6

Linguistic Justice

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1. The Issue

Al and Bo grew up learning different mother tongues. At some later stage, Bo learns Al's, while Al does not learn Bo's. They can now communicate with one another. Not quite on an equal footing, of course—Al tends to have the upper hand in any argument they might have with one another and in any competition in which they might have to take part using the shared language—but nonetheless with significant benefits, both material and non-material, accruing to both.

So far, therefore, so good enough—except perhaps that the cost of producing this benefit, though enjoyed by Al with greater comfort and with the bonus of some pleasing by-products, is borne entirely by Bo. Is this nothing to worry about, as Bo freely chose to learn Al's language? Or is it fair, on the contrary, that Al should make a substantial contribution towards this cost and, if so, at what level?

This chapter aims to spell out and assess alternative answers to this question. Which answer is chosen has no implications whatever in the context of the homogeneous nation-state tacitly taken for granted in most thinking about social justice. But it may have momentous implications for the question of the fair distribution of resources in the Indian Union, in the South African Federation, in the European Union, indeed in most countries of the old continents, and even more so at the level of the world as a whole, as economic globalization irresistibly and irreversibly snowballs into existence the first world-wide lingua franca.

2. Cooperative Justice versus Distributive Justice

The way I shall phrase the central question of this chapter rests on two crucial assumptions, both debatable but, I believe, defensible. The first is that it makes sense to think of linguistic justice as a form of inter-community cooperative justice, and not only as an aspect of inter-personal distributive justice.

A person's linguistic competence can of course be regarded as a complex skill which significantly affects her life chances, including her earning power, and is itself the product of a combination of effort and of circumstance—in particular, of a human environment which can make the learning of one or more languages in one or more variants either so easy that it is hardly noticeable or prohibitively difficult. Unequal linguistic endowment can be the source of major inter-personal injustice. To determine whether, how, and to what extent it needs to be corrected, we can appeal to the usual set of principles of distributive justice.

For example, from a Rawlsian perspective, in so far as a person's mother tongue—or one's 'accent' when speaking the standard idiom—is an economically irrelevant characteristic, the principle of fair equality of opportunity will require that it should not influence in any way that person's access to valued social positions. Mother tongue, in this perspective, is as illegitimate a basis for discrimination as race, gender, or faith. But there are of course many contexts in which linguistic competence operates as a productive skill. To this extent, the linguistic equipment one owes to one's childhood environment can be regarded as a talent, and the principle of fair equality of opportunity, that is, of equal opportunities with given talents, is irrelevant. But the difference principle is not. Among those who occupy the worst social position (in terms of lifetime expectations of social and economic advantages), those with the misfortune of speaking the wrong language, or of speaking the right language with the wrong accent, are bound to be over-represented. Rawlsian justice does not let them down. The difference principle requires that the expectations of the incumbents of this position be maximized, that they be higher than those associated with the worst position under any alternative arrangement. Under neither principle, however, does the rent associated with having one type of linguistic competence rather than another, or having inherited one mother tongue rather than another, require separate treatment. It is possible and instructive to provide estimates of the lifetime earnings differential associated, in a particular country at a particular time, with having one mother tongue rather than another.[1] But there is no reason to single out linguistic assets for special treatment: they can safely be lumped together with other personal assets.[2]

[1] See for example Grin and Vaillancourt (1997) and Grin (1999*a*).

[2] The same holds, *mutatis mutandis*, within the framework of the 'real-libertarian' conception of justice presented and defended in Van Parijs (1995; 2001). The fact that possessing a mother tongue different from the dominant one may constitute a handicap makes undominated diversity less likely to obtain spontaneously (thus justifying that some resources be specifically targeted at dominated

There is, however, a distinct perspective from which it makes sense to discuss linguistic justice independently of other dimensions of justice. To characterize it, think of the following analogy. Some years ago, I spent a number of months, together with my family, living with my father-in-law. After a while, one feature of our common life started bothering me: as soon as any amount of dust or crumbs became visible, my father-in-law got the vacuum-cleaner out of the cupboard to get rid of them. As a result, all the cleaning was done long before we reached the threshold which would have triggered me into doing the cleaning myself, and my standards of cleanliness were more than met without my ever doing any work for it. No power relationship or altruism was involved, or at least needed to be. Yet the structure of the situation was such that I systematically benefited from my father-in-law's toil without contributing myself in any way to the public good he produced. Even on the generous assumption that I was not responsible for any of the crumbs, this seemed unfair to me, and to restore my peace of mind (and enhance the probability of remaining welcome?) we soon struck an explicit deal involving some compensatory performance—toilet cleaning, if I can trust my memory.[3]

What connection does this have with linguistic justice? Quite simple. In the example of the opening paragraph, Bo is in a situation analogous to my father-in-law's. By learning a second language in her own best interest, she is producing a public good which Al is enjoying at no cost, just as my father-in-law is doing by cleaning the floor. Now, if Al and Bo are just individuals who differ in many respects and among whom justice needs to be done, the disadvantage to Bo arising from the opportunity cost of having to learn the majority language and from the lesser comfort in using it is just one dimension in a set of advantages and advantages which may make her condition, on the whole, better or worse than Al's. But now think of Al and Bo as two non-overlapping linguistic communities who have to live together in a country or on a planet, in the same way as my father-in-law and I had to live, albeit for a short while, in the same house. Laissez-faire would lead to 'free riding', here simply defined by the fact that two people (or categories of people) enjoy some benefit while the work required to produce it is (self-interestedly) performed by only one of them. Under such conditions, if only to avoid embarrassment or resentment, or to make our interaction smoother, more relaxed, and thereby, conceivably, more profitable, all things considered, for both, it makes sense to think together about what could count as a fair arrangement.[4] The latter need not entail equal contributions to

linguistic communities), while employment rents will be more than proportionally appropriated by people with more valuable linguistic assets (and their maximin redistribution through the highest sustainable basic income will therefore benefit more than proportionally those with less valuable linguistic assets). In neither case does linguistic justice need to be treated separately.

[3] I used this story in Van Parijs (1996) to illustrate and motivate one potential application of David Gauthier's principle of maximin relative benefit, to which I return shortly.

[4] I do not need to assume that, whenever anyone is producing a positive externality, she can legitimately turn to whoever benefits from it in order to collect a fee (that would not exceed the value

the cost of producing the joint benefit. It may even allow free riding to continue in one domain of interaction, providing it is offset by compensatory free riding in another. But to assess the fairness of the pattern of interaction that generates the benefit of communication between linguistic communities, one needs an appropriate criterion of fairness. This is precisely how I shall understand the subject of linguistic justice.

3. Permanent Commuting versus One-Off Move

There is a second basic assumption which further specifies this understanding and which I shall briefly motivate, again by using an analogy. Suppose the dwellers of both a city and its surrounding countryside all greatly benefit from spending most of their days side by side, for example by working together. It therefore makes sense for the country dwellers, spread all around the city, to do the commuting. It also makes sense to ask how fair it would be for city dwellers to contribute to the cost of the commuting, at least if we suppose that country dwellers did not deliberately choose to settle in the country, but happened to live there at the time the potential benefit from spending days side by side arose. However, beyond the short term, the acknowledgement of this joint benefit and of the legitimacy of co-financing it unavoidably prompt the question of whether the right thing to do is to subsidize permanent commuting or to subsidize a one-off move. The former is bound to prove more expensive in the long run, and the only way of justifying it is by invoking, in addition to the collective good of spending days close to each other, the collective good of spending nights and weekends spread over a broader space. In the absence of a further collective benefit of this sort (maintenance of the rural landscape, better social control in smaller towns?), it seems fair that the share of the cost of indefinite commuting that exceeds the cost of moving once and for all should be entirely borne by those with an expensive taste for living far from the centre.

Justice between linguistic communities could analogously be conceived either as a fair sharing of the cost of permanent commuting—the learning of the 'dominant' language by the present and all subsequent generations of speakers of the 'dominated' languages—or as a fair sharing of the cost of a one-off move—the replacement of the 'dominated' languages by the 'dominant' language as a common mother tongue. If the permanence of linguistic diversity is a general nuisance rather than a general benefit, those who are asked to support it by funding the asymmetric bilingualism of many generations rather than the conversion process of one or two could legitimately complain. Against the background of this sort of assumption, perhaps the Bretons were inadequately

of the benefit), but only that she can do so in a subset of cases (long-term interaction, voluntary contribution by the beneficiary to the creation of situations in which the externality is being enjoyed?) to which my two examples belong.

compensated for being toughly turned into unilingual French citizens, but they could not expect the rest of the French population to subsidize for ever their learning of French as a second language. Similarly, if the world were to be turned, linguistically speaking, into a Republic of Ireland writ large, its linguistic communities might be entitled to a far more generous compensation from today's anglophone countries than the Irish people got from the United Kingdom as Irish was driven out by English even as a mother tongue, but this would be far less, in the long run, than what would be required by the cost sharing of permanent second language learning. My second assumption will simply be that the collective value of undoing the multilingual outcome of the Babel fiasco is significantly less than that of maintaining a significant degree of linguistic diversity. I gladly concede that there is nothing self-evident about this assumption—except for those who have language(s) as their subject matter. A pretty strong argument is needed to vindicate it in the face of the tremendous efficiency gains that would follow from having all six or ten billion of us share the same mother tongue. I am not making the slightest attempt to provide such an argument here, but I believe it can be made.[5]

4. The Bare Bones of the Problem

Against the background of these two key assumptions, the problem of linguistic justice can be formulated in its barest form as follows. There are two linguistic communities, respectively called D(ominant) and d(ominated), with respectively N and n native speakers ($N > n$). The per capita (gross) cost c of learning a second language is the same for both communities. The learning of the other language by either of the two communities generates a per capita (gross) benefit B for members of D, and b for members of d. In both cases, the benefit is given by the number of speakers this learning enables them to communicate with, lifted upward or downward by a comfort coefficient s that reflects superiority or inferiority in the interaction: the per capita benefit is higher if communication occurs in one's own mother tongue, it is lower if it takes place in an idiom learned later in which one never feels quite as comfortable. Hence, supposing that d-speakers learn the other language while D-speakers don't, the per capita gross benefit to d-speakers is $b = N(1 - s)$ and the per capita gross benefit to D-speakers is $B = n(1 + s)$.

The learning is worth doing in the aggregate if and only if the total benefit of one of the two communities learning the other community's language exceeds the total cost. The total benefit β is given by $NB + nb$. Under the simplifying assumptions just made, this is equal—irrespective of whether the learning is done by d or D—to $2Nn$, or twice the number of pairs of people who become able to communicate with one another as a result of one of the communities

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[5] I sketch two families of possible arguments of this type in Van Parijs (2000b).

learning the language of the other. The total cost is nc if d does the learning and Nc ($>nc$) if D does it. The necessary and sufficient condition for the overall net benefit to be positive is therefore $2Nn > nc$ or $2N > c$.

It is of crucial importance to note that the necessary and sufficient condition for either of the two communities to derive a positive net benefit from learning the other language is unavoidably more demanding. D will benefit if and only if $B = n(1 - s) > c$, while d will benefit if and only if $b = N(1 - s) > c$. It is of course arithmetically possible for the per capita cost c to fall short of $2N$, while exceeding $N(1 - s)$ and a fortiori $n(1 - s)$, thus making room for a discrepancy between laissez-faire and efficiency in the minimal sense of Pareto optimality: the individual cost of learning exceeds the benefit from learning for every potential learner, even though the overall potential gain from learning is such that everyone could be made better off without anyone needing to become worse off.

To illustrate this possibility in the framework of our initial example, let us assume that Al has a sister, An, with identical language skills, to mirror the assumption that the dominant community D they form is twice the size of the dominated community d, with Bo as its sole member. Let us further assume that costs and benefits can be estimated, using the same one-dimensional metric, as follows. While the gross benefit (that is, abstracting from the cost, if any) to a person of the learning of a second language (by herself or someone else) is posited to be 1 for each of the speakers with whom this learning enables her to communicate (thus disregarding for the moment the complexity arising from the comfort coefficient s), its *gross cost* (that is, abstracting from the benefit, if any) is posited to be 3 for the person who does the learning. The net benefit is then given by the difference between gross benefit and gross cost. (See rows i–x in Table 6.1.)

5. Reconciling Freedom and Efficiency: Church and King

What would happen, in this simple example, under laissez-faire, that is, in the absence of any transfer targeted at language learners? Al and An will not learn Bo's language, since the net benefit of doing so would be negative for each of them ($1 - 3 = -2$). Nor will Bo learn language A, for the same reason ($2 \times 1 - 3 = -1$). But this outcome is clearly inefficient if one takes account of communication externalities, that is, the benefits for some from the language-learning of others. True, if Al and An were learning Bo's language, the overall net benefit would remain negative, as the free benefit for Bo ($2 \times 1 = 2$) would not offset the net cost to Al and An ($2 \times (-2) = -4$). But if Bo were learning the language of the majority, the free benefit for Al and An ($2 \times 1 = 2$) would exceed the net cost to Bo ($2 \times 1 - 3 = -1$).

Under such circumstances, there is an obvious case for intervention, and a no less obvious suggestion as to its level. Efficiency can be reconciled with freedom—everyone can be made better off without anyone needing to be

Table 6.1 Al, An, and Bo under four compensation regimes

	Al & An	Bo	Total
Basic facts			
i. Gross benefits if the *As* learn	1 ($\times$ 2)	2	4
ii. Gross benefits if Bo learns	1 ($\times$ 2)	2	4
iii. Gross benefits if all learn	1 ($\times$ 2)	2	4
iv. Gross costs if the *As* learn	3 ($\times$ 2)	0	6
v. Gross costs if Bo learns	0	3	3
vi. Gross costs if all learn ($=$ iv $+$ v)	3 ($\times$ 2)	3	9
In the absence of any transfer			
vii. Net benefits if the *As* learn ($=$ i $-$ iv)	-2 ($\times$ 2)	2	-2
viii. Net benefits if Bo learns ($=$ ii $-$ v)	1 ($\times$ 2)	-1	1
ix. Net benefits if all learn ($=$ iii $-$ vi)	-2 ($\times$ 2)	-1	-5
x. Net benefits if no one learns	0	0	0
Under a Church and King regime			
xi. Subsidies if Bo learns	-0.5 ($\times$ 2) $- \epsilon$	$1 + \epsilon$	0
xii. Net benefits if Bo learns ($=$ viii $+$ xi)	0.5 ($\times$ 2) $- \epsilon$	ϵ	1
xiii. Contributions to the cost of learning ($=$ v $-$ xi)	0.5 ($\times$ 2) $+ \epsilon$	$2 - \epsilon$	3
Under a Pool regime			
xiv. Proportionally shared learning costs	1 ($\times$ 2)	1	3
xv. Subsidies if Bo learns (v $-$ xiv)	-1 ($\times$ 2)	2	0
xvi. Net benefits if Bo learns (viii $+$ xv)	0 ($\times$ 2)	1	1
Under a Gauthier regime			
xvii. Maximum net benefits ($=$ total net benefit)	1	1	1
xviii. Equal (or maximin) net benefits	$1/3$ ($\times$ 2)	$1/3$	1
xix. Subsidies if Bo learns (xviii $-$ viii)	$-2/3$ ($\times$ 2)	$4/3$	0
xx. Shares in the cost of learning ($=$ v $-$ xix)	$2/3$ ($\times$ 2)	$5/3$	3
Under the proposed regime			
xxi. Equal benefit/cost ratio	$4/3$	$4/3$	$4/3$
xxii. Subsidies if Bo learns (v $-$ ii/xxi)	$(-3/4)$ ($\times$ 2)	$3/2$	0
xxiii. Post-subsidy gross costs if Bo learns (v $-$ xxii)	$3/4$ ($\times$ 2)	$3/2$	3
xxiv. Net benefits if Bo learns (ii $-$ xxiii)	$1/4$ ($\times$ 2)	$1/2$	1

coerced into learning another language—if Bo's willingness to learn the *As'* language earns her a subsidy at a level just sufficient to induce her to do so. In our example, this sharing of the cost of learning will need to take the form of a tax of slightly more than 0.5 on both Al and An and a subsidy of slightly more than 1 to Bo that will, jointly with the direct benefit of being able to communicate

with the As ($=2$), more than offset her gross cost ($=3$). Relative to the no-learning situation, the total net benefit is then 1, and everyone is better off. (See rows xi–xiii in Table 6.1.) This corresponds exactly to the cost-sharing rule proposed, on grounds of sheer efficiency, by economists Jeffrey Church and Ian King (1993) as an appropriate way of internalizing the 'network externalities' of language learning, that is, the benefits generated for any user of the network by the fact that one more user joins it.

From such a standpoint, it is crucial to note, there are many situations in which communication externalities do not need to be compensated. Suppose, for example, that there are four As instead of just two. It now makes sense for Bo to learn the As' language even if she has to bear the entire cost. For her gross cost remains the same (3), while her gross benefit doubles (4×1), thus yielding a positive net benefit for her ($4 - 3 = 1$), even in the absence of any cost-sharing by the As. No Pareto-improvement is then achievable through the introduction of a subsidy, and the latter, therefore, could not be justified on efficiency grounds.

Our problem, however, is not linguistic efficiency but linguistic justice. And the distribution of costs and benefits that emerges from the previous criterion is, to put it mildly, not self-evidently fair. In the original version of our example (with only two As), Bo ends up (after subsidies) paying two-thirds of the cost of producing a net benefit nearly 100 per cent of which is enjoyed by Al and An. In the expanded version (with four As), Bo's net benefit ($=1$) is the same as for each of the As, but she bears alone 100 per cent of the cost. In this linguistic example, just as in the case of my father-in-law's cleaning, this is surely not good enough. Is there any criterion around that could make a more credible claim to expressing what is required by justice, which may diverge significantly from what is required by efficiency?

6. Reconciling Justice and Efficiency: Pool

Reconciling linguistic justice and linguistic efficiency is precisely the chief objective of an essay on 'the official language' by political scientist Jonathan Pool (1991*a*). His point of departure can be presented as follows. In a situation in which there are two or more mother tongues, it is easy enough to identify a solution that would be fair: for example, no one learning any other language, or everyone learning all other languages, or everyone learning another language, either natural or artificial, equidistant from all the mother tongues involved. It is also easy to identify a solution that would be efficient: everyone whose mother tongue is not the most widespread learning the one that is most widespread—at least if it does not happen to be exceptionally difficult to learn. But the fair solutions seem bound to be inefficient, and the efficient solution is clearly unfair. Is there an inescapable dilemma between fairness and efficiency?

Pool thinks not, providing one selects the most widespread language as the common language and organizes transfers to those who learn it as a second language for everyone's benefit, whether or not the personal benefit they derive from learning it is sufficient to motivate this learning. What is the criterion that determines the fair level of transfers? Necessarily one that is more demanding than Church and King's efficiency-driven rule: Pool's criterion requires the cost of learning to be shared by the various linguistic groups in proportion to their sizes. In the original version of our example (with two *A*s only), this amounts to requiring Bo to do the learning, while dividing the cost of this learning (=3) equally among Al, An, and Bo (1 each). (See rows xiv–xvi in Table 6.1.)

This rule certainly looks far more appealing than Church and King's as a proposal for a fair sharing of the burden of producing a good that benefits everyone; or at least it does so as long as one does not scrutinize the way in which the total net benefit of the learning is distributed among the three speakers. As it happens, Bo appropriates 100 per cent of this benefit, since Al's or An's contribution (=1) to the cost of Bo's learning is exactly equal to the benefit each derives from being able to communicate with her. Indeed, had Bo's learning cost been even very slightly higher (say, 3.3 instead of 3), the total net benefit would have remained positive ($4 - 3.3 = 0.7$), and hence the learning would still have been worth doing, but Al and An's net benefit would have become negative ($1 - 1.1 = -0.1$), as the cost sharing required of them by Pool's rule would have made them worse off than if Bo had not bothered to learn their language.

Consequently, if Pool's rule is meant to govern—without the supplementation of an ad hoc restriction—the distribution of the benefits of a cooperative venture to which people can be assumed to consent voluntarily, it looks as if it is overshooting the mark. It does reconcile efficiency (the overall-net-benefit-maximizing learning pattern) with some attractive egalitarian conception of fair burden sharing (a proportional contribution to learning costs by each linguistic group), but at the cost of having to coerce *A*-speakers into joining the deal or, for short, at the cost of giving up freedom.

7. Reconciling Justice, Efficiency, and Freedom: Gauthier

To solve this difficulty, a third formula may be available in the literature. After the economics of networks and the politics of language policy, let us now turn to moral philosophy. As a general criterion for fairly distributing the benefits from voluntary cooperation, David Gauthier (1986: 271–2) proposes maximin relative benefit. If one assumes away any indivisibility in the range of contributions to the cost of learning, maximin relative benefit is not distinct from equal relative benefit, that is, the equalization of the ratio of each cooperator's actual benefit from the cooperative venture (relative to what her fate would have been in the absence of cooperation) to the maximum benefit she could have derived from it.

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To determine this maximum benefit for one of the cooperators, one must select the level of production of the good (in this case, a pattern of competence in the mother tongue of the other group) that maximizes the net benefit for that cooperator under the constraint that the net benefit of none of the other cooperators can be negative. What this 'maximum benefit' of each of our three cooperators amounts to can be conveniently read from the table of net benefits in the absence of any transfer (rows vii–x). The level of production chosen, in the calculation of each of the cooperators' maximum benefit, is necessarily the one that maximizes the total net benefit, namely Bo learning the *As*' language and the *As* learning nothing (1 compared with -2 if the *As* learned or even -5 if all learned). Bo's maximum benefit then consists in her appropriating 100 per cent of this total net benefit ($1 = 2 \times 1 - 3 + 2 \times 1$), thanks to a transfer of 1 from both Al and An, which leaves the latter indifferent between cooperation and the status quo. Symmetrically, Al's (or An's) maximum benefit is achieved when he (or she) appropriates 100 per cent of the total net benefit, by letting An (Al) alone contribute a transfer of 1 towards Bo's learning costs, thus leaving both An (Al) and Bo indifferent between cooperation and the status quo. (See rows xvii–xx in Table 6.1.)

Given that the maximum benefit is the same for all three, equalizing their relative benefits will obviously require that each should achieve the same absolute net benefit level of $1/3$. This requires, in our example, a pattern of transfers to the language learner less stingy than under the Church and King regime, but less generous than under the Pool regime. To lift Bo's net benefit to the level of their own, Al and An will both have to pay her $2/3$, so that Bo ends up with a total subsidy of $4/3$ towards her learning effort. The risk of overshooting inherent in Pool's criterion has now vanished. For, as the cost of learning increases, the subsidy by nonlearners will increase (as long as the learning is worthwhile), but it will never make them worse off than in the absence of cooperation. Suppose, for example, that the cost of learning increases from 3 to 3.7. Learning is still efficient, as its cost falls short of its total gross benefit ($=4$). With a surplus now shrunk to 0.3, Gauthier's criterion entails a shrinking of each cooperator's absolute level of net benefit from $1/3$ to $1/10$ (which still corresponds to one-third of the surplus for each). This is achieved through a subsidy of 1.8 to Bo (which grants her a net benefit of $2 \times 1 - 3.7 + 1.8 = 0.1$) funded equally by Al and An (which shrinks the net benefit of each to $1 - 0.9 = 0.1$). But the very fact that transfers are calibrated to equalize (positive) net benefits protects this upward adjustment of the *As*' contribution from overshooting in the way it did under Pool's regime.

Note, however, that even after the transfer, Bo is still bearing a disproportionate share of the learning costs. Not only is she contributing more ($5/3$) towards the cost of the good enjoyed by all three than either Al or An taken separately ($=2/3$), but also more than the two of them together ($=4/3$), despite the fact that the two linguistic groups derive the same gross benefit ($=2$) from the good produced. Indeed, this imbalance is getting worse as the inequality in the sizes of the two linguistic groups increases. (See rows viii–xiii in Table 6.2.)

TABLE 6.2 Variable number of speakers of the dominant language

	Al & An	Bo	Total
Basic facts			
i. Number of *A*s	2	4	9
ii. Total gross benefit of Bo's learning (i $\times$ 2)	4	8	18
iii. Total gross cost of Bo's learning	3	3	3
iv. Total net benefit of Bo's learning (ii $-$ iii)	1	5	15
v. Pre-transfer net benefit for Bo (i $-$ iii)	-1	1	6
vi. Pre-transfer net benefit for each *A*	1	1	1
vii. Pre-transfer net benefit for all *A*s (vi $\times$ i)	2	4	9
Under a Gauthier regime			
viii. Equal individual net benefit ($=$ iv/(i $+$ 1))	1/3	1	3/2
ix. Subsidy to Bo (viii $-$ v)	4/3	0	9/2
x. Transfer to each *A* ($-$ ix/i)	$-2/3$	0	1/2
xi. Bo's share in the cost of learning (iii $-$ ix)	5/3	3	15/2
xii. *A*s' total share in the cost ($=$ ix $=$ $-$x . i)	4/3	0	$-9/2$
xiii. *A*s' total net benefit (viii . i)	2/3	4	27/2
Under the proposed regime			
xiv. Equal benefit/cost ratio (i $\times$ 2)/iii	4/3	8/3	18/3
xv. Subsidy to Bo (iii $-$ i/xiv)	3/2	3/2	3/2
xvi. Transfer from each *A* (xv/i)	3/4	3/8	1/6
xvii. Bo's share in the cost of learning (iii $-$ xv)	3/2	3/2	3/2
xviii. *A*s' total share in the cost ($=$ xv $=$ xvi . i)	3/2	3/2	3/2
xix. Net benefit for each *A* (vi $-$ xvi)	1/4	5/8	5/6
Under a Church and King regime			
xx. Subsidy to Bo	$1 + \epsilon$	0	0
xxi. Bo's implied share in the cost (iii $-$ xx)	$2 - \epsilon$	3	3
xxii. Each *A*'s share in the cost (xx/i)	$1 + \epsilon./2$	0	0
xxiii. Net benefit for Bo (v $+$ xx)	ϵ	1	6
xxiv. *A*s' total net benefit (vii $-$ xx)	$1 - \epsilon$	4	9
xxv. Net benefit for each *A* (xxiv/i)	$(1 - \epsilon)/2$	1	1
Under a Pool regime			
xxvi. Bo's proportional share in the cost (iii/(i $+$ 1))	1	0.6	0.3
xxvii. Subsidy to Bo (iii $-$ xxvi)	2	2.4	2.7
xxviii. Each *A*'s share of the cost (xxvii/i)	1	0.6	0.3
xxix. Net benefit for Bo (v $+$ xxvii)	1	3.4	8.7
xxx. *A*s' total benefit (vii $-$ xxvii)	0	1.6	6.3
xxxi. Net benefit for each *A* (xxv/i)	0	0.4	0.7

For example, if the number of *A*s is doubled, the total gross benefit of Bo's learning *A* swells from 4 to 8 (4 for each group), while the gross cost remains unchanged (=3). The equal division of the total net benefit (=5) attributes 1 to each of the five speakers, and, since this is what emerges in this case in the absence of any transfer, Bo can be left to bear the whole of the learning cost by herself. If the number of *A*s further swells from 4 to 9, the total gross benefit becomes 18, the total net benefit 15, and its per-capita equal share 1.5. Since Bo's pre-transfer net benefit (given by the number of speakers she gets access to minus the learning cost) far exceeds this level ($9 - 3 = 6$), she must now not only pick up the full bill of the learning but in addition finance an aggregate subsidy larger than this cost, so that each of the nine (non-learning) *A*s can enjoy, in addition to costless access to a new speech partner, a transfer of 0.5, presumably as a reward for the large communication potential *A*s jointly offer so cheaply to Bo.

8. An Alternative: Equal Ratios of Benefit to Cost

As in the case of Pool's criterion, it would be possible to get rid of the most extreme counter-intuitive implications by adding an ad hoc stipulation, in this case the condition that the learners must not be worse off under the deal than they would be under laissez-faire. Gauthier himself would certainly subscribe to such a stipulation, as he meant his criterion to apply exclusively to the sharing of the benefits that flow from a cooperative improvement upon the laissez-faire outcome. However, it is also possible to formulate a distinct criterion, which avoids at one swoop the undershooting of Church and King and the overshooting of both Gauthier and Pool, while also getting rid of the less extreme counter-intuitive implications. Here it is: simply equalize the ratio of (gross) benefit to (gross) cost.[6]

Of course, the learning is worth doing only if the total (gross) benefit exceeds the total (gross) cost, which entails that the ratio between them will be strictly larger than 1. What the criterion requires is that this overall ratio should apply to each speaker involved, whether a member of the learning or non-learning group, and hence also to each of the two groups as a whole. Its implications in our three-person example are illustrated in rows xxi–xxiv of Table 6.1. Contrary

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[6] A very different criterion, which also avoids in one fell swoop the various difficulties mentioned so far, consists in applying Gauthier's criterion to whole linguistic groups rather than individual speakers. In the case of two groups, the total cooperative surplus is then divided equally among them—rather than distributed between them in proportion to their sizes—which yields, given our simplifying assumptions, precisely the same cost-sharing formula as the equal-ratios-of-benefit-to-cost criterion which I am about to present and defend: each of the two groups needs to pay half the cost. In the general case of *n* linguistic groups, however, this 'global Gauthier criterion' generates wildly counter-intuitive implications (for example, a high sensitivity of the fair distribution of costs to how finely linguistic groups are subdivided), which the equal-ratios criterion avoids. See de Briey and Van Parijs (2002) for a detailed discussion of this further criterion.

to the Church and King regime, it follows that as soon as there is some cost to be borne by someone, no one can fairly derive a benefit without contributing to that cost. Contrary to the Pool regime, it follows that the cost can never exceed the benefit for some without exceeding it for all (and hence making the learning pointless). And, contrary to the Gauthier regime, it follows that no one will ever be required to pay more than the full cost of the learning. In our example, as the number of speakers in the majority group increases—and hence also the potential net benefit from the minority group's learning—the size of subsidy to the learners remains fixed at half the cost (see rows xiv–xix in Table 6.2). This simply reflects the fact that the aggregate gross benefit grows equally for the learning group and the non-learning group. Under our simple assumptions, therefore, the equal benefit/cost ratio criterion generates a simple 50/50 cost-sharing rule between the two linguistic groups.

9. Four Formulas

By using the abbreviations and assumptions made at the start, each of the four criteria thus briefly discussed can be compactly restated as a formula for the size of the subsidy to each of the D-learning d-speakers. Let us remember that, abstracting from the comfort coefficient s, the per capita gross benefits of there being a shared language, respectively for each of the N D-speakers (Al and An in our example) and for each of the n d-speakers (Bo in our example) are given by $B = n$ and $b = N$. The per capita cost of the d-speakers learning the D-language is given by c, the per capita subsidy (to the d-speakers) by t and the per capita tax (on the D-speakers) by $T = (n/N) \cdot t$.

According to Church and King's efficiency-driven criterion, the transfer must very slightly exceed the difference between the per capita cost and the per capita benefit for d-speakers subject to this difference being positive and to learning generating an overall surplus. The conjunction of these two conditions simplifies into requiring c to be larger than N but smaller than $2N$. Hence:

Church and King: $t = c - b + \epsilon = c - N + \epsilon$, *subject to* $N < c < 2N$.

Pool's criterion of proportional cost sharing demands that the tax paid by each (non-learning) D-speaker be equal to the gross cost of learning borne by each d-speaker minus the subsidy each of them receives. Given the budget constraint ($N \cdot T = n \cdot t$), this amounts to subsidizing a proportion of the cost of learning equal to the share of D-speakers in the total population. Hence:

Pool: $t = c - T = c - (n \cdot t/N) = c \cdot N/(N + n)$.

Gauthier's criterion of maximin relative benefit simplifies, in the case of our problem, to the equalization of net benefits. The subsidy to each d-speaker must therefore be equal to the difference between the cost of learning and the gross

benefit of each d-speaker (essentially as in Church and King) plus the net benefit (after tax) of each D-speaker. Bearing in mind again the budget constraint, this amounts to demanding that one subsidize the cost of learning in the same proportion as under Pool's criterion, but only after deduction of difference between the (higher) per capita gross benefit of the minority group and that of the majority group. Hence:

$$Gauthier: t = (c - b) + (B - T) = (c - (N - n)) \cdot N/N + n.$$

Lastly, my own preferred criterion of equal benefit/cost ratios requires the gross benefits derived from the learning by each person (and hence by each group) to be proportional to her contribution to its cost, namely, the gross cost of learning minus the subsidy for d-speakers and the tax for D-speakers. Whereas Church and King subsidies cover only the gap between gross cost and gross benefit, the subsidy implied by the alternative proposal covers the gap between gross cost and a proportion (smaller than 1) of the d-speakers' gross benefit corresponding to D-speakers' ratio of contributions to benefits (T/B). Whereas Pool subsidies cover the whole of the gap between the d-speakers' per capita learning cost and the D-speakers' per capita tax, the subsidy implied by the alternative proposal covers only the gap between the learning cost and a proportion (higher than 1) of the per capita tax given by the ratio of the d-speakers' to the D-speaker's per capita gross benefits (b/B). Bearing in mind again the budget constraint ($n \cdot t = N \cdot T$) and the simple assumptions about gross benefits ($b = N$ and $B = $ n), this reduces to requiring a per capita subsidy corresponding to half the cost of learning. In brief:

$$Alternative: t = c - (T/B) \cdot b = c - (b/B) \cdot T = c - (b/B) \cdot (n \cdot t/N) = c/2.$$

The key factual assumption that generates this simple result is that the communication links opened up through a language learner's toil are symmetrically valued, and hence that proportionality to benefit requires the set of all those who become able to communicate with the learner to jointly foot half the bill. If our comfort factor s had been introduced to reflect superiority/inferiority in competition and other interaction, the subsidy would have needed to be higher than $c/2$. If one had heeded the differential importance attached to communication, for example, owing to inequalities in wealth or power, the subsidy, in most circumstances, would have needed to be lower.

10. Policy Implications

My aim, here, has not been to provide a full-fledged rigorous formulation of a precise and general criterion of linguistic justice, let alone to present a comprehensive case for its validity. I have examined four possible criteria, each with at least some prima facie plausibility, but with widely diverging implications, as

illustrated for example by the very different profiles of subsidies they justify as the size of the majority linguistic group expands (see rows xx, xxvii, ix, and xv in Table 6.2). Through sketching what I regard as decisive objections to the first three criteria, I have indicated why I believed the fourth criterion to make most sense, at least against the background of the two fundamental assumptions spelt out at the start. I shall say no more in its defence.[7] To conclude, I shall simply outline the sort of policy implication such a criterion, or related ones, would have in the real world.

Whether coerced or, more often, uncoerced, asymmetric bilingualism has been a frequent phenomenon in many places for a long time. But as schooling, mobility, and communication expand and intensify, it is becoming more ubiquitous and more massive than ever. As Abram de Swaan (1993; 2001) has elegantly put it, mankind as a speaking species forms a worldwide language system firmly held together by asymmetric plurilingualism: natives of peripheral languages learn the central language of their area; natives of central (or lesser) languages learn one of 13 or so supercentral languages, or regional lingua francas; and natives of supercentral (or lesser) languages learn the one emerging hypercentral language.

This ubiquitous asymmetric bilingualism is arguably very efficient. But nothing guarantees that it be fair. To make it fair, a simple rule of thumb emerges from the above discussion: whenever a language is the object of asymmetric bilingualism, the linguistic group whose mother tongue it is must pay half the cost of this learning, in a comprehensive sense that should cover both the explicit cost of language tuition and the huge implicit opportunity cost of having to learn a language rather than devoting one's (children's and own) time to other activities. Exact assessments are of course out of reach, but a cost sharing that would charge the wages of language teachers and all the teaching material used to the linguistic group whose language is being learned while leaving the opportunity cost altogether uncompensated would seem to be a minimum demand—especially as equal cost sharing between the two linguistic groups takes no account of the inequality in interaction and of the other incidental advantages of the free-riding linguistic group hinted at the beginning.

Quibbling about exact amounts can go on for ever. But there is no need to wait for it to die out before the Castilian natives should start preparing the cash they owe to the Catalans, or the Hindi natives what they owe to the Santals, or the French natives what they owe to the Congolese, or indeed the English natives the huge and ever growing amount they owe to much of the rest of the world— unless they find it more convenient for them, possibly even mutually beneficial, to replace cash transfers by tolerance for, indeed promotion of, free-riding in other dimensions, for example by making an electronic version of all

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[7] See the final sections of de Briey and Van Parijs (2002) for a generalization of the criterion to the case of *n* language groups and a discussion of its acceptability.

English-language scientific journals available free of charge to all academics outside the English-speaking world, or by waiving intellectual property rights on the reproduction of English publications in any country in which English is not the mother tongue of the majority. However, as such measures would in all likelihood further deepen the asymmetric bilingualism which called for compensation in the first place,[8] it is very doubtful that they could go a long way towards extinguishing the *D*-natives' debts, and generous direct cash subsidies to the teaching of English (and supercentral languages) seem inescapable, not as a matter of charity, nor merely as a tool of cultural imperialism, but as a duty of justice.

I can already think of more than a handful of objections, more or less self-serving, which worried natives of supercentral and hypercentral languages will no doubt be keen to raise. As this contribution is meant for an audience consisting mainly of English natives, who stand to lose most (at least in an immediate, zero-sum sense) from bringing fairness to the world language system, I am sure there is no need for me to get the discussion off the ground by spelling out some of these objections myself.[9] They can be trusted to take care of that. If it makes them more comfortable, they can even do it in English. I won't charge.

[8] Indeed, for this very reason, members of other linguistic communities have expressed fierce opposition to my proposal, which would, in their view, amplify the problem rather than cure it.

[9] In fairness, however, I should refer the reader to de Briey and Van Parijs (2002), which generalizes the criterion of linguistic justice proposed here to the case of *n* linguistic groups. One (no so obvious) implication is that, in case the mandarinophones join the global crowd and seriously start learning English in turn, it is not just the anglophones but also the francophones (and even more all smaller linguistic groups) who will have, out of justice, to subsidize China's huge learning effort—even irrespective of the fact that learning English is much harder against a Chinese background than with an Indo-European mother tongue.