

# Linguistic diversity

## What is it? And does it matter?<sup>1</sup>

**Philippe Van Parijs**

Université catholique de Louvain, Chaire Hoover d'éthique économique et sociale  
Harvard University, Department of Philosophy

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What is linguistic diversity? How can it be measured? Can the spreading of a lingua franca be expected to reduce it? And if so, does it matter?

In an attempt to answer these questions, this paper first distinguishes the three dimensions of diversity — richness, evenness and distance — and describes the tension that is bound to arise between linguistic diversity in various senses and the promotion of multilingualism. It next distinguishes between the two levels of linguistic diversity — local and territorial — and describes the structural tension that tends to develop between local and territorial linguistic diversity.

On this background, it argues that linguistic diversity, by itself, cannot plausibly be regarded as a good, all things considered, especially because of its negative impact on the prospects for economic solidarity; that the erosion of local linguistic diversity should therefore be witnessed with equanimity; but that territorial linguistic diversity will need preserving as the by-product of a concern for the equal dignity of the identities closely associated with native languages.

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<sup>1</sup> This paper constitutes a preliminary version of chapter 5 of a book in progress (Ph. Van Parijs, *Linguistic Justice for Europe and for the World*, Oxford University Press), referred to below as *LJ*. The arguments it offers rely on a broader framework developed in this book, in particular the "minimex" analysis of language dynamics, and the distinction between linguistic justice as fair cooperation, as equality of opportunity and as equal dignity. This framework is sketched in Van Parijs (2004). Earlier versions were presented at the seminar "Social Justice and Cultural Diversity" (Amartya Sen and Philippe Van Parijs, Harvard University, Spring Semester 2005), at the Conferences «Understanding Diversity : Mapping and Measuring» (European network « Sustainable development in a Diverse World », Milano, 26 January 2006) and "Challenges of Multilingual Societies" (CORE & ECARE, Brussels, 9-10 June 2006) and at the workshop on "Language and Politics" of the World Congress of Political Science (Fukuoka, 10 July 2006).

## 1. The three dimensions of diversity

Our intuitive notion of diversity contains three dimensions. These I shall label, borrowing from the discussion on biodiversity, richness, evenness and distance. Take a population A consisting of three communities, each of them speaking only one language, and another population B consisting of five communities, each of them also speaking only one language. The *richness* of B is then said to be greater than that of A, as the number of distinct *types* — whether species, races or, in this case, native languages —, is larger in B than in A. It may therefore be tempting to infer that population B is linguistically more diverse than population A. But this would be premature. Why?

Suppose that the three communities that make up population A are of about equal sizes, whereas in population B one of the five languages is the native language of 99% of the population? In the light of this additional information, we shall have no difficulty agreeing that population A is, after all, linguistically more diverse than the nearly homogeneous population B. Diversity, we conclude, cannot be only a matter of richness, i.e. of number of types, but also of *evenness*, i.e. of how equally the population is spread between those types, or of how little the members of the population are concentrated in one or few types. Just as richness will not do without evenness, evenness will not do without richness. Just imagine that population A is joined by one individual with a distinct native language. Surely diversity increases. Yet evenness unambiguously declines. Hence evenness cannot be all there is to diversity. Richness matters independently.<sup>2</sup>

How should these two dimensions be combined? Several indices of fragmentation (or fractionalization, or segmentation) have been proposed for this purpose. The most widely used among them is the Simpson index of fractionalisation:

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<sup>2</sup> It is here taken for granted that linguistic diversity relates to people's native linguistic competence. But richness and evenness could also be applied at the level of linguistic performance. This distinction does not make sense in the case of biodiversity: if you are born a chimpanzee, you will not behave and look like a mosquito, nor conversely. But natives of one language can end up speaking another most of the time. Diversity at the level of performance may therefore diverge significantly, typically downward, from diversity at the level of competence. The relevance of this distinction will be illustrated below (section 2).

$$F = 1 - \sum_i s_i^2,$$

where  $s_i$  is the share of type  $i$  in the population ( $n_i/N$ ). The negative term in this expression (the sum of the squares of the shares) is also known as the Herfindal index of industrial concentration when  $s_i$  is interpreted as the share of a firm in total sales on a specific market.<sup>3</sup> The Simpson index increases monotonically with both richness and evenness and it can be intuitively interpreted as the probability that any particular member of the population concerned meets someone belonging to a type different from hers in random encounters within the population.<sup>4</sup>

Richness may be enough to capture our intuitive notion of diversity *qua* variety or plurality. Richness and evenness together may be enough to capture our intuitive notion of diversity *qua* fragmentation. But they do not exhaust the whole of our intuitive notion of diversity. If island A houses three species of mosquitoes and island B, in the same proportions, one species of mosquitoes, one species of parrots and one of crocodiles, we shall have no difficulty agreeing that there is more diversity in B than in A. Making such a judgement presupposes some notion of distance. In the case of biodiversity, the extent to which the genetic equipments characteristic of two species differ from one another (genomic distance) or the number of nodes that separate them in the most plausible conjectural genealogical tree (taxonomic distance) have been used for this purpose (see e.g. Weitzman 1992). This third dimension of diversity can be added to richness and evenness, not just in the area of biodiversity, but whenever some sensible measure of distance can be devised.

Obviously, diversity may increase in terms of Simpson-style fragmentation while decreasing in terms of distance, or the other way around. In many relevant cases, however, the partial ordering produced by the intersection of the three dimensions just discussed (number of types, spread among types, distance

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<sup>3</sup> The Simpson index can be shown to correspond to a particular value (1) of a parameter in a more general index of diversity combining richness and evenness (Patil & Taillie 1982), with richness corresponding to another extreme value of that parameter (-1) and the Shannon-Weaver index of entropy corresponding to an intermediate value. For an instructive formal discussion of these indices see Ottaviano & Pinelli (2005).

<sup>4</sup> The probability for some member of type  $i$  to meet a non-member of  $i$ , assuming the probability of meeting any member of the population (including herself) is the same, is given by  $(N-n_i)/N = 1-s_i$ . The weighted average of this probability over all types  $i$  is given by  $\sum_i s_i \cdot (1-s_i) = 1 - \sum_i s_i^2$ , which is precisely the Simpson index.

between types) should be sufficient to enable us to say, without much hesitation, that diversity is increasing or decreasing in a particular population, and in many relevant cases that diversity is greater in one population than in another. On the other hand, if some sufficiently robust and relevant notion of distance is available, one might be tempted to side-step types altogether. Rather than trying to construct a compound out of the number of types, the distances between types and the spread of individuals among types, one might wish to go straight for the average distance between individuals. This is exactly what is proposed by Bossert, D'Ambrosio and La Ferrara (2006) with their generalized fractionalization index:

$$G = 1 - \left( \frac{\sum_{i,j} p_{ij}}{N^2} \right)$$

where  $p_{ij}$  is the degree of proximity (normalized so as to fall between 0 and 1) between individuals  $i$  and  $j$  and  $N$  the number of individuals in the population.

In the special case in which  $p_{ij}$  is posited to be 1 for two individuals belonging to different types, and 0 for two individuals belonging to the same type, this generalized index of dissimilarity coincides with the Simpson index of fractionalization presented above.<sup>5</sup> The latter can therefore be interpreted as relying on a very rough assessment of distance. But this need not make it less relevant than the generalized index in most contexts. Take race, for example, as defined by the colour of the skin. Degrees of darkness may matter for some purposes, but the most useful index of racial diversity is most likely to remain one defined in terms of that small set of discrete types in terms of which people perceive themselves and are perceived by others.<sup>6</sup>

As regards linguistic diversity, Simpson-style indices can be devised and applied easily enough as soon and as long as one can draw a sensible list of distinct languages (no continuum of dialects) and uniquely ascribe each individual to one and only one of them (no multilinguals). To capture distance, on the other hand, two types of indices have been proposed, parallel to taxonomic and genomic distance in the biological case. Thus, Laitin (2000) and Fearon (2003) use an index based on the number of branches two languages

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<sup>5</sup> See Bossert, D'Ambrosio and La Ferrara's (2006) illuminating axiomatic derivation of their generalized index.

<sup>6</sup> See Lee & Bean (2004) and Hochschild, Burch and Weaver (2005) for insightful empirical studies of the distinct effects of colour and race.

share in a hypothetical family tree of languages, while Pinelli (2005) uses an estimate of the time elapsed since the linguistic communities involved were separated. One problem with such indices is that they overlook proximity generated through lexical borrowing and other linguistic influences after separation. This could in principle be remedied by using measures of linguistic proximity. Thus, Desmet & al. (2005) use Dyen & al. (1992)'s index of lexical distance among a large number of Indo-European languages based on the proportion of words with a common origin in a small sample of basic words. The problem is that basic words are less likely to be borrowed than less frequent ones, and that use of the Dyen index therefore oddly entails that French is lexically closer to German than to English, despite the massive import of French words into English.

However, one may wonder whether making linguistic difference a matter of finely measured degree serves any purpose. Linguistic difference as a causal factor would seem to be essentially a matter of hindered oral communication through lack of mutual intelligibility, a threshold quickly reached even by comparatively closely related idioms. Nonetheless, Desmet & al. (2005) show that an index of linguistic diversity that takes linguistic distance into account is a better predictor of the degree of redistribution (as the share of social spending in GDP) than index of fractionalization. The underlying mechanism they suggest, however, is not a direct causal impact of linguistic distance. Linguistic similarity is rather taken as a proxy for how close and recent contact has been between the populations concerned.<sup>7</sup>

The discussion so far takes for granted that each human being can be assigned to one language, just as every organism can be assigned to one species. Human beings, however, are endowed with the capacity to become competent in several languages. This makes room for a distinct and often more relevant notion of linguistic distance. Take the case of a population consisting initially of two unilingual communities A and B, and suppose that half of B learns the language of A. This learning generates a new mixed type AB, and diversity,

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<sup>7</sup> Indices of diversity that incorporate distance also have the advantage of making results less dependent on the choice of considering two dialects (say, Napolitan and standard Italian) as two variants of the same language or as two distinct languages. Simpson-type indices can jump as a result of choosing, more or less arbitrarily, the second option, whereas distance-sensitive indices behave more smoothly.

as measured by the Simpson index, would unambiguously rise. Surely, it makes far more sense to assert that diversity has thereby been reduced: by being turned into ABs, some of the As have come linguistically much closer to the Bs, and have thereby reduced the average distance between the linguistic repertoires of the population. As soon as some degree of multilingualism is present, in other words, it is natural to define linguistic distance as the lack of overlap between linguistic repertoires, and linguistic diversity as average linguistic distance. The more languages two people have in common, and the better they know these languages, the smaller the linguistic distance between them. And the smaller this distance, on average, between members of a population taken two by two, the less diverse the population.

## **2. Multilingualism against linguistic diversity ?**

In the light of this conceptual clarification, let us examine the relationship between linguistic diversity and convergence towards one lingua franca. Consider, for example, the two chief official goals of the European Union's language policy: the protection of linguistic diversity and the promotion of multilingualism.<sup>8</sup> At first sight, there is a natural complementarity between these two objectives: multilingualism is inconceivable without linguistic diversity, and linguistic diversity is pointless in the absence of multilinguals capable of enjoying it. There would be indeed no tension whatever between the two objectives if the multilingualism of the European Union took the form of the Germans learning Cantonese and Quechua, the French Afrikaans and Telugu, the Brits Javanese and Lingala, and so on. But of course it does not, for two main reasons.<sup>9</sup> First,

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<sup>8</sup> See Strubell (2004) for an overview of the declarations by the Commission, the Council and the Parliament.

<sup>9</sup> Robert Phillipson (2003: 193-8) emphasizes the intrinsic tension between the EU's ritual assertion that it wants both to encourage contact and mobility in all sorts of ways, and hence multilingualism, on the one hand, and on the other hand the preservation (if not the promotion) of linguistic diversity. To be fair, the European Commission is not unaware of the tension: "While recognising the emergence of English as the most widely-spoken language in Europe, the Union also want to make sure that this does not become, over time, a factor limiting linguistic diversity within its frontiers. This is why the Commission's Action Plan has set the target of 'mother tongue-plus-two'." (European Commission 2004: 22). This remedy thus offered by the Commission, however, is hardly promising for reasons linked to the core of the language spread mechanism (see LJ chapter 1) and, even if it did achieve universal trilingualism, it would only mitigate, not remove, the fourfold tension delineated below.

there is an officially declared bias favouring the learning of other EU languages rather than, say, Arabic or Chinese. Secondly, there is an officially unintended bias towards the learning of English, driven by the interaction of probability-sensitive learning and minimex language use.<sup>10</sup> Consequently, as the European population is growing more multilingual (or at least bilingual) by increasing its competence in at least one foreign language, it is becoming more diverse in terms of richness and evenness, through the appearance and gradual expansion of mixed types. But it is by the same token becoming less diverse in the more plausible sense spelled out at the end of the previous section that incorporates distance between linguistic repertoires.

Reduced linguistic diversity so understood is a direct and unavoidable consequence of the spreading of a lingua franca. There is a second reason, this time causal, not logical, why widening competence in a shared language can be expected to reduce linguistic diversity. Whenever natives of some language learn another language, this expands the possibility of borrowing and other forms of influence. However, as most natives of some language becomes competent in the same other language, this possibility becomes a strong probability, and the language they all learned will tend to exert a lasting influence on their native tongue: most obviously through the import of vocabulary, sometimes also through morphological and syntactic changes (see e.g. McWorther 2001: chapter 3). Moreover, as the natives of several languages all become competent in the same lingua franca, such influences do not only take their languages closer to the latter but also to each other. There must be few languages today in which it has not become “cool” to “google” “blogs” on the “web”. Owing to this process, it is not just the distance between linguistic repertoires that shrinks — trivially — as a result of the emergence of a lingua franca. It is also the distance between the native languages themselves.

Thirdly, the spreading of the lingua franca can be said to reduce linguistic diversity even in a sense that abstracts from distance between languages and

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<sup>10</sup> As argued in *LJ* chapter 1, the core of the dynamics of language spread under present conditions can be understood as the mutually reinforcing interaction between on the one hand the impact of the probability of using a language on the speed with which it is learned, and on the other the systematic adoption, in communication between plurilinguals, of the language of minimum exclusion (or minimex), i.e. the language best known by the participant who knows it least. See also Van Parijs (2004) for a sketchier formulation.

repertoires and takes only richness and evenness into account. To see this, one needs to make a distinction between the distribution of competences and the distribution of performances, which has no analogue in the case of biodiversity. To illustrate, consider jointly the following two trends, both very tangible in Europe today. One is the spreading of competence in English through the explosive interaction of probability-sensitive learning and minimex communication. The other is the growth of the proportion of linguistic interaction occurring between people with different mother tongues. Under some mild assumptions, the necessary outcome of the combination of these two mutually reinforcing trends is an increase in the proportion of conversations held in English. As we move away from a world of essentially unilingual communities whose members talk only to each other, the proportion of conversation held in a language stops being roughly equal to the proportion of natives of that language.<sup>11</sup> And once the gap between the two proportions is no longer insignificant, it makes sense to redefine richness and evenness in terms of whether and how much the various languages are being used in conversations, rather than in terms of their presence and distribution in people's competences. As people add competence in English to competence in their native language and interact with people who lack the latter competence, they substitute English to their mother tongue in a growing share of their conversations. Hence, while evenness need not decline and may even increase as regards competences (as mixed types catch up with pure types), it will exhibit a strong tendency to decrease in terms of performances. We are of course very far from a situation of random mixing, but transnational mobility and communication are sharply on the increase, and further facilitated by the very spread of the lingua franca. Moreover, in some non-Anglo countries as different as India and the Netherlands, many people have achieved such a high level of competence in the lingua franca that they find it easier to express themselves on some subjects in that language even with people sharing their native tongue.

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<sup>11</sup> At the limit (with universal asymmetric bilingualism and random pairing of speech partners), the proportion of conversations held in any language  $i$  other than the lingua franca  $f$  shrinks from  $n_i/N$  to  $(n_i/N)^2$  (with  $n_i$  the number of natives of language  $i$  and  $N$  the total population, while the proportion of conversations held in the lingua franca rises from  $n_f/N$  to  $1 - \sum (n_i/N)^2 + (n_f/N)^2$ ).

When this last stage is reached, however, one must be prepared for a decline in diversity in yet another, fourth sense, which concerns competence, as the first two did, not just performance, and which obtains even abstracting from the distance dimension, as the third one did. Universal diglossia, i.e. the generalization of bilingualism in a linguistic community through the learning by all its members of the same more widely spread language, is commonly regarded by sociolinguists as the last stage before the local language starts withering away. As Antoine Meillet (1928: 117) puts it, among many others<sup>12</sup>: “The local idiom is useless the day the whole population, knowing the common language, is bilingual. The young then no longer feel the need to know the local idiom: even if they practiced it in their childhood, they forget it as they grow older”.

Whereas few people seem to be greatly concerned with loss of linguistic diversity in the first three senses considered above, many are with loss of linguistic diversity in this fourth sense. This time, competence diversity shrinks, not just performance diversity as in the third sense, and it does so through impoverishment, no longer through enrichment as it did in the first two senses. Yet, throughout the linguistic history of the world, diversity loss in the first sense has standardly led to diversity loss in the fourth one. In many cases, oppression and shame accelerated the process. But in a high mobility context, the explosive interaction of probability-sensitive learning and minimex communication is powerful enough to complete the job unassisted. As diversity loss in the first sense is inseparable from the very adoption of a lingua franca, the erosion of linguistic diversity in this fourth sense is a sensitive issue to which I shall return (see section 4).

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<sup>12</sup> See e.g. Crystal (2000: chapter 3) on this unstable “stage 2” of language shift. In a highly model of trade interaction between two countries of equal sizes but unequal wealth, Choi (2002) shows how the greater relative profitability of specializing in jobs requiring bilingualism for members of the poorer country eventually leads, after several generations, to the exclusive use of the language of the richer country.

### 3. Local diversity versus territorial diversity

Just as important as the distinction between three dimensions of diversity — richness, evenness and distance — is the distinction between its two levels. Here again, it is helpful to look at the literature on biodiversity, where a distinction is commonly made between  $\alpha$ -diversity, or the number of species within a particular habitat, and  $\gamma$ -diversity or the number of species within a particular landscape consisting of a set of habitats. Both  $\alpha$ -diversity and  $\gamma$ -diversity express richness — or “variety” or “inventory diversity” — at the local and at the global level, respectively. By contrast,  $\beta$ -diversity is meant to express differentiation — or “distinctiveness” or “specialization” or “segregation” —, i.e. the extent to which habitats differ from one another within a given landscape.  $\beta$ -diversity can be defined, as it was initially in the biodiversity literature, as the ratio of  $\gamma$ -diversity to average  $\alpha$ -diversity, i.e. the ratio of the total number of species in the landscape to the average number of species in its habitats. Alternatively and more conveniently, it can be defined as the difference between  $\gamma$ -diversity and average  $\alpha$ -diversity.<sup>13</sup> In either case, it reaches its minimum (1 and 0, respectively) when all species present in the landscape are present in each habitat, or in as many habitats as their (possibly small) sizes allow, and its maximum is reached when each species is gathered in a single habitat, or in as few habitats as its (possibly large) size allows.

Beyond the case of biodiversity, we can analogously make a more general distinction between ( $\alpha$ ) diversity (or variety) *within* some component (habitat, neighbourhood, region, country, etc.) of a broader population (landscape, city, country, world, etc.) and ( $\beta$ ) diversity (or differentiation) *across* such components. These components are usually defined territorially, but need not be. They could correspond, for example, to the various sections of a school or to the various regiments that make up an army. To the extent that the components are local units, defined in territorial terms, I shall speak of *local diversity* to refer to

<sup>13</sup> The former definition was proposed by Whittaker (1972) and the latter by Lande (1996). When all species are present in each habitat Whittaker’s index is equal to 1 and Lande’s to 0. When the habitats are as specialized as the sizes of the species allow, Whittaker’s index is equal to the number of habitats  $K$  or the number of species in the landscape  $\gamma$ , whichever is smaller, while Lande’s is then given by  $(\gamma - \gamma/K)$ . Lande’s measure is more convenient because it enables the richness of the landscape ( $\alpha$ ) to be decomposed into the sum of the average richness of the habitats  $(\sum \alpha_i/K)$  and their differentiation ( $\beta$ ).

$\alpha$ -diversity within some local unit, and of *territorial diversity* to refer to  $\beta$ -diversity across local units. In the case of ethnic, or cultural, or linguistic diversity, this distinction is useful to contrast, on the one hand, the local diversity that exists, say, in a town, typically as a result of recent immigration, but also sometimes as a result of more ancient immigration, with distinctness perpetuated by religious differences, as in the Jewish ghettos of medieval cities; and on the other hand the territorial diversity that exists between different geographical areas of a particular country, such as Switzerland or Nigeria, typically as a result of its incorporating territories in which people have been speaking “forever” different languages.

To capture properly the notion of territorial diversity, however, it is essential not to confine it, as I have done so far, to the richness dimension, i.e. to the number of types (species, languages, races, etc.). Take for example an island consisting of two regions. At an early stage, each of the two regions has native Greek speakers and native Turkish speakers in equal proportions, say 50/50. At a later stage, one region has a 90/10 majority of Greeks, and the other one a 90/10 majority of Turks. Despite the dramatic shift, the island’s territorial diversity, using the measure specified above, has remained unchanged at its minimum level, since the average number of native languages in each region has remained equal to the total number of native languages in the island ( $\beta = 2 - (2+2)/2 = 0$ ). As this example shows, a useful notion of territorial diversity should at least take the evenness dimension of diversity into account. Useful indices which do precisely this have been developed for very different purposes by sociologists and economists.

For example, the *isolation index* developed in the sociological literature on segregation is the probability for a person to meet another member of her own ethnic group if she were to meet at random other dwellers of her neighbourhood. This index can obviously be generalized to any interpretation of both type and local unit. Its average value across all types reaches its minimum when the distribution of types is the same in all units. Moves away from such a homogeneous distribution of types across units are reflected in a rise of the isolation index, which therefore provides a more satisfactory index of territorial diversity than  $\beta$  indices of biodiversity. In our island example, for example, the

probability for a Greek to meet a Greek when randomly meeting inhabitants of one's region is significantly higher under a 90/10 distribution than under a 50/50 distribution.<sup>14</sup>

In a very different context, economists developed the country Gini coefficient in order to capture how specialized a country is, i.e. to what extent the distribution of its output between industrial sectors diverges from the distribution of the output of a larger entity (say, the European Union) of which it is a part. When averaged over all local units (here countries), this index can be used to measure the degree of territorial diversity, i.e. in this case the degree of sectoral differentiation of countries. It reaches again its minimum when the distribution is the same in all units, and the larger it becomes, owing to the specialization of each unit in one or more types, the greater the territorial diversity. When applied to our island example, this index too yields a more satisfactory verdict than simple  $\beta$  indices that only take the number of types into account. Both region's Gini coefficients (which capture how "ethnically specialized" they are) and hence also their average value obviously increase as one moves from a 50/50 to a 90/10 distribution of Greeks and Turks.<sup>15</sup>

Suppose then that we have some sensible notion of both local and territorial diversity. As suggested long ago by Claude Lévi-Strauss (1961: ch.9) in connection with cultural diversity, there is a tension between the two. Maximum local cultural diversity means that every culture can be found in every place, whereas maximum territorial diversity requires that each place has a culture that cannot be found anywhere else. And the same can be said for linguistic diversity.<sup>16</sup> It follows that those wishing to promote local cultural or

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<sup>14</sup> This probability is  $(1/10)^2 + (9/10)^2 = 82/100$  under the uneven 90/10 distribution, whereas it is  $(1/2)^2 + (1/2)^2 = 50/100$  under the homogeneous distribution. See Appendix 1, which also presents the dissimilarity index.

<sup>15</sup> See again Appendix 1 for a more precise presentation of this country Gini coefficient (which captures the degree of industrial specialization of countries), as well as of the symmetric industry Gini coefficient (which captures the degree of geographical concentration of industries). Inequality indices can thus serve to measure diversity, be it in a rather convoluted way. Appendix 2 clarifies the conceptual relationship between inequality and diversity.

<sup>16</sup> This trade-off is self-evident under the simple interpretation of territorial diversity that only takes richness (the number of languages) into account. But it also holds under interpretations that incorporate evenness (the relative spread of languages), as captured in the indices of isolation or specialization. Starting from a situation of minimum territorial diversity (same distribution of languages in each local unit), it is possible to

linguistic diversity must realize that this will come at the cost of reduced territorial diversity. By contrast, if preserving territorial diversity is a meaningful objective, the development of local diversity will need to be counteracted.

Thus, typical “multiculturalism policies” entail fostering local diversity at the expense of territorial diversity, whereas the imposition of an official language to a whole country or part of it amounts to favouring territorial diversity at the expense of local diversity. What about the adoption of a lingua franca? Like multiculturalism policies, it tends to systematically reduce territorial linguistic diversity as a result of the four processes discussed in section 2. Unlike multiculturalism policies, however, it does not do so by systematically increasing local diversity. On the contrary, if we start from a local situation that is not totally homogeneous, it will tend to reduce local diversity too. And even if we start from a unilingual situation, the gradual spread of the lingua franca may first increase local diversity, but once it has reached everyone it will have reduced it to its initial level, and the erosion of the “superfluous” language will start, thus further reducing territorial diversity.

#### **4. Is linguistic diversity valuable?**

This stylized picture of the processes at work brings out the ineluctability of a deep long-term tension between the spreading of a lingua franca and linguistic diversity, whether the latter is defined in a way that includes only richness or also evenness and distance, whether it is interpreted as local or as territorial diversity. Is this a problem? The responses I offered to the cooperative and distributive injustices generated by the adoption of a lingua franca (*LJ* chapters 2-3) did nothing to alleviate this threat, on the contrary. By endorsing linguistic territoriality, my response to linguistic injustice as unequal dignity does involve a firm protection of some degree of territorial linguistic diversity, but this protection (not maximization) of territorial linguistic diversity is just a by-product of the proposed solution to this dimension of linguistic injustice (*LJ* chapter 4).<sup>17</sup>

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increase it while also increasing local diversity in some of the local units (through swaps that make the distributions more even in each of them), but only at the cost of sharpening concentration (and hence reducing local diversity) in others.

<sup>17</sup> The proposed solution falls far short of maximizing linguistic diversity, or even from maintaining as much as possible the existing linguistic diversity, for two reasons. One is

It is not appealed to as an argument in its favour, whether as an aim in itself or as instrumentally useful for some important aspects of our common good.

Is this right? Should diversity not rather be regarded as being of great intrinsic or instrumental value, as seems implied, for example, by both the Indian Union and the European Union choosing "Unity in Diversity" as their mottos, in contrast with the United States' "E pluribus Unum", or by the European Union's Charter of the Fundamental Rights (2000) making sure to state, in its article 22, that "the Union shall respect cultural, religious and linguistic diversity"?<sup>18</sup> And should this not play a major role in the normative discussion of linguistic matters?

Let us acknowledge straight away that there are many people who find linguistic diversity a plain nuisance. Among them are those who care for nothing but business.<sup>19</sup> But they are not alone. Thus, no doubt to the surprise of many of his contemporary colleagues, the distinguished linguist Antoine Meillet (1928: 244) : « The small languages are a stage through which poorly cultured people pass on their way to universal civilization. But the multiplicity of the languages currently used in Europe, already inconvenient today, prepares crises which will be hard to resolve, as it goes against the general trends of civilization. The unity of the common language is an immense strength for those who possess it. »<sup>20</sup> If

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that only those languages will survive which manage to grab a territory with sufficient firmness, and hence only those linguistic communities which have the critical mass and the economic confidence that make the cost of this grabbing reasonable. Secondly, whereas the linguistic territoriality principle fosters territorial linguistic diversity by blocking the full replacement of local languages by the worldwide lingua franca, it also counteracts local linguistic diversity by operating as an unfettered local lingua franca.

<sup>18</sup> Diversity is sometimes distinguished from sheer variety precisely on the ground that the former, unlike the latter, is regarded as intrinsically valuable. See e.g. Heyd (2005).

<sup>19</sup> See, for example Feld (1998 : 199), quoted by Phillipson (2001 : 113-114): "It is worthwhile to consider whether the EU should answer the call for uniformity on the issue of language business transactions and further protect itself against the potential onslaught of language regulation by each individual Member State. One potential action the EU might take would be to declare a common language in the EU market."

<sup>20</sup> Somewhat less explicit but fundamentally on the same line is Mill's (1861: 294-5) famous passage: " Nobody can suppose that it is not more beneficial to a Breton, or a Basque of French Navarre, to be brought into the current of the ideas and feelings of a highly civilised and cultivated people — to be a member of the French nationality, admitted on equal terms to all the privileges of French citizenship, sharing the advantages of French protection and the dignity and prestige of French power — than to sulk on his own rocks, the half-savage relic of past times, revolving in his own little mental orbit, without participation or interest in the general movement of the world. The

a powerful language were to drive all others into gradual extinction, not only would we all enjoy the convenience of being able to use our mother tongue in all the conference rooms and hotel lobbies of the world. Incomparably more would be within our reach: even in the most remote bazaars, farmyards and playgrounds, we would be able to understand directly what the locals are saying to each other, while the reach of world-wide media and the massively enhanced trans-national mobility would prevent the stable development of mutually unintelligible dialects. Once again, all human beings would « speak the same language and form a single people », and hence possibly « no goal will be unachievable for them » (Genesis 11.6). Is there anything to prevent us from looking forward to this new stage in the progress of mankind, apart from the irrational fear that a jealous Yahweh may strike once more and cruelly thwart our neo-Babelian hubris?<sup>21</sup>

Unlike Meillet, most professional linguists are understandably not keen to see most languages in the world quickly vanish, many of them only poorly documented, thereby irreversibly amputating the subject-matter of their discipline. But most of them are also reasonable enough to admit, when pressed, that it would be unfair to attempt to induce some people to keep learning, talking and teaching a language they would otherwise abandon, for the sole purpose of enabling a small bunch of inquisitive scholars to indulge their intellectual curiosity and write about them in academic journals. To broaden their coalition, linguists will have no difficulty recruiting translators and interpreters, who would obviously lose their source of income were linguistic diversity to disappear. But this would hardly make the argument less suspiciously corporatist. Nor would their case be much strengthened by the support of the aesthetes who love steeping themselves in delightfully varied linguistic environments. I can sympathize with those who believe that the attraction of Florence would be

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same remark applies to the Welshman or the Scottish Highlander, as members of the British nation."

<sup>21</sup> Troja provides a somewhat less mythical parable for the curse of linguistic diversity. Why did the Achaeans win the war? Perhaps because of the cunning of the wooden horse, but incomparably more because their koine, their shared language, enabled them to coordinate effectively, whereas the cacophony that prevailed between Trojans and their allied turned out to be a decisive disadvantage (see Ross 2005). What the Iliad documents is arguably just a special case of the tension between ethnic diversity and the efficient production of public goods, as studied for example by Alesina and La Ferrara (2000).

diminished if Italian had gone into disuse, and that the charm of Rio would suffer if Brazilian were replaced by American. But this seems of precious little weight in regard to the great collective benefits of universal communicability. Those who want to make a persuasive case for the value of linguistic diversity therefore realize they need arguments that appeal to less factional interests.<sup>22</sup>

One possible line of argument emphasizes that each language is a unique repository of human knowledge. It comes in two main variants. The more subtle one rests on the interesting observation that the syntax of a language, its phonological system, its morphology and its lexicon contain information about the history of the peoples who have been speaking it through the centuries, most obviously about where they came from, about which other peoples they are related to, about which they interacted with. With any language that goes extinct without having been fully recorded, knowledge of this sort is lost forever. A great pity for anyone interested in the relevant segments of human history. But it should be no insult to the honour of their profession that, as an argument for preventing people from giving up their ancestral language, the irreversible loss of such potential knowledge is no more persuasive than the shrinking of the subject matter of professional linguists.

The second variant is less subtle but incomparably broader in scope, and hence more promising as a non-corporatist argument. It rests on the plausible assumption that some things have been known only to people of a particular language, uniquely equipped with the terminology needed to formulate them. To illustrate, take the attempt made by Skutnabb-Kangas (2003: section 3) and others to seal a strong alliance between advocates of biodiversity and linguistic diversity. There is an undeniable positive cross-regional correlation between linguistic diversity and biodiversity, with both languages and species particularly numerous (relative to the sizes of human populations) in equatorial areas. What explains the correlation, it is suggested, is a causal link from linguistic diversity to biodiversity: in the absence of the nature-respecting knowledge incorporated in the many local languages, species diversity would soon be reduced. The correlation, however, is bound to have far more to do with the relative attractiveness of certain natural conditions (climate, relief, etc.) for nature- and

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<sup>22</sup> For a clear presentation of the main arguments, see Crystal (2000: chapter 2).

culture-destroying colonization and industrialization. The relationship between biodiversity and linguistic diversity, as we saw above (sections 1 and 3), can be instructive, but appeal to a spurious correlation is an unpromising way of harnessing interest in the former in order to generate support for the latter. The impact language conservation may have on species conservation must be, if at all real, very modest, and likely to be offset by the potential of knowledge dissemination which a switch to a more widespread language would create. This last remark applies more generally to any instance of this first variant of the argument: people who possess some knowledge can express it in the language they have learned (and which threatens to displace the old one), be it by importing the terminology from their native language. And by doing so, they would not only preserve the knowledge in question, but also make it more widely available.

A distinct family of arguments rests on the connection between linguistic diversity and cultural diversity. Culture can be roughly defined as a set of ways of thinking and behaving that is durably shared by, and distinctive of, a community. Linguistic diversity is linked to cultural diversity in two ways. One is that, like religion for example, a community's language directly constitutes and shapes its distinctive thoughts and practices. The other is that, more than religion or than any other aspect of a culture, it affects the patterns of interaction and hence the flows of information, education, persuasion or imitation that constantly shape and reshape all aspects of culture. Given the nature and reach of present and future media, so this line of argument goes, linguistic diversity is the firmest, and increasingly the only serious protection of cultural diversity. This preserves worldwide more options for people to choose from, and hence leaves more room for collective experimentation in private and social life, from which mankind as a whole may benefit in the long run.<sup>23</sup>

Unlike those mentioned before, this line of argument must be taken seriously. But remains unavoidably speculative, and is weakened by two serious difficulties. Firstly, if the point of cultural diversity is the cultural freedom it gives and if the exercise of the latter must therefore be fostered, then cultural diversity, i.e. diversity of thoughts and practices linked to distinctive multi-

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<sup>23</sup> See e.g. UNDP (2005).

generational communities, is in the process of being eroded by the very dynamics it sets in motion. Cultural diversity makes cultural freedom possible, but the exercise of cultural freedom replaces cultural by non-cultural diversity, which linguistic diversity has no particular capacity to protect. Secondly, the price to be paid for linguistic diversity (also, though to a lesser extent, in the presence of a lingua franca) is the less general and less rapid availability of whatever exists or is invented in any particular culture (except the one associated with the lingua franca). Assuming there is a positive impact of linguistic diversity on cultural diversity, therefore, the impact on the general interest will be offset, perhaps only partly but perhaps also more than fully, by the lesser availability of whatever cultural diversity there is.

### **5. Local linguistic diversity against economic solidarity?**

In this light, the case for linguistic diversity as an efficient way of pursuing some general benefit turns out to be rather weak. As if this was not bad enough, there appears to be a strong case against linguistic diversity as an obstacle to the achievement of distributive justice (as understood in *LJ* chapter 2).

Thus, a growing number of econometric studies have tended to establish a robust negative correlation between linguistic diversity and a number of variables that can be regarded as more or less plausible proxies for the extent of economic solidarity or of redistribution of the better off to the worse off (see Appendix 3 on the measurement of economic solidarity). For example, using a sample of over two hundred countries, Alesina & al. (2003: Table 13e) show that, after controlling for many variables, there remains a significant negative correlation between on the one hand ethnic diversity (using the Simpson index), especially when defined exclusively in linguistic terms, and on the other the share of transfers and subsidies in the country's GDP. This result is even strengthened when the linguistic diversity index is redefined to incorporate linguistic distance (Desmet & al. 2005: section 5.2). But of course this does not rule out that, owing to some other relevant difference a linguistically more

diverse country may nonetheless achieve greater solidarity.<sup>24</sup> All the correlations establish, and need to establish, is the existence of a *ceteris paribus* relationship.

To make sense of this negative relationship between linguistic diversity and economic solidarity, several mechanisms have been suggested. How generous an economic solidarity system manages to be can schematically be said to depend on the willingness of the better off to share with the worse off and on the ability of the worse off to organize so as to force the better off to share.<sup>25</sup> Both factors can be affected by the degree of linguistic diversity through two mechanisms. On the one hand, linguistic diversity makes *identification* more difficult: a different language makes one part of the population perceive another as alien, as not belonging to the same kind, and hence as less trustworthy, less likely to reciprocate, or to have reciprocated had roles been reversed.<sup>26</sup> This may be either because the alien language is as such a feature of the alien culture that makes the other difficult to identify with, and/or because it reduces interaction and thereby makes the other more impenetrable. Lesser identification makes both the better off more reluctant to accept economic solidarity and the worse off less capable of organizing collectively to demand it effectively. On the other hand, linguistic diversity also affects solidarity simply by making *communication*

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<sup>24</sup> One interesting example is offered by the comparison of South Africa and Brazil, two recent federal democracies with a comparable level of development and a similarly high level of gross income inequality (Seekings 2004). Given the massive prevalence of Portuguese in Brazil, any reasonable measure of (evenness-sensitive) linguistic diversity, should uncontroversially rank South Africa above Brazil. Yet South Africa displays a far higher level of economic solidarity (transfers reduce the Gini coefficient by 25%, compared to 0-7% in other developing countries), at least before the expansion of Brazil's centrally funded social assistance programmes from the late 1990s onward. The bulk of this is achieved through a non-contributory old-age pension scheme, first restricted to whites, then extended to all, then differentiated in discriminatory fashion, and finally reunified — all under the apartheid regime. Paradoxically, in the South African case, the racial divide may have helped. The crucial step — the reunification of its old age assistance scheme in the final years of the apartheid regime — became possible as a result of the establishing of strong intra-racial solidarity being followed by an attempt by the ruling racial group to deflect both domestic revolt and international opprobrium through universalising this solidarity.

<sup>25</sup> Generous solidarity is of course more a matter of conquest than of generous sentiments. See e.g. Stephens (1979) on the negative correlation between ethnic diversity and the strength of the labour movement. La Ferrara's (2004) findings about the negative impact of ethnic heterogeneity on participation in the production of a public good is also, be it less directly, relevant.

<sup>26</sup> On the basis of a large US survey, Putnam (2005) shows that there is a robust negative correlation between the degree of ethnic diversity (using a Simpson index and the five US Census categories: White/Black/Asian/Hispanic) and the level of trust (in members of one's own as well as of the other groups).

more laborious: in the absence of an effective medium of communication, it is more difficult for the better off to be persuasively exposed to arguments of fairness in favour of the worse off, for the worse off to coordinate effectively their struggle against the better off, and for all to settle on the fine grain of the organization of solidarity.<sup>27</sup>

The tension thus highlighted can be expected to hold for both local and territorial diversity. Let us consider local diversity first. By ensuring that everyone learns the local official language, the implementation of linguistic territoriality (as advocated in *LJ* chapter 4) reduces local linguistic diversity in all four senses distinguished in section 2, and there is no doubt that it also tends to reduce local cultural diversity by increasing every local resident's potential exposure to the information and ideas available to every other local resident. The intensification of contact may threaten the local survival of languages other than the official one, but the aim should not be to eradicate them. Getting everyone into a common *demos* made possible by a shared language is essential to the pursuit of distributive justice. People from all layers of society must be willing and able to explain their standpoint to each other, to listen to each other, to take decisions that can seriously claim to have been made for the common good, that can hope to reflect an equal respect for the diversity of conceptions of the good life and an equal respect for the interests of everyone affected. But this does not amount to merging everyone into the same *ethnos*, with a common language as a core component of the common culture. In other words, the strong identification favoured by linguistic identity may be dispensable if the communication enabled by proficiency in a common medium fully performs its job both on the side of acquiescence by the better off and on the side of mobilization of the worse off. In particular, a plurality of languages and the associated cultures can be transmitted from generation to generation in addition to the language known in common. The latter is essential to facilitate dialogue,

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<sup>27</sup> Miller (2004) argues, on the basis of international comparisons of people's revealed sense of justice, that there is little ethnic variation as regards conceptions of distributive justice. However, the finer structure of legitimate solidarity ("What counts as an illness?" "To what extent and how should it be cared for collectively?" etc.) may vary significantly in culturally diverse communities, and conceivably, as suggested by Anne Phillips (2004) for reasons that owe more to differences in their recent histories and present conditions than to differences in their remote cultural roots.

discussion, argumentation, understanding between all members of the community, but there is no need to turn the latter into a cultural monolith.

From this perspective, there cannot be either a general endorsement or a general condemnation of linguistically relevant multiculturalism policies, i.e. policies aiming to preserve or respect cultural diversity. There is no conclusive evidence as to whether the adoption of multiculturalism policies tend to correlate with increases or decreases in institutionalized solidarity.<sup>28</sup> But even if there were such evidence, no general conclusion could be drawn. Suppose for example that the data showed a positive correlation. For critics of multiculturalism policies this need not come as no surprise. Both multicultural policies and welfare policies, some of them claim, stem from the same "providential" dynamics of the contemporary democratic state, which drives the latter to accommodate an ever expanding set of sectoral demands.<sup>29</sup> No wonder, therefore, that they might be positively correlated, at least in the short run. But this is consistent with multiculturalism policies slowly undermining the welfare state, if only by hindering a rapid reduction of the linguistic cultural diversity that keeps being amplified by immigration. Because of the time required for these sociological processes to work themselves out and the randomness involved in their being politically exploited, this effect is most unlikely to show up immediately, even though the weakening of the fellow-feeling between all citizens and the decreasing ability of the worse off to join make the "providential" set up increasingly vulnerable.

Moreover, the fine grain of the multiculturalism policies is of crucial importance. To illustrate, take the teaching of, or in, the immigrants' mother tongues, a multiculturalism policy that can be sensibly justified both as a way of symbolically asserting the dignity of the languages concerned and the associated

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<sup>28</sup> Against the claim made for example by Todd Gitlin (1995) or Brian Barry (2001) that multiculturalism policies undermine economic solidarity, Banting and Kymlicka (2004) showed, using various indices of the degree of economic solidarity achieved by tax and transfer systems, that this cannot be said to have been the case so far. Within the small sample consisting of the four Anglo countries in the context of which the above-mentioned claim is being made, the opposite seems to have happened: the more MCP-intensive countries (Canada and Australia), as far as immigrant minorities are concerned, fared better than the other two in terms of economic solidarity trends. However, if the sample is expanded to include a larger set of OECD countries, no pattern can be detected either way.

<sup>29</sup> See, for example, Schnapper (2002, 2004).

identities and, in some cases, as a way of formalising and strengthening the children's valuable competence in a major world language such as Spanish, Arabic, Turkish or Bengali. The most straightforward way of doing this consists in offering this option in those schools in which there is sufficient demand for a particular language, owing to a high proportion of pupils with a particular origin. In countries where school choice is free, the provision of such courses will create an incentive for parents of the relevant origin to send their children to those schools. As a result, whatever degree of ethnic mixing had been achieved in the school system will be reduced, and given that children's acquisition of the local language depends more on interaction with their peers than on formal teaching, the long term threat posed to social cohesion (through the causal chain of poor linguistic competence, low productive skills generally, low probability of landing a good job, low chance of social and geographical mobility) is quite considerable. In countries in which school choice is strongly constrained by districting, the threat will be slower to show but deeper, as the provision of immigrant language courses will not only create an incentive to change schools, but also to move, thus fostering segregation not just in schooling but also in housing. Much of this effect can be switched off, however, if instead of being organised as part of the curriculum of a particular school, the courses were open to pupils from different schools, which, in an urban context, is often a realistic possibility.<sup>30</sup> A small organisational difference that could not reasonably be expected to affect an index of the extent of multiculturalism policies is therefore arguably of crucial importance for the strains these may help perpetuate or amplify with economic solidarity.<sup>31</sup>

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<sup>30</sup> Forcing the autochthonous pupils of a school to attend the immigrant language classes when offered would no doubt be even more counterproductive than introducing it as an optional subject. On the contrary, managing to convince some of them (and their parents) of the interest they may have in learning languages such as Arabic and Turkish would be a welcome achievement, providing it is not so successful that it reduces significantly the opportunity and incentive for immigrant children to learn the local language.

<sup>31</sup> There is a hint at the importance of considering the fine grain of MCPs in Banting and Kymlicka's (2004) remark that some critics of MCPs seem to understand the latter in a narrow sense than entails separateness. But separateness need not be in the explicit content of the policy for it to emerge from its implementation. In my example, it could be said that separateness is greater in the variant of the policy that will, I argue, end up producing less separateness: teaching Arabic as an optional part of the curriculum of nominally multi-ethnic schools looks far less "separatist" than gathering in one place kids from various schools who (or whose parents) share the wish (for them) to study Arabic.

Presupposed in this discussion is the notion that the persistent segregation of linguistic communities is to be counteracted. This should not be regarded as self-evident. Thus, to explain that support for the welfare state in Canada does not seem to suffer from growing overall levels of ethnic diversity, Soroka, Johnston and Banting (2004) suggest, that "the high level of geographic concentration of immigrant minorities in certain regions and especially certain urban areas" may be better for interpersonal trust, which itself clearly has a positive effect on support for the welfare state.<sup>32</sup> One should not overlook the direct impact of social capital on distributive justice (what is distributed through local informal solidarity may matter as much as what is distributed by formal institutions) and the welfare state may well be less vulnerable politically with tight ethnic communities than with general anomy.<sup>33</sup> But especially if the ethnic divide is a linguistic divide, the vicious circle of a persisting linguistic handicap sketched earlier makes segregation most unpromising for distributive justice, both because of its direct impact on opportunities and because of its impact on competent participation in a common public forum and in the mobilization of the worse off.<sup>34</sup> Hence, multiculturalism policies that breed segregation by compelling, encouraging or even simply allowing linguistically distinct immigrant communities to have their own schools, sports clubs or neighbourhoods can be expected to affect negatively the prospects of economic solidarity.

It is of course not only multiculturalism policies that affect the extent of separation between the various linguistic communities. The fine grain of the institutions of economic solidarity is no less relevant.<sup>35</sup> This holds, for example,

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<sup>32</sup> In the same vein, Putnam's (2005) data indicate that local ethnic heterogeneity has a negative impact on trust and other indicators of social capital. They therefore suggest that increasing local homogeneity through segregation would increase the level of social capital.

<sup>33</sup> See also David Miller's (2004) conjecture that "segregation", though worse than "integration", should be better than "alienation" as far as trust and hence solidarity are concerned.

<sup>34</sup> The twofold argument is parallel to the argument in favour of dissemination (versus compensation) as the most appropriate strategy for pursuing distributive justice on the background of the spread of the lingua franca (*LJ*, chapter 3).

<sup>35</sup> Soroka, Johnston and Banting (2004) persuasively observe, as one possible explanation for the resilience of the Canadian welfare state in the face of increasing ethnic diversity, that a welfare state can accommodate cultural diversity more easily if it relies on contributory benefits (as Canada does to a greater extent than Australia or the US): strengthening the relative importance of the insurance component of a welfare state is no doubt less demanding in terms of identification, but it also amounts to reducing the

for the organization of the health care system, which can be more or less segregated. It also holds for the aspects of the welfare state that most affect the labour market. Suppose that basic economic security is implemented through employment-unfriendly means-tested benefits, which are withdrawn as soon as a member of the household performs a declared paid job and which may prove difficult to recover once that job is lost, owing to opaque and possibly discriminatory rules. For a given level of generosity of the welfare state, the opportunity and motivation to acquire and retain linguistic skills will be far less than under a more employment-friendly regime, with a cumulative negative impact on both the opportunities and participation of linguistic minorities. It does not follow that one should go for a punitive workfare state, which would amount to reduced solidarity (distributive justice, as interpreted in *LJ* chapter 3, is not only a matter of income). There is another version of the “active social state” that consists in spreading solidarity to low-income working households, whether through wage subsidies, through varieties of earned income tax credits or (my preferred variant) through the provision of a universal income floor in the form of non-means-tested child benefits and basic pensions and a modest citizen’s income for all adults.<sup>36</sup>

The general conviction that underlies this discussion is that the key strategy for sustaining generous economic solidarity despite growing local linguistic and cultural diversity is based on sufficiently intensive interpersonal contact, through school, work and other channels, across the boundaries that tend to form around linguistically distinct communities.<sup>37</sup> It must, however, be

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extent of the genuine (*ex ante*) solidarity it realizes. The point I am making here is independent of this observation. Even for a given level of generosity, the way the welfare state is structured matters to the tension there may be between diversity and solidarity.

<sup>36</sup> See Van Parijs, Jacquet & Salinas (2000) for a detailed comparison of the various versions of this non-punitive “active welfare state”) and Vanderborght & Van Parijs (2005: chapter 2) for a less technical treatment.

<sup>37</sup> Another example is the extension of voting rights at local elections to all non-citizens. This arguably strengthens the weak channels of communication across communities by giving more reasons and pretexts to talk, more opportunities for friendships, connivances and solidarities. It would also increase the electoral incentive to look after neglected urban neighbourhoods, thereby counteracting their ethnic homogenisation. As mutual identification, joint responsibility for the common good, pride (and shame) of place keep being constructed through this and other means in mixed communities, starting from the most local level up, the challenge posed to economic solidarity by persistent cultural diversity — in particular in the form of maintenance of immigrant languages from generation to generation — will arguably lose some of its sharpness.

conceded that the more contacts of these sorts there are, the stronger the tendency for local linguistic and cultural diversity to wither away or to grow less (as a result of continuous immigration) than it would otherwise have done —, as a result of interaction, including intermarriage, and of exposure to common circumstances, information and other influences.<sup>38</sup>

Unlike the erosion of territorial diversity, to which I return shortly, this erosion of local diversity is not a problem. Fair economic opportunities and appropriate weight in the political process must have precedence over the preservation of local linguistic and cultural diversity wherever it happens to emerge as a result of immigration. Even if this results in some languages and cultures being squeezed out altogether locally, no unfairness, or lack of respect, is thereby being inflicted on anyone, providing the background assumption is one of reciprocity, however counterfactual. Had the roles been reversed, had the (current) autochthonous been migrating into the homeland of the (current) immigrants, they could not have claimed or expected more by way of protection of the local cultural diversity which they would have been causing by moving there. By deliberately reducing or containing local linguistic diversity, therefore, the learning of a common language by all those who share a territory does not hurt justice as equal dignity (see *LJ* chapter 4), while promoting the conditions for furthering distributive justice.<sup>39</sup>

## **6. Territorial linguistic diversity against economic solidarity ?**

Thus, the linguistic territoriality regime offered to handle linguistic injustice as unequal dignity sides conveniently with distributive justice at the expense of some diversity at the local level. At the territorial level, on the other hand, it has the effect of protecting diversity, and hence would seem to undermine rather than improve the conditions for distributive justice on a broader scale. If the segregation of linguistic communities at the local level is a bad thing for the sake of economic solidarity, fortunately counteracted by the linguistic territoriality

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<sup>38</sup> As the point is sometimes put (e.g. Salas Astrain 2004, ch.1), the “inter-cultural” saps the “multi-cultural”.

<sup>39</sup> It is the principled symmetry (or reciprocity) of territoriality regimes that makes a blatant lack of symmetry (between the official language and the others) acceptable without embarrassment as regards local diversity.

principle, how can it fail to be a bad thing on a larger scale too? By hindering both identification and communication, as explained above (section 5), linguistic diversity can be expected to weaken the prospects for economic solidarity at the territorial no less than at the local level.

Before addressing this challenge, we need to consider an argument to the effect that it does not exist, that there are on the contrary good reasons good reasons to expect territorial linguistic diversity to go hand in hand with a developed welfare state. The point of departure of this argument — and part of what it is meant to explain — is the contrast between the United States and the European Union taken as a whole. At present, the level of economic solidarity can safely be said to be higher in the latter than in the former. Yet, it is obviously also the European Union that exhibits the higher level of territorial linguistic diversity, firmly preserved by national boundaries that have gradually come to coincide by and large with linguistic boundaries (through the two mechanisms sketched *in LJ*, chapter 4).

Economic reasoning suggests that this positive correlation between solidarity and diversity is no coincidence. Here is the argument. Industrial development relies crucially on specialised skills. But heavy investment in these skills will happen only if enough insurance is provided in case local demand for them never materializes or disappears. One way of providing such insurance is by unifying linguistically a large area within which one can then move at comparatively low cost in search of another employment for the same skills. Another is through a developed welfare state. With a territory cut up into smaller linguistic areas, and hence with a higher average cost of moving in search of another use for one's skills, the optimal welfare state is bound to be, on average, considerably larger in the European Union than in the United States.<sup>40</sup>

Rather than happily concluding that, far from being antagonistic, territorial linguistic diversity and generous economic solidarity are complementary, it is

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<sup>40</sup> See D'Antoni and Pagano (2002) and Pagano (2004). What they have in mind is essentially the cash transfer system. But the argument can plausibly be stretched to explain why the optimal level of public funding of higher education should be higher in Europe than in the US, or in Francophone than in Anglophone Canada — and indeed why this is actually the case. This is just another way of collectivising part of the risk involved in the expensive acquisition of potentially remunerative skills. And so is the adoption of rigid pay scales linked to the educational level, also far more present in Europe than in the US.

important to note, first, that what is shown to be optimal, under conditions of greater linguistic diversity, is greater social insurance, not greater genuine (ex ante) solidarity. That Europe should have a larger truly redistributive welfare state can therefore be explained by this argument only to the extent that it forms an unavoidable by-product of a strong social insurance system, as administrative simplification and political dynamics push the transfer systems of each nation state beyond what fits under the umbrella of the insurance principle.

This is an important qualification. But there is an even more serious objection to a complacent reading of this argument. Suppose that the national solidarity systems become immersed in a common market, in which capital and commodities move freely, while people remain essentially stuck within national borders as a result of language differences. Considerations of competitiveness will put the truly redistributive (or “compassionate”) aspects of the welfare state under growing pressure, as mobile capital and consumer demand will tend, other things being equal, to move to those places where redistributive taxation weighs less. The pressure is further increased as the upper layers of the skilled labour force become more mobile trans-nationally — precisely by virtue of having become competent enough in an international lingua franca —, thereby increasing considerably the (redistributive) tax elasticity of the domestic supply of human capital.

Governments will need to respond by lowering the higher rates of income tax, by substituting regressive consumption taxes for progressive income taxes, by expanding lax and generous “expatriate” or “non-resident” statuses, by deliberately tolerating tax loopholes that primarily benefit affluent taxpayers, and by shifting government expenditures in favour of high earners. Put differently, they will need to shift resources towards subsidised opera performances, public golf courses and convenient airports, and away from subsidies to low-paid jobs and benefits to the unemployed; towards the cleaning or policing of the better neighbourhoods at the expense of education or public transport in the poor ones. Immersion in a competitive trans-national market turns states into firm-like entities, under constant pressure to downsize their redistributive ambitions, to shrink those aspects of their welfare systems that go beyond insurance, to reduce public expenditures that effect genuine transfers from the high earners to

the low earners, from the more talented, the more skilled, the more mobile, towards the less qualified, the less able, the less mobile.<sup>41</sup>

Of course, as solidarity becomes more difficult to organize, for the reasons just sketched, at the level of individual nation states immersed in a common market, one might hope that a larger political entity, pitched at a level closer to the one at which the market is operating, say the European Union, could take over the task. Indeed, in the US, the bulk of the net redistribution accomplished by the tax-and-transfer system is the work of federal, not of state programmes.<sup>42</sup> But given the spread of the lingua franca among the highly skilled, the economic case just sketched in favour of developed social insurance systems — and hence the expectation of some genuine solidarity as a by-product — would lose much of its strength. More importantly, by switching to this higher level, the EU's advantage over the US in terms of prospects for sustainable economic solidarity would be turned into a handicap, as its far greater territorial linguistic diversity, precisely entrenched by the linguistic territoriality principle, would tend to make identification and communication at the relevant level more difficult than in the US.

Moreover, precisely because of the grip of the linguistic territoriality principle, there is a strong case for keeping many policies decentralised at a level at which they can be discussed and explained in the language people are most familiar with. This is in principle compatible with the bulk of economic solidarity being organised at a more centralised level. But a tension unavoidably arises between centralised solidarity and decentralised competences in other fields —

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<sup>41</sup> Instead of lamenting all this, should one not rejoice at the constraints to which the national Leviathans are thereby subjected? The disciplining of rulers by a mobile tax base may sometimes provide a powerful and salutary lever for instilling respect for the rule of law, or for fostering the efficiency of the public sector, or for promoting a better match between the public goods supplied by a government and those the populations really want. But we live in a world in which globalisation, privatisation and Trade Union decline make factor incomes ever more unequal. We also live in a world in which secularization, marital instability and geographical mobility keep eroding the once powerful income-sharing function of the family. For these two sets of reasons, the redistributive role of the tax system is more crucial than ever to the achievement of anything remotely resembling distributive justice. If it turns out that, in the wake of financial and industrial capital, human capital has to be immunised from redistributive taxation, it will be impossible for anyone who cares about distributive justice not to be deeply concerned.

<sup>42</sup> This pressure of market competition on decentralised polities helps account for the negative correlation between federalism (vs unitarism) and economic solidarity pointed out, for example, by Banting and Kymlicka (2004).

say, education, town planning or environmental policy —, as some of the benefits and costs of sound or sloppy policy in decentralised matters are exported upwards to the central level, and hence shared by decentralised units which bear no responsibility for them. Thus, the partition of the near totality of Belgium's surface into two unilingual areas (in the 1930s) led to the growing separation of two distinct public discussion spaces, subsequently to demands on both sides for the devolution of powers to entities matching these spaces, and eventually, in the 1990s, to the transformation of the country into a full-fledged federal state along linguistic lines. No logical entailment, but a natural dynamics. However, the need to allocate to the decentralised authorities responsibility for the consequences of their policies in these other fields further contributes to preventing more centralised, and therefore economically less vulnerable, solidarity from being sustained at as high a level as would be the case with less territorial linguistic diversity. Added to the obstacle it creates for strong identification and fluid communication, this is a third reason why territorial linguistic diversity hinders the pursuit of economic solidarity.

There is no point denying this tension between territorial diversity and economic solidarity, and hence between the pursuit of justice as equal dignity through a linguistic territoriality regime and the pursuit of justice as equal opportunity through redistribution. Let us recall the rationale for the territoriality principle (*LJ* chapter 4). If we want to respect the equal dignity of the various linguistic communities in a context in which the language of one of them is granted the status of a common lingua franca, demystification and symbolic affirmation are not enough. We must also accept that each of them can adopt coercive measures which make it realistic give their language top status in the territory in which it happens to prevail and effectively protect it against gradual displacement. Although such coercive measures provide some material advantages to the natives of the language, they can be expected, under contemporary conditions, to involve a significant long-term net cost for the communities concerned. This cost should be borne by each of the communities which make the choice of imposing protective measures. Some of them will consider it prohibitive, and they will waive their right to implement the territoriality regime which these measures would constitute.

The preservation, owing to this set up, of a significant degree of territorial linguistic diversity constitutes a *prima facie* hindrance as regards the pursuit of economic solidarity and hence of distributive justice as equal opportunity, both across linguistic communities and (because of tax competition in case of redistributive schemes at the level of political units immersed in a common market) within each of them. But it is precisely this hindrance which the spreading and democratization of competence in the *lingua franca* is meant to reduce, by making communication, though not identification, about as easy and reliable among natives of different languages as it is among natives of the same one.

As argued elsewhere (*LJ* chapter 4), the very spreading of the *lingua franca* will make it more difficult for the linguistic territoriality principle to be effective, both because of universal diglossia among natives and because non-native immigrants can get away with using just the *lingua franca*. Consequently, the level of coerciveness required to prevent erosion of the local language will need to increase. At the same time, the extent to which the identity of the dwellers of the territory is linked to its language may be sharply reduced.<sup>43</sup> We may then be approaching a situation analogous to the terminal stage of many "dialects", whose native speakers were persuaded to identify with a more or less cognate grander language. No one's honour or dignity is being threatened if a language with whom no one identifies is not given pride of place anywhere, if it is left to agonize and die. As identification with their language declines, more communities will judge that the preservation of their linguistic distinctiveness is not worth the cost and coercion it imposes and decide to waive in turn their right to protect it. The hindrance to the pursuit of trans-national distributive justice will thereby be further reduced.

Presumably, if people's identities were reshapeable at will, developing a broader identity so strong as to obliterate their identities as speakers of the weaker language and heirs to the traditions associated with it would get rid of

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<sup>43</sup> David Crystal (2000:81) notes that, in a situation universal diglossia, the dominated language is there "to express the identity of the speakers as members of their community... The dominant language cannot do this.", but also (*ibid.* fn 23): "Only at the point where people have completely lost their sense of identification with their ethnic origins will the new language offer an alternative and comfortable linguistic home (at which point, the cultural assimilation would be complete)."

any injustice as unequal dignity there might have been: injustice as unequal dignity is not between languages, but between people who identify with them. Identities, however, are not so malleable. For the time being, therefore, and for the foreseeable future, justice as equal dignity will need to confer a major role to the linguistic territoriality principle and hence significant salience to the many quibbles its implementation is bound to give rise to. As a consequence, a considerable degree of territorial linguistic diversity will need to remain entrenched, to the chagrin of those who believe justice is entirely a matter of material distribution.

The celebrators of linguistic diversity will be relieved to read this. But they must realize that they are just being lucky. The reason why linguistic diversity must and will be preserved is not that it is intrinsically valuable, nor that it can be expected, all things considered, to have beneficial consequences. It is simply that it constitutes, for the foreseeable future, a by-product of the pursuit of linguistic justice a equal dignity.

## Appendix 1

### The measurement of territorial diversity

Measures of territorial diversity, or of the distinctiveness of local units such as habitats, neighbourhoods or regions) that compose a broader entity such as a landscape, a city or a country) are unsatisfactory if they look only at the presence or absence of types (such as species, races or languages) and disregard their relative concentration. Measures that take the evenness dimension of diversity into account, not only richness, have been developed in two very different fields: the sociological study of racial or ethnic segregation and the economics of regional or national industrial specialization.

As used in the literature on segregation (Massey and Denton 1988), the index of *isolation* for a type *i* (e.g. an ethnic group) in an entity (e.g. a city) composed of a number of units (e.g. neighbourhoods) is the probability for a member of *i* to meet another member of *i* when meeting at random all and only individuals living in the unit *j* in which they live themselves. It is given by the sum of the probabilities of meeting an *i* in each unit, weighted by the shares of the *i* population of the entity to be found in each unit:

$$p_i = \sum_j (n_{ij}/n_i)/(n_j/n_j),$$

where  $n_{ij}$  is the number of people of type *i* living in unit *j*

$n_i$  is the number of people of type *i* living in the entity as a whole

$n_j$  is the number of people living in unit *j*

The overall isolation index is then given by the weighted sum of the isolation indices for the various types:

$$p = \sum_i (n_i/N) \cdot p_i,$$

where  $n_i$  is the number of people of type *i* living in the whole entity

$N$  is the total population of the entity

$p_i$  is the isolation index for type *i*.

This index reaches its maximum (= 1) when all members of each type *i* live in units with only members of their type. It reaches its minimum (=  $\sum_i n_i^2/N^2$ )

when the share of each type is the same in all units. Obviously, the higher the index the more (evenness-sensitive  $\beta$ -) diversity there is across units.

The same intuitive notion of inter-unit diversity can also be captured with the index of *dissimilarity* (as generalized from Maignan & al. 2003, itself based on Massay and Denton 1988). The dissimilarity index for one type is given by the (minimal) proportion of the population of that type that needs to move from one unit to another in order for the share of that type in the population to be the same in all units. The overall dissimilarity index is then given by the weighted average of this dissimilarity index over all types. Using the same notation as above, the total number of members of type  $i$  who need to be moved to achieve equal proportions in all units is given by:

$$D_i = (\sum_j n_j \cdot |n_{ij}/n_j - n_i/N|) / 2n_i$$

where  $|n_{ij}/n_j - n_i/N|$  is the absolute difference between the share of type  $i$  in unit  $j$  and the share of type  $i$  in the whole entity.

The overall dissimilarity index is then given by

$$D = (\sum_i \sum_j n_j \cdot |n_{ij}/n_j - n_i/N|) / 2N.$$

It reaches its minimum (0) when the share of each type is the same in all units. It reaches its maximum when types make up 100% of all the units in which they are present. This dissimilarity index clearly provides another plausible candidate for an evenness-sensitive measure of  $\beta$ -diversity.

A third index with the same potential is the country Gini coefficient developed in regional economics to capture the degree of distinctness or relative specialization of the industrial structure of a country. Using again the same vocabulary and notation, the first step consists in defining a Balassa index as the ratio of the share of type  $i$  (say, the value of the output of an industry, or the size of an ethnic group) in unit  $j$  (say, a country's GDP, or the population of a neighbourhood) to the share of type  $i$  in the entity (say, the European Union's GDP, or the total population of a city):

$$b_{ij} = (n_{ij}/n_j) / (n_i/N).$$

Next, for a given unit  $j$ , the types are ranked from the lowest to the highest Balassa index (i.e. from the unit's most underrepresented to its most

overrepresented type). Using this ranking, a Lorenz curve is then drawn, with the cumulative share of the type in the whole entity on the x axis and the cumulative share of the type in the unit on the y axis (reaching a maximum of  $\sum_i(n_{ij}/n_j) = 1$  for  $\sum_i(n_i/N) = 1$ ). On this basis, a Gini coefficient (capturing the gap between the Lorenz curve and the 45° line) can be calculated to reflect the degree of inequality of the relative presence of each type in the unit considered. If the distribution of types is exactly the same in the unit as overall (say, if the industrial structure of a member state is the same as that of the EU or if the ethnic composition of a neighbourhood reflects exactly the ethnic composition of the city as a whole), the Balassa indices for all types are equal to 1 and the Gini coefficient for the unit is zero. If instead, the unit is highly specialized in some types that are rare in other units, the Gini coefficient will be high, reflecting the distinctiveness of the unit. Again, the weighted average of this Gini coefficient over all units can be used as an index of evenness-sensitive  $\beta$ -diversity.

Finally, let us consider the *industry Gini coefficient*, developed as an index for the geographical concentration of an industry, and applicable again far beyond this case, whenever the diversity of the distribution of types in different units is to be assessed. We start again with a Balassa index, now redefined as the ratio of the share of unit j (say, a country or a neighbourhood) in type i (say, the value of the output of an industry at EU level, or a particular ethnic group in the city as a whole) to the share of unit j in the entity as a whole (say, the European Union's GDP, or the total population of the city):

$$b_{ij} = (n_{ij}/n_i)/(n_j/N).$$

Next, for a given type j, the units are ranked from the lowest to the highest Balassa index (i.e. from the unit in which the type is most underrepresented to the one in which it is most overrepresented). Using this ranking, a Lorenz curve is then drawn, with the cumulative share of the units in the whole entity on the x axis and the cumulative share of the units in the type on the y axis (reaching a maximum of  $\sum_i(n_{ij}/n_i) = 1$  for  $\sum_i(n_i/N) = 1$ ). On this basis, a Gini coefficient (capturing the gap between the Lorenz curve and the 45° line) can be calculated to reflect the degree of inequality of the relative presence of each unit in the type considered. If the distribution of units is exactly the same in the type as overall (say, if an industry is shared among the member states in the same proportion

as the EU's GDP), the Balassa indices for all types are equal to 1 and the Gini coefficient for the type is zero. If instead, the type is concentrated in one of few units with no or few other types in them, the Gini coefficient will be high, reflecting the concentration of the type. Again, the weighted average of this Gini coefficient can be used as an index of evenness-sensitive  $\beta$ -diversity.

## **Appendix 2**

### **Diversity versus inequality**

There are several connections between the notions of diversity and inequality. Take any quantitative variable, such as height, income, fluency in English, the number of years one has been living in a country, the average number of syllables of one's language etc., for which some notion of inequality can be defined, and whose values can be partitioned not too arbitrarily into, say, ten intervals of equal size, which I shall call levels. Consider next the following three populations:

A: 50% at level 5 and 50% at level 6.

B: 50% at level 1 and 50% at level 10.

C: 10% at each of the ten levels.

Compare first populations A and B. Relative to A, we shall no doubt agree that B is more *unequal*, more *polarized* and more *diverse*. But it would be wrong to infer that we use these notions interchangeably. To see this, compare next A and C. Relative to A, we shall no doubt agree that C is more unequal (the fact that 20% of the population are somewhat closer to the mean is more than compensated by the fact that 60% are further away from the mean) and more diverse (all ten levels are instantiated instead of the just two most central ones), but it is clearly less polarized. Finally, compare B and C. Relative to B, we shall no doubt agree that C is less unequal and less polarized, but we shall say without hesitation that it is more diverse if diversity is made exclusively a matter of richness and evenness (see section 1). However if we want to take distance into account to such an extent that it erases the role of richness and evenness (see section 1), the extent of diversity will collapse into the extent of inequality. The connection just made between diversity and inequality holds only when some notion of distance makes sense (not, say, for the diversity of tastes or nationalities in a group) and when this distance can be interpreted as a matter of having more or less of something (not, say, for the multi-dimensional notion of distance between languages).

Even when distance is left out and diversity is only a matter of richness and evenness, however, there is still an analytic connection between diversity

and inequality. But this time it is an inverse relationship and one between diversity and inequality between type sizes, not between types. All members of the population are supposed to belong to one type. The numbers of individuals belonging to the various types can diverge more or less. The more equal these numbers, the greater the evenness and hence the diversity. This is captured by Simpson-style indices (see section 1). But it can also be captured in (the inverse of) inequality indices such as the Gini coefficient or the coefficient of variation, applied to type sizes. As indices of diversity, however, coefficients of inequality perform far worse than Simpson-style indices as soon as the number of types is not fixed. To see this, suppose a population consists of two large types. Add one newcomer belonging to a different type. On any intuitive interpretation, diversity unambiguously increases. By contrast, if it were measured by the inverse of inequality indices, diversity would necessarily shrink, since the inequality between type sizes increases.

There is still a third, more far-fetched, connection explored in Appendix 1. An inequality index may be relevant not only because, like diversity, it captures some notion of difference (first connection); or because, in contrast with diversity, it captures the degree of concentration of individuals in some of the types (second connection); but also because it can be applied to measure the divergence of the distribution of types in the various from their distribution in the entity as a whole. A great inequality in the relative representation of types in units means that the make up of the various unit is very different, and hence that there is a high level of inter-unit diversity — itself inversely related to intra-unit diversity for a given level of diversity overall (section 3).

### **Appendix 3**

#### **The measurement of economic solidarity**

In Europe at any rate, “economic solidarity” is most commonly understood to refer to the institutionalised transfers from the better off to the worse off. So defined, it constitutes a major tool for the achievement of distributive justice, itself defined as the equalization of opportunities (see LJ chapter 3). The same expression is also sometimes used to refer to the “fellow-feeling” between the better off and the worse off. Solidarity as a set of feelings might be one cause or condition of solidarity as a set of transfers. Indeed, the most obvious conjecture as to why linguistic diversity may pose a threat to solidarity transfers is that it undermines solidarity feelings. But this need not be the only, nor indeed the main mechanism involved (see section 5).

The measurement of economic solidarity *qua* institutionalised transfers is quite tricky. Simple indicators like the average rate of income tax or the share of social transfers in GDP are only very imperfect proxies, for example because a reform that increases the tax burden on the poor would show up in an increase in economic solidarity so measured. A more appealing measure — used for example, in connection with the relationship between solidarity and diversity, by Seekings (2004) or Banting and Kymlicka (2004) — is the reduction of the Gini index of inequality as a result of taxation and transfers. It is certainly an instructive indicator but needs to be handled with care, for four distinct reasons.

Firstly, much of the measured difference between pre- and post-tax-and-benefit Gini indices simply reflects income shifts along the life-cycles of the same people, rather than redistribution between different people. Even a system consisting entirely of generous but actuarially fair pensions systems — and hence involving no *ex ante* inter-individual redistribution (or “solidarity”) whatever — would show up as a powerful reducer of the Gini index, at least as long as the data base consists (as is almost unavoidably the case) of snapshots of the income distribution, rather than of lifetime expected incomes.

Secondly, even if we had an exact measure of the impact of the tax-and-benefit system on Gini indices for lifetime incomes, this may still be a very imperfect indicator of the level of solidarity as a dispositional property of the redistributive institutions. If a powerful redistributive set up operates on the

background of an exogenously given distribution of primary incomes that happens to be very equal already, it will be reflected in a smaller Gini reduction than a weaker redistributive set up that operates on the background of a far more unequal pre-tax-pre-transfer distribution. A better criterion, it would seem, would consist in applying the batteries of redistributive policies existing in various countries to the same distribution of primary incomes, possibly yielding different rankings in terms of degree of “solidarity” depending on which particular distribution of primary incomes it is applied to. (See Callan and Sutherland (1999) for an illuminating illustration using the Euromod simulation model.)

Thirdly, the comparison between Gini coefficients measures the impact of the tax-and-transfer system only in a purely arithmetic sense. Anticipation of the taxes and benefits is most likely to lead to a higher pre-tax-and-transfer Gini index than the one that would counterfactually prevail if there were no taxes or transfers. In the absence of a reliable and sufficiently redistributive pension system, for example, comparatively poor people would be under greater pressure to earn more during their active life than would otherwise be the case, and after retirement would derive a private income from the savings thereby made possible. Consequently, the size of the arithmetic difference between the pre- and post-tax-and-benefits Gini indices is likely to overestimate the actual impact of the tax-and-benefit scheme on inequality in disposable incomes.

Fourthly, once a longer-term perspective is adopted, the distribution of primary incomes cannot be regarded as exogenous for reasons that go beyond behavioural adjustments to the anticipation of taxes and transfers. As one considers the next generation, a more strongly redistributive system can be expected to generate a more equal distribution of primary income, for example as a result of less unequal health and education. In a steady state, therefore, not only will a more powerfully redistributive system seem to display less “solidarity” if it happens to operate on a more equal distribution of primary incomes, but it will have a systematic tendency to display less “solidarity” (so measured), precisely as a result of inducing a more equal distribution of primary incomes. A better measure would need to take this trans-generational impact into account.

Moreover, once the effect on the distribution of primary incomes is taken into account, it makes sense to look at transfer schemes as part of a package that also includes a country's labour market institutions or language policies : tolerance for racial discrimination, basic education of very unequal quality combined with free higher education for the "best", or an uncompensated privilege given to the mother tongue of a subset of the population, for example, may deeply affect primary income inequalities. (See e.g. Grin (2004) on the distributive consequences of imputing the costs of use and learning to the non-natives of the privileged language.) Paradoxically, the Gini index reduction that can be ascribed to the explicit redistributive mechanisms may make the level of solidarity look quite high precisely because the solidarity implemented by the whole set of institutions is quite low.

The upshot of all this is that comparisons of levels of solidarity across countries must be performed with extreme caution, even when reliable data are available to compute the pre- and post-tax-and-benefit Gini indexes. Assessments as to whether solidarity has increased or decreased in a particular society can generally be made more easily because of the constancy of a number of parameters, but even then vigilance is in order. An increase in the level of "solidarity", as measured by the rate of reduction of the Gini coefficient, may have nothing to do with the adoption of more generous redistribution policies, but simply be the mechanical reflection of an increase of primary inequalities, themselves conceivably the outcome of solidarity-unfriendly reforms adopted at an earlier stage.

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