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Edited by Anne-Claude Berthoud, François Grin and Georges Lüdi.

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PART IV

Transversal issues

Assessing efficiency and fairness in multilingual communication

Theory and application through indicators

François Grin & Michele Gazzola
Université de Genève

As shown in several chapters of this book, actors confronted with the need to communicate in a multilingual context use a variety of strategies. These strategies may be more or less directly influenced by the language policies adopted by the public or private sector institutions in which they operate. Such policies may also be extremely diverse. Whether we are referring to actual language practices or explicit language policies, they can prove more or less multilingual. Assessing the relative merits of “more” or “less” multilingual practices and policies presupposes that we have a set of criteria which we can use as a basis for comparing them with each other. This chapter is devoted to the development of such criteria on the basis of the core principles of policy analysis, as it is applied to a host of other questions ranging from education planning to the provision of health services and environmental protection. We first show how the standard criteria of efficiency and fairness can be constructed and used with reference to language. We then infer from this analytical framework a matrix for the generation of a system of indicators of efficiency and fairness in multilingual communication. Examples of indicators, which can be “populated” with data, are provided in the appendix.

17.1 Introduction

17.1.1 The evaluative perspective on multilingualism

This chapter provides an overview of a relatively unusual component of the DYLAN project, namely an economics-based perspective on multilingual communication. Let us first recall the DYLAN project’s core question: “Under what conditions can multilingualism be an asset rather than a drawback?” This question can be seen as a quintessentially economic one, in the sense that it harks back to a weighing of the advantages and

drawbacks of a scenario – in our case, “multilingualism” – by comparison with another scenario, which will serve as a point of comparison, or *counterfactual*. In practice, neither multilingualism nor its counterfactual (for example, “monolingualism”) should be viewed as *one* single scenario. Rather, multilingualism may take the form of different scenarios characterised by relatively *more* linguistic diversity than others; our problem here is not to describe multilingualism as such, but to assess the relative virtues and drawbacks of *more* or *less* multilingualism.

A proper weighing of advantages and drawbacks is only possible if the nature of both is clearly identified, and if some general unit of measurement for them is defined, making it possible to compare systematically the scenario we are interested in (namely, “multilingualism” and, more specifically, the extent of multilingualism that can be observed in companies, European institutions and universities) with the alternative. The latter would logically be defined as a situation characterised by “less” multilingualism – potentially, monolingualism. The multilingual practices observed (and characterised as such) by other DYLAN teams are not necessarily simple or straightforward; but their very identification, even by sociolinguists who insist on their complexity, implies that there is something that can be compared to other – less multilingual – practices. The question, now, is what can be inferred from these observations. Describing observable multilingual practices is fine and well, but what matters is whether relatively more multilingual practices can be shown to be better than *less* multilingual practices (perhaps even monolingual ones).

This, of course, begs the question of what “better” actually means. In the case of private-sector companies, it is presumably something that increases the value of results like “profit”, “value added”, or “productivity”: putting it squarely, does multilingualism make a company *more* profitable than it would be if it were to operate in one language only? For the political institutions of the European Union (EU), the gauge of success probably is not profit or some variant thereof, but some other goal considered relevant for them, such as, venturing out on a limb, “equal political participation of all European citizens”. As regards educational institutions like universities, whose core missions are the production and the transmission of knowledge, the question becomes whether they are better able to achieve these goals by operating in one language or in many languages. This is not to say that the concept of “language” is unproblematic; however, it is not entirely devoid of meaning either. If the authors of these pages suddenly were to switch from English to Latvian or Swahili, there are strong chances that many readers would suddenly no longer understand the text. *Ergo*, it is not absurd to refer to “languages” in full awareness of the fact that “languages-in-use” are not watertight compartments.

The process of weighing the advantages and drawbacks should also strive to have general relevance: even if it can conclusively be shown not only that “multilingualism is good”, but also that multilingualism is superior to monolingualism in a given setting (for example, in a company), what matters is whether this is likely to hold generally,

not just in one particular company, but across different companies, all other things being equal. Thus, answering the central question of the DYLAN project does not only require a comparative approach. It also calls for the development of a set of concepts allowing us to reason about observed effects and to interpret them at a general, as opposed to a case-specific level. This does not mean that context should be ignored, far from it. It means, however, that the analysis should be robust enough to hold across different contexts – this is, in essence, the methodological approach used when comparing an experimental group with a control group.

The corresponding methodological and conceptual challenges are considerable. The research presented here, which addresses *efficiency and fairness in multilingual communication*, has been designed to deal with precisely such questions.

In Section 2, we present the overall analytical framework, anchored in economics and policy analysis, with which we propose to meet these challenges. Developing this framework, which rests on an application to the sphere of multilingual communication of the crucial notions of “efficiency” and “fairness”, is a necessary stepping-stone. In Section 3, we propose a re-conceptualisation of “communication” in order to approach it in the perspective of policy analysis; we are then in a position to assess communication in terms of efficiency and fairness. We propose a theory of efficient and fair multilingual communication, along with the economic concepts with which the degree of efficiency and fairness can be systematically gauged in a general, macro-level perspective. The latter is nevertheless anchored in micro-level processes. The approach is flexible enough to be adaptable to the three terrains investigated in other chapters of this book: private-sector businesses, European Union institutions and educational systems. It has also been designed in a way that allows for explicit bridge-building between the very different epistemological sensitivities represented in these different chapters.

In practice, the assessment of the relative efficiency and fairness of alternative modes of multilingual communication requires a considerable amount of data, along with the close monitoring of a large number of aspects of actual communication processes. The analytical framework, therefore, is crucially important, because it provides a template for identifying and collecting relevant information. Its function is to steer clear from the risk of gathering information in a haphazard way.

Another challenge is to organise this information in a manner that ensures its usefulness to stakeholders such as decision-makers, the media, or citizens at large. Stakeholders include readers who may have little reason to plunge into the methodology of policy evaluation. One way to structure and organise abundant information is to develop an *indicator system* made up of subsets of indicators that are consistent with the analytical framework, and this is the approach adopted in this chapter. Section 4 is devoted to the presentation of indicators in general, both at the level of individual indicators and at the level of an indicator system. A corresponding list of over

200 indicators has been developed as part of the research work of which this chapter provides an account.¹ “Populating” these indicators with actual data requires substantial financial resources, because it entails controlled data collection on a large, representative sample. This is not a task for a research team, but for well-financed public agencies. The list of 200 indicators, however, has not been put together in the belief that the European Commission would actually set out to collect all of them, but in order to offer a reasoned choice of indicators, out of which the Commission may choose to select a few which are seen as particularly important, for example on the basis of their (contingent) policy relevance or their ease of collection. Even if it is compact and confined to some essentials, a well thought-out, theory-based, yet practice-oriented system of indicators can be an essential tool to monitor multilingualism in Europe, and to promote efficient and fair communication.

17.2 Analytical framework

17.2.1 Efficiency

The concept of efficiency refers to resource allocation, a central question in economics. As Mas-Colell et al. note, “the fundamental issue in economics is the organisation of production and the allocation of resulting commodities among consumers” (1995). Most resources are scarce and susceptible of alternative uses; no assumption needs to be made regarding the intrinsic difference (or absence thereof) between material and symbolic resources. From the standpoint of economic analysis, there is no *a priori* reason for excluding some categories of resources from the analysis. Hence, the question is how they should be used to avoid waste. Waste does not necessarily mean that resources are employed thoughtlessly or without any reasonable criteria. It simply means that, at least in principle, it would be possible to reallocate the production and distribution of commodities so as to get more out of the resources used.

The concept of efficiency in economics is mainly applied to the study of the properties of the market as a mechanism to allocate resources. By contrast, the analysis of efficiency in language diversity management is not concerned (or at least not principally) with the analysis of efficiency in the market of language *goods*, such as

1. For reasons of space, it was not possible to include such a list in this volume. However, it is available on line on the website of the DYLAN project (www.dylan-project.org) as well as on the website of the *Observatoire Économie-Langues-Formation* at the University of Geneva (www.elf.unige.ch). This list is an integral part of the message of this chapter, and readers are invited to look at it.

grammar books, textbooks or language courses, but with the efficiency of public policies related to languages, that is, *language policies* (cf. Gazzola & Grin 2007 for a more extensive discussion). Let us from now on address the issues at hand in terms of policy evaluation, remembering that the principle of evaluation can be applied not only to formal, explicit policies designed and implemented by the state and its surrogates, but also to most other situations where social actors make decisions about languages.²

As in the case of any other public intervention, the efficiency of language policies should be evaluated. Generally speaking, the evaluation of the efficiency of a public policy requires a comparison between its advantages (or “benefits”) and its drawbacks (or “costs”). As a general rule, a policy can only be efficient if the advantages outweigh the drawbacks. If both advantages and drawbacks can be expressed in monetary form, the difference between benefits and costs can be computed. If decision-makers can choose between several policies, the efficiency criterion requires choosing the option which displays the highest level of net benefit, that is, the biggest difference between the gross benefits and the costs.

The identification and the computation of the benefits and costs of linguistic diversity is itself, however, fraught with methodological and epistemological difficulties due to the complex nature of language. As pointed out by Grin and Vaillancourt (1997), the set of advantages and drawbacks, both at the individual and social level, includes costs and benefits not only of a market nature, but also of a non-market, or symbolic, nature. The identification of the possible channels through which languages are potentially carriers of benefits or costs is far from clear-cut.³ Some relationships—like that between language skills and wage differentials on the labour market—have been modelled formally (see 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; most of them are usually not collected and are 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” postgraduate education. This does not mean, however, that any attempt at evaluation is ruled out, but that some simplifications are necessary to achieve it.

2. For example, the choice by a multinational company to encourage the use of one language instead of another for internal communication can be analysed using the same tools and criteria as those which are applicable to state-level language policies.

3. See Grin (1994) for an attempt to characterise such channels.

17.2.2 Fairness

In economics, the terms *equity*, *fairness* and *distributive justice* are generally used as equivalent.⁴ Issues of equity are sometimes forgotten in policy exercises that overemphasise the issue of efficiency; nevertheless, they still play a central conceptual role in economic analysis, particularly in areas such as income distribution and optimal taxation. An efficient policy may be rejected if its distributive consequences are deemed too unfair, for example in terms of income distribution between socio-economic groups. Unfortunately, generally speaking, there is no mechanism to aggregate individuals' well-being indicators and translate them into a single, synthetic social preference index to rank-order alternative economic states.⁵ However, this does not imply that economics as a discipline fails to provide a valid framework for comparing the relative fairness of alternative economic states. As Just et al. stress, an "often misunderstood point in [...] economics is whether economists need to talk about the 'desirability' of a policy change, such as the 'goodness' or 'badness' of technological change [...]. Making such recommendations may not be a necessary or appropriate role for an economist to play. Rather, pointing out the economic implications of policy changes for individual groups in society may provide the critical policy analysis needed by policy-makers, who are elected and empowered to make choices and alter income distribution" (2004).

Hence, there is no particular moral or ethical content in the economic and policy analysis perspectives on "fairness". In line with the specialist literature, we simply assess fairness in terms of the identification of *who loses*, *who gains*, and (if possible) *how much*. Putting it differently, fairness is approached exclusively in terms of the *distribution of (material and symbolic) resources*.

17.3 Results and discussion

17.3.1 Multilingual communication as an object of evaluation

The existing literature on the evaluation of efficiency of language policies is rather heterogeneous, and it includes contributions encompassing the evaluation of the cost-effectiveness of language policies aimed at supporting minority languages (Grin & Vaillancourt 1999), the study of the allocative consequences of alternative language regimes in the institutions of the European Union (e.g. Fidrmuc & Ginsburgh 2007; Gazzola 2006a, 2006b; Ginsburgh, Ortuño-Ortín & Weber 2005; Ginsburgh & Weber

4. See for example, Boadway and Bruce (1984) or Moulin (2003).

5. This result is known as "Arrow's impossibility theorem". See Moulin (2003) for a discussion of the theorem.

2005; Grin 1997, 2004; Pool 1996), the assessment of the benefits and costs of the bilingual policy of Canadian federal institutions (Vaillancourt & Coche 2009), and the analysis of the allocative consequences of alternative policies on foreign language education in Europe (Grin 2005).

Nevertheless, there is a common feature linking these contributions which often emerges only indirectly. Many authors emphasise that among all the possible advantages (or “benefits”) of a language policy, one specific advantage stands out as particularly relevant for policies aimed at managing linguistic diversity in multilingual contexts, such as international institutions or multilingual states. This benefit is *effective communication* between actors having different mother tongues (or “first languages” or “native languages”). This is why we have decided not to venture in an assessment of the highly aggregated net benefits of alternative language policies (which could also include benefits other than communication) but, taking account of the purposes of the DYLAN project, to focus instead on an assessment of multilingual communication. In essence, this approach—which we will call the *effective communication approach*—constitutes an adaptation to the field of communication of the principle of comparison between alternative policy options. Evaluating efficiency, therefore, amounts to assessing the relationships between one particular outcome (effective communication), and the costs necessary to achieve it. In this perspective, efficiency is interpreted as cost-effectiveness;⁶ putting it differently, we focus on communication mediated through languages, and our focus is not communication processes *per se*, but the relative advantages and drawbacks of more or less multilingualism in communication. Recall that these forms and degrees of multilingualism can be, for purposes of comparison, captured by various parameters (some of which are mentioned, for example, in House & Rehbein 2004).

Let us now turn to the question of what *effective communication* means.⁷ In order to avoid simplistic definitions of communication, it is better to work in parallel with several, not mutually exclusive definitions, which reflect different perspectives on the nature and functions of communication. We have adopted three different definitions of communication, namely:

- α) Informatory communication;
- β) Cooperative communication;
- γ) Strategic communication.

6. Therefore, for the purposes of this chapter, no formal difference is made between “efficiency” and “cost-effectiveness”, although a difference *does* exist in the economic and policy analysis literature (Grin 2001).

7. Since we do not focus on communication *per se*, but on communication occurring in multilingual settings, that is, on communication mediated through languages, other communicational means such as gestural expressiveness or symbols will not be considered.

These definitions have been inspired in particular by the contributions of Paulré (1993) and enriched using the work of Carey (1992), Charaudeau (1995) and Lamizet and Silem (1997). Notice that these definitions are not an abridged or revised version of the well-known Jakobsonian communication functions. Rather, they aim at characterising a multilingual communicative context according to the (*main*) *communicational intent* or *goal* of a communication occurring between agents (or groups of agents) using different languages.

In the first case (α), communication is simply a process of transmission and distribution of messages. In this perspective, communication amounts to an exchange of information that aims to transfer data and knowledge from an individual to another, not unlike communication occurring between machines. In the second case (β), communication is defined as a process that makes cooperation possible and that encourages the attainment of the common goals of the organisation. The focus of β -communication is the notion that communication means sharing something “common”, such as a culture or a feeling of membership that promotes coordination and the emergence of new ideas. The scope of the definition of β -communication goes beyond that of α -communication, which is in large part included in the former.

Finally, the third case (γ -communication) stresses the power aspect of communication. The focus here is on the role of communication as a tool or as an object of competition for power between individuals and/or between organisations. In this case, communication is seen as a process intended to influence, persuade or charm others so as to realise one’s own objectives. The difference between β -communication and γ -communication is not always clear-cut. For example, the process of reaching a common agreement does not require a sharp distinction between the cooperative and persuasive dimensions. Conversely, the common goal of the organisation as a whole can very well be to prevail over competitors; this is particularly true for companies. However, it is useful to keep these three forms of communication distinct, not only because the indicators characterising them are not the same, but also because this difference plays a central role in the analysis of fairness in multilingual communication.

Let us define more precisely what we mean by “main communicational goal”. The notion of efficiency makes no sense if a goal is not identified. Hence, the concept of main communicational goal must be interpreted in the light of a given context, and in particular the context provided by the core activities carried out in a given organisation or in one of its constituent parts. What characterises communication as effective, therefore, is its direct relationship with the attainment of these goals. In other words, the effectiveness of language policies or strategies—or, more generally, different ways of handling multilingual communication—is assessed with respect to the effectiveness of the institution analysed in achieving its goals. For example, the effectiveness of language policies in the university system can be assessed with respect to the main goal of universities which, generally speaking, is to produce and spread knowledge. As

regards the private sector, the effectiveness of language strategies in enterprises can be assessed on the basis of its contribution to the achievement of the firms' central goal which is, essentially, making profits. Profits, in turn, are the result of the difference between revenue and expenditure. To the extent that a given communication strategy contributes to increasing revenue (e.g. by gaining market share) and/or to reducing costs (e.g. by allowing access to cheaper inputs), it contributes to achieving the company's goals.

This approach is suitable for analysing language policies both at a macro level, such as language policies in multilingual states, and at a micro level. Consider the example of a supranational institution such as the European Union (EU). On the one hand, we may examine how effective the EU institutions are in communicating with European citizens and *vice versa* (macro-level analysis) in terms of democratic participation. On the other hand, we may focus on the micro-level communication process occurring within the institutions between groups of Members of the European Parliament (MEPs) or civil servants speaking different languages who have to work together. In this case, the target of language policy is the internal linguistic environment of the institutions. What matters here is that the approach does not imply any *a priori* definition of what goals are. The concept of main communicational intent always depends on the (possibly dynamic) position of actors in a given context.

Let us now turn to the issue of fairness. The literature on fairness in language policy and planning (or "linguistic justice") includes contributions stemming from the social sciences and political philosophy.⁸ Social scientists have focused mostly on the identification and quantification of the distributive consequences of language policies. Pool (1987) and Pool and McFann (1992), for example, offer a typology of linguistic inequalities caused by different language policies. Grin has identified channels through which distributive effects among language groups occur (2005, 2008). Wickström (2011) analyses certain distributions of language rights in multilingual settings using a welfare economics approach and focusing on the analysis of the trade-off between efficiency and fairness. Theoretical contributions often address the question of what principles should guide any redistribution of resources (Pool 1991; de Briey & van Parijs 2002; Van Parijs 2011; Wickström 2007; Wickström 2013; Fiedler 2010a, 2010b). Let us point out once again that the resources in question are not just material or financial, but also include symbolic ones.

The analysis of the distributive consequences of language policies must be pursued through an identification of the channels of distribution of resources and possibly

8. See Van Parijs (2011), de Schutter (2007) and Kymlicka and Patten (2003). On the historical aspects of fairness in language policy, see Moliner, Hüning & Vogl 2013, this volume.

through an assessment of the distributional effects of policies on the relative position of the actors involved. This identification is necessary for any decision regarding redistribution, but the choice of the fairness criteria still belongs to the policy- or strategy-maker.

In the approach adopted by the DYLAN project, the attribute defining a group with respect to others is the shared part of the linguistic repertoire of its members, usually centring on their first language. Note that none of the chapters of this book characterises groups of actors in terms of other attributes, such as disposable income or other indicators of socio-economic status; in the few cases where such aspects are mentioned, they are given a secondary role relative to an actor's linguistic profile, which therefore remains our key analytical dimension. Also note that we carefully avoid the notion of "speech communities", which would require additional assumptions that are not necessary to the analysis proposed here. The assessment of the distributive effects can also be carried out with respect to corporate actors, like firms or universities. Although these do not have a native language, they can often be characterised in terms of linguistic attributes on the basis of the official language(s) of the state where they are based.⁹

Since we deliberately focus on a single benefit, namely, effective communication, we need a specific approach to assess how policies influence the distribution of this benefit among actors, as well as of the associated costs. The assumption made here is that the distributive effects of alternative language policies/strategies can be assessed through a set of indicators relating to three distinct phases of communication, which are:

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

First, we may approach fairness in terms of *access* to communication (or, putting it differently, to a "communication network"). If a decision is made in an institution (as a result of a given configuration of interests and power) to use two languages (J and K) instead of just one (J only) for its external communication, this will enable those speakers of K with limited competence in J to have better access to communication.

9. In some cases, this assumption may not reflect reality accurately, especially for multinational companies or large internationalised universities. However, the relevance of the criterion chosen lies in its practical usefulness, and in most cases the staff of firms (in particular small and medium enterprises) and universities is still composed of people who have as their native language or language of primary education the official language of the state (or region) where the company or university is based.

Putting it differently, the move from J to J+K implies a sharing of resources (in this case: being included in the communication network) with those speakers of K who are not fluent in J. The overall distribution of resources is modified to the benefit of this group of speakers.

Second, we may approach the question of resource distribution in terms of *process* or, more precisely, *participation in the communication process proper* (the “communication process proper” means, for example, interaction a citizen and a given institution). If both languages J and K are allowed (instead of J only) we may expect speakers of K who have a limited competence in J to participate more actively in this process. There again, we need to identify who is actually and actively involved in a communication process.

Third, we may approach the question of resource distribution in terms of *outcome*. The term “outcome” has a very specific meaning in policy analysis, including in the applications of policy analysis to language policy. However, we are using it here in a slightly different sense. For us, outcomes are the results *outside* the communication process proper. For example, the fact that an institution decides to use more languages may mean a better representation of different language groups in decision-making.

These three dimensions refer to different *stages* in the communication process, and distributive effects may occur in each of them: when accessing a communication network, when actually participating in it and with respect to the consequences of communication.

A third important concept in evaluation is cost. The narrowest and simplest interpretation of the costs of language policies refers to the direct and indirect monetary outlays associated with the management of multilingual communication. Let us call these *primary costs*. Primary costs are defined as the sum of the direct costs (or operational costs) of a language policy, like the expenditure related to language services such as translation and interpreting (either internal or outsourced), plus indirect costs, like a given share of common administrative structures, or overheads directly associated with language services.

Secondary costs are a broad class of actual or potential sources of costs associated with the management of communication in multilingual contexts. This may include misunderstandings due to translation and/or interpreting (or to the process of information circulation that precedes or follows translation proper), delays, errors and reduced productivity due to lack of proficiency in foreign languages in the internal activities of the organisation analysed. In certain cases, it may be possible to put a monetary value on these costs.

A third class of costs related to language policies can be called *implicit costs*. Limiting the number of official languages used by an institution to a restricted subset of languages spoken in a given territory, for example, implies that those who do not know (one of) the official language(s) must pay to have access to communication. This is what Pool (1991) calls the “adoption price”, that is, the set of indirect costs

associated with the use of a foreign or second language for official purposes. The concept of adoption price includes quantifiable variables such as learning costs, time and effort and other non directly quantifiable factors such as linguistic insecurity caused by an imperfect command of the official languages, and a loss of prestige.

All three types of costs must be taken into account in the evaluation. As Pool and McFann put it,

it is wrong to claim that having many official languages is necessarily inefficient. As more native languages are made official, translation costs rise but adoption costs fall. The tendency to regard multiple official languages as inefficient may reflect a state-centred neglect of costs incurred by individuals in adapting to language policies. (Pool & McFann 1992).

The relative magnitude of benefits and costs is ultimately an empirical question, and Pool and McFann usefully warn us against the hasty pronouncements which are all too often made in this regard.

Assessing different ways to manage multilingual communication in terms of its cost-effectiveness therefore means evaluating the evolution of the relationship between effectiveness indicators and the sum of primary and secondary costs. The assessment of fairness must include a description of the distribution of implicit costs by actors' first language. For example, the impact of a language policy on the distribution of implicit costs among actors is a central element of the evaluation of fairness at the "access" level.

17.4 Towards a set of linguistic indicators for Europe

One of the contributions of the DYLAN project consists of providing a detailed description of the steps which characterise the evaluation of language policies. For the sake of brevity, we do not go into detail here (cf. Grin & Gazzola 2010). Let us simply recall that the concept of "indicator" plays a central role at different stages of the evaluation process. An indicator may be defined as:

"The measurement of an objective to be met, a resource mobilised, an effect obtained, a gauge of quality or a context variable. An indicator produces quantified information with a view to helping actors concerned with public interventions to communicate, negotiate or make decisions. Within the framework of evaluation, the most important indicators are linked to the success criteria of public interventions". (European Commission 2008)

Indicators can measure facts, but they can also measure opinions and they can be derived from secondary sources such as censuses, or designed specifically for a single evaluation (*ad hoc* indicators). As a general rule, raw observations and unprocessed quantitative information are not indicators *per se*. Indicators are theoretical constructs

which must make sense with respect to the evaluative questions of the researcher. The nature and the role of an indicator are defined with respect to the needs of evaluators and do not automatically spring from the data.

Developing indicators for the evaluation of language policies is still not a very common practice. Nevertheless, some very interesting and promising experiences in the design of language policy indicators do exist, particularly in multilingual countries such as Canada or Spain, and international organisations like the EU or UNESCO that have a long-lasting tradition in linguistic diversity management (cf. Grin & Gazzola 2010).

Although some surveys collecting data on the language skills of European citizens have been carried out at the request of the European Commission (such as the *Eurobarometer* surveys on the linguistic competences of EU citizens), this has not been followed up with the elaboration of a systematic set of language indicators that could be used for evaluation. This situation can be traced back to the lack of an analytical framework from which an evaluative perspective could be derived, and, on this basis, a set of indicators defined. The framework developed here generates proposals for such a set of indicators, and this closing section is devoted to highlighting its main components.

Indicators make sense in order to understand better a given reality and then to act upon it, nudging it in the required direction. What this means in practice will be case-dependent: relevant indicators are not the same for a publicly financed structure like the European Union and its institutions, or for profit-maximising firms. Across all cases, however, some descriptive, contextual indicators are likely to be relevant. Such indicators (starting with the most elementary ones, like the percentage of speakers of different languages as their first or second/third/etc. language in a given setting) are often already collected.

The approach to indicators developed here is, however, much more targeted, since (i) it focuses on communication; (ii) it takes account of the fact that decisions influencing communication “travel” through successive states, from the goal-setting upstream to the final outcome downstream; (iii) the aim of the indicators is to enable a comparison in terms of two established criteria, namely efficiency and fairness.

The combination of these dimensions generates a conceptual grid (Table 1) in which each cell does not need to contain indicators, but in which any indicator considered should be fitted.

Let us consider the case of a particular document *D*. This document may be used for internal or external communication; its main communicational intent may be informative, cooperative or strategic. Combining these two dimensions, we get $2 \times 3 = 6$ *genres of communication*; let us label them from CG1 to CG6. In line with the central DYLAN question, we now want to compare more or less multilingual ways to organise these communicational genres. Table 1 provides a way to structure the comparison in a systematic fashion, and to generate an internally consistent *list* of indicators.

Table 1. General overview of the list of indicators

GENERAL CONTEXT INDICATORS	a00: general demographic, business, institutional and educational indicators					
COMMUNICATION GENRE	CG1 <i>internal- informatory</i>	CG2 <i>internal- cooperative</i>	CG3 <i>internal- strategic</i>	CG4 <i>external- informatory</i>	CG5 <i>external- cooperative</i>	CG6 <i>external- strategic</i>
GOAL	for each column, explicit statement of the goal pursued in terms of the degree of efficiency and fairness of communication					
<i>Terrain indicators</i>						
INPUT	a11	a12	a13	a14	a15	a16
OUTPUT	a21	a22	a23	a24	a25	a26
Effectiveness- OUTCOME	a31	a32	a33	a34	a35	a36
Fairness-ACCESS	a41	a42	a43	a44	a45	a46
Fairness-PROCESS	a51	a52	a53	a54	a55	a56
Fairness-OUTCOME	a61	a62	a63	a64	a65	a66

Let us recall that the “inputs” of a policy are defined as the human, financial and material means mobilised for its implementation, “output” is what is funded and achieved (or realised) through the resources allocated to the policy, and policy “outcome” are the effects of the policy on the target population as a result of the policy (cf. below for an example). Let us note that:

1. In this approach, the choice has been made to interpret efficiency as cost-effectiveness, taking the form of an outcome/input ratio; however, information about outputs is interesting and often necessary as a stepping-stone towards outcome assessment;
2. In the case of fairness assessment, indicators are relevant with respect to three stages, namely, access, process and outcome (set a41 through a66);
3. The *list* of indicators that can be fitted into this table is potentially endless; but by selecting some indicators (for example, one or two per cell), decision-makers can design the indicator *system* that must be used to evaluate a specific policy; recall that an indicator system cannot be defined independently of the questions asked, or the concerns that need addressing;
4. For this reason, the questions and concerns (and, by way of consequence, the goals pursued if a policy is designed to improve efficiency and/or fairness) should be clearly spelled out for each communicational genre – hence the inclusion in this table of the row entitled “goal”, which is not intended to contain indicators but rather a statement of the issues on the basis of which a system will be selected from a list;

5. Depending on the context, not all of the 37 cells in Table 1 (a00, a11 through a66) are equally relevant, and the same indicators would not be suggested for private-sector companies, official European bodies or educational institutions. For example, column CG6 is likely to feature far more prominently for companies than for the other two.
6. The ultimate rationale for indicators is not to “measure” or “quantify” language policies, nor to assess whether a specific language policy is efficient or fair *per se*, although such information may be relevant. The function of indicators is to help decision-makers *compare* the value of indicators in different scenarios (e.g. the more or less multilingual regime of EU institutions).

For these reasons, this chapter proposes a *list* of indicators (see Footnote 1); selecting some indicators from this list in order to design a system is a task that depends on the actors concerned (for example: businesses, political institutions, education planners) and the specific issues they have to confront.

Let us present two examples that clarify how the framework and the indicators discussed in this chapter can be adapted to concrete cases. We present an example regarding external communication and an example dealing with internal communication and interaction.

Example 1 – External communication of a DG of the European Commission

Let us focus on the external communication of a given Directorate General (DG) of the European Commission. We consider in particular its web pages. The “main communicational goal” of the DG is to provide information to citizens of the EU on a given topic. The DG can opt for a “more” or “less” multilingual policy, for example, using six languages or only three. The policy intervention consists essentially in the translation of web pages into a certain number of languages (five or two) from the language(s) in which they were originally generated.

To assess inputs, we must consider the expenditure figures corresponding to the resources used to implement a policy. Examples of input indicators are the number of translators’ working hours in full-time equivalent, the average cost of a working hour, and the amounts invested in language processing software.

The direct policy output is the number of web pages translated per language and per month. The effectiveness and the efficiency of alternative policies must, however, be evaluated with respect to their outcomes rather than their outputs. Depending on the definition of the effective communication adopted (see above), the set of effectiveness indicators can vary. Table 2 presents some examples. According to the first definition of communication (“informatory communication”), communication is effective if it successfully transmits information. The simplest indicator of effectiveness is the average number of web pages visited by citizens per month. If a given web page is more frequently visited because it is available in six languages rather than three, this implies

that communication is more effective in the first case. More refined indicators can be used, such as the average number of web pages visited by citizens per month by citizens' L1, possibly weighted to take account of the relative demographic size of groups of people in the EU sharing the same L1.

If we focus on the cooperative dimension of communication, we should rely on more complex indicators of effectiveness, reflecting the feeling of inclusion of citizens visiting the web site of the DG considered ("cooperative communication"). Generally speaking, people prefer to have the choice of being able to access web pages in their native language even if they know other languages (European Commission 2011). Hence, if translating web pages into a choice of different languages only generates a modest increase in the number of visits (for example, because citizens reading these web pages are, on average, proficient in other languages), it may substantially increase the ease and comfort with which those citizens access information. The preferences of citizens who visit web pages published in different languages could be assessed through *ad hoc* surveys or simply by providing a rating scale at the bottom of each web page, in which visitors can assess the usefulness of the information contained in the page itself. If we observe that citizens speaking language *X* as an L1, on average, tend to rate a given page higher if it is provided in language *X* rather than in language *Y*, we could conclude that they feel more comfortable reading it in *X* than they do in *Y*. This, in turn, could be seen as having a positive effect on the level of participation experienced by citizens.

Depending on the context, the strategic dimension of communication could also be taken into account, although it is not necessarily relevant to this example.

Table 2. Examples of effectiveness indicators

Informatory communication ("alpha") (cell a34, Table 1)	Cooperative communication ("beta") (cell a35, Table 1)
<ul style="list-style-type: none"> • Average number of web pages visited by citizens per month • Average number of web pages visited by citizens per month, by citizens' L1 • Average number of web pages per language of publication visited by citizens per month, by citizens' country of residence 	Indicators of feelings of inclusion in visitors to websites, e.g. rating of web pages by language in which they are published and by citizens' L1

Effectiveness indicators must be viewed in relation to indicators of cost in order to assess the relative cost-effectiveness of different ways of handling multilingual communication. For example, if the increase in the average number of web pages visited by citizens per month coincides with an increase in the number of languages available (from three to six) and if this increase is more than proportional to the corresponding increase in expenditure on translation, using six languages turns out to be more cost-effective than using only three.

The evaluation of alternative language regimes should also be assessed with respect to their distributive consequences. A simple indicator of fairness at the “access” level is the difference from a maximum in terms of number (or percentage) of web pages in different languages potentially available to citizens, by citizens’ L1 (for example, a web site may be fully accessible in languages *X*, *Y* and *Z* while only 50% of its pages are also available in languages *A*, *B* and *C*). An estimation of the implicit costs borne by those who do not have access to documents should also be part of the evaluation.

Indicators of feelings of inclusion experienced by visitors can be used to assess fairness at the outcome or process level. Systematic differences in the rating of web pages available only in languages *X*, *Y* and *Z* by citizens whose L1 is *X* with respect to ratings provided by citizens whose L1 is not *X*, *Y* or *Z* could be interpreted precisely as a distributive effect of the language policy occurring at the “outcome” level.

Example 2 – Academic meetings

Consider two different meetings (*A* and *B*) in the same university, each bringing together participants with different linguistic repertoires and, in particular, different native languages. Suppose that in meeting *A*, the use of a wide range of languages is encouraged, while in meeting *B*, the group leader insists on the use of a single language. Both meetings are recorded and the speaking times of participants are recorded in seconds. The total duration of the meeting can therefore be analysed in terms of the share of speaking time t_j used by each participant j ($j = 1, \dots, N$), opening the way to the development of numerous indicators.

A first question is whether the speaking time is relatively equally shared or whether it is monopolised by a few speakers. Are the meetings similar or very different in this respect? To answer this question, one can compute an indicator of “evenness of speaking time” (EST) given by:

$$EST = 1 - \sum_{i=1}^N t_j^2$$

The value of EST will be closer to 0 if one speaker takes up most of the speaking time, and closer to 1 if all speakers share speaking time more equally. The value of the EST indicator can be computed separately for meetings *A* and *B*, in order to assess which of the two meetings generates a more even distribution of speaking time (leaving aside other intervening factors such as hierarchy and meeting chairmanship). Evenness of speaking time can be put in relation with more (*A*) or less (*B*) multilingual modes of communication. Such a relationship can then be generalised once a sufficiently large number of observations has been gathered.

Following the meeting, participants can be asked to grade its usefulness (for example in terms of the actual amount of information they consider was acquired and

understood) on a scale from 1 to 10. Let us call the resulting average value (across all participants) “informational usefulness of the meeting” (IUM). IUM is an indicator of the effectiveness of communication according to the first definition provided above (informatory communication, cell a31 in Table 1). They may also be asked to grade the pleasantness of the meeting, for example in terms of the extent to which they felt that they could actually impart all that they had to say, also on a scale from 1 to 10. Let us call the resulting average value “pleasantness of the meeting” (PM). PM is an indicator of effectiveness of communication according to the second definition provided above (cooperative communication, cell a32 in Table 1).

IUM and PM can be recorded separately for both meetings, and then compared; they can also be put in relation with other characteristics of the meeting. For example, the correlation between EST and PM provides a way to ascertain whether evenness of speaking time is strongly or weakly connected to the participants’ satisfaction with the meeting – including its linguistic aspects.

17.5 Concluding remarks

Three observations are in order. First, our goal is not, and could never have been, to *populate* with figures the indicators summarised in Table 1. Let us insist that in an evaluative approach, “data” must not be confused with a small set of case-specific observations (detailed as they may be); “data”, particularly if they are intended to fit into a reasoned indicator system serving language policy purposes, are usually of the quantitative sort and their collection requires large-scale organisational structures. Collecting the data needed to populate the indicator system would represent a massive endeavour, to be coordinated at the level of an agency such as EUROSTAT, ensuring the participation of all interested member states. Our task was to develop the theory-based and practice-oriented analytical instrument on the basis of which the indicator system could be designed.

Second, it should be clear that we are not proposing the systematic collection of data to populate all of these indicators. Independently of the enormous scope of such a task, it would raise daunting challenges in terms of reliability and comparability at the stage of primary data gathering. Even if some of the indicators proposed are combinations of others (meaning that the total number of basic indicators on which data must be collected is in fact less), some can only be populated by gathering more than one type of information (for example, “per-student average public expenditure for teaching foreign languages in tertiary education” requires information on spending *and* on the number of students). Rather, our list is intended as a discussion platform for the Commission and Member states. It is incumbent upon them to make a selection of the indicators they wish to populate in order to monitor multilingual practices in Europe and to nudge the latter, through appropriate policies, towards greater efficiency

and fairness. Actually populating the system with reliable figures for the indicators eventually chosen is, as pointed out above, a task for an official body such as EUROSTAT.

Third, our list of linguistic indicators is quite extensive in that it encompasses many ways to monitor and compare the linguistic dimensions of communication in multilingual settings. It should not, however, be considered final. The list of indicators in a set is potentially endless, and we could have added many more. Likewise, as part of the consultation process which ought to be initiated among stakeholders,¹⁰ variants of the proposed indicators may be suggested, or entirely new ones considered. What matters is that they make sense with respect to a consistent approach to multilingualism in Europe, particularly since multilingualism can significantly affect efficiency and fairness in contemporary European society.

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10. Particularly the relevant divisions within European institutions, Member states' language policy bodies, EUROSTAT, business associations, and academic coordination bodies.

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