (Moroccan Arabic), etc., whereas we feel that it should not disappear from the top 20 languages and have therefore counted together the various Arabic languages.*
In Table 9 I compare the rankings from Tables 3 and 4, combined with one I used in my 2000 book which was based on the Ethnologue, 12th edition, and on data from 1998 from the three Davids, Crystal (1997), Harmon (1995) and Graddol (1997). As we can see, Arabic is on that list, and Hindi and Urdu were combined into one language (by David Graddol, 1997: 8), something that I said in my book could cause a war - a somewhat ironic forced unity in today's India/Pakistan situation. Only Mandarin Chinese, Portuguese and Telugu have the same ranking in all three sources.

Table 9. Comparison of Figures on the Top 20 Languages

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>1 Chinese, Mandarin</td>
<td>Chinese, Mandarin</td>
<td>Chinese, Mandarin</td>
</tr>
<tr>
<td>2 Hindi</td>
<td>Spanish</td>
<td>English</td>
</tr>
<tr>
<td>3 Spanish</td>
<td>English</td>
<td>Hindi/Urdu</td>
</tr>
<tr>
<td>4 English</td>
<td>Bengali</td>
<td>Spanish</td>
</tr>
<tr>
<td>5 Bengali</td>
<td>Hindi</td>
<td>Arabic</td>
</tr>
<tr>
<td>6 Portuguese</td>
<td>Portuguese</td>
<td>Portuguese</td>
</tr>
<tr>
<td>7 Arabic</td>
<td>Russian</td>
<td>Russian</td>
</tr>
<tr>
<td>8 Russian</td>
<td>Japanese</td>
<td>Bengali</td>
</tr>
<tr>
<td>9 Japanese</td>
<td>German</td>
<td>Japanese</td>
</tr>
<tr>
<td>10 German</td>
<td>Chinese, Wu</td>
<td>German</td>
</tr>
<tr>
<td>11 Korean</td>
<td>Javanese</td>
<td>French</td>
</tr>
<tr>
<td>12 Chinese, Wu</td>
<td>Korean</td>
<td></td>
</tr>
<tr>
<td>13 French</td>
<td>French</td>
<td></td>
</tr>
<tr>
<td>14 Javanese</td>
<td>Vietnamese</td>
<td></td>
</tr>
<tr>
<td>15 Telugu</td>
<td>Telugu (sic!)</td>
<td></td>
</tr>
<tr>
<td>16 Vietnamese</td>
<td>Chinese, Yue</td>
<td></td>
</tr>
<tr>
<td>17 Chinese, Yue</td>
<td>Marathi</td>
<td></td>
</tr>
<tr>
<td>18 Marathi</td>
<td>Tamil</td>
<td></td>
</tr>
<tr>
<td>19 Tamil</td>
<td>Turkish</td>
<td></td>
</tr>
<tr>
<td>20 Turkish</td>
<td>Urdu</td>
<td></td>
</tr>
</tbody>
</table>

changes in rank bolded

The conclusion from this little exercise is that when we are talking about the world’s languages, even the biggest ones, we do not really know what we are talking about. Some of the changes in the Tables are due to changes in classification systems. Of the others, some are results of real changes, but many are results of guess-work. The problem is that we don't know which is which. We do not have even the basic information needed for efficient language planning and language policies. Even when speaking about millions of people, our figures are all but reliable. As my initial Danish example shows, we know more about pigs than people.

What about the smaller languages, in terms of the numbers of speakers/signers. As we know, most of the world’s languages are spoken by relatively few people. The median number of speakers of a language is probably around 5-6,000 (Posey 1997). There are just under 80
languages with more than 10 million speakers, together accounting for far over 4 billion people, according to the Ethnologue, 14th edition. Fewer than 300 languages are spoken by communities of 1 million speakers and above, meaning that over 95% of the world's spoken languages have fewer than 1 million native users. A quarter of the world's spoken languages and most of the Sign languages have fewer than 1,000 users, and at least some 500 languages had in 1999 under 100 speakers (Ethnologue, 13th edition). Some 83-84% of the world's languages are endemic: they exist in one country only (Harmon 1995).

Table 10. Basic information about languages

- There are 6-7,000 spoken languages (see The Ethnologue, <http://www.sil.org/ethnologue/>), and maybe equally many Sign languages.
- The median number of speakers of a language is probably around 5-6,000
- Over 95% of the world's spoken languages have fewer than 1 million native users
- Some 5,000 spoken languages have fewer than 100,000 speakers
- Over 3,000 spoken languages have fewer than 10,000 users
- Some 1,500 spoken languages and most of the Sign languages have fewer than 1,000 users
- Some 500 languages had in 1999 fewer than 100 speakers
- 83-84% of the world's spoken languages are endemic: they exist in one country only

But there are really many serious errors in the Ethnologue, even in the latest (14th) edition. The same applies to the second edition of Wurm's new Atlas of the World's Languages in Danger of Disappearing. I have looked at some of the situations that I really know well personally. To take just one example, at least six, possibly seven of the 10 Saami languages are misplaced in the Atlas in terms of the endangerment categories, as these are defined in the Atlas itself (pp. 54-55). If all of us, and especially the indigenous peoples who use the number-wise small languages, at least had the opportunity to correct the data we know are less than correct, it would help.

It is unnecessary here to say that languages are today being murdered faster than ever before in human history - all of us know the prognoses by Krauss, Wurm and others (e.g. Krauss 1992, Krauss 1995, Wurm, ed., 2001). Since it is already a decade since Krauss presented his first prognosis in Language in 1992, it should already be possible to check to what extent the trends that he discussed have materialised. But to my knowledge, nobody has even tried to check. Of course, since we do not have the exact benchmark data or today's data, even following what is happening would largely be based on guesswork - but at least we should try. Again, our responsibility. Even if the red lists for threatened animals and plants (see Table 11) do not receive enough financial support to be accurate, the red books for threatened languages (Table 12) are in a much worse situation - they are for the most part being kept by individuals, as a labour of love, with next to no resources. Even so, the categories for endangerment are constantly being developed further (see, e.g., the categories used in Wurm, ed., 2001, 14, 53; see also the discussions about the criteria in Skutnabb-Kangas 2000a, sections 1.3 and 2.3.2).

Table 11. Red lists for threatened animals and plants

The web-sites for the Red Lists of Threatened Plants and Threatened Animals are
<http://www.rbge.org.uk/data/wcmc/plants_by_taxon.html>
<http://www.wcmc.org.uk/species/plants/plant_redlist.html>
These lists are monitored by World Conservation Monitoring Centre, 219 Huntingdon Road, Cambridge CB3 0DL, UK; phone 44-1223-277 314; fax 44-1223-277 136; email
4. The Culprits: most indigenous and minority education participates in committing linguistic genocide

4.1. Defining linguistic genocide in education

It is clear from the statistics of number of languages and number of speakers that indigenous peoples and minorities are the main depository of the LD of the world. Therefore, it is decisive what happens to their languages. Many of them have traditionally been multilingual, and they have maintained their own languages. Today, as formal education reaches more and more people, schools can kill in one generation languages which, in situations without western type of formal schooling, were maintained for hundreds or even thousands of years or more.

The education of indigenous peoples and minorities in large parts of the world is today being organised in direct contradiction of our best scientific knowledge of how it should be organised, and so is the education of both minorities and numerically large but politically dominated groups in most African and many Asian countries (see Skutnabb-Kangas 2000a for details in the claims; see Brock-Utne 1999 and Prah 1995a and b, for Africa, and references to Pattanayak and Rahman in the bibliography for Asia). Most of this education participates in committing linguistic and cultural genocide, according to Articles II (e) and (b) of the UN International Convention on the Prevention and Punishment of the Crime of Genocide (E793, 1948):

Article II(e), 'forcibly transferring children of the group to another group'; and Article II(b), 'causing serious bodily or mental harm to members of the group'; emphasis added.

Likewise, most minority education is guilty of linguistic genocide according to the UN 1948 special definition:

Article III(1) ‘Prohibiting the use of the language of the group in daily intercourse or in schools, or the printing and circulation of publications in the language of the group’.
Assimilationist submersion education where indigenous and minority children are taught through the medium of dominant languages, causes mental harm and often leads to the students using the dominant language with their own children later on, i.e. over a generation or two the children are linguistically and often in other ways too forcibly transferred to a dominant group. This happens to millions of speakers of threatened languages all over the world. There are no schools or classes teaching the children through the medium of the threatened indigenous or minority languages. The transfer to the majority language speaking group is not voluntary: alternatives do not exist, and parents do not have enough reliable information about the long-term consequences of the various choices. Because of this, we are NOT talking about 'language suicide', even if it might at first seem like the speakers are themselves abandoning their languages. 'Prohibition' can be direct or indirect. If there are no minority teachers in the pre-schools/schools and if the minority languages are not used as the main media of education, the use of these languages is indirectly prohibited in daily intercourse/in schools, i.e. it is a question of linguistic genocide. Most of this prohibition is today more sophisticated than the earlier physical punishment for speaking the mother tongue (see Skutnabb-Kangas 2000a for hundreds of examples of all types of prohibition).

Most children obviously want in their own interest to learn the official language of a country and mostly also to learn English if it is not one of the official languages. But learning new languages, including the dominant languages should not happen subtractively, but additively, in addition to their own languages. Formal education which is subtractive, i.e. which teaches children something of a dominant language at the cost of their first language, is genocidal.


4.2. Examples of linguistic genocide in education

4.2.1. Europe

Pirjo Janult (1998) shows in a longitudinal study that of those Finnish immigrant minority members in Sweden who had had Swedish-medium education, not one spoke any Finnish to their own children. Even if they themselves might not have forgotten their Finnish completely, their children were certainly forcibly transferred to the majority group, at least linguistically. Nils - Erik Hansegård (1967: 71ff) describes the intrusion of the Swedish language into the lives and homes of the Saami in northern Sweden; the Saami themselves blame the school. Elina Helander, herself Saami, has shown in her dissertation (1984) about the same area that the younger Saami use much more Swedish than the older ones; in addition to more social and geographic mobility and interethnic marriages, formal education seems to be the culprit.

4.2.2. Africa

Edward Williams did two large-scale empirical studies, testing almost 1,500 students, in Zambia and Malawi in grades 1-7 and interviewing and observing many (1998). In Zambia, children were (supposed to be) taught through the medium of English, from grade 1, and to study a local language as a subject. This is known as submersion education (see Skutnabb-Kangas 1996b, 2000a, for definitions of various models). In Malawi, they were taught through local languages, in most cases their mother tongues, during the first 4 years, while studying English as a subject. From grade 5 onwards, children in Malawi also study through the medium of English. Even
when the Zambian children had had all their schooling in English, their test results in the English language were no better than those of the Malawi children who had only studied English as a subject. In fact the children in Malawi were doing slightly better than the children in Zambia.

In both countries there were huge differences in the results in English between urban and rural children, meaning English language results are socially not enhancing democracy. Likewise, there were big gender differences, meaning English language results do not support gender equality. Many of the Zambian pupils could not even be tested in the local language because they could not read it. On the other hand, when the Malawi children were tested in the local language, there were almost no differences between urban and rural pupils, or between the genders. Large numbers of Zambian pupils are claimed to 'have very weak or zero reading competence in two languages' (ibid., 62). The 'Malawian success in teaching reading in the local language', on the other hand, is achieved despite the almost complete absence of books and classes with an average of around 100 pupils, many of which are taught in the open' (ibid., 62).

We often hear that there is no money for teaching in the many languages, in Africa or Asia. Echoing Indian evidence (e.g., Pattanayak 1988, 1991), Williams concludes that

‘[the] moral of the Malawian achievement would appear to be that if resources are scarce, there is a greater likelihood of success in attempting to teach pupils a known local language, rather than an unknown one’ (ibid., 62).

Since between 74 to 89% of the children in grades 3-6 are judged as not adequately comprehending a text in English that is judged to be at their level (ibid., 63), 'it is likely that they cannot understand their content subject course books' (ibid., 63), and therefore it is 'difficult to see how the majority of pupils in Zambia and Malawi could learn other subjects successfully through reading in English' (ibid., 63).

Teaching through an African language thus produces more democracy and equality, whereas using a foreign language as the measure of status and as a medium of education harms the children and also society as a whole. Williams concludes that

'[f]or the majority of children in both countries the test results, and classroom observations, suggest there is a clear risk that the policy of using English as a vehicular language may contribute to stunting, rather than promoting, academic and cognitive growth' (ibid., 63-64; emphasis added).

Zubeida Desai's 2001 study with Xhosa-speaking grade 4 and 7 learners in South Africa shows similar results. They were given a set of pictures which they had to put in the right order and then describe, in both Xhosa and English. In Desai’s words, it showed 'the rich vocabulary children have when they express themselves in Xhosa and the poor vocabulary they have when they express themselves in English’ (ibid, 321). The Pan South African Language Board (where Desai has since 1996 been a member and the Chair; she is currently the Deputy Chair) argued in March 1999, criticising the Government, that ‘African learners are not likely to receive quality education if they are not able to access knowledge equitably. The board further argued that a more pedagogically sound approach would be to enable all learners to write their examinations in their primary languages’ (ibid, 337-338; see also other references to Desai in the bibliography).

Kathleen Heugh showed in a study (2000b; see also other references to her in the bibliography; likewise references to Alexander) that the percentage of Black students who passed their
exams went down every time the number of years spent through the medium of the mother tongues decreased.

All these studies fit the UN genocide definition of ‘causing serious bodily or mental harm to members of the group’. The studies confirm a pattern in many postcolonial contexts. World Bank policy employs a rhetoric of endorsing local languages, but funding exclusively strengthens European languages (Mazrui 1997; see also Punchi 2001). The Papua New Guinea example mentioned later (Klaus, in press) is a real exception to this.

4.2.3. Australia

Anne Lowell and Brian Devlin reach a similar conclusion in Australia in an article (1999) describing the ‘Miscommunication between Aboriginal Students and their Non-Aboriginal Teachers in a Bilingual School’. It is clearly demonstrated that ‘even by late primary school, children often did not comprehend classroom instructions in English’ (p. 137). Communication breakdowns occurred frequently between children and their non-Aboriginal teachers’ (p. 138), with the result that ‘the extent of miscommunication severely inhibited the children's education when English was the language of instruction and interaction’ (p. 137; emphasis added). In the conclusions and recommendations the authors say that

‘the use of a language of instruction in which the children do not have sufficient competence is the greatest barrier to successful classroom learning for Aboriginal Children’ (p. 156; emphasis added).

4.2.4. USA and Canada

John Baugh from Stanford University, in an article called ‘Educational Malpractice and the Miseducation of Language Minority Students’ (2000) draws a parallel between how physicians may maltreat patients and how minority students (including for instance Ebonics/Black English using students who do not have mainstream US English as their first language), are often treated in education in the USA. The harm caused to them by this maltreatment and miseducation also fits the UN definition of ‘causing serious bodily or mental harm to members of the group’.

Katherine Zozula and Simon Ford tell in their 1985 report “Keewatin Perspective on Bilingual Education” about Canadian Inuit ‘students who are neither fluent nor literate in either language' and present schooling' statistics showing that the students 'end up at only Grade 4 level of achievement after 9 years of (quoted in I. Martin 2000b: 3). The same type of results are presented in the Canadian Royal Commission on Aboriginal Peoples 1996 Report. They note that 'submersion strategies which neither respect the child's first language nor help them gain fluency in the second language may result in impaired fluency in both languages' (quoted in I. Martin 2000b:15). The Nunavut Language Policy Conference in March 1998 echoes this in claiming that 'in some individuals, neither language is firmly anchored’ (quoted in I. Martin 2000b: 23). This statement is partially based on the empirical study by two experienced Arctic College educators, Mick Mallon and Alexina Kublu, in a 1998 Discussion Paper for the conference which states that ‘a significant number of young people are not fully fluent in their languages', and that many students 'remain apathetic, often with minimal skills in both languages’ (quoted in I. Martin 2000b:9: 27). A 1998 report (Kitikmeot struggles to prevent death of Inuktitut) notes that 'teenagers cannot converse fluently with their grandparents' (quoted in I. Martin 2000b:31).

4.2.5. Deaf students
Another example of assimilationist submersion education where minorities are taught through the medium of dominant languages is when Deaf students are taught orally only and sign languages have no place in the curriculum. This also often causes mental harm, including serious prevention or delay of cognitive growth potential (e.g. Branson & Miller 1998, 2000, Grosjean 2001, Jokinen 2000, D. Martin 2001, Reagan & Osborn 2002, Skutnabb-Kangas 2000a; see EUD Update (2001) for an overview of the disastrous situation in the education of Deaf students in various European countries: see Krausncker 1998 and Skutnabb-Kangas 2002 for the false arguments used by Council of Europe to exclude Sign languages from the European Charter for regional or Minority Languages; see also the section on Sign languages on Terralingua's website www.terralingua.org). For Deaf children the harm caused is much greater than for oral children, since trying to force Deaf children to become oral only and preventing them from fully developing a sign language in formal education, deprives them of the chance of learning the only type of language through which they can fully express themselves. Since they in most cases do not share this mother tongue with their parents, they are completely dependent on formal education to really develop their Sign language mother tongue to the highest possible level (see also Skutnabb-Kangas 2002). It is interesting to see how this genocide is sometimes 'aided' by development co-operation - see Kontra 2001 on British Council's role in discouraging the use of Sign languages in Hungary.

All these are examples of genocide according to Articles II(b) and (e). Many children become, like the Navajo, according to Lee and McLaughlin (2001), "culturally ambivalent about Navajo" and "harbour shame about their own culture and hostility towards the language". Many indigenous and minority children, schooled in a dominant language, show most of the indicators of an unsuitable education and an unequal society: high drop-out rates, low school achievement, overrepresentation in special education classes, high rates of suicides, youth criminality and unemployment, etc. Few have a chance to fully develop their linguistic, educational, cognitive and creative potential.

There are already today in Africa and Asia local people who know no African or Asian languages. There are grandparents who cannot communicate with their monolingual English-speaking grandchildren. If the future African and Asian elites have English as their only or main intellectual language, what chances do they have to understand the needs of their countrymen and women, most of whom do not speak English? If they know nothing of their continents' ancient and present cultures, how could they possibly enhance development?

4.2.6. Mother tongue medium education

On the other hand, Arlene Stairs has shown that 'in schools which support initial learning of Inuititut, and whose grade 3 and Grade 4 pupils are strong writers in Inuititut, the results in written English are also the highest.' (1994, quoted in I. Martin 2000b: 60; see also her 1988).

The same experience is echoed all over the world, with the Navajo (Lee & McLaughlin 2001), with the Saami, with all those 'national' minorities who have mother tongue medium education, like the Swedish-speakers in Finland, the Welsh in UK, the Frisians in the Netherlands, the results in dual language programmes in the USA and so on.

In Papua New Guinea, 470 languages are used as the media of education in preschool and the first two grades; children become literate more quickly and easily in their mother tongues than they did in English, learn English more quickly and easily than their older brothers and sisters did under the old system; the results of the Grade 6 examination in the three provinces which were the first to begin the reform in 1993 were much higher than the results of students from provinces where students were immersed in English from Day One of Grade One. Access is increasing because many parents now appear more willing to send their children to school and
to make the sacrifices necessary to keep them in school. Dropout has decreased. In particular, a higher proportion of girls are in school than was previously the case. Children are more excited, pro-active, self-confident, and inquisitive about learning, and ask more questions (Klaus, in press; Nagai & Lister, in press, Skutnabb-Kangas, in press c).

In Alaska, just to mention a few examples, the Yu'piq teacher Nancy Sharp (1994, quoted in I. Martin 2000b: 62), compares, partly on the basis of her own experience: when Yu'piq children are taught through the medium of English, they are treated by 'White' teachers as handicapped, and they do not achieve; when they are taught through the medium of Yu'piq, they are 'excellent writers, smart happy students' (quoted in I. Martin 2000b: 62; see also Lipka et al. 1998).


5. The human rights system does not prevent linguistic genocide

We have already stated earlier that mother tongue medium education should be a basic linguistic human right (LHR). But international and European binding Covenants, Conventions and Charters give very little support to linguistic human rights in education (e.g. Skutnabb-Kangas & Phillipson 1994). Language gets in them a much poorer treatment than other central human characteristics. Often language disappears completely in binding educational paragraphs, for instance, in the Universal Declaration of Human Rights (1948) where the paragraph on education (26) does not refer to language at all. Similarly, the International Covenant on Economic, Social and Cultural Rights (adopted in 1966 and in force since 1976), having mentioned language on a par with race, colour, sex, religion, etc. in its general Article (2.2), does explicitly refer to 'racial, ethnic or religious groups' in its educational Article (13.1). However, here it omits reference to language or linguistic groups:

... education shall enable all persons to participate effectively in a free society, promote understanding, tolerance and friendship among all nations and all racial, ethnic or religious groups ... (emphasis added).

When language is in educational paragraphs of human rights instruments, the Articles dealing with education, especially the right to mother tongue medium education, are more vague and/or contain many more opt-outs and modifications than any other Articles (see, e.g., Benson et al. (eds) 1998, May 2001, Kontra et al., eds. 1999; Phillipson & Skutnabb-Kangas, 1994, 1995, 1996; Skutnabb-Kangas, 1996a, b, 1999, 2000a; b, Skutnabb-Kangas & Phillipson, 1994, 1997, 1998, de Varennes 1996). Only one of the many possible examples will be presented of how language in education gets a different treatment from everything else (see Skutnabb-Kangas 2000a, Chapter 7, for others). In the UN Declaration on the Rights of Persons Belonging to National or Ethnic, Religious and Linguistic Minorities from 1992 (adopted by the General Assembly in December 1992), most of the Articles use the obligating formulation 'shall' and have few let-out modifications or alternatives - except where linguistic rights in education are concerned. Compare the unconditional formulation in Article 1 about identity, with the education Article 4.3:
1.1. States shall protect the existence and the national or ethnic, cultural, religious and linguistic identity of minorities within their respective territories, and shall encourage conditions for the promotion of that identity.

1.2. States shall adopt appropriate legislative and other measures to achieve those ends.

4.3. States should take appropriate measures so that, wherever possible, persons belonging to minorities have adequate opportunities to learn their mother tongue or to have instruction in their mother tongue. (emphases added, 'obligating' in italics, 'opt-outs' in bold).

The same types of formulation as in Art. 4.3 abound even in the latest HRs instruments. All the formulations below come from the Council of Europe Framework Convention for the Protection of National Minorities and the European Charter for Regional or Minority Languages, both in force since 1998. According to them, minority languages and sometimes even their speakers MIGHT 'as far as possible', and 'within the framework of [the State's] education systems', get some vaguely defined rights, 'appropriate measures', or 'adequate opportunities', 'if there is sufficient demand' and 'substantial numbers' or 'pupils who so wish in a number considered sufficient' or 'if the number of users of a regional or minority language justifies it'. The Articles covering medium of education are so heavily qualified that the minority is completely at the mercy of the state (see also Thornberry 1997). It is clear that the opt-outs and alternatives in the Convention and the Charter permit a reluctant state to meet the requirements in a minimalist way, which it can legitimate by claiming that a provision was not 'possible' or 'appropriate', or that numbers were not 'sufficient' or did not 'justify' a provision, or that it 'allowed' the minority to organise teaching of their language as a subject, at their own cost.

Still, the human rights system should protect people in the globalisation process rather than giving market forces free range. Human rights, especially economic and social rights, are, according to human rights lawyer Katarina Tomaševski (1996: 104), to act as correctives to the free market. The first international human rights treaty abolished slavery. Prohibiting slavery implied that people were not supposed to be treated as market commodities. ILO (The International Labour Organisation) has added that labour should not be treated as a commodity. But price-tags are to be removed from other areas too. Tomaševski claims (ibid, 104) that

*The purpose of international human rights law is ... to overrule the law of supply and demand and remove price-tags from people and from necessities for their survival.*

These necessities for survival include not only basic food and housing (which would come under economic and social rights), but also basics for the sustenance of a dignified life, including basic civil, political and cultural rights. It should, therefore, be in accordance with the spirit of human rights to grant people full linguistic human rights. Of course the rights need to be binding, there must be a duty-holder, and both a monitoring system and a proper complaint system need to be in place, with some kind of penalties for non-compliance.

Linguistic human rights in education should grant an unconditional access to mother tongue medium education for all who so wish, within a free, comprehensive and all-encompassing educational system. They should protect linguistic diversity.

In general, we do not have these basic rights today, and languages are being murdered daily. Hearing that languages are disappearing, many people might say: so what? Most people don't even notice, because they did not know that those languages existed in the first place. Might it not be better for world peace if we all speak a few big languages and understand each other,
they ask - only romantic linguists want to preserve the small ones. The fittest languages survive; the others were unable to modernise and adapt, so the argument goes.

Here I present only two of the many counterarguments against linguistic genocide and for support for the maintenance of linguistic diversity (hereafter LD). I start with the relationship between linguistic diversity and biodiversity.
6. The relationship between linguistic diversity and biodiversity argument

6.1. The threat towards biodiversity

Maintenance of diversities, in the plural, is one end of a continuum where ecocide and linguistic genocide are at the other end. We start with biodiversity. Monocropping, pesticides, deforestation, genetic engineering and the wrong use of fertilisers and irrigation, etc., have led to an unprecedented decrease of all kinds of biodiversity. We use agro-biodiversity as an example (Table 13). People consume at least 7,000 species of plants, but 'only 150 species are commercially important and about 103 species account for 90 percent of the world's food crops. Just three crops - rice, wheat and maize - account for about 60 percent of the calories and 56 percent of the protein people derive from plants' (Thrupp 1999: 318).

Table 13. Plants people consume

<table>
<thead>
<tr>
<th>Plants people consume</th>
<th>Commercially important</th>
<th>90% of food crops come from</th>
<th>60% of plant calories &amp; 56% of plant proteins come from</th>
</tr>
</thead>
<tbody>
<tr>
<td>at least 7,000 species</td>
<td>150 species</td>
<td>103 species</td>
<td>3 species</td>
</tr>
</tbody>
</table>

Source: Thrupp 1999: 313

The remaining crop diversity (already low) is eroding at 1-2% and livestock breeds at 5% per annum (Christie & Moonie 1999: 321). 'Almost all farmers' knowledge of plants and research systems [something that has been built up during the 12,000 years of agriculture, Thrupp 1999: 318] could become extinct within one or two generations' (Christie/Moonie 1999: Table 7.5). Likewise, 'almost all local knowledge of medicinal plants and systems as well as the plants themselves could disappear within one generation' (ibid.). 'Rainforests are coming down at a rate of 0.9 percent per annum and the pace is picking up. Much of the earth's remaining diversity could be gone within one or two generations' (ibid.). Figures for the disappearance of biodiversity in general are available from dozens of sources (see the websites in Table 11 for links).

6.2. Comparing the threat towards biodiversity and linguistic diversity

Still, linguistic diversity is disappearing relatively much faster than biodiversity. I will present a very simple comparison, based on numbers and extinction rates. The number of biological species on earth has been estimated to something between 5 and 15-30 million, with a "working figure" of about 12.5 million. Only some 1.5 million different species (from plants and animals to fungi, algae, bacteria and viruses) have so far been identified by natural scientists (Maffi et al., in press). According to conservative (i.e. optimistic) assessments, more than 5,000 species disappear every year; pessimistic evaluations claim that the figure may be up to 150,000. Using the most 'optimistic' estimate of both the number of species (30 million) and the killing of species (5,000/year), the extinction rate is 0.017% per year. With the opposite, the most 'pessimistic'
estimates (5 million species; 150,000/year disappear), the yearly extinction rate is 3%.

On the other hand, researchers who use the high extinction rates, often also use higher estimates for numbers of species. If the number of species is estimated at 30 million and 150,000 disappear yearly, the rate would be 0.5% per year. Many researchers seem to use yearly extinction rates which vary between 0.2% ('pessimistic realistic') and 0.02% ('optimistic realistic' - these are my labels).

If we disregard the cumulative effect and do a simplified calculation, according to the 'pessimistic realistic' prognosis, then, 20% of the biological species we have today might be dead in the year 2100, in hundred years' time. According to the 'optimistic realistic' prognosis the figure would be 2%. ). Optimistic estimates, then, state that 2% of biological species but 50% of languages may be dead (or moribund) in a 100 years' time. Pessimistic estimates are that 20% of biological species but 90% of languages may be dead (or moribund) in a 100 years' time (Table 14).

Table 14. Prognoses for 'dead' or 'moribund' species and languages

<table>
<thead>
<tr>
<th>Percentage estimated to be dead or moribund around the year 2100</th>
<th>PROGNOSIS</th>
<th>Biological species</th>
<th>Languages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optimistic realistic</td>
<td>20%</td>
<td>20%</td>
<td>90%</td>
</tr>
<tr>
<td>Pessimistic realistic</td>
<td>20%</td>
<td>20%</td>
<td>90%</td>
</tr>
</tbody>
</table>

Since the first research-based prognoses of the speed of disappearance of languages appeared a decade ago (in the journal Language; see Krauss 1992), it would already be possible to get some idea of the validity of the estimates if the figures we have about the number of languages were more reliable - but, alas, they are not.

6.3. Correlational relationships between biodiversity and linguistic and cultural diversity

But what is the relevance of this information? Firstly, linguistic and cultural diversity on the one hand and biodiversity on the other hand are correlated - where one type is high, often the other one is too, and vice versa. Secondly, some of the main causes for the disappearance of biodiversity that have been identified are habitat destruction, for instance through logging, spread of agriculture, use of pesticides, and the poor economic and political situation of the people who live in the world's most diverse ecoregions. What most people do not know is that disappearance of languages may also be or become a very important causal factor in the destruction of biodiversity.

One of the organisations investigating the relationship above is Terralingua (http://www.terralingua.org/). 'Terralingua is a non-profit international organisation devoted to preserving the world's linguistic diversity and to investigating links between biological and cultural diversity.' Conservationist David Harmon is the General Secretary of Terralingua. He has investigated correlations between biological and linguistic diversity. Harmon has compared endemism of languages and higher vertebrates (mammals, birds, reptiles and amphibians), with the top 25 countries for each type (1995: 14) (Table 15). I have BOLDED AND CAPITALISED those countries which are on both lists. 16 of the 25
Table 15. Endemism in languages and higher vertebrates: a comparison of the top 25 countries

<table>
<thead>
<tr>
<th>Endemic languages</th>
<th>Number</th>
<th>Endemic higher vertebrates</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Papua New Guinea</td>
<td>847</td>
<td>Australia</td>
<td>1,345</td>
</tr>
<tr>
<td>Indonesia</td>
<td>655</td>
<td>Mexico</td>
<td>761</td>
</tr>
<tr>
<td>Nigeria</td>
<td>376</td>
<td>Brazil</td>
<td>725</td>
</tr>
<tr>
<td>India</td>
<td>309</td>
<td>Indonesia</td>
<td>672</td>
</tr>
<tr>
<td>Australia</td>
<td>261</td>
<td>Madagascar</td>
<td>337</td>
</tr>
<tr>
<td>Mexico</td>
<td>230</td>
<td>Philippines</td>
<td>437</td>
</tr>
<tr>
<td>Cameroon</td>
<td>201</td>
<td>India</td>
<td>375</td>
</tr>
<tr>
<td>Brazil</td>
<td>185</td>
<td>Peru</td>
<td>332</td>
</tr>
<tr>
<td>Zaire</td>
<td>158</td>
<td>Colombia</td>
<td>330</td>
</tr>
<tr>
<td>Philippines</td>
<td>133</td>
<td>Ecuador</td>
<td>294</td>
</tr>
<tr>
<td>Uva</td>
<td>143</td>
<td>Uva</td>
<td>284</td>
</tr>
<tr>
<td>Vietnam</td>
<td>105</td>
<td>China</td>
<td>256</td>
</tr>
<tr>
<td>Tanzania</td>
<td>101</td>
<td>Papua New Guinea</td>
<td>201</td>
</tr>
<tr>
<td>Sudan</td>
<td>97</td>
<td>Vanuatu</td>
<td>186</td>
</tr>
<tr>
<td>Malaysia</td>
<td>92</td>
<td>Argentina</td>
<td>168</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>90</td>
<td>Cuba</td>
<td>152</td>
</tr>
<tr>
<td>China</td>
<td>77</td>
<td>South Africa</td>
<td>146</td>
</tr>
<tr>
<td>Peru</td>
<td>75</td>
<td>Zaire</td>
<td>134</td>
</tr>
<tr>
<td>Chad</td>
<td>74</td>
<td>Sri Lanka</td>
<td>126</td>
</tr>
<tr>
<td>Ecuador</td>
<td>71</td>
<td>New Zealand</td>
<td>120</td>
</tr>
<tr>
<td>Solomon Islands</td>
<td>69</td>
<td>Tanzania</td>
<td>112</td>
</tr>
<tr>
<td>Nepal</td>
<td>68</td>
<td>Japan</td>
<td>112</td>
</tr>
<tr>
<td>Colombia</td>
<td>55</td>
<td>Cameroon</td>
<td>105</td>
</tr>
<tr>
<td>Côte d'Ivoire</td>
<td>51</td>
<td>Solomon Islands</td>
<td>101</td>
</tr>
<tr>
<td>Canada</td>
<td>47</td>
<td>Ethiopia</td>
<td>88</td>
</tr>
<tr>
<td>Switzerland</td>
<td>47</td>
<td>Somalia</td>
<td>88</td>
</tr>
</tbody>
</table>

Harmon gets the same results with flowering plants and languages, butterflies and languages, birds and languages, etc. - a high correlation between countries with biological and linguistic megadiversity (see also Harmon, in press, Maffi et al., in press). Table 16 shows more of the correlations. The figures for languages are derived by Harmon from the Ethnologue, 12th edition, and for vertebrates from Groombridge 1992; the countries which are on the top lists for endemism for both vertebrates and languages are still bolded and capitalized. The list ranks countries not in terms of all languages but according to the number of endemic languages. Remember that endemic languages represent the vast majority (some 83-84 percent) of the world's languages. As can be seen, Papua New Guinea, which ranks first in terms of endemic languages, is country number 13 in terms of endemic vertebrates. The USA is number 11 on both the languages and the vertebrates list. On the other hand, Nigeria is number 3 on the
languages list but is not among the 25 top countries for any of the biological species diversity indicators used here. Still, the correlations are very high indeed.

Table 16. Endemism in Languages Compared with Rankings of Biodiversity

<table>
<thead>
<tr>
<th>Country</th>
<th>Rank, Total Number of...</th>
<th>On mega-diversity list?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Endemic Languages Rank</td>
<td>Endemic Vertebrates Rank</td>
</tr>
<tr>
<td>Papua New Guinea</td>
<td>1</td>
<td>15</td>
</tr>
<tr>
<td>Indonesia</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Nigeria</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>India</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Australia</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Mexico</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>Cameroon</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>Brazil</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>DRC</td>
<td>9</td>
<td>1</td>
</tr>
<tr>
<td>Philippines</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>USA</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>Vanuatu</td>
<td>12</td>
<td>3</td>
</tr>
<tr>
<td>Tanzania</td>
<td>13</td>
<td>21</td>
</tr>
<tr>
<td>Sudan</td>
<td>14</td>
<td>1</td>
</tr>
<tr>
<td>Malaysia</td>
<td>15</td>
<td>2</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>16</td>
<td>25</td>
</tr>
<tr>
<td>China</td>
<td>17</td>
<td>12</td>
</tr>
<tr>
<td>Peru</td>
<td>18</td>
<td>8</td>
</tr>
<tr>
<td>Chad</td>
<td>19</td>
<td>7</td>
</tr>
<tr>
<td>Russia</td>
<td>20</td>
<td>71</td>
</tr>
<tr>
<td>Solomon Islands</td>
<td>21</td>
<td>24</td>
</tr>
<tr>
<td>Nepal</td>
<td>22</td>
<td>68</td>
</tr>
<tr>
<td>Colombia</td>
<td>23</td>
<td>9</td>
</tr>
<tr>
<td>Colle d'Ivorie</td>
<td>24</td>
<td>51</td>
</tr>
<tr>
<td>Canada</td>
<td>25</td>
<td>47</td>
</tr>
</tbody>
</table>

(source: Maffi, Shuttab-Kargas & Harmon, in press).

6.4. Causal relationships between biodiversity and linguistic and cultural diversity

Recent research shows mounting evidence for the hypothesis that it might not only be a correlational relationship. It may also be causal: the two types of diversities seem to mutually enforce and support each other (see Maffi 2000a). UNEP (United Nations Environmental Program), one of the organisers of the world summit on biodiversity in Rio de Janeiro in 1992 (see its summary of our knowledge on biodiversity, Heywood, ed., 1995), published in December 1999 a mega-volume called Cultural and Spiritual Values of Biodiversity. A Complementary Contribution to the Global Biodiversity Assessment, edited by Darrell Posey (1999) summarising some of this evidence of causality. Likewise, Luisa Maffi’s (2001) edited volume On Biocultural Diversity. Linking Language, Knowledge and the Environment illustrates it. The strong correlation need not indicate a direct causal relationship, in the sense that neither type of diversity should probably be seen directly as an independent variable in relation to the other. But linguistic and cultural diversity may be decisive mediating variables in sustaining biodiversity itself, and vice versa, as long as humans are on the earth. As soon as humans came into existence, they started to influence the rest of nature. Today it is safe to say that
there is no 'pristine nature' left - all landscapes have been and are influenced by human action, even those where untrained observers might not notice it immediately. All landscapes are cultural landscapes. Likewise, local nature and people's detailed knowledge about it and use of it have influenced the cultures, languages and cosmo-visions of the people who have been dependent on it for their sustenance. This relationship between all kinds of diversities is of course what most indigenous peoples have always known, and they describe their knowledge in several articles in the UNEP volume.

We in Terralingua suggest that if the long-lasting co-evolution which people have had with their environments from time immemorial is abruptly disrupted, without nature (and people) getting enough time to adjust and adapt (see Mühlhäusler, 1996), we can expect a catastrophe. The adjustment needed takes hundreds of years, not only decades (see Mühlhäusler, 1996). Two examples from different parts of the world: nuances in the knowledge about medicinal plants and their use disappear when indigenous youth in Mexico become bilingual without teaching in and through the medium of their own languages - the knowledge is not transferred to Spanish which does not have the vocabulary for these nuances or the discourses needed (see Luisa Maffi's doctoral dissertation, 1994; see also Nabhan 2001).

I was told a recent example by Pekka Aikio, the President of the Saami Parliament in Finland (29 November 2001). Finnish fish biologists have just "discovered" that salmon can use even extremely small rivulets leading to the river Teno as spawning ground - earlier this was thought impossible. Pekka said that the Saami have always known this - the traditional Saami names of several of those rivulets often include the Saami word for "salmon spawning-bed". This is ecological knowledge inscribed in indigenous languages.

Those of us who discuss these links between biodiversity and linguistic diversity sometimes get attacked by some linguists and others who accuse us of Social Darwinism. I will use a representative sample of these attacks. It claims that

relying on biomorphic metaphors implies that dominant languages are fitter than others and that "primitive" languages, unable to adapt to the modern world, deserve their fate.

Much of the accusations have to do with lack of interdisciplinary knowledge - most linguists do not know enough about present-day biology to be able to see what the biological metaphors and the claims of a causal relationship stand for. I have deconstructed the attacking claim a bit, with arguments from David Harmon, in another paper (Skutnabb-Kangas, in press b) but will here only say that much of the misunderstanding has to do with linguists not being able 'to distinguish Social Darwinism (which of course has long since been discredited [...] from neo-Darwinism as it is now understood by evolutionary biologists' (Harmon, email in March 2001). Evolution is undirected, it 'does not, cannot, aim to produce anything'. Evolutionary 'fitness' has nothing to do with hierarchies; biologists do not and cannot claim that any species is more 'primitive' or more worth than another. 'A biological organism is "fit" simply if it fits into its ecological community and functions therein. If conditions change radically, and it no longer fits into the community, it will probably go extinct (note that there is no hint of "should" or predestination).’ Harmon's conclusion is:

Now the crux of the question as [the attacker] applies it in [his/her] quote above, is: what does it mean to say that "primitive" languages are "unable to adapt to the modern world"? We know that it DOES NOT mean that they couldn't adapt linguistically; it is the consensus among linguists, is it not, that any language has the internal resources to cope with extralinguistic change and innovation, of whatever scope, IF there were no (extrinsic, non-linguistic) sociopolitical pressures on it. That condition is perfect "fitness" in the strict Darwinian sense. [The attacker], like so many others, is not distinguishing between this un-teleological,
evolutionary condition and the radically different, non-evolutionary, volitional processes of socio-
political change that are the real causes rendering languages "unable to adapt to the modern
world". A giveaway: note the tag phrase "deserve their fate": from fitness we have segued to a
declaration of (1) morality, as in just desserts, and (2) fate, as in predestination. An
impermissible leap, if the two distinct senses are left undistinguished.

These thoughts are a lead-in to my second argument, creativity. In my view, evolutionary
biologists’ arguments are extremely useful when debating the 'fitness' of the world's small
languages as languages of teaching and learning, or languages of administration. In addition to
clarifying the major argument about the need to maintain biodiversity and thus indirectly the
need to maintain linguistic diversity, they also give us support for the creativity argument. What
in the discipline of biology is discussed in terms of 'fitness', can be discussed in terms of human
creativity and adaptability and their relationship to language (Table 17).

Table 17. Definitions of fitness

- Applying evolutionary biologists' definitions of fitness
- An organism is fit if it is able to fit into its ecological community, function therein, and has the
  internal resources to cope with change;
- A language is fit if it has the internal resources to cope with linguistic change and innovation;
- A (language) community is fit if it has the creativity and adaptability to cope with change and
  innovation.

Homogenisation harms 'fitness' while diversity is a prerequisite for it and enhances it.

7. The creativity and multilingualism argument

7.1. Knowledge and ideas - the main commodities produced in an
information society

In industrial societies, the main items produced were commodities and, in a later phase,
services. In industrial societies the ones who did well were those who controlled access to raw
materials and owned the other prerequisites and means of production. When we move ahead to
an information society proper, the main 'commodities' produced are knowledge and ideas.
These are mainly transmitted through language(s) (and visual images). In this kind of
information society, or "knowledge society" as it has also been called, those with access to
diverse knowledges, diverse information and ideas, will do well, the creativity argument claims.

A certain degree of uniformity might have promoted some aspects of industrialisation, but in
postindustrial information societies uniformity will be a definite handicap. But it is this uniformity
that is behind the success in selling big branded names, like Coca-Cola or McDonald
hamburgers. Through branding, what is sold is an image rather than a product. "When the
White House decided it was time to address the rising tides of anti-Americanism around the
world … it hired one of Madison Avenue's top brand managers … Charlotte Beer", Naomi Klein

As Colin Powell put it, 'There is nothing wrong with getting somebody, who knows how to sell
something. We are selling a product. We need someone who can rebrand American foreign
policy, rebrand diplomacy.' (ibid.). "In the corporate world, once a "brand identity" is settled
upon, it is enforced with military precision'. Despite some local adaptation, 'Its core features
remain unchanged. … branding is about rigorously controlled one-way messages, sent out in
their glossiest form, then sealed off from those who would turn corporate monologue into social
dialogue’, Klein writes.

This branding type of homogenisation is at the core of corporate (and analogous) control in
globalisation - and it is not only the enemy of messy diversities and democracy but also the
worst enemy of creativity. It is an outmoded monolingual, monocultural and ultimately self-destructive strategy. In trying to create the security that is connected to always finding the same Holiday Inn or Wal-Mart, no risks are taken. Control takes over, creativity dies.

Thinking of what the most dangerous killer language is doing, we might ask ourselves: is English for Speakers of Other Languages a homogenising brand? Is it selling an image? Does it always or even often hold what it promises? When taught subtractively, it kills diversity? It hierarchises societies, i.e. works against democracy?.

If so, how can other languages and cultures be maintained and English learning become additive not subtractive, at the same time as ordinary people get access not only to English but, more importantly, the material resources (e.g. jobs) and ideological promises (e.g. about more democracy and human rights) that the English language, falsely, has come to stand for in some peoples’ minds, and in the false image-making. How can one make English teaching non-homogenising?

Back to creativity. Creativity precedes innovation, also in commodity production, and investment follows creativity. Multilingualism enhances creativity. High-level multilinguals as a group do better than corresponding monolinguals on tests measuring several aspects of ‘intelligence’, creativity, divergent thinking, cognitive flexibility, etc. This has been formulated by Stephen Wurm (who himself was fluent in tens of languages) as follows:

Bi- and multilinguals tend to be superior to monolinguals in having more flexible, more alert minds and a greater and quicker thinking capacity on the basis of a much greater volume of memory which they have for mastering two (or in the case of multilinguals more than two) different language systems with different vocabularies, grammars, sound structures and idiomatic expressions. Bi- and multilingualism from very early childhood onwards, to be maintained past the age of six years, is the most advantageous quality any person can possess (Wurm 2001: 15).

And in describing the “intellectual and emotional advantages of bi- or multilingualism and biculturalism” (ibid., 22), Wurm claims the following:

1) From a practical point of view, those concerned have access to a far greater volume of information and knowledge than monolinguals, possess a larger stock of knowledge (both linguistic and general) in their minds, grasp different semantic associations better, and, being used to switching languages, and thought patterns, have more flexible minds

2) They are less rigid in their attitudes and have a tendency to be more tolerant of the unknown than monolinguals (i.e. they are less hostile and suspicious); they are more inclined to regard manifestations of other cultures by individuals as acceptable and respectable, even though different from their own cultures.

3) Their thought patterns and world-view are better balanced due to their familiarity with different, often somewhat contradictory concepts. They have greater ability than monolinguals to learn concepts, ideas and things that are entirely new, to fit into novel situations without trauma, and to understand the different facets of a problem. (Wurm 2001: 22).
In an information society, those parts of the world will do well where multilingualism has been and is the norm, even among people with no or little formal education, and where there is a rich linguistic and cultural diversity, embodying diverse knowledges. The countries with mega-diversities have had more various micro-environments to observe, analyse, describe and discuss than countries with less diversity, and all of these knowledges have been encoded in their many languages. They have in this sense access to more varied knowledges, ideas, and cosmovisions than countries with few languages and cultures. Getting return on investment for supporting multilingualism presupposes that the multilinguals in these countries get access to exchanging and refining these knowledges - which they may, in a thoroughly wired satellite- and chip-driven global society. This presupposes in most cases linguistically additive education, initially (minimally for the first 6-8 years) through the medium of the mother tongue, even for numerically small groups. Thus linguistic human rights in education build on and produce not only local linguistic and cultural capital but knowledge capital that is exchangeable to other types of capital. In this sense, Europe, with only 3% of the world's oral languages, is poor, whereas, for instance, Africa is rich - provided that the linguistic and cultural diversity and biodiversity are maintained, rather than destroyed (see, e.g. Adegbija 2001, Afolayan 1978, 1984, Bamgbose 1991).

In order to adapt to the massive changes in today's globalisation, people need adaptability, fitness, that requires creativity. I summarize my own views on the relationship between linguistic and cultural diversity, biodiversity, and creativity, using Colin Baker's (2001) summary of Chapter 2, from Baker's review of my latest book:

"Ecological diversity is essential for long-term planetary survival. All living organisms, plants, animals, bacteria and humans survive and prosper through a network of complex and delicate relationships. Damaging one of the elements in the ecosystem will result in unforeseen consequences for the whole of the system. Evolution has been aided by genetic diversity, with species genetically adapting in order to survive in different environments. Diversity contains the potential for adaptation. Uniformity can endanger a species by providing inflexibility and unadaptability. Linguistic diversity and biological diversity are ... inseparable. The range of cross fertilisation becomes less as languages and cultures die and the testimony of human intellectual achievement is lessened.

In the language of ecology, the strongest ecosystems are those that are the most diverse. That is, diversity is directly related to stability; variety is important for long-term survival. Our success on this planet has been due to an ability to adapt to different kinds of environment over thousands of years (atmospheric as well as cultural). Such ability is born out of diversity. Thus language and cultural diversity maximises chances of human success and adaptability" (from Colin Baker's review of Skutnabb-Kangas 2000, Baker 2001: 281).

If we during the next 100 years murder 50-90% of the linguistic (and thereby mostly also the cultural) diversity which is our treasury of historically developed knowledge, and includes knowledge about how to maintain and use sustainably some of the most vulnerable and most biologically diverse environments in the world, we are also seriously undermining our chances of life on earth.

Killing linguistic diversity is then, just as the killing of biodiversity, dangerous reductionism. Monocultures are vulnerable, in agriculture, horticulture, animal husbandry, as we see in increasingly more dramatic ways, when animals, bacteria and crops which are more and more resistant (to antibiotics, to Roundups, etc), are starting to spread - and we have just seen the tip of the iceberg. With genetic manipulations the problems are mounting rapidly.
In terms of the new ways of coping that we are going to need, the potential for the new lateral thinking that might save us from ourselves in time, lies in having as many and as diverse languages and cultures as possible. We do not know which ones have the right medicine. For maintaining all of them, multilingualism is necessary. Multilingualism should of course, then be one of the most important goals in education. But as we have seen, it is not.

7.2. Monolinguals are out - (good) jobs require multilingualism

How is all this relevant for teachers of English? Can we not predict that at least, or maybe even especially, those who know English will be in a secure position in the future, because of this language competence?

No. High proficiency in English is already something a lot of people have, and even more people will have in the future. Economist François Grin states that even if it still may pay off especially, those who know English will be in a secure position in the future, because of this one of the most important goals in education. But as we have seen, it is not.

Firstly, monolingual English speakers will lose out economically, and not only economically. As I have often said, we multilinguals may in a hundred years’ time show voluntarily English-multilinguals (those who could have learned other languages but chose not to) in pathological museums. It is tragic that there are Asian and African elites who fool themselves and consciously or subconsciously strive for belonging to this category of dinosaurs, and are even proud of it.

Secondly, bilinguals. In Grin's large-scale study in Switzerland (Grin, 1995a,b, 1996a; see also other references to Grin in the bibliography), an officially quadrilingual country, having 'perfect' English (10-15 percent of the interviewees, depending on the dimension) gives the highest salary level for both German and French speakers. But for some bilinguals, it is already more profitable to have languages other than English as their second languages. Already today, having 'only' good competence (level 2) in English pays off less well for both German and French speakers than having good competence in each other's languages, French for German speakers and German for French speakers.

Thirdly, multilinguals. Grin also argues that those with only good English plus their mother tongue will get fewer chances (and less Return On Investment, ROI) than high level MULTilinguals. This is especially true for those whose mother tongue is not one of the 'big' other-than-English ones. That means that English-German and E-French bilinguals will manage still for a while when E-Danish or E-Finnish or E-Romansch or English-Yoruba bilinguals would already be out. In the new century, high levels of multilingualism will be a prerequisite for many high-level and/or high-salary jobs, and also for many of the interesting jobs (see García, 1995; García & Otheguy, 1994; Lang, 1993, Rosen et al., 2000), regardless of status and cash.

Prognoses from several countries predict that English proficiency, even very high levels, is becoming more and more common (e.g. Graddol, 1997). In fairly few years' time, when Europe, USA and Canada are lesser and lesser economic players globally, as seems likely, even native-like English takes people nowhere - there will be too many people who possess that qualification. High competence in English will be like literacy skills today and computer skills tomorrow (see Rassool 1999; see also Rassool 1998), something that employers see as a self-evident, necessary basic prerequisite, but not sufficient. Other competencies, including competencies in other languages, are needed.

Supply and demand theories predict that when many people possess what earlier might have been a scarce commodity, the price goes down. When a relatively high proportion of a country's
or region's or the world's population have 'perfect' English skills, the value of these skills as a financial incentive decreases substantially.

The Financial Times, 3rd Dec. 2001 reports on a survey undertaken for the Community of European Management Schools, an alliance of academia and multinational corporations. The survey concludes that a company's inability to speak a client's language can lead to failure to win business because it indicates lack of effort. Nuffield Languages Enquiry 2000 (www.nuffield.org) concludes: 'English is not enough. We are fortunate to speak a global language but, in a smart and competitive world, exclusive reliance on English leaves the UK vulnerable and dependent on the linguistic competence and the goodwill of others ... Young people from the UK are at a growing disadvantage in the recruitment market ... The UK needs competence in many languages - not just French - but the education system is not geared to achieve this ... The government has no coherent approach to languages' (from the Executive Summary Languages: the next generation). The British newspaper The Independent of 31 May 2001 reported that graduates with foreign language skills earn more than those who only know English.

Multilingualism is the future because it enhances creativity and supports diversity.

Two additional complexities need to be pointed out, though (and see Graddol, 1997, for some others). Since additional language learning only gives an economic bonus provided there is a relative scarcity of competence in that language, and the economic incentives for individuals would decrease with higher supply, it might become a necessity for elites to regulate the required competence in English so that the elites still remain the ones who have the required competence. Literacies have certainly been and are still being used in this way (see Naz Rassool's excellent analysis of this, 1999). This means that, for instance, English could be used to legitimate the unequal access to power and resources in a multidimensional way: elite gatekeepers may be demanding competence in English at levels or in varieties or of discourses which are always just out of reach of ordinary people, while offering access at lower levels or in varieties/discourses that do not pose threats to elites. This seems to be one of the common scenarios in Africa, for instance, but a similar hierarchisation seems to be at work worldwide.

Professor Tariq Rahman writes that "English-medium schools [in Pakistan] tend to produce snobs completely alienated from their culture and languages." Instead, he suggest that ALL English-medium schools should be abolished, and "English should be taught as a language to all children so that it is no longer the sole possession of the elite." Rahman, who is himself "a product of the English-medium school" believes, however, "that we are mentally colonized and alienated from our cultures if all we know is in English. At the moment we have English-medium schools for the elite of wealth and power (military mostly): Urdu-medium schools for the common people; and madrassas for very poor children. In short, English is a device which restricts the entry of the poor and the less powerless into the ranks of the elite. My idea is to encourage not only Urdu but also Sindhi, Pashto, Punjabi and Balochi at least so that people become additive multilinguals and get some jobs in their own languages. Indeed, English need not be the language of elitist jobs as it is at the moment" (from an email 13 February, quoted with permission; see also Rahman 1996, 1999, 2000, 2002).

One of the important questions is: how can languages and cultures be maintained and English learning become additive not subtractive, at the same time as ordinary people get access not only to English but, more importantly, the material resources (e.g. jobs) and ideological promises (e.g. about more democracy and human rights) that the English language, falsely, has come to stand for in some peoples’ minds, and in the false image-making.
The second complexity has to do with the fact that in a market-driven economy it is only relatively large languages in terms of numbers which can become so important on the labour market that the specific knowledge in these languages will become a purely commercially sought-after quality, as Annamalai has pointed out (personal communication). The smaller languages, for instance those with fewer than a million or maybe half a million speakers, would need to use the creativity argument (which is independent of which languages you are multilingual in, big or small) rather than hoping that products in their language would become commercially attractive. They are the ones who need the human rights protection most in the moment, until the world realises where its treasures lie, namely in the diversity which presupposes the existence of these small languages.

7.3. Can we afford to support all the languages

7.3.1. What should travel - commodities or ideas?

One of the main arguments one often hears when claiming that diversity should be maintained is: yes, of course, but it is completely unrealistic and romantic; it costs too much. Even if we had the money, it is not cost-effective; the ROI (Return On Investment) is too low. The first and most important cost argument is harsh cash: we cannot afford to develop, reduce to writing, develop materials, train teachers, bureaucrats, researchers, etc for all the languages of the world and use them for official purposes - it is completely unrealistic. The figure of some 40 percent of the administrative budget of the European Union going just to translation and interpretation, with only 11 languages involved, is often mentioned as an example. Likewise, the simple space problem, having interpreter booths for interpreters between all the official languages, was often mentioned (and physically demonstrated) to us in South Africa, with 11 official languages. When the EU had 9 official languages (until 1995), there were 72 possible combinations if one translated from each of the languages to every other language (9x8). The present 11 languages, with 15 member states, give 110 pairs (11x10), and 21 likely member states would give 420 directions of interpretation (21x20). With ex-Yugoslavia and ex-USSR as members (with just some of their present official languages), would for 25 languages, still a very small number, give 600 (25x24) directions of interpretation (Fishman, 1994: 51-53; Phillipson, in press) (see Table 18).

Table 18. Number of directions of interpretation in the European Union with X number of languages

<table>
<thead>
<tr>
<th>Number of official languages</th>
<th>Interpretation in terms of combinations</th>
<th>Interpretation directions</th>
</tr>
</thead>
<tbody>
<tr>
<td>9 (until 1995)</td>
<td>9x8</td>
<td>72</td>
</tr>
<tr>
<td>11 (in 2002, with 15 member states)</td>
<td>11x10</td>
<td>110</td>
</tr>
<tr>
<td>21 (after enlargement?)</td>
<td>21x20</td>
<td>420</td>
</tr>
<tr>
<td>25?</td>
<td>25x24</td>
<td>500</td>
</tr>
</tbody>
</table>

This type of argument obviously makes language rights activists seem like stupid, unrealistic romantics. It is not cost-effective, and, knowing the limitations of interpretation and translation, even at the highest levels (see Piron, 1994, 1996; see also Phillipson’s review of the former,
1997), it is not efficient; we do not get out enough of our investment, so the argument goes.

There are, of course, good alternatives, e.g. including Esperanto as a relay language (see the Esperanto bibliography in my 2000a). But in general, there has been very little serious work on what a functional, multilingual, ecological, democratic language policy for Europe (see Vanting Christiansen 2002) could look like. Vanting Christiansen is asking questions about the likely trends, summarizing the possibilities through playing with the letters EU: do we want a European, English Elite, Ethnic or Esperanto Union, she asks. Phillipson, in press, presents overviews, discussions and suggestions.

The first counterargument is that translation and interpretation at ALL the European Union institutions costs only 0.8% of the total EU budget whereas support to agriculture - which is devastating for the rest of the world, especially African and Asian countries - takes almost half of the total EU budget.

For the second economic counterargument when discussing the costs involved in the maintenance of linguistic diversity, it is important to differentiate between what I call 'physical' and 'mental' aspects of costs, at two levels, in relation to communication(s) and in relation to power and control.

Here I will only have time to touch upon the communication part (for the power and control aspect, see my 2000a). When people ‘communicate’ with each other, concrete objects can be moved: people can travel themselves, or exchange commodities, things ('physical communication'). Alternatively, they can exchange ideas ('mental communication'). Table 19 tries to capture some of the elements.

**Table 19.** Communication (physical or mental) as exchange of commodities or ideas
### Table 19. Communication (physical or mental) as exchange of commodities or ideas

<table>
<thead>
<tr>
<th></th>
<th>Physical Communication: exchange of commodities (including physical mobility of people)</th>
<th>Mental Communication: exchange of ideas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean for communication to flow</td>
<td>Roads, waterways, subways, airports, bridges, tunnels, buses, trains, ports, etc.</td>
<td>Spoken and signed languages, visual and audio images, telephone cables, satellites, cables, etc.</td>
</tr>
<tr>
<td>Tools (vehicles) used</td>
<td>Self-reproducing: legs, house, skepticism, canoes, etc.</td>
<td>Self-reproducing: physical apparatus for hearing, seeing, speaking, signing, reading, paper &amp; pen, board &amp; chalk, typewriters, TVs, planners, computers, radios, music, instruments; clothes, food, movement, jewelry, etc.</td>
</tr>
<tr>
<td>Cost for material investment by individual</td>
<td>Relatively small for self-reproducing tools; large for anything above bicycle</td>
<td>Relatively small for most basic tools</td>
</tr>
<tr>
<td>Cost for material investment by society</td>
<td>Measured (see Means above), for both building and maintenance</td>
<td>Relatively large initially, less for maintenance (materials for language learning, training of teachers &amp; translators, interpretation equipment, etc.)</td>
</tr>
<tr>
<td>Cost for mental investment by individual</td>
<td>Relatively large (time &amp; effort)</td>
<td>Relatively large (time &amp; effort for language learning)</td>
</tr>
<tr>
<td>Cost for mental investment by society</td>
<td>Measured (research, planning, production, maintenance)</td>
<td>Relatively large (research, planning, interpretation &amp; translation)</td>
</tr>
<tr>
<td>Externalities</td>
<td>Measured; to a large extent irreversible</td>
<td>Negligible</td>
</tr>
<tr>
<td>Return On Investment (ROI)</td>
<td>Negative for the world, including environmental effects</td>
<td>Positive</td>
</tr>
</tbody>
</table>

A general conclusion is that while the costs for physical communications are enormous, the ROI (return on investment) low and negative (except for TNCs, transnational companies), the rationale for much of the movement of commodities non-existent, except for market capitalism, and the effects for equity and peace negative, the costs for mental communications are relatively much lower, the ROI much higher (also for some TNCs, like Microsoft or Nokia) and with few side-effects and the rationale a positive one for peace and democracy (on this, see, e.g. Sachs, ed., 1992; Galtung, 1996). My first plea to you is: please count the costs of communications through moving commodities, including people, and through exchanging ideas, and compare!

In order to translate some of this conclusion to the language of economics, I will link the discussion of cost to the concepts externalities and internalities.

#### 7.3.2. Externalities and internalities as factors in cost-effectiveness

In mainstream economics, externalities are the costs that are routinely counted in the price of a product, while externalities are costs which can be seen as possible side-effects, long-term effects (like environmental pollution which is not counted in the costs of a car). Externalities are today not only not counted as costs which the consumer should pay; they are often not mentioned or not even known. When people start demanding compensation from cigarette factories for their lung cancer, for instance, these costs which so far have been externalities, may soon become internalities and be counted in the price, making the cost of cigarettes higher.
If we apply these concepts to various aspects of communications, it seems clear that the externalities for physical communication are growing so rapidly in terms of the environmental costs that it will be necessary to support mental communications to a much larger extent. Chips and ideas weigh little and their travel causes little pollution, as compared to raw materials, oil, food, clothing, machines. In rational communication, ideas should travel globally, with the help of additive multilingualism and translation and interpretation, while most of the production of commodities and energy should be done locally, for local needs. It is total craziness that food on the average American table has traveled 2000 miles (Lehman & Krebs 1996: 122), or that people in Denmark buy Californian apples or New Zealand lamb or Kenyan cut flowers, or their pigs are fed Brazilian or Argentinean soy bean flour. And at least, if this still happens, we who benefit should pay the real price, meaning the externalities should be internalized, counted in the price.

But for rational communication to be effective, in terms of ROI, local and global mental communication and the free exchange of ideas must be optimal. Since people receive, reflect on, exchange and create ideas most optimally in languages they know, local languages and thus linguistic diversity are necessary for cost-effective communication. This might be the only way in which the disastrous economic theories about ‘comparative advantage’ (everybody should produce what they are good at - see Lehman & Krebs 1996 for a critique) do work - using local languages definitely is a comparative advantage. The cost involved in people not understanding the messages (also in education) and not being able to fully utilize their potential and creativity, are enormous, as, for instance, many African and Indian scholars have repeatedly pointed out (e.g. Pattanayak, 1986, 1988, 1991; Prah, 1995a, b). From a communications cost point of view, then, when externalities are internalized, languages are our most cost-effective communication tools.

We can go further and also apply the concepts to language maintenance and linguistic human rights (LHRs). In relation to linguistic majorities, (or dominant groups in general), externalities are today mostly left as externalities, i.e. not counted in the costs that majorities cause. More specifically, the costs for the protection of their LHRs, their chances to use their own languages everywhere, are often not even mentioned, let alone counted - and we others pay them. It could be said, maybe a bit provocatively, that many of the costs of translation and interpretation are not caused by minorities or indigenous peoples who in most cases are bilingual or multilingual. Especially interpretation costs are, at least in the West, caused by monolinguals, and these are often individuals from linguistic majority populations, for instance North Americans or Brits or Chinese or Russians. Likewise, mostly the costs for language learning, caused by the fact that people need common languages in order to be able to communicate, are not shared evenly. For instance, the teaching of English worldwide is paid for by everybody else but the native English speakers. Still it is their monolingualism that forces all of us others to learn their language while they do not learn our languages. We pay the costs while they benefit, not only by not needing to use time for learning other languages, or not needing to pay the costs for our learning but also in other significant ways. They get direct cash transfers - English teaching is a multibillion dollar business for Britain and the United States. They are in a better negotiating position, because they are able to use their mother tongue while we others have to use a foreign or second language (I am here using my fifth language in terms of order of learning). They can concentrate more on content and less on form when using the mother tongue. In research, they dominate "international" journals (look at the editorial boards of a few…) and conferences. And so on. They benefit, we pay. There are many novel methods teaching people to become fairly rapidly receptively competent in several languages (see e.g. Klein & Stegmann 2000), but it does not seem so far that many English-only speakers have shown much interest.

On the other hand, when counting what is cost-effective in relation to minorities (or other dominated groups/peoples), externalities are often counted as costs, i.e. internalised, and they
are certainly not shared. This is what enables some people to draw the conclusion that the granting of (linguistic) human rights to us (including the maintenance of the languages of minorities and indigenous peoples, and proper L2 learning where teachers are bilingual) is not cost-effective. On the other hand, the cost of not granting LHRs is also treated as an externality or not even mentioned. Wrong economics prevail over human rights and the future of the planet. The political decisions about this are in most cases not made in democratic ways (even if democracy were only defined as majority rule plus minority protection, e.g. Tomaševski, in press, 5; see other references to Tomaševski in the bibliography for brilliant and courageous analyses on human rights and education).

My second plea to you is: when discussing costs, please count in the externalities, and see what is most cost-effective when the externalities are shared.

But to sum up the conclusions from the biodiversity argument and the creativity and cost arguments, we can use the new paradigm of ecosystem health. The general conclusion here is that we cannot afford NOT to maintain and support linguistic diversity.

8. Negative developments: the ecosystem health

8.1. Unnecessary deaths and hardship - indications of ecosystem illness

Ecosystem health is an emerging discipline with the purpose to develop theories, methods and practical tools for assessing, monitoring and improving society's ability to sustain Earth's life support systems (see Rapport and Wilcox in the bibliography for the concept of ecosystem health). Traditional research and practice in the area of the environment-human nexus has mainly concentrated on the effects of air, water and soil pollution and other toxins on human health (ibid.). We can speak of an earlier concept of health where health was seen as absence of illness, as negative health. The WHO's (World Health Organisation) defined already in 1948 health as "a state of complete physical, mental and social well-being". This is in sociological terms positive health, not only not being ill but feeling positively good and healthy. To the positive health definition, the Canadian Association of Physicians for the Environment (2002) has recently added "ecological". Health is "a state of complete physical, mental, social and ecological well-being". They state that our health ultimately depends on the health of the ecosystem of which we humans are a part (ibid.).

Parallel concepts have been used about peace where negative peace is absence of war whereas positive peace includes really good relations. The Norwegian peace researcher Johan Galtung (1996) states that for negative peace, externalities have to be internalised, counted as costs for war. For positive peace, externalities have to not only be internalised but these internalities have to be shared, globally, so that everybody who benefits also participates in paying. Likewise, we might envisage that for even negative health of people and the rest of the ecosystem, externalities have to be internalised, counted as costs.

Unnecessary deaths are an ultimate indication of illness for humans. I will take one comparison as an example.

1. Think of those around 3,000 people who died in New York on the 11th of September 2001. Let's compare them with other equally unnecessary deaths.
2. Think of those over 2,500 people, mostly workers, who have died unnecessarily yearly since 1987 in the USA in accidents caused by toxins (according to the U.S. Chemical Health and Safety Investigation Board, quoted in Platt McGinn 2001).

3. Think of those minimally 11,000 civilians who have died of cancer in the USA as a result of the nuclear downfall produced in connection with the nuclear tests that the USA undertook in 1951-1963 (according to new studies from the US Department of Health and Human Services, reported in New Scientist, quoted in the Danish daily Information, 11 March 2002, p. 6).

4. Think of those 500,000 children who have died in Iraq, as a result of the UN sanctions.

5. Think of those thousands of civilians in Afghanistan who have died in US bombings since October 2001, and are still continuing to die.

6. Think of those over 12 million people who die each year because of unclean water and poor sanitation (The State of World Population 2001).

7. Think of those nearly 3 million people who die yearly of air pollution (ibid.).

8. Think of those 1 million people who die yearly of malaria and those 2 million who die of tuberculosis (http://www.who.int)

9. Think of those 'more than 10,000 children who are needlessly dying every day' (Guardian Weekly, March 21-27, 2002: 12)

10. and think of those hundreds of millions who die every year as a result of hunger, alcohol, cigarettes and drugs, obesity, car accidents...

The human acts that killed all these people, in the US as well as in Afghanistan and Iraq and globally, are ultimately based on the unequal power relationships in the world, on various unproductive reactions to poverty and unfairness. As long as we poison our physical environment with toxins and poison our socio-political and economic environment with unnecessary poverty for some and unethical over-consumption for others, coupled with unequal power relations, our ecosystem is far from reaching even negative health.

There are other equally devastating indicators of ecosystem illness. I shall only run through a few of them. Most of the data come from the World Health Organisation (http://www.who/). We have unnecessary communicable diseases that could be avoided by simple environmental interventions. They account for 20-25% of deaths worldwide today (Table 20):

**Table 20. Unnecessary communicable diseases that could be avoided by simple environmental interventions**

- 60% of diseases resulting from acute respiratory infections,
- 90% of diarrhoeal disease,
- 50% of chronic respiratory conditions, and
- 90% of malaria could be avoided.

Just to take malaria as an example, it is estimated to kill over 1 million people each year, including one child every 30 seconds; an estimated 30% of the child deaths could be avoided if children slept under bednets regularly treated with recommended insecticides (http://www.who.int).
Likewise, tuberculosis which is perfectly preventable, kills 2 million yearly. We have unnecessary hardship which is likewise a symptom of ecosystem illness (Table 21, Table 22):

**Table 21. Unnecessary hardship: symptom of ecosystem illness**

Of the 4.4 billion people in the underdeveloped countries (=countries that are consciously underdeveloped, by their own & Western elites),
- nearly 60% lack sanitation,
- nearly a third lack access to clean water,
- 25% lack adequate housing,
- 20% lack access to modern health services, and
- 20% of children do not attend school through grade 5.

**Table 22. Unnecessary hardship - lack of food**

- 800 million people are chronically malnourished,
- 2 billion people lack food security,
- 1985-1995 food production lagged behind population growth in 64 of 105 developing countries, with Africa faring the worst.

Unnecessary pollution continues even if we have the technology and the means to prevent it (719):

**Table 23. Unnecessary pollution continues - and it costs…**

- 90-95% of sewage and 70% of industrial wastes are dumped untreated into surface waters in underdeveloped countries where they pollute the water supply,
- Chemical run-off from fertilisers and pesticides and acid rain from air pollution require expensive and energy-intensive treatment to restore water quality in industrialised countries,
- Air pollution kills up to 24,000 people yearly in the UK and hospitalises tens of thousands more
- The current British population stands to lose about 16 million years of life due to air pollution, unless radical changes are made
- The health costs of UK road transport alone amount to more than £11 billion a year
- The health costs of air pollution from the UK aviation sector are estimated at more than £1.3 billion a year.

And half the world's population (of 6.1 billion) still exists on less than $2 a day (The State of World Population 2001, United Nations Population Fund, September 2001).

These costs in terms of unnecessarily lost lives, and in terms of all the military costs and domestic intelligence and control costs are being paid to uphold what is falsely called democracy and the free world, meaning for upholding the ethically unacceptable division of power in the world. They have been legitimated as some kind of necessary costs for fighting terrorism, even if they fight it in ways which can only increase causes for terrorism. They have not been counted in as costs of upholding poisoning systems. They have not been internalized but are even in the best case being treated as externalities, and often not even seen as connected to their purpose. Instead of being seen as unnecessary costs which are already ruining our planet, they are legitimated through a smoke screen of lies. If the lives of the fewer than 3,000 people killed on September 11th are so precious that billions of dollars can be used to prevent it from happening again, so should the lives of all the others be who continue to die and suffer unnecessarily. The war on terrorism should be directed towards preventing all those unnecessary deaths and the
unnecessary hardship and pollution and poverty. But instead what is called war on terrorism seems to have other goals and these goals are the topic of the last part of my talk today.

8.2. Farewell to good governance, states based on the rule of law, and human rights?

I said at the beginning of my talk that last year has seen more decisions being made that negatively affect the health of the whole ecosystem than any other year in the history of the planet. Now I come back to this claim. I give a short description of in what ways the last year has taken us closer to the catastrophe that we are facing.

The last decade has seen the negative unprecedented spread of and domination by what some people might believe is an economic theory, namely the neo-liberal ideology of the so called "free markets". These neo-liberal market-based economies have added to the hardships of billions of people. "Free markets" have nothing to do with economic theories and everything to do with an ideological mantra, repeated ad nauseam. These markets are of course all but free.

Just a couple of examples. As the director of the Third World Network, Martin Khor from Malaysia, says (in an interview from Porto Alegre in the Danish daily Information 4. February 2002), when the Western countries give one billion dollars per day in subsidies to their agriculture, how can one speak of competition on equal premises. Or how can Uganda, with 250,000 people working with sugar canes, compete, when the customs tariffs for sugar are 151% in the USA, 175% in Europe, and 278% in Japan, whereas Uganda can place only a customs tariff of 25% on commodities imported from other countries, and the Bretton Woods institutions (The World Bank, the International Monetary Fund) would like the figure to be still lower. Is this a "free" market?. But there were some positive developments, at least on paper and to some extent also in practice.

There were other mantras which were repeated as guidelines for international relations. Ignacio Ramonet, the editor of Le Monde Diplomatique, sees three important mantras, being constantly repeated during that period, namely "the promotion of democratic government, the insistence on the idea of the state based on law, and the glorification of human rights". This "modern trinity", he writes, "was an imperative in domestic and foreign policy, repeatedly invoked by commentators" (Ramonet 2002: 1). Despite some ambiguities, "it seemed likely that the trinity would be supported by ordinary people, who would see it as an advance of human rights and law against barbarism" (ibid.).

"Suddenly, in the name of a supposed 'just war' against terrorism, all this has been forgotten", Ramonet claims (ibid.). "Values that only yesterday were regarded as fundamental have disappeared from the political landscape, and democratic countries took steps backwards in human rights and international law" (ibid.). I use the United States as an example, but similar developments on a serious but less drastic scale are happening elsewhere.

The USA is abandoning the rule of law in several ways, domestically and internationally. Firstly, the USA has not hesitated in openly making alliances with extremely undemocratic military and other dictator regimes which until recently were seriously criticized, regimes which routinely violate basic human rights of their citizens and are paragons of undemocratic governance and lack of rule of law.

Secondly, traditionally, good governance and democracy meant separating the three powers, the legislative, judicial and executive branches of government. The laws are to be passed by democratically elected parliaments like the US Congress; the courts are to be independent and
follow laws enacted by Congress, with fair and open trials, the government has the executionary power, and all are accountable to the people.

The system of emergency justice, created through the new anti-terrorism law, the military tribunals, granting new powers to the CIA and the FBI, all are marginalizing the elected Congress and the courts and have created parallel systems. This has meant "eliminating the Supreme Court's function as final arbiter and relegating Congress to impotence" (Golub 2002, 6). President Bush, called the American Caesar" by Philip Golub, is, by substantially enlarging his executive powers, "questioning a cornerstone of US democracy, the separation of powers" (ibid.). William Safire, a right-wing editorialist in New York Times, thinks that this amounts to "a seizure of dictatorial power" (2001).

George Monbiot states that "the war on terrorism is threatening the very freedoms that the US and Britain claim to be defending" (2002, 11) and calls these countries the Taliban of the West. The UK, Germany, Italy, Spain, France and Denmark have all introduced repressive legislation, but the USA has gone further than any of the others. CIA has the powers to assassinate foreign political leaders in secret operations; some of FBI's high officials have presented suggestions that amount to acceptance of the use of torture; members of al-Qaida have been killed even when they had surrendered, ignoring the Geneva Convention; the first draft of the American service-members’ protection act, approved by the Senate, enables the US even to invade a country to recover any US citizen likely to be brought before a future International Criminal Court (Ramone2002: 1); in the US, children and young people are brought to court because they have used their right to free speech, for instance writing their own logos on their T-shirts (e.g. the 15-year old Katie Sierra in Charleston, the 19-year old A.J. Brown in North Carolina, or the 22-year old Neil Godfrey from Philadelphia, all reported in Monbiot 2002, 11).

The US has also ratified fewer human rights conventions than most states in the world. The US, posing as The Defender of Human Rights globally, occupies, together with 4 other countries, a shared 161st-164th position of 193, in terms of the number of its own ratifications of Universal Human Rights Instruments - hardly a morally convincing record (still down from May 1998 when it held a 156th - 161st position). Likewise, having only ratified 3 (21.4%) of the 14 American Regional Instruments, it occupies, together with 2 other countries, a shared 22nd - 24th place out of 35. The US does not recognise the authority of international law over US law, something that can be exemplified by the fact that "American representatives on the United Nations Security Council vetoed a resolution calling on all governments to observe international law" as Noam Chomsky notes (1991: 16, as quoted in Pilger 1998: 27). Another example: the United States was the only state voting against the Declaration on the Right to Development, adopted by the UN General Assembly in 1986 (General Assembly resolution 41/128 of 4 December 1986) . The Declaration "provides in its Article 8(1) that States shall undertake, at the national level, all necessary measures for the realization of the right to development and shall ensure inter alia, equality of opportunity for all in their access to basic resources, education ... employment and the fair distribution of income" (Eide 1995, 39; emphasis added). It is also interesting to see where the so called "rogue states" are placed (Iran between 141-145, Iraq 104-111, Libya 53-57 and North Korea 173-175). All others except North Korea show a better record than the USA.

And even those which the US has ratified, like the four Geneva Conventions about combatants, prisoners and civilians in time of war , are being violated by the USA, as stated in a critical article by the Swiss foreign minister, Joseph Deiss, in his April 18th 2002 article "Human rights and prisoners of war. The Geneva conventions must be applied fully".

As a prerequisite to asking other states to play a fair game in the international arena, states ought to follow the commonly agreed rules, rather than being rules onto themselves. We need
to assess all states with the same yardstick - everything else is pure hypocritical power politics and against basic democracy.

As a summary, many of the civil liberties that we have fought for since the American Declaration of Independence and the French Revolution, have been suspended during the last half year, since September 11th. This includes many of the central human rights, among them linguistic human rights.

It seems that the USA wants to maintain absolute power, through its indisputable military might, with the goal of maintaining the disparities in material resources between itself and, especially, the underdeveloped countries.

This continues the foreign policy of George Kennan, US Cold War planner. He wrote in 1948, in the aftermath of the passing of the first parts of United Nations Bill of Rights:

We have 50 per cent of the world's wealth, but only 6.3 per cent of its population. In this situation, our real job in the coming period is to devise a pattern of relationships which permit us to maintain this position of disparity. To do so, we have to dispense with all sentimentality ... we should cease thinking about human rights, the raising of living standards, and democratisation' (quoted in Pilger 1998: 59).

There are clear parallels between the covert and overt agendas after the second World War and the time after September 11th. Some of the first economic instruments for maintaining the disparity between the US and the rest of the world and for developing today's modern globalisation in order to reach this goal were put in place already at the Bretton Woods hotel in July 1944 when the United Nations Monetary and Financial Conference was held. By the end of the Bretton Woods meeting, the World Bank and the International Monetary Fund (IMF), thereafter called 'the Bretton Woods instruments', had been founded, and the groundwork had also been laid for what later became first GATT and then the WTO (World Trade Organisation). At this meeting the overt agenda was to create institutions that would secure peace and prosperity globally.

If we now look at the US overt agenda of claiming to be fighting terrorism and defending democracy, the rule of law, and human rights, we can see the same US egoism, wanting to grab much more than their fair share, wanting to go it alone when it suits what it thinks is its interests. Some examples of the most worrying recent decisions have been listed in Table 24.

One important issue is to do with USA’s withdrawal from and opposition to the Kyoto protocol on climate change. The United States is already the world's leading producer of greenhouse gasses. With less than 5% of the world's population, it produces 25% of the emission of greenhouse gasses. The Bush administration proposes to increase US emissions by at least an additional 12% in the next ten years. This will leave the US producing at least 35 percent more greenhouse gasses in 2010 than would be permitted under the Kyoto protocol (Statement by Worldwatch President, Chris Flavin on the Bush Administration's alternative to the Kyoto protocol, February 14, 2002).

An equally decisive issue is about genetically modified organisms, GMOs, where the US has not only maintained their opposition to the biosecurity protocol, which aims to regulate trade in GMOs, but vigorously attacked it at the Nairobi conference in October 2001 [even if the USA has] no business taking part in negotiations on its implementation” (Kempf 2002: 29) [since the USA has not signed it].
The USA also ‘reaffirmed its outright hostility to the nuclear test ban treaty’ (ibid.). The American planned military spending for 2002, $344 billion (up 10% on the 1993-2000 average), is higher than that of China, Russia, France, Germany and Britain put together (Kempf 2002, 29).

In December 2001 the USA rejected the biological weapons convention (ibid.), and withdrew unilaterally from the 1972 Anti-Ballistic Missile Treaty (Krauthammer 2001: 22).

**Table 24. The United States opposes or has withdrawn from all of the following**

- the Kyoto protocol on climate change,
- the biosecurity protocol, which aims to regulate trade in GMOs,
- the nuclear test ban treaty,
- the biological weapons convention, and
- the 1972 Anti-Ballistic Missile Treaty.

To sum up the USA position today, in the eyes of a contemporary analyst, Hervé Kempf (2002), the fact that the USA has stepped up its military spending while rejecting multilateral agreements is no mere coincidence. There is a structural link between the two. This is because, in the US administration’s view, the American way of life, which is based on a very high level of consumption, is not something that should be called into question.

We can compare this with one of the more covert agendas of the 1944 Bretton Woods conference. It was to make everybody embrace the Unites States’ ‘elementary economic axiom ... that prosperity has no fixed limits’, as expressed by the president of the conference, the U.S. Secretary of the Treasury, Henry Morgenthau, in his opening speech (quoted in Korten 1996: 21).

The comparison between Morgenthau 1944 and Kempf today (Table 25; emphases added) sums up the links between 1944 and 2002 - they are about unilateral domination.

**Table 25. Link 1944 - 2002: USA unilateral domination**

| Breton Woods 1944, UN Monetary and Financial Conference. Goal: to make everybody embrace the Unites States’ ‘elementary economic axiom ... that prosperity has no fixed limits’, as expressed by the president of the conference, the U.S. Secretary of the Treasury, Henry Morgenthau, in his opening speech | Hervé Kempf (2002): the fact that the USA ‘has stepped up its military spending while rejecting multilateral agreements is no mere coincidence. There is a structural link between the two. This is because, in the US administration’s view, the American way of life, which is based on a very high level of consumption, is not something that should be called into question.’ |

In another comparison, I give first the full quote from 1944 about the United States’ “need to dominate economically and militarily to ensure raw materials”.

The U.S. Council for Foreign Relations, a body with corporate and foreign policy leaders, established in 1944 their vision of a peaceful world, with ‘a global economy, dominated by U.S. corporate interests’, and with a ‘grand area’ (minimally ‘the Western Hemisphere, the Far East and the British Empire’) that the U.S. would need to dominate economically and militarily to ensure [raw] materials for its industries’ because ‘the U.S. national interest required free access to the markets and raw materials’ of this area’ (Korten 1996: 21).
Then I compare this with how Condoleezza Rice, President G.W. Bush's foreign affairs advisor, legitimates the same U.S. domination today (Table 26; emphases added).

**Table 26. Global domination of USA corporate, national interests is legitimate... they are universal!!**

| The U.S. Council for Foreign Relations, 1944: 'a global economy, dominated by U.S. corporate interests' | Condoleezza Rice, President G.W. Bush’s foreign affairs advisor, in *Campaign 2000*. Promoting the national interest: |
| …the USA ‘would need to dominate economically and militarily’ because ‘the U.S. national interest required free access to the markets and raw materials of this area’ (Eshkenazi 1996: 21). | 'The rest of the world is best served by the USA pursuing its own interests because American values are universal'. |

What in 1944 was admitted to be US corporate and national interests, are now sold as universal interests. We have a direct link from Kennan 1948 to the US response after 11th September 2002.

Pierre Bourdieu describes this ideological universalisation of particular models, using the glorification by France of the French revolution as an example. France saw the French society as "the presumed incarnation of the Rights of Man" Bourdieu (2001, 96-97, translation Robert Phillipson) and "the inheritance of the French Revolution, was seen, particularly in the Marxist tradition, as the model for all possible revolutions (ibid.) Likewise, Bourdieu (ibid.) describes today's globalisation as

... a pseudo-concept that is both descriptive and prescriptive, which has replaced 'modernisation', that was long used in the social sciences in the USA as a euphemistic way of imposing a naively ethnocentric evolutionary model by means of which different societies were classified according to their distance from the economically most advanced society, i.e. American society. [...] The word (and the model it expresses) incarnates the most accomplished form of the imperialism of the universal, which consists of one society universalising its own particularity covertly as a universal model.

It is this universalising of the specifically American, meaning USA, model that the whole era after the second "World" War has been about. And that model is disastrous to the planet.

Now how do education in general and English teaching in particular fit into this? If subtractive English teaching continues, at the same time as the results of it are glorified, it will become progressively easier to sell North American and European or more generally western ideologies, in fact outright lies, about the fairness of the present world system of disparities. When mother tongue medium teaching does not exist for indigenous peoples, minorities, and other dominated linguistic groups, the knowledge needed for independent analysis of the world is much harder to get. When transnational corporations, together with the Bretton Woods instruments, dominate not only the form but also the content of education, through textbook production and footing other bills too (see, e.g., Barlow & Robertson 1996 for Canada and Monbiot 2000 for Britain; see also Spring 1998 for a general introduction into the relationships between education and the global economy), it becomes progressively more difficult to analyse the rhetoric of the “free” world. When fewer and fewer alternatives exist, it will be easier to construct the power elites of the world as the benefactors whose only wish is to democratisate the world and defend
everybody's human rights. It is easier to make people accept as universal the ideologies about the necessity of "free" markets and the benefits of globalisation, at the same time as the prerequisites for life on the planet are diminishing and the ecosystem health is deteriorating because of the decisions made by the power elites. If you, my dear audience, feel as dismayed as I do about the picture that I have painted about how US and global corporate/industrial/financial/military elites try to run the world (and I hope most of you do), does it show in your teaching and research? Do your students get access to all the many alternative voices and critical analyses?
9. Conclusions: no security, all risks - what is your responsibility?

In every person's and society's life there has to be a balance between security and risk-taking. If there is security only, and people take or experience no risks, the society stagnates and does not develop - there are few challenges. If there are risks only and no security, nothing people can trust, the speed of change is too quick and societies and people experience too much stress: they cannot cope, as other animals cannot cope with us humans in the initial Diane Ackerman quote.

Security in traditional ("pre-modern") societies used to come from kinship systems, the local community as a place, a well-known physical and social environment, from religious cosmologies, and from tradition (Giddens 1990). Much of this is gone with urbanisation, mobility and secularisation of societies. In 'modern' cultures, the sources of security are individualised personal relationships, abstract systems, future-oriented thought as a mode of connecting past and present. The US is a peculiar mixture of pre-modern and modern. Many of the threats and dangers in the old days emanated from nature: prevalence of infectious diseases, climatic unreliability, floods or other natural disasters (ibid.). With the destruction of biodiversity and with the growing economic gaps we are getting these back. Risk of falling from religious grace or of malicious magical influence was also a threat in the old days - today when the "free market" has become the new god, being exposed to radical critical thinkers - like the one you have here - is often seen as a risk of falling from religious grace or of malicious magical influence. Alternative thinking, words, are dangerous and contagious … in any language.

But in trying to regain some of the security from old times, in our modern individualistic ways, through over-consumption and acceptance of manufactured consent, we are also facing some of the dimensions of high consequence risks of modernity (ibid., 1990: 150). These dimensions are, according to the British sociologist, Anthony Giddens, the following:

1. growth of totalitarian power,
2. nuclear conflict or large-scale war,
3. ecological decay or disaster, and
4. collapse of economic growth mechanisms.

In this paper I wanted to concentrate mainly on two of these risks, namely growth of totalitarian power and, especially, ecological decay or disaster. I wanted to show especially what the role of the enforced homogenisation of cultures, languages and nature is in creating these risks. I claim that the several ways we use to compensate for the disappearance of security, do not give us more security, but add to these risks. The way the war on terrorism is being fought undermines global trust and breeds more threats and dangers and more terrorism. Today we have not only all the risks of modernity but we are also at the same time getting back the risks of pre-modern societies, for instance climatic unreliability, floods, hurricanes and other disasters. These were in pre-modern times natural disasters but today they are man-made disasters.

In order to adapt to the massive changes in today's globalisation, people need adaptability, fitness, that requires creativity. I summarize my own views on the relationship between linguistic and cultural diversity, biodiversity, and creativity, using Colin Baker's (2001) summary of Chapter 2, from Baker's review of my latest book:
"Ecological diversity is essential for long-term planetary survival. All living organisms, plants, animals, bacteria and humans survive and prosper through a network of complex and delicate relationships. Damaging one of the elements in the ecosystem will result in unforeseen consequences for the whole of the system. Evolution has been aided by genetic diversity, with species genetically adapting in order to survive in different environments. Diversity contains the potential for adaptation. Uniformity can endanger a species by providing inflexibility and unadaptability. Linguistic diversity and biological diversity are ... inseparable. The range of cross fertilisation becomes less as languages and cultures die and the testimony of human intellectual achievement is lessened.

In the language of ecology, the strongest ecosystems are those that are the most diverse. That is, diversity is directly related to stability; variety is important for long-term survival. Our success on this planet has been due to an ability to adapt to different kinds of environment over thousands of years (atmospheric as well as cultural). Such ability is born out of diversity. Thus language and cultural diversity maximises chances of human success and adaptability" (from Colin Baker's review of Skutnabb-Kangas 2000, Baker 2001: 281).

In the face of all that I have described, I must admit that at this point the only way that I can see of being truly "pro-American" is to criticise the American government for being anti-American, and many American people for supporting this anti-American stance. When Bush in his January 2002 State of the Union Address talked about human dignity, rule of law, free speech, and equal justice, at the same time as his government is working hard to prevent all of them, all over the world, not only does it sound a bit hollow. In fact he was betraying not only Americans and American values but normal honesty and decency. We need strategies for seeing through this rhetoric.

Finally, a few words about linguistic and cultural ecologies and our responsibility for ruining or not ruining them. The impact of the recent positive developments in counteracting linguistic genocide in education and the killing of linguistic diversity is yet to be seen. We might learn from the history of killing biodiversity. Jared Diamond examines in the chapter 'The Golden Age That Never Was’ in his 1992 book the evidence for people and cultures before us having completely ruined the prerequisites for their own life, beyond repair. They have destroyed their habitats and/or exterminated large numbers of species. This has happened in many places and it makes the 'supposed past Golden Age of environmentalism look increasingly mythical' (Diamond, 1992: 335). If we want to learn from it, and not make it happen on a global basis (this is our obvious risk today), we better heed his advice. Diamond claims the following:

'... small long-established, egalitarian societies tend to evolve conservationist practices, because they've had plenty of time to get to know their local environment and to perceive their own self-interest. Instead, damage is likely to occur when people suddenly colonize an unfamiliar environment (like the first Maoris and Eastern Islanders); or when people advance along a new frontier (like the first Indians to reach America), so that they can just move beyond the frontier when they've damaged the region behind; or when people acquire a new technology whose destructive power they haven't had time to appreciate (like modern New Guineans, now devastating pigeon populations with shotguns). Damage is also likely in centralized states that concentrate wealth in the hands of rulers who are out of touch with their environment' (Diamond 1992, 335-336).

I have both summarized Diamond's factors and added to them in Table 27, and drawn out today's situation where it seems to me that we have the perfect global prerequisites for ruining our planet beyond repair.
Similar factors have also been discussed by others (see articles in Maffi, ed., 2001). In terms of ruining our linguistic and cultural ecologies beyond repair, we know already that similar processes are at work. There are many similar analyses of destructive paradigms. Some researchers have also started the discussion trying to identify the languages-related devastating processes which are similar to the list of factors that Diamond has identified.

Summing up, then, learning new languages should be additive rather than subtractive. It should add to people’s linguistic repertoires; new languages, including lingua francas, should not be learned at the cost of the diverse mother tongues but in addition to them. In this sense, the Killer Languages, and English as the foremost among them, are serious threats towards the linguistic diversity of the world (see Phillipson 1992, 1998, Phillipson & Skutnabb-Kangas 1997, 1999). Linguistic human rights are more needed than ever. So far, human rights instruments and discussions about both them and about educational language rights have not even started addressing these big questions in a coherent way where all types of ecology would be discussed within an integrated political and economic framework. When speakers of small languages learn other, necessary, languages in addition to their native languages, they become multilingual, and the maintenance of LD, necessary for the planet, is supported. When dominant languages, like English, are learned subtractively, at the cost of the mother tongues, they become killer languages.

<table>
<thead>
<tr>
<th>Positive ecological practices tend to evolve</th>
<th>Damage tends to occur</th>
<th>Our perfect global prerequisites to ruin the planet beyond repair</th>
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</thead>
<tbody>
<tr>
<td>1. Small, long-established, egalitarian societies (authority is based on age, gender and knowledge; &quot;rulers&quot; participate in ordinary life and work of society)</td>
<td>1. Centralized states that concentrate wealth and power in the hands of rulers who are out of touch with their social environment. Authority is based on wealth, inheritance, military, financial and political power</td>
<td>1. Long-established small societies are breaking up. We have growing gaps and alienated elites</td>
</tr>
<tr>
<td>2. People have had plenty of time to get to perceive their own self-interest, planning is long-term, including ancestors and future generations</td>
<td>2. People acquire a new technology whose destructive power people haven't had time to appreciate</td>
<td>2. New technologies are more destructive than ever and results of biochemical and other experiments (like genetically modified crops) are taken into use before we know anything about the long-term effects on nature or people. Planning is guided by short-term greed of elites</td>
</tr>
<tr>
<td>3. People have had plenty of time to get to know their local environment. They feel ownership and responsibility, based on knowledge of the intricate biocultural relationships</td>
<td>3. People advance along a new frontier and colonize an unfamiliar environment; rulers are out of touch with their biological (and sociocultural) local environment. If an environment is ruined, they can move to another place</td>
<td>3. With urbanization and migration, people encounter new unknown environments where they do not feel ownership and responsibility (because of the short-time-span and their limited chances of influencing decisions); We do not have the new planets to move to when we have damaged this one...</td>
</tr>
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</table>
10. Hope?

But indigenous peoples and minorities have started the positive struggle, regardless of what happens in the academia. In all parts of the world they are trying to counteract the threat towards their languages. In many if not most cases, the initiatives and demands for linguistic human rights come from the people themselves, not governments or even (outsider) NGOs. All generations are involved, elders, parents, youth, even children. In Ian Martin's study in Nunavut, Canada,

A fourteen-year old high school student writes that she wants to pass on her language to her children, but feels that her own control of the language is not firmly anchored, and she doubts that she has much to pass on. In the same Iqaluit school, a student writes that he feels ashamed not to be able to understand his grandparents and other elders, and wonders why the school does nothing to help. (I. Martin 2000a, i).

I will end on two personal notes. I have worked for at least 35 years with Saami people. The Saami, so called Lapps in colonial language, are an indigenous people in the northern parts of Norway, Sweden, Finland and Russia. There are maximally 35,000 people who speak Saami, and there are ten Saami languages. All but one are on the seriously endangered list (see Wurm 2001). In November 2001 I was on a tour on the Finnish side of the Saami country.

The specific Saami music, yoik, was forbidden as pagan for several hundred years - now it is performed and taught again. When Norwegian or Finnish are taught subtractively to Saami children, the languages, the dresses, the music, disappear. I would not like to live in a world where they do not exist. Giving the paper that was based on this article, I played a short traditional Saami yoik, sung by my ‘goddaughter’, Petra Birehaš Magga. I also visited the Anár Saami (under 300 speakers) language nest (yes, based on the Maori model from the other side of the globe!). Kids between 9 months and school age are using Saami only with the two staff (one a young mother of the 9 month old, the first first language speaker of Anár Saami for two decades; for the other children it is a second language) and with elders who visit a lot. One old man promised me that he would speak Anár Saami only to his next grandchild and wondered why he had actually not done this with the earlier ones.

In Vuoto where the (North) Saami language, the largest of the ten Saami languages, has been almost eradicated (see Aikio 1998), I met 3 young girls, Karen-Anni Hetta, Elii-Marja Hetta and Inga Äärelä. (9, 11 and 11 years) who attended the whole long evening meeting we had about revitalization. After the meeting, they performed, at my request, two yoiks (but for me only, in the next-door classroom, door shut so nobody else could hear). Then they started asking me for details about what they could do to enjoy their cultural rights (the right to wear Saami clothes in school which some Finnish newcomer parents had objected to) and to get Saami-medium teaching. They wanted to know what linguistic and cultural human rights they had! There is hope.

My final example. Many young women have, just like some in my closest family, have said the last 20 years that they do not want to have children - the world is too awful a place. But who bears the responsibility for the state of the world? The decisions are in the end ours. When we decide how to bring up our children, at home and in schools, we also decide whether they will consume more than their fair share of the world's resources and accept an over-consuming McDonaldized western society, with its inevitable counterpart, with hunger, poverty, low life-expectancies and lack of formal education for most people in the rest of the world, and a ruined, polluted environment, with violence, terror and powerlessness for all of us ordinary people. We do have a decisive influence on whether our children become egoists who don't care about the
rest of the world. We can influence what kind of politics they are willing to accept, and whether they accept the blatant lies and lack of basic morality that most of our politicians habitually present to us.

We who produce or read papers like this room have much more responsibility than ordinary people in, for instance Nigeria or Nepal or India. In most areas we consume much more of the world’s resources than they do, and we destroy our planet much more than they do. We have a consumption gap. The world’s richest countries (20% of the world’s population) account for 86% of the total private consumption. The poorest 20% account for 1.3% of the world’s private consumption.

A child born today in an industrialised country will add more to consumption and pollution over her lifetime than 30 to 50 children born in developing countries. That is how much bigger your and my responsibility is.

Two strategies: One: start reducing that negative impact.

Another is to have a positive impact by spreading the messages and the better habits and ideologies, to our children and our students, and to start making real demands on the politicians. Otherwise your great grandchildren will not have a world to live in.

Today I have an even more urgent personal reason to continue the struggle, my grandson, Uki Erik, born in January 2002. His parents have, it seems, decided to trust in our power to change the world.

In the picture I showed of him, he is 14 hours old, peeping into the world, with just one eye half-open, as if checking whether it is a place that he dares to enter. What can I say to him? What can we say to all the children that are born now?

You decide. When your great grandchildren ask: ‘why did you not stop this craziness? You could have done it?’, the one answer we cannot give is: I DID NOT KNOW. Research into this area is only in its beginning, but it might prove to be research vital for our future. If we do not want to be part of the threat but part of the solution, how can we stop the Western unconcern and take responsibility? How should we change our research, our teaching, our participation in world affairs? How can we contribute to making teaching additive and critical; so that it can become an empowering factor in the lives of those who do not want to kill diversities and who are concerned about the ecosystem health.

Will you please help me ensure that Uki Erik can open the other eye too, trusting that it will be worth it? Will you please help me ensure that the Saami yoiks can continue to be heard so that the world is a more diverse, more creative place for him and for the Saami children to live in? The oral presentation was finished with Petra Birehaš Magga performing one of her own creations, a yoik about a butterfly. Remember, where there are many different butterflies, there are also often many different languages.
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Abstract

In industrial societies, the main items produced were commodities and, in a later phase, services. In industrial societies the ones who did well were those who controlled access to raw materials and owned the other prerequisites and means of production. When we move ahead to an information society proper, the main 'commodities' produced are knowledge and ideas. These are mainly transmitted through language(s) (and visual images). In this kind of information society, or "knowledge society" as it has also been called, those with access to diverse knowledges, diverse information and ideas, will do well, the creativity argument claims. A certain degree of uniformity might have promoted some aspects of industrialisation, but in postindustrial information societies uniformity will be a handicap.

Creativity precedes innovation, also in commodity production, and investment follows creativity. Multilingualism enhances creativity. High-level multilinguals as a group do better than corresponding monolinguals on tests measuring several aspects of 'intelligence', creativity, divergent thinking, cognitive flexibility, etc. In an information society, those parts of the world will do well where multilingualism has been and is the norm, even among people with no or little formal education, and where there is a rich linguistic and cultural diversity, embodying diverse knowledges. The countries with mega-diversities had more various micro-environments to observe, analyse, describe and discuss than countries with less diversity, and all of these knowledges have been encoded in their many languages. They have in this sense access to more varied knowledges, ideas, and cosmo-visions than countries with few languages and cultures. Getting return on investment for supporting multilingualism presupposes that the multilinguals in these countries get access to exchanging and refining these knowledges - which they may, in a thoroughly wired satellite- and chip-driven global society. This presupposes in most cases education through the medium of the mother tongue, even for numerically small groups. Thus linguistic human rights in education build on and produce not only local linguistic and cultural capital but knowledge capital that is exchangeable to other types of capital. In this sense, Europe, with only 3% of the world's oral languages, is poor, whereas Africa is rich - provided that the linguistic and cultural diversity and biodiversity are maintained, rather than destroyed.

In order to adapt to the massive changes in today's globalisation, people need adaptability, fitness, that requires creativity. Colin Baker summarizes in his review of Skutnabb-Kangas 200 the views on the relationship between linguistic and cultural diversity, biodiversity, and creativity:

"Ecological diversity is essential for long-term planetary survival. All living organisms, plants, animals, bacteria and humans survive and prosper through a network of complex and delicate relationships. Damaging one of the elements in the ecosystem will result in unforeseen consequences for the whole of the system. Evolution has been aided by genetic diversity, with species genetically adapting in order to survive in different environments. Diversity contains the potential for adaptation. Uniformity can endanger a species by providing inflexibility and unadaptability. Linguistic diversity and biological diversity are ... inseparable. The range of cross fertilisation becomes less as languages and cultures die and the testimony of human intellectual achievement is lessened.

In the language of ecology, the strongest ecosystems are those that are the most diverse. That is, diversity is directly related to stability; variety is important for long-term survival. Our success on this planet has been due to an ability to adapt to different kinds of environment over thousands of years (atmospheric as well as cultural). Such ability is born out of diversity. Thus

If we, during the next 100 years, murder 50-90% of the linguistic (and thereby mostly also the cultural) diversity which is our treasury of historically developed knowledge, and includes knowledge about how to maintain and use sustainably some of the most vulnerable and most biologically diverse environments in the world, we are also seriously undermining our chances of life on earth.

Killing linguistic diversity is then, just as the killing of biodiversity, dangerous reductionism. All monocultures are vulnerable, terms of language and culture reduction as well as in agriculture, horticulture and animal husbandry, as we see in increasingly more dramatic ways, when animals, bacteria and crops which are more and more resistant (to antibiotics, to Roundups, etc), are starting to spread - and we have just seen the tip of the iceberg. With genetic manipulations the problems are mounting rapidly.

In terms of the new ways of coping that we are going to need, the potential for the new lateral thinking that might save us from ourselves in time, lies in having as many and as diverse languages and cultures as possible. We do not know which ones have the right medicine. For maintaining all of them, multilingualism is necessary. Multilingualism, based on full command of the mother tongue(s) and adding on, should of course, then be one of the most important goals in education. But is it?

There are already today in Africa and Asia local people who know no African or Asian languages. There are grandparents who cannot communicate with their monolingual English-speaking grandchildren. If the future African and Asian elites have English as their only or main intellectual language, what chances do they have to understand the needs of their countrymen and women, most of whom do not speak English? If they know nothing of their continents' ancient and present cultures, how could they possibly enhance development?

Europe is both genetically and linguistically the poorest part of the world (3% of the world's languages, if we count in ex-Soviet Union and discount the languages of recent immigrants). Still, education of most "national" and almost all immigrant minorities participates in committing linguistic genocide (according to United Nations definitions of genocide), instead of supporting the languages that could enrich Europe. Australia and North America have killed off more indigenous languages during the last 200 years than any other parts of the world, and they continue this policy with immigrant minority languages in schools.

All official languages are potential threats to indigenous and minority languages, but English is the killer language over all others. Of course achieving high levels of competence in English is something that enhances one's chances on the labour market. The question is NOT whether or not children should learn English - of course they should. The question is how they can best do it. In most situations in the world using English as the medium of education for non-English speaking children is not a solution. It is a big problem. Carol Bloch from South Africa has started speaking of English not as the medium of instruction in Africa but English as the medium of destruction. Similar processes can be discussed with all big languages (Mandarine Chinese, Hindi, Spanish, English, Bengali, Portuguese, Arabic, Russian, Japanese, German, Korean, French, Javanese, Telugu, Vietnamese, just to take the 15 languages with the highest numbers of first language speakers, in order) and all those languages which are taught and spread subtractively (at the cost of people's first languages), instead of additively, adding to their repertoires. Using a foreign medium of instruction is today the most important pedagogical reason for illiteracy.
Educational linguistic human rights, including the right to mother tongue medium education, might be part of a solution, even when schools alone cannot save languages whereas they can kill a language, even in one generation, more or less on their own, as Joshua Fishman claims. But with the ongoing erosion, led by the USA, of the three 1990s mantras (democracy, rule of law, human rights) which accompanied the neo-liberal globalisation ideology of the "free" markets, there is not much hope.

The paper will discuss the present situation of the world's languages and the role that education (and researchers?) play in their destruction in this light. Some positive examples of the opposite will also be given.