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# Assessing efficiency and fairness in multilingual communication

## Towards a general analytical framework

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The comparison between various language policies that aim to manage multilingual communication ought to rely on some robust methodology for evaluation. This paper discusses the possibility to found such a methodology on the well-established concepts of efficiency and fairness. Assessing efficiency implies comparing how resources are allocated under alternative policy options (or scenarios) in order to identify the policy promising the best overall allocation. Assessing fairness calls for the evaluation of the distributive effects of each scenario on the linguistic groups involved in communication — that is, ascertaining who benefits and who loses (and how much) under alternative policy options.

This paper provides the background for developing indicators of effective and fair communication, which synthesise some desirable characteristics of communication processes. They enable us to compare different ways of handling communication in multilingual settings. In order to assess effectiveness and efficiency, we work with three (not mutually exclusive) definitions of communication, namely, informatory, cooperative and strategic communication. These definitions reflect the different (main) communicational intents of the actors. In order to assess fairness, we establish a distinction between communication in terms of access, process and outcome.

### Introduction

In the case of scientific communication, to which this issue of the *AILA Review* is devoted, linguistic equality can be studied from different perspectives. The approach we present in this article banks on the economics of language and language policy evaluation, a field of research with a strong interdisciplinary orientation (see e.g. Grin, 1996, 2003). The theoretical background and the methodologies for evaluation are imported from policy analysis (Rossi *et al.*, 2004, and Dunn, 2004), and welfare economics (Boadway and Bruce, 1984, and Just *et al.*, 2004), a branch of economic theory

that is concerned with the evaluation of economic policies in terms of their effects and implications on the well-being of society. The main advantage of developing an analytical framework based on these disciplines is that it provides a robust methodology for *evaluation*, and more specifically, for the comparison between alternative scenarios. The very fact of looking for alternatives implies that some scenarios can be considered preferable to others, and that we therefore need explicit criteria and a consistent methodology to rank-order the alternatives considered. Two main criteria in economic and policy analysis are particularly relevant for the comparison between alternative scenarios, namely, efficiency and fairness.

The purpose of this paper is to present some guidelines towards a general analytical framework for assessing the relative efficiency and fairness of different ways of managing multilingual communication, or more specifically, communication occurring in multilingual organisations (including not only international organisations, but also academic institutions, multilingual companies, etc.) dealing with linguistic diversity both for their internal and external communication. This focus on multilingual organisations does not imply any major loss of generality, since the principles and the methodology of the policy analysis approach have a broad practical applicability that extends, *mutatis mutandis*, to other areas of linguistic diversity management.

In this paper, we proceed as follows: Section 1 presents the concepts of efficiency and fairness, as they are employed in economics and policy analysis. This section serves as an epistemological introduction to Sections 2 and 3. These sections outline some principles of efficiency (Section 2) and fairness (Section 3) evaluation in multilingual communication. Section 4 sums up our main results in a brief conclusion.

## **Allocation, distribution and evaluation**

The problem of how social resources should be used arises when they are scarce and have alternative uses. In economics, the term “resource” usually refers to financial (or material) resources, but non-material, symbolic values are equally conceptually relevant to an economic analysis and ought, in principle, to be taken into account as well. Efficiency, therefore, refers to resource allocation, and in particular to how resources should be employed to get as much output as possible out of a certain amount of resources used (see Myles, 1995 for a more technical definition). As such, the concept of efficiency can be applied to a broad range of human activities. Without entering into technical detail, we shall simply recall that, in general, resources are allocated more efficiently in state *B* than in state *A* if in *B* no one in society is worse off — that is, no one’s “utility” (or well-being) decreases — and at least one individual is better off than in state *A*. In other words, there is room for a more efficient use of resources if a re-allocation of resources makes at least one person better off without making anyone worse off; this rule is known as the “Pareto criterion”.

Clearly, this general principle is of limited applicability, since the situations in which a change does not harm any member of society are relatively unusual. Compensatory transfers are a possible solution, in the sense that those who benefit from the change pay a compensation to those who lose, so that in the aggregate no one is worse off. These transfers might not be easy to implement in practice (cf. Boardman *et al.*, 2006; Just *et al.*, 2004). There is, however, a less demanding version of this principle that has broader practical applicability. According to this criterion — called the Kaldor-Hicks criterion — an improvement in resource allocation is possible if those who are better off in state *B can* (but not necessarily do) fully compensate those who are made worse off, and ultimately at least one person is better off.

The notion of efficiency is particularly important in the evaluation of state intervention, which typically takes the form of public policy. Decision-makers are interested in the evaluation of the impacts of a given policy on the well-being of the members of society. The Kaldor-Hicks criterion provides guidelines to assess whether a project (such as, for example, the construction of a new underground line) can be justified on the basis of efficiency.

However, the Kaldor-Hicks criterion does not require that those who benefit from a particular policy *actually* compensate those who lose. It simply requires that compensation is *potentially* possible and that, in the aggregate (that is, if compensatory transfers were eventually made), no one would be worse off. Nevertheless, as the choice about whether or not compensation is finally paid is a political question, “an appropriate welfare analysis must investigate the effects of a policy change on both groups and leave the subjective evaluation of which distribution is better to the policy maker who is elected to fulfil that responsibility” (Just *et al.*, 2004: 8).

The issue of fairness becomes relevant at this stage.<sup>1</sup> One of the most important tasks of the analyst in the evaluation process, whether carried out *ex-ante* or *ex-post*, is to point out the distributive consequences of alternative scenarios. In other words, almost every change is likely to affect asymmetrically the relative position of the relevant groups — whether the latter are defined on a socio-economic or ethno-linguistic basis — so that some groups win and some groups lose, or at least, they do not win to the same extent. It is part of the work of the analyst to characterise these groups, to identify the winners and the losers (or alternatively the big and the small winners) and to identify the magnitude of gains and losses caused by a particular change.

As a result, even if a particular policy could be justified on the basis of the Kaldor-Hicks criterion (efficiency), it is perfectly possible for it to be eventually rejected for reasons of equity. In other words, as fairness is a key element of policy evaluation too, there is no reason why a policy intervention fulfilling the Kaldor-Hicks criterion should not be rejected because of its unfair distributive consequences — it may, for example, be rejected on the grounds that no compensation between groups is technically feasible.

In this paper, therefore, we do not refer to “fairness” in moral terms, that is, in terms of compliance of a give policy to certain ethical principles, but rather in terms

of the distributive consequences that alternative policies entail (cf. Zajac, 1995, Mueller, 2003, and Moulin, 2003). The choice of whether inequalities should be accepted or not is a political matter. As such, it cannot be made on purely technical grounds and must be the object of a democratic public debate that typically relies, explicitly or not, on alternative theories of justice (cf. Arnsperger and van Parijs, 2000, and Kymlicka, 2002). However, the evaluation work carried out by the policy analyst can contribute to this debate by making it a better informed one.

## **Efficient communication as an object of study**

### *The limits of cost-benefits analysis for language policy evaluation*

Language-related policies, such as the promotion of a minority language or the teaching of foreign languages, can also be assessed in terms of their efficiency and fairness (Grin, 2005). Note, however, that the principle of comparison between alternatives and the techniques for evaluation of efficiency and fairness can be adapted to a broader range of situations in human life. For this reason the term “alternative policies” is used here to stress this principle of comparison between competing scenarios, whether they are taken at a state level or at the level of a more simple organisation.

One of the most popular techniques to assess the relative efficiency of different policy alternatives is cost-benefit analysis or CBA (cf. Brent, 1997, and Boardman *et al.*, 2006). CBA is based on a systematic comparison of the levels of *net* benefit of alternative projects (this term is generally used in CBA literature as equivalent to “policy” or “programme”), the net benefit being defined as the difference between gross benefits and costs. In principle, the existence of a positive net benefit is the necessary condition for compensating those who are worse off because of a given policy (see above). If several projects have a positive net benefit, CBA suggests, all other things being equal, picking the project offering the largest net benefit.

In order to have a reliable basis for comparison, the net benefits of alternative programmes must be expressed in a common unit of measurement, usually money. In principle, “symbolic” values can also be taken into account to a certain extent, provided that the people concerned accept to state truthfully how much they are willing to pay for those things to which they attach symbolic value (cf. Grin and Vaillancourt, 1997). A standard textbook example is that of environmental assets, such as a beautiful panorama that one can enjoy from the terrace of one’s home. If watching the sunset is valuable to a particular person, she will be willing to pay a higher price for a flat with a view than for a ground floor one overlooking the parking lot. The difference in this person’s willingness-to-pay for these two otherwise identical flats can be considered a good approximation of the value that she attaches to a beautiful view from her terrace.

In principle, a similar logic could be applied to the comparison between alternative language policies, such as the promotion of the language of immigrants in the school system of a given territory, *by comparison with* a strictly monolingual system. The usefulness of a comparison between the costs and benefits of alternative language policies has already been stressed by Jernudd (1971) and more recently, among others, by Grin (1994), Vaillancourt (1995) for bilingualism in Canada, Patrinos and Velez (1995) for bilingual education in Guatemala, Mühlhäusler and Damania (2004) for indigenous languages in Australia, and by several contributions in Ricento (2006). Take for example the hypothetical case of the introduction of an immigrant language in the school system of a given country. This policy entails both costs like the training of teachers, and benefits, some of them strictly material, such as those accruing to those who will in the future use this language for business with countries where it is spoken, while others are symbolic benefits, such as maintaining cultural links with the language of their relatives.

To sum up, the analyst should: (i) identify relevant benefits and costs; (ii) quantify in monetary units all the benefits and costs previously identified and compute the net benefit of each option; (iii) compare the two (or more) alternative options and choose that with the larger net benefit. The logical rigour of CBA, therefore, comes at a price. First, the identification of the possible channels through which languages are potentially carriers of benefits or costs is far from clear. Some relationships — like that between language skills and wage differentials on the labour market — have been modelled formally (cf. Grin, 2005: 35–45 for a review), but there is still much to do at a theoretical level. Moreover, moving from the formal model to the empirical estimation requires a considerable amount of data, and most of them are usually not collected or simply not available.

These conceptual and empirical difficulties are even greater when dealing with large-scale phenomena, such as language policies to promote multilingualism in Europe or to “internationalise” post-graduate education. This does not, however, mean that the entire endeavour of evaluation is hopeless, but simply that some simplifications are necessary, a question to which we now turn.

### *Assessing effectiveness*

For the purposes of analysing multilingual communication in multilingual organisations, we shall focus on one particular, but significant, benefit that is always mentioned in the literature, namely, communication, and, in particular, *effective* communication. In essence, this approach is an adaptation of the principle of comparison between alternative scenarios to the field of communication. By adopting this approach, we are implicitly making the following assumptions. One is, that the degree of efficiency and the distributive effects of different models of management of multilingual communication, according to their more or less high level of diversity, (i) *are* intrinsically relevant questions; (ii) are related to more or less high degrees of efficiency and to

the distributive effects in the broader linguistic environment<sup>2</sup> (of which communication is clearly a key element). Putting it differently, we are assuming that the part is a barometer for the whole.

Let us now turn to the question of what effective (multilingual) communication means. Let us stress that we are focusing on communication mediated through language (or rather, languages), since our main concern is not communication *per se*, but communication occurring in multilingual settings. Hence, other communicational means such as symbols or gestural expressiveness will not be considered here. Should we focus on the most skeletal definition of communication, that is, the mere transmission of information? Or should we work with a “thicker” definition? A possible strategy is not to choose between them, and to use jointly several definitions that are not necessarily mutually exclusive. These reflect different perspectives on the nature and functions of communication. More specifically, we assume that three different definitions of communication should be taken into account. These definitions have been inspired in particular by the contributions of Paulré (1993) and enriched with the work of Carey (1992), Charaudeau (1995) and Lamizet and Silem (1997). Let us call them:

- α.  informatory communication*
- β.  cooperative communication*
- γ.  strategic communication*

It is worth stressing that we are not proposing an abridged or revised version of the well-known Jakobsonian communication functions. Rather, by using these definitions we aim at stressing the (main) *intent* of a communication occurring between people (or groups of people) speaking different languages. Clearly, distinct communicational intents will be related to the utilisation of some particular functions. However, the identification and the description of these functions in multilingual contexts are not central to our discussion and will not be examined here.

It is important to understand that we are *not* talking about actual communication in its full complexity, and that we are *not* assuming that communication can ever be reduced to any of these types. Simply, we propose to look at selected aspects of communication, in order to allow for comparison between different occurrences of communication in professional activity.

The concept of “main communicational intent” must be interpreted in the light therefore of a given *context* (that is, a communicational situation or perhaps more generally an “interactional situation”). The point of departure for the analyst’s observations is the core activities carried out in a given organisation or in a particular part of it. What characterises a communication as effective, therefore, is its direct relationship with the attainment of the main *goals* of the activities observed (e.g. to cooperate in the case of a work meeting, or to convince in the case of a Member of the European Parliament making a speech, etc.).

Let us now take a closer look at the three definitions. In the first definition (*α*), communication is regarded as a process of transmission of contents between actors

(in our case, between individuals belonging to different language groups). Communication, therefore, amounts to an exchange of information similar to that occurring between computers. This definition is certainly the most reductionist of the three, but nevertheless it seems to have gained large currency in the public debate. For example, it is the definition implicitly referred to by most of the commentators who see languages as mere (and perfectly substitutable) tools (e.g. de Swaan 2001).

The key point in this case is to assess when “informatory” communication among people of different languages is “effective”. To answer to this question, a possible strategy is to devise a set of *indicators* that serve to characterise an instance of communication as effective. In other words, indicators should be designed in such a way to *reflect* some “desirable characteristics” that communication should have to be effective, that is, to effectively transmit information in a given context.

Let us take the example of a simple indicator in the case of an international meeting of people belonging to different language groups. An  $\alpha$ -communication between individuals is effective if the transmission of information occurs without substantial losses or “noise”. Assuming that interpretation and translation services are used, a possible indicator of effectiveness is the inverse of the number of errors due to errors in interpretation. One point needs to be clarified with respect to the use of indicators of effectiveness. Their main function is not to assess whether a specific way of handling multilingual communication is efficient *per se*, but to *compare* different alternatives. In other words, what is relevant for the comparative analysis is to understand how an indicator such as the inverse of the number of errors *changes* when we move from, say, a full symmetrical system of interpretation and translation to, say, a system that uses the relay technique.<sup>3</sup> Of course, the use of indicators is not risk-free. We shall come back to this point in the conclusion.

In the second definition ( $\beta$ ), communication is seen as an activity through which cooperation and coordination become possible. This definition refers to the idea that communicating also means having something “in common”, be it culture or a feeling of membership in a given organisation. Therefore, communication is effective if it encourages the attainment of some shared or common objectives of the groups involved. This definition of communication largely includes the first definition, and thus they do not have to be regarded as antithetical. Take the case of an international scientific meeting on the effects of smoking on health. If there is genuine participation and cooperation in the debate, and assuming away other differences between agents, we should not observe significant inequalities in an indicator such as the speaking time of the participants according to their language group (of course, this indicator must be adjusted for the size of groups).

The third definition of communication (strategic or  $\gamma$ ), emphasizes the power (or “cratic”) aspect of communication. Communication here is defined as an activity intended to persuade, influence or charm others. In this case, therefore, we stress the role of communication both as a tool and object of competition for power between actors or even organisations that aim to achieve their own goals. Take the example

of an academic institution confronted with the challenge of internationalisation and student mobility. A  $\gamma$ -communication aimed at the external world, in this case towards students, is effective if it helps to reach the institution's own objectives, such as persuading as many students as possible to enrol. A possible effectiveness indicator of  $\gamma$ -communication can be the actual number of enrolments. Note again that the real question is not to assess the value of the indicator as such, but to see how it changes if the university moves from, say, a situation in which only a language is used for undergraduate teaching to another in which a mix of two languages is employed.

In this case too,  $\alpha$ -communication is to a large extent included in the definition of strategic communication, since the transmission of information is part of the persuasive communicational activity. The cooperative and the strategic dimensions of communication are not necessarily mutually exclusive either. For example, both may be present in those activities that lead to a common agreement. However, it is useful to keep these definitions distinct, first because this difference is likely to play a role in the evaluation of fairness, and secondly, because the effectiveness indicators designed are not necessarily the same.

A useful methodological distinction in the evaluation is that between communication occurring within the organisation or institution (which we shall call "internal") and communication from the organisation towards the external environment ("external"). There is no reason why effectiveness indicators for internal and external communication should be the same.

Summing up, the effectiveness of alternative systems for managing multilingual communication can be assessed across two dimensions, namely, external and internal communication, and across three different main communicational intents, namely, informative, cooperative and strategic. This yields a possible set of effectiveness indicators like that showed in Table 1.

**Table 1.** Matrix of effectiveness indicators

Internal communication ( <i>i</i> )			External communication ( <i>e</i> )		
Main Communi- cational intent	Indicators	Vector of indicators	Main Communi- cational intent	Indicators <sup>e</sup>	Vector of indicators
$\alpha$	$\alpha^i_1, \alpha^i_2, \dots, \alpha^i_a$	$[\alpha^i]$	$\alpha$	$\alpha^e_1, \alpha^e_2, \dots, \alpha^e_a$	$[\alpha^e]$
$\beta$	$\beta^i_1, \beta^i_2, \dots, \beta^i_b$	$[\beta^i]$	$\beta$	$\beta^e_1, \beta^e_2, \dots, \beta^e_b$	$[\beta^e]$
$\gamma$	$\gamma^i_1, \gamma^i_2, \dots, \gamma^i_c$	$[\gamma^i]$	$\gamma$	$\gamma^e_1, \gamma^e_2, \dots, \gamma^e_c$	$[\gamma^e]$

The number of indicators is not necessarily equal for every cell. This idea is captured by the subscripts (*a, b, c*) for different classes of indicators of type  $\alpha, \beta$ , or  $\gamma$ , and by the superscript (*e, i*) which is used to distinguish indicators used for internal communication from those employed for external communication.

The main function of this matrix is just to help the analyst to come up with an analytical frame for the management of multilingual communication, and therefore it should not be seen as an attempt to "measure" communication. Besides, this matrix is

just a stepping stone towards the core activity of the policy analyst, namely *comparison* (see below).

The theoretical elaboration and refinement of these indicators is an intellectual challenge that has to be tackled in an interdisciplinary perspective, in which applied linguists and sociolinguists play a very central role. We shall come back to this point in our conclusions. The result of such an effort will ideally be a set of reliable and relevance indicators that, according to the context analysed, can be used in comparative analysis.

### *Comparing scenarios: effectiveness*

In order to carry out a comparative analysis, the possible alternatives must be spelled out. Comparative analysis makes no sense if no appropriate *counterfactual* is specified, and the *status quo* is the simplest possible type of counterfactual.

The system for handling multilingual communication observed at time  $t_1$  in a given context, therefore, should be characterised in terms of its level of linguistic diversity (say,  $D_1$ ). This characterisation can be made by using several analytical dimensions (or parameters), such as the number of languages used. Clearly, the list can be enlarged and refined by adding new dimensions of linguistic diversity. For this purpose, House and Rehbein (2004: 3) provide a useful general list of parameters:<sup>4</sup>

- the languages used ( $L_1$  to  $L_n$ );
- the speech situations (differentiated according to discourse and text);<sup>5</sup>
- the roles of the participants (with or without language mediators);
- the socio-political status of the languages involved (languages in relation to whole society as a whole, including  $L_1$ , second or foreign language(s), *lingua franca*, etc.);
- the skills of the participants (from individuals to groups, in a continuum from monolingual to multilingual);
- the typological distance between the languages involved;
- the degree of language separation, language mixing or switching.

Not all conceivable systems of multilingual management are equally interesting; moreover, the number of possible combinations may be exceedingly high and make the analysis unmanageable. Thus, a reasonable strategy is to compare two alternatives to the *status quo*. The first alternative may be defined by a level of diversity (say,  $D_L$ ) lower than  $D_1$ , and the second by a level of diversity (say,  $D_H$ ) higher than  $D_1$ . As the object of study is multilingual communication, and more specifically, efficiency in multilingual communication management, the comparison should be framed in terms of different *levels* of linguistic diversity.

The alternatives  $D_L$  and  $D_H$  must include all the parameters used to characterise  $D_1$  (for example, the simple number of languages). Note, however, that changing all the parameters at the same time is not necessary for characterising  $D_L$  and  $D_H$  with

respect to  $D_1$ , since one may decide to focus only on the change of a subset of parameters.  $D_L$  and  $D_H$  may be real, but also ideal alternatives, specifically designed to highlight some specific features that are particularly relevant to the comparison. For example, we might compare a strictly monolingual firm to a company working with three languages.

$D_L$  and  $D_H$  are levels of diversity that the organisations are potentially interested in targeting for their internal or external communication. However, assuming that organisations are able to target different levels of linguistic diversity is not the same as assuming that they are able to modify the surrounding linguistic environment at will. The behaviour of organisations, of course, can contribute to alter some of the characteristics of the linguistic environment — even if such a change is not the deliberate *aim* of the action taken. But this is not the main point here. What counts is that they are able to modify their language policy regarding external communication and to change some internal characteristics; this gives rise to what we shall also call competing “scenarios”.

In the main, the comparative analysis consists in assessing how the value of effectiveness indicators shown in Table 1 is modified if the scenario changes from the *status quo* ( $D_1$ ) to  $D_H$ , or alternatively, to  $D_L$ . In the example mentioned before, this is equivalent to asking how an indicator of type  $\gamma^e$  (say,  $\gamma^e_1$ , the number of students enrolled) changes if we move from a situation  $D_1$  — in which undergraduate programmes are taught in one language only — to another situation  $D_H$  — in which two languages are employed. The expected output of the comparative work would be a set of indicators arranged as in Table 2.

Table 2. Comparative analysis matrix

Less diversity ( $D_L$ )		<i>Status quo</i> ( $D_1$ )		More diversity ( $D_H$ )	
Internal com- munication	External com- munication	Internal com- munication	External com- munication	Internal com- munication	External com- munication
$[\alpha^i]_L$	$[\alpha^e]_L$	$[\alpha^i]_1$	$[\alpha^e]_1$	$[\alpha^i]_H$	$[\alpha^e]_H$
$[\beta^i]_L$	$[\beta^e]_L$	$[\beta^i]_1$	$[\beta^e]_1$	$[\beta^i]_H$	$[\beta^e]_H$
$[\gamma^i]_L$	$[\gamma^e]_L$	$[\gamma^i]_1$	$[\gamma^e]_1$	$[\gamma^i]_H$	$[\gamma^e]_H$

Ideally, comparative analysis would require an experimental design method or multivariate analysis allowing us to isolate exogenous effects. However, these methods are unlikely to be applicable in practice because of the complex interconnections between the processes at hand and the difficulty of gathering highly detailed and mutually comparable data. Nevertheless, circumstantial analysis based on current or past data, interviews, as well as sociolinguistic research, all provide useful inputs making it possible to estimate orders of magnitude, with which much policy-making has to be content in practice. As a general rule, some information is better than no information at all — once the analytical procedures adopted are clearly spelled out — and in many

real-world situations, it is reasonable to aim at plausibility rather than formal statistical significance.

### *Comparing scenarios: efficiency*

Comparing alternative scenarios simply on the basis of the indicators of their respective effectiveness will be misleading, because every “effect” is achieved at a certain cost. The comparison between alternatives, therefore, should not be limited to the comparison between effectiveness indicators, but it should also include an assessment of the costs of each alternative. A useful evaluation technique is *cost-effectiveness analysis* (CEA). CEA is preferred to CBA in many domains, such as health care, in which for several reasons (ethical, practical, etc.) it is unsatisfactory to attach a monetary value to benefits. CEA compares alternative projects on the basis of their costs and effects. The effect is measured in some non-monetary form (say, time, the number of potential customers, etc.), while the cost is measured in monetary form. What is relevant for the comparative analysis is the ratio between the costs and the effect measured through a given indicator. This ratio is called cost-effectiveness ratio (CE ratio). Without entering into technical detail (cf. Levin and MacEwan, 2001), suffice it to say that to assess the *efficiency* of alternative projects, the analyst ranks-order them according to their cost-effectiveness (CE) ratios, which, for the purposes of this paper, amounts to treating “cost-effectiveness” and “efficiency” as synonyms.<sup>6</sup> The lower the CE ratio, the more efficient the policy. In other words, all other things being equal, the policy with the lowest CE ratio is that by which we can obtain a unit of effect (e.g., an additional potential customer) at the lowest cost per unit.

Let us consider a very simple example. Assume that a research institute is planning to increase the number of languages on its website to reach a larger number of potential students (indicator of effectiveness). Assume also that adding language *X* yields 100,000 potential new visitors per year at a cost of 5,000 Euros per year, while adding languages *Y* and *Z* increase the value of the indicator to 120,000 visitors per year at a cost of 10,000 euros per year. The second alternative is *prima facie* better than the first one, since a larger number of potential visitors can be reached. However, if costs are taken into account, the picture changes completely. In the first option a new student is reached at an average cost of 0.05 euro, while in the second case, the average cost rises to 0.08 euro. Clearly, resources are allocated more cost-effectively in the first than in the second case.

Although CEA is useful to assess the relative efficiency of alternative projects, it is not suitable to establish that a given project guarantees an efficient use of resources *per se*, as in CEA the net benefit is not computed. The impossibility of determining whether the net benefit it is positive or not is the most important shortcoming of CEA as compared to CBA. However, assuming that the result (or the effect) of a project is worthwhile, CEA is very useful to identify the alternative that delivers this result at the lowest average cost.

Given the complexity and multidimensionality of language processes, CEA should be applied carefully in order to avoid simplistic conclusions. For example, standard CEA can be enriched with qualitative data. Moreover, the analysis must be structured so that more than a single effect is taken into account. Nevertheless, its internal logic is robust and it provides a strong analytical framework. It is worth stressing again that the main purpose of the analysis is *not* to compute CE ratios as such, but to understand in which direction they change if the scenarios also change.

### The assessment of the distributive effects

The assessment of the distributive consequences of alternative policy options is an equally important dimension of evaluation. As pointed out in Section 2, an efficient policy may be rejected if its distributive consequences are deemed too unfair. More generally, as Myles notes (1995: 7) “it is often the case that the efficient policy is highly inequitable whilst the equitable policy would introduce into the economy significant distortions and disincentives. Given this fact, the design of optimal policy can be seen as the process of reaching the correct trade-off between equity and efficiency objectives”. Fairness, therefore, also plays a central role in language policy evaluation, as shown by the rapid increase in the number of contributions on this subject.<sup>7</sup>

Assessing fairness means asking who benefits and who loses from the change from  $D_1$  to  $D_L$  (or  $D_H$ ) — or who benefits or loses “more” and who benefits or loses “less”. In our case, the key attribute defining a group with respect to others is, in essence, the mother tongue of its members. Note, however, that in the approach we have been developing, we do not construct a measurement for benefits, since we deliberately focus on a single “benefit”, namely, effective communication. Hence, the assessment of who gains and who loses is necessarily a partial one.

A possible strategy is to assume that the distributive effects of alternative policies can be assessed through a set of indicators relating to three distinct phases of communication:

1. *access*
2. *process*
3. *outcome*

The idea behind fairness in “access” is that the actors involved in communication can be seen as actors involved in the creation of a common network to make communication possible (let us call it a “common communication network” — CCN). In this perspective, languages are “threads” linking users, which, in turn, are like nodes of a network. A simple example of communication network is that of  $M$  persons of different mother tongues linked by a neutral *lingua franca*. Another kind of network is that based on an equal distribution of active and receptive competences; in this case, everyone can speak his/her language because the other members of the network have

receptive skills in that language. The distributive consequences of the creation of a CCN are particularly interesting when the medium of communication is a single language that is at the same time the main language of some (but not all) the individuals making up the network. This is the case, for example, of communication occurring between the majority group and minority groups (e.g. monolingual Spanish speakers with respect to speakers of Basque, Catalan and Galician).

Assessing fairness in “access” means checking how the costs of “access” to a CCN are distributed across language groups. Consider a multilingual organisation and assume that in the current situation, the CCN is such that everyone can use his or her language because translation and interpretation services are provided. Assume also that the cost of these services is  $X$  and that it is funded by all groups in proportion to their size. What will be the distributive effects of a reduction in the number of working languages? Some agents will no longer have access to the network unless they learn one of the working languages selected, or get language services at their own expense. Assume that these agents choose the second way to be re-connected to the CCN, and for the sake of the example assume also that the costs they now have to bear are larger than the amount corresponding to their previous contribution to  $X$ . Those who have not been excluded from the CCN will benefit from this *without* contributing to the extra cost borne by the excluded.

Clearly, fairness in “access” can take different forms according to the communication intent considered ( $\alpha$ ,  $\beta$  or  $\gamma$ ).

Analysing fairness in terms of “process” means focusing on the distributive effects that arise from the very act of communicating. For example, assume that we are dealing with  $\beta$ -communication in the case of an annual international scientific meeting. Assume also that for a given year, the organisers expand the set of languages in which draft papers can be submitted for review. It is likely that, among other things, this policy will increase the “comfort” of several potential speakers. More precisely, the language policy adopted is likely to decrease the “linguistic insecurity” (cf. Francard, 1993, and Bretegnier and Ledegen, 2002) of potential speakers at the conference, since a larger group of them is now allowed to submit draft papers in their language.

It is worth noting that “soft” aspects of communication like that just presented should not be neglected. The analysis of the distributive effects related to the “outcome” of the communication process addresses the following questions: do some linguistic groups communicate more “effectively” than others — where effectiveness is defined as in the preceding section? Do we observe some changes if we move from situation  $D_1$  to  $D_L$  (or  $D_H$ )? Notice that in this case, the focus is not on “effective” communication in the organisation *as such* (see above), but rather on how “effectiveness” is *distributed between different language groups*. Assume for example that we are dealing with internal  $\alpha$ -communication within an international institution, say the United Nations (UN), and that we are comparing two language regimes (used here for the purposes of explanation). The first, say  $R_1$ , is an asymmetrical language regime in which everyone may use any of the 6 official languages of the UN, but all interventions are translated

only into French. Hence, everyone ought to have good receptive competence in this language. The second, say  $R_H$ , is a language regime where everyone may use any of the 6 official languages but everything is interpreted only into Esperanto (or Latin, or any other language which is *not* the native language of any of the participants). In this case, receptive competence in this language is required. All other things being equal, the second language regime can be considered more linguistically diverse since the number of languages is higher. Assume also that the effectiveness indicator  $\alpha_n^i$ , say, the inverse of the number of errors, can be expected to be roughly the same for both  $R_1$  and  $R_H$ , that is, the loss of information due to interpreting and difficulties in understanding a foreign language (whether French or Esperanto) is equal. Now, it is likely that what *does* change is the distribution of  $\alpha_n^i$  across language groups. In particular, we can expect that  $\alpha_n^i$  is more equally distributed in regime  $R_H$  than  $R_1$ . Due to the importance of the “power” dimension in communication, the analysis of the distributive effects of alternative scenarios is particularly important for  $\gamma$ -communication.

Summing up, the approach developed in this section aims at providing a framework for the identification of the channels through which the distribution of resources is affected at different stages of communication, taking account of different communicational intents. Such a framework is necessary if we want to design compensating measures that can restore fairness in communication.

## Concluding remarks

In this paper, we present some guidelines for the evaluation of language policies aiming at managing multilingual communication. The evaluation process is carried out along two analytical dimensions, namely, efficiency and fairness. The general framework presented is intended to provide a basis for further research, in particular in the domain of indicator design. 18 possible configurations are possible, by distinguishing between internal and external communication, three main communicational intents, and three possible dimensions for the assessment of distributive effects ( $2 \times 3 \times 3$ ); for each configuration, a comparison ought to be made between the status quo and “more diverse” and “less diverse” alternatives.

Efficiency concerns the allocative dimension of evaluation. It implies comparing how resources are allocated under different scenarios so as to single out the scenario promising the best allocation. Efficiency by no mean implies uniformity of tastes and practices or, alternatively, simple cost minimisation. On the contrary, efficiency is a concept that makes no sense unless the *preferences* of social actors are duly taken into account. Just as it may be a perfectly rational choice to travel first class from Brussels to Paris by train (if comfort is important enough to justify paying a higher price), by the same token, it is perfectly rational to pay to have “more comfort” in multilingual communication. Efficiency, therefore, should be understood as a relationship between the benefits we are aiming at and the costs we are willing to accept.

In this paper, the notion of “benefit” of linguistic diversity has been interpreted as “effective communication”. We have proposed different definitions of what “effective communication” can mean, in order not to limit ourselves to a reductionist view of communication as a mere transmission of messages and languages as simple tools for conveying information. Clearly, the informatory communicational intent (what we have called  $\alpha$ -communication) is part of real-life communication but it is not all. Other analytical dimensions, such as, the cooperative or the strategic dimensions, *are* relevant for language diversity management. The definition of  $\alpha$ -,  $\beta$ - and  $\gamma$ -communication constitute an attempt to operationalise this idea.

The methodology proposed is based on the concept of indicator. Indicators are meant to be a tool for comparative analysis. Hence, their goal is not to “measure” or “quantify” communication. Rather, the rationale for using indicators is to assess how they change if we move towards a more (respectively, less) diverse linguistic environment, and more specifically towards a more (less) multilingual communication. Cost evaluation should also be approached through comparison. Assessing different ways to manage multilingual communication in terms of their efficiency, therefore, means evaluating the evolution of the relationship between effectiveness and costs indicators.

The main contribution of this paper is to suggest how this relationship could be logically structured. However, applied linguistics can play a key role in the development of indicators of efficiency and fairness. In scientific communication (cf. Ammon, 2001, and Carli and Calaresu, 2007), for example, concepts like the “quality of knowledge”, as well as perspectives derived from the sociology of knowledge in distinct linguistic communities, can have major importance for elaborating indicators. Hence, claiming that the most efficient solution for scientific communication is to operate in a single language is a proposition that ought to be closely scrutinised in the light of possible alternatives, taking into account different definitions of what communication is as well as the preferences of the actors involved. However, comparing alternatives is only possible if the comparison is rigorous and consistent, which requires a set of relevant and robust indicators. Including, as we have done here, the cooperative and strategic dimensions in efficiency evaluation increases the crispness of the comparison by adding a larger set of potential effectiveness indicators that do justice of the complexity of language and communication.

The assessment of the distributive effects of language policies is our second key analytical dimension. By distinguishing between fairness in access, process and outcome, we aim at defining a triple locus for the evaluation of fairness in communication. In this perspective, linguistic justice is not only a matter of finding a rule for sharing the costs of what we have called the common communication network. It also implies that other analytical dimensions, such as linguistic insecurity and inequality in outcome, have a role to play when comparing scenarios. The evaluation of fairness in language policy, therefore, is much more about the study of the material and symbolic consequences of linguistic diversity for the people speaking different languages, than a study of its effects on languages themselves.

## Notes

1. For simplicity, no distinction is made in this paper between the terms fairness, equity and justice.
2. The concept of linguistic environment can be defined as a theoretical construct that “subsumes in an extensive (but obviously not exhaustive) fashion all the relevant information about the *status*, in the broadest sense of the word, of the various languages present in a given polity at a certain time. This includes the number of speakers, individual proficiency levels in the various languages, the domains of use of each language by different types of actors (individuals, corporations, state, civil society organizations), their attitudes towards the languages considered, etc.” (Grin, 1999: 47).
3. A full symmetrical system of interpretation and translation is a system in which all the official languages of a meeting are directly translated into and from each other. The relay technique involves two stages to translate a message from language *A* to language *B*. First *A* is interpreted into language *X*, known as the “pivot” language. Then the message is interpreted from language *X* into language *B*.
4. This list of parameters is involved in the definition of what House and Rehbein call “linguistic constellation”. This concept is very close to what we called “linguistic environment” (see footnote 2).
5. The distinction between discourse and text is defined as follows: “whereas the discourse situation is one in which speaker and hearer are co-present and can co-ordinate their speech actions *in situ*, written text is, systematically speaking, distributed over two situations, that of production and that of reception, such that a text must verbalize everything necessary for its reception at some different point in time, possibly by several different (groups of) readers.” (House and Rehbein, 2004: 3).
6. For a discussion of the distinction between these two concepts in language policy evaluation, see e.g. Grin (2001). See also Grin and Vaillancourt (1999) and Grin (2001) as an example of how CEA can be applied to language policy evaluation.
7. . See in particular, Pool (1991), Pool (1996), Church and King (1993), de Brieu and van Parijs (2002), van Parijs (2004a, 2004b), Grin (1997, 2004a, 2004b, 2005), Fidrmuc *et al.* (2004), Ginsburgh and Weber (2005), Fidrmuc and Ginsburgh (2007), and Gazzola (2006a, 2006b). A review of the debate on linguistic justice among philosophers is provided in de Schutter (2007). See also Kymlicka and Patten (2003).

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