Language Planning and Economics

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This paper proposes a comprehensive overview of the 'economics of language'. This field of research, which is grounded in the discipline of economics, displays a strong interdisciplinary orientation, which places it on the fringes of mainstream economics. It studies the ways in which linguistic and economic processes influence one another. It is also well placed to contribute to the evaluation of public policies regarding language, because it offers analytical tools for the systematic identification and measurement of the advantages and drawbacks of policy alternatives. I begin by discussing the reasons why an economic perspective on language is scientifically and politically relevant; I then review some of the attendant epistemological and methodological issues, before moving on to an overview of the main lines of research in language economics. A full section of this paper is devoted to the economic approach to language policy, and another focuses on an application to education policy, detailing the economics of second or foreign language education. The paper aims at making the key economic tools accessible to readers from varied academic backgrounds; it also emphasises the need to combine disciplines to develop an inclusive methodology for the selection, design, and implementation of language policies.

Keywords: Language economics, language policy, policy analysis, diversity, rates of return on language skills, costs of language policy

Introduction

Because language issues are present in every aspect of human experience, they are of interest not only to language specialists, but to practitioners of all social sciences. This wide relevance of language issues as objects of study is evidenced by the attention they have received, first and foremost, on the part of sociologists. This has contributed to the emergence of 'sociolinguistics' as a full-fledged field of specialisation which researchers may access not only through linguistics, but also through sociology. To a lesser degree, the disciplines of anthropology and political science have also been taking an increasing interest in language matters.

Over the past 35 years, however, economics has also been used to investigate a variety of language problems. The 'economics of language', or 'language economics', as a field of research plays a marginal role in academia, but an increasingly important one in practice. The goal of this essay is to take stock of the contributions of language economics and to assess their relevance, with particular emphasis on applications to language planning.

The paper is organised as follows: The second section, 'The Need for an Economic Perspective on Language Issues', discusses the reasons for developing an economic perspective on language issues. The third section, 'Language: Too Much Alive for the Dismal Science?', addresses epistemological and methodological problems raised by the application of economics to language. The fourth section, 'The Economics of Language: History and Main Strands of Research',

1466-4208/03/01 0001-66 $20.00/0
CURRENT ISSUES IN LANGUAGE PLANNING

Vol. 4, No. 1, 2003

contains a brief historical account of the development of language economics, followed by a review of the literature arranged in five thematic areas. The fifth section, 'The Economics of Language Policy', focuses on the economics of language policy, examining in particular the reasons for state intervention, the 'value' of language, optimal diversity, and principles of policy evaluation. The sixth section, 'An Application: Language Education Policy', examines at closer range the application of economic analysis to language education policies. The concluding section is devoted to a brief critical assessment.

The Need for an Economic Perspective on Language Issues

The rise in subjective diversity

While the field of language economics is epistemologically anchored in the discipline of economics, it remains relegated to the outer fringes of the latter. If a field of specialisation may be said to have a centre of gravity, it could in this case be located somewhere in a virtual territory bordered not only by economics, but also by policy analysis, the sociology of language, sociolinguistics, and the education sciences. This relative marginalisation, however, is mitigated by the fact that the need for an economic perspective on language matters appears to be on the rise. Various global trends in the areas of language, ethnicity and culture are giving increasing relevance to the examination of specific problems where the economics of language can help. Four such trends should be mentioned:

- First, the geopolitical recomposition of Eastern Europe and the Commonwealth of Independent States (CIS)[2] following the fall of the Berlin Wall on 9 November 1989 has made room for the reassertion of a wide range of local and regional identities which had been suppressed for decades. To the extent that these identities are associated with certain languages, the latter are more generally visible now than they were in the 1960s, when the first papers in language economics started to appear.
- Second, the end of the 20th century and the beginning of the 21st century are witnessing migration flows of unprecedented magnitude and diversity; the pairs of countries defined by a migrant's country of origin and country of destination are more varied than ever before. Population movement, far from being strictly associated with economic hardship or political oppression, increasingly concerns highly trained professionals as well. Taken together, these trends result in linguistically, ethnically and culturally more diverse environments, particularly in urban settings.
- Third, the development of supra-national institutions such as the European Union (EU) give rise to new language contexts. These may be described as additional *layers* in our 'linguistic environment' (a term discussed in more detail below), where these layers are characterised by the diversity of the languages at hand and the potential rivalry or even conflict between the different languages spoken by different groups of users.
- Fourth, the complex web of processes often subsumed under the general term 'globalisation' manifests itself, among others, by an increase in the share of international trade in world production, as well as by a decline in the relative cost of travel and telecommunications. Both evolutions increase

the likelihood or decrease the cost of regular contact with a wide range of people using a wide range of languages.

It is therefore useful to make a distinction between 'objective' and 'subjective' (or 'perceived') diversity, and to note that this rise in subjective diversity is fully compatible with a decline in objective linguistic diversity around the world, to which many commentators have been alerting us (e.g. Crystal, 2000; Grimes, 1998; Skutnabb-Kangas, 2000). Yet what matters here – particularly from the standpoint of economics – is that the increase in subjective diversity we are confronted with raises policy questions that need to be solved.

Conflict and threat

Against this backdrop, language economics is gaining recognition, because linguistic diversity is both *conflictual* and *threatened*. Since both dimensions are often addressed separately, it is useful to pause for a moment and consider why both need to be taken into account.

The conflictual nature of linguistic diversity stems from the fact that groups using different languages often compete for access to material and symbolic resources, and some authors (e.g. Nelde, 1997) point out that there is no language contact without language conflict – it being understood that conflict is not necessarily armed or even violent, and may be confined to political rivalry in the framework of democratic institutions. Language need not even be the major fault line separating parties in a conflict – other markers of identity, such as religion, often prove much more divisive. Rather, one might say that *all other things being equal*, language contact tends towards conflictuality. Rivalry or conflict does not, of course, occur between languages but rather between *users* of different languages, and it has more than one economic dimension.

Three main types of connection between the spheres of language and economics may be identified, and each provides a context for rivalry or conflict:

- First, economic factors (which may be treated as 'variables' or more complex 'processes' – a distinction I shall return to shortly) affect the fortunes of different languages, both at the micro and at the macro level. For example, at the micro level, the relative prices of different language-specific goods and services (such as books in different languages) are likely to affect patterns of language use, whether directly through consumer decisions to purchase them or not, or indirectly through the greater or lesser provision of public services in certain languages, to the extent that such provision is sensitive to costs. At the macro level, patterns of international trade are likely to influence language dynamics, both informally, in interaction between economic actors and formally, through the choices made by large organisations (such as multinational corporations) to favour certain languages for internal communication).
- Second and reciprocally, language variables (and/or processes) have an impact on economic variables (and/or processes) – again, at the micro as well as macro level. For example, at the micro level, a person's language skills may give rise to wage rate differentials that reward those skills. Skills are better rewarded in some languages than others, illustrating a form of competition between languages. At the macro level, the demographic size of

a language community is likely to stimulate aggregate demand for language-specific goods and services consumed by that community. The micro and macro levels are also linked to one another: some form of ascendancy over business competitors (a micro-level link between firms, possibly achieved through the dominant position of one's language) will generally facilitate access to economic resources or provide better conditions for securing economic gain, which will ultimately be observed at the macro level.

Third, economic arguments may be invoked to support claims made by different parties in language conflict, as well as in the more specific context of debate over competing language policy options. Consider, for example, the issue of support to minority languages. Some claim that the necessary measures are too expensive (thereby bringing economic considerations into play) while others will argue that they are well worth it (thereby resorting, deliberately or not, to a quintessentially economic reasoning that hinges on the weighing of advantages and drawbacks, even if those are neither material nor financial). Practically, authorities developing language policy plans are also confronted with the need to assess their costs and bring the latter in line with budget constraints. This requires some evaluation work, in which economists have to enter the fray.

Let us now review these links between language and the economy with respect to the 'threatened' character of diversity. We have recalled above that this state of affairs is now amply documented. It also raises economic questions, many of which are much the same as those that arise from conflict, and reflect the same three types of linkages. For example, as regards the 'economy→language' category of issues, one might ask how economic processes contribute to the demise of small languages, and whether economic forces are intrinsically responsible for this state of affairs, or whether these forces are merely a conduit through which independent language dynamics operate. As to the reciprocal type of relationships ('language→economy'), some contend, for example, that minority language preservation makes a net contribution to economic welfare – is this indeed the case? Finally, as regards policy matters, should scarce resources be devoted to minority language protection and promotion, and if so, how much?

The above is but a sample of the many ways in which language and economics are connected, and which the economics of language can help to investigate. Such investigation is taking on increasing strategic importance, not primarily because economic analysis might help to understand reciprocal causal links between economic and language-related processes, but because owing to its conflictual *and* threatened character, linguistic diversity calls for some kind of intervention – which takes the form of *language policies*. We have also observed that language policies, which mobilise material and symbolic resources and redirect them in certain ways, have direct economic implications. Consequently, a language economics viewpoint is more frequently required to evaluate possible courses of action in language policy.

A supporting rather than central role

In a general introduction to the economics of language published some six years ago, I suggested that the economics of language should be seen as a field of

specialisation in the making (Grin, 1996a). I believe this observation to remain, by and large, true today. What has happened in recent years is a more general recognition of the usefulness of an economic perspective on a broad range of language problems, with a generally more favourable climate (albeit moderately so) towards interdisciplinary work.

Since this point is not always apparent in the language economics literature, let it be made here without further ado: in my view, the chief usefulness of an economic perspective on language probably is not so much that it helps to understand language-related processes *as such*. Economics as a discipline does not have much of a claim to being particularly well-suited to this task, although some interesting insights into patterns of individual language behaviour or meso-level patterns of language dynamics can be acquired through economic modelling resting on the concept of 'network externalities' (see the section headed 'The Economics of Language: History and Main Strands of Research' below). The chief usefulness of language economics is derived from its capacity to formulate, evaluate and compare policy options regarding language, and hence to assist in decision-making.

In relation to this, it is important to stress that economic tools do not replace political debate or contributions from other disciplines. The economic analysis of language-related processes, as these are affected, among other factors, by language policies, does require reference to some concepts developed in other fields, such as the sociology of language. This alone indicates that the endeavour must be interdisciplinary. A no less important point is that language *policies* ultimately require *political* decisions. Even if the treatment of language economics proposed here emphasises its application to policy aspects (which presupposes that *political* choices have been made upstream), the policy discussion cannot take the place of the political one. Hence, propositions derived from a language economics perspective on language policies are only intended as an input in a wider political debate on 'language-in-society'.

This paper attempts to provide a balanced overview of this field of investigation. Given that other contributions, some published in recent years, contain fairly extensive reviews of language economics, I shall avoid repeating what the reader can easily find elsewhere (Grin, 1994, 1996b; Grin & Vaillancourt, 1997; Vaillancourt, 1985a). Moreover, striking developments in language economics over the past five years have been relatively few, with new results mainly in two areas: the theoretical and empirical assessment of language policies, and the estimation of rates of return on foreign language skills with novel, sometimes tailor-made data sets. For these various reasons, the rest of this paper, rather than focusing on a literature review, will emphasise analysis and commentary.

Language: Too Much Alive for the Dismal Science?

The meaning of scarcity

Economics is sometimes called the 'dismal science'. As often is the case with witty yet unflattering labels, it does hold some truth, but some commentary is needed in order to assess its actual import. Such commentary can also provide a suitable entry point into a discussion on the nature of economics as a discipline and on its applicability to language issues.

What makes the exercise particularly apposite is the fact that one sometimes encounters, among scholars from the language disciplines or other social sciences, what amounts to a form of a priori aversion towards economics. This hostility is perhaps not entirely undeserved. However, it is not always grounded in a robust grasp of economic analysis, and I submit that, if appropriately understood and put in its proper place, economics can offer analytical and methodological tools relevant to the study of language, in particular language policy, and offer insights that other approaches do not provide.

The paternity of the label 'dismal science' is generally attributed to the British historian Thomas Carlyle (1795–1881), who witnessed the wretched living conditions of much of the British working class and observed that this state of affairs was sadly compatible with economists' analyses of economic processes. Some, however, trace the expression back to the prediction by Malthus, at the end of the 18th century, that the production of goods (in particular food) would always be outpaced by population growth, dooming large tracts of mankind to perpetually hover on the edge of starvation. Malthus's predictions have been disproved, as shown by the growth of per capita product in the long run, which has allowed an *average* level of prosperity far beyond the expectations of most 'classical' economists.[3] Nonetheless, the derogatory label has remained, unchallenged even by most economists, many of whom apparently assume that being dismal is somehow a proof of seriousness and scientific accomplishment.[4]

What certainly *is* true is that economics constantly reminds us of *limitations* – more precisely, of the fact that resources are limited, and that this imposes constraints on human action. This is reflected in the modern definition of the discipline. Definitions have changed over time. In the 4th century BC, Aristotle had defined economics as the science of the acquisition of wealth. In the introduction to his weighty tome on the history of economic thought, Blaug (1985) records three types of early definitions, namely: the study of the nature and causes of the wealth of nations; the study of the laws governing the distribution of the products of agriculture and mining; and the study of the laws of capitalism. More recent (that is, post-1870s) definitions, listed by Becker (1976: 3) typically include the study of the allocation of material goods to satisfy material wants; the market sector; and the allocation of scarce means to satisfy competing ends. This latter definition is certainly the most profound – and probably the most widely accepted. One of its chief virtues is that it avoids an obvious problem with more substantive definitions of economics, which stems from the fact that demarcating any particular phenomenon as 'economic' is purely arbitrary. For example, as many economics textbooks point out, inflation, unemployment and consumption, which are regarded as quintessentially economic questions, also are political, sociological or psychological ones. Conversely, typically 'political' processes, such as voting behaviour or the adoption of a public policy, present indisputably economic dimensions. Characterising this discipline with respect to others therefore calls for a shift of emphasis from subject matter to approach, and this is precisely what the last of the above definitions achieves: economics is fundamentally a *way* of looking at human experience as a tension between ends and means.

This definition was first formulated expressly by Robbins, who described economics as 'a science which studies human behaviour as a relationship

between ends and scarce means that have alternative uses' (Robbins, 1935: 16–17). In other words, economics as a discipline exists only *because* of scarcity: in a world of boundless plenty, resources would not be scarce, and the problem of their allocation would simply not arise. If, therefore, the discipline of economics is, in essence, nothing but a constant reminder of the prevalence of some 'principle of reality' (perhaps over some less stern 'principle of pleasure'), it is not surprising that many should see it as dismal. This, however, may not be the chief reason for its unpopularity with some practitioners of other disciplines in the social sciences, whose determinism (as with much of structuralist theory in mainstream sociology) can be seen as no less pessimistic, and just as reductionist. As we shall see shortly, the causes of some of the hostility may have their roots elsewhere. For now, we can nonetheless take 'scarcity' as the starting point and ultimate justification for all economic theorising.

Scarcity and choice

One question to address is whether scarcity is a relevant issue to begin with. There can be little doubt that it is, and this point should not detain us too long: for most people, needs and aspirations exceed resources, which logically implies that some form of scarcity exists.[5] Recall first that nothing, in economic theory, mandates a restriction to *material* or *financial* resources, and that intangibles like social networks and interpersonal affection are, from the perspective of economic analysis, perfectly relevant resources.

That resources are at least *perceived* as limited can be illustrated by the following experiment: most human beings, if asked to choose between having 'more' or 'less' resources than they currently enjoy, will express a preference for 'more' over 'less', whether the resource at stake is money, love, health or friendship. Furthermore, even a person blessed on all these counts will be confronted with one absolute limitation, namely, time. Wealth may give access to better health and hence increase life expectancy, but this is true only within limits, and (beyond a certain age) with a tendency to decreasing physical and mental abilities. Moreover, as Linder once observed, even immortality would not solve the problem of scarcity:

> in an economic heaven, the problem of time will be particularly pressing. We will find there an infinite volume of consumption goods, which pleasure-hungry angels will feverishly try to exploit during the limited time at their disposal *per day*. That one may in this heaven enjoy eternal life as a consumer fails to alter the situation. This can increase the total satisfaction derived over the course of centuries. What we are interested in, however, is the yield *per time unit*. To maximize this, time must be carefully stewarded by the students of Epicureanism. (Linder, 1970: 13; emphasis mine)

In the more mundane context in which most humans live, scarcity, whether serious and life-threatening or merely annoying, is an everyday reality. If scarcity is such a pervasive aspect of human experience, its logical, unavoidable consequence is the need to make choices in order to use scarce resources wisely. Choices may be influenced, or in large part constrained by social norms (possibly mediated through an individually developed habitus in Bourdieu's sense), but some space for choice will nonetheless remain, and it is

this space that economists are interested in. Hence, economics does not merely (and negatively) confine us to a depressing world of scarcity and frustration – it also stresses (positively) the role of choice, in which actors have a not insignificant degree of personal freedom. As such, it contains a full-blown theory of agency,[6] and the emphasis on a certain 'approach' (as distinct from a certain subject matter) as the truly distinguishing feature of economics as a field of scientific inquiry does not strip it of all substantive content. It is worth, at this point, repeating Becker's famous observation that when there are no alternatives, there is no choice, and where there is no choice, there is no economic problem; put differently, this simply means that more than most social scientists, economists are wedded to the notion of the autonomy of actors. The strengths and weaknesses of economic theory as a theory of human behaviour (as compared to other theories of agency developed in other disciplines, in particular sociology) raise questions we shall return to later; the important point here is that the subject matter of economics is how humans make *choices*,[7] and that the need to make choices is a result of scarcity.

The relevance of rationality

The economic approach to human behaviour is based on one very simple, possibly simplistic hypothesis, namely, that actors use their limited resources rationally by making choices regarding the allocation of these resources in such a way as to maximise their satisfaction (or, in economic parlance, their 'utility'). This is assumed to apply to *any* actor, and given economists' concern with generality, they are less interested in particular social actors operating in a given context than in the generic actor or agent, often called the 'homo œconomicus'. This approach has strengths as well as limitations. Its strongest suit is that owing to its very generality, it can make a defensible claim at grounding a general, deductive *theory* of human behaviour, rather than case-specific, *ad hoc* interpretations of the idiosyncratic action of actors in a particular situation. Another strong point is that the twin assumptions of 'rationality' and 'utility maximisation' are so general that they are difficult to fault substantively. This point has often been made by scholars in other social sciences, such as the anthropologist Cancian, who observed almost forty years ago that:

> [utility] maximization is one of the standard restatements of the *a priori* truth that all human behavior is patterned; that all human behavior has a reason. The use of maximization as a scientific strategy involves seeking out the motives (or whatever the investigator sees as the impetus of behavior) and attempting to rank-order them so as to see the behavior as the (conscious or unconscious) maximization of these things. They become the ends being maximized . . . It is in this sense that all people always maximize or economize. There can be no argument about it. (Cancian, 1966: 47)

It is easy to criticise this approach as 'reductionist', but it is far from clear that it is – and such criticism is sometimes uttered by commentators who use theories of actors' behaviour that are no less reductionist, and possibly even more so, without their being aware of it.[8] A properly applied economic analysis, precisely because it starts out from an assumption about human behaviour that is so general as to be almost tautological, forces the analyst to be precise about

the logical links that enable her to link the general theoretical plane of the rationality assumption with observed patterns of behaviour. In this exercise, successive *reductions* from a complex, multi-faceted reality to a simpler (but, one hopes, heuristically valuable) abstraction need to be identified and expressly formulated.

The rationality hypothesis, in that it relates ends and scarce resources, is actually extremely malleable and open to imports from other disciplines. For example, the precise nature of the 'ends being maximised' (to use Cancian's phrase) will vary according to time and place, history, custom and culture. Economists can use information provided by anthropologists, sociologists, political scientists and psychologists regarding not only how these ends are chosen, but what they are and, consequently, *what* is being maximised. In the same way, findings from other social sciences provide information about the *constraints* under which 'utility' is maximised – these constraints, after all, are merely a manifestation of the scarcity of resources, or of restrictions on the ways in which resources may be used. Hence, as has already been noted, both the ends and the means connected by a utility-maximising behaviour can be of any nature – tangible or intangible, financial or symbolic. Rationality is procedural rather than substantive. This makes it possible for economists to study production, consumption, markets, prices, wages or interest rates, but also to apply their analytical tools to health, education, the environment – or language.

The rational calculus of utility maximisation is, of course, not synonymous with egoism, and Schenk notes that '[i]t is well-known in economics that the assumption of self-interest can lead to cooperative and altruistic behavior [The less well-known converse can be shown] that altruism can lead to behavior which appears based on self-interest' (Schenk, 1987: 192). Economics is mainly based on philosophical utilitarianism, but authors like Nobel Prize laureate Amartya Sen usefully remind us (1985) that this intellectual tradition (whose classical formulation is attributed to Jeremy Bentham) comes in different and subtle variants, and that it incorporates a distinctive ethical perspective. Not only is it, therefore, a far cry from what some deride as crass materialism, but there are no convincing grounds to construe 'utilitarianism' as an insult, although some do – sometimes, one suspects, with a limited grasp of what the discipline of economics actually is about.

Nonetheless, the economic approach to human behaviour does have limitations. These limitations, however, are not consubstantial with the discipline, and should rather be associated with two features of a very different logical standing. The first limitation is associated with the methodology that economists generally favour; the second has to do with the praxis of some economists as social actors in the academic context. Let us examine these limitations in turn.

Formal modelling and its limitations

Formal modelling is used in all disciplines in the social sciences; however, it has a distinguished tradition in economics, which prides itself on its extensive use of it, particularly in theoretical as distinct from empirical research. Models are usually defined as abstract, simplified representations of the problem to be studied. What economists regard as a model, however, usually requires a more elaborate and formal construction than in most other disciplines in the social

sciences. For example, a typology of language functions, because it rests on the analytical development of categories of language behaviour, may be described by sociolinguists as a model (e.g. Appel & Muysken, 1987), but it would not, in economics, be called one. An economic model is always made up of two categories of ingredients, namely, variables and relationships between them; and at least some of these relationships should be causal ones.[9] These relationships need not be formulated in great detail; however, what is usually expected of them is some information as to whether a (positive or negative) change in the value of an *independent* variable will induce a (positive or negative) change in the value of a *dependent* variable. Suppose for example that Y stands for the labour income of a generic actor (the 'homo œconomicus') while Q stands for his demand of a particular good or class of goods (say, clothing). One would normally expect a person's demand for the good to be an increasing function of his income, *all other things being equal*. Hence, one of the most elementary models of individual demand as a function of labour income would be of the form:

$$Q = f(Y)$$

where the gradient of the relationship between Q and Y is assumed to be positive; put differently, the first derivative of Q with respect to Y is larger than zero. This general analytical form can be given a specification such as:

$$Q = a + bY$$

where $a \geq 0$ and $0 < b < 1$. This specification would imply that even when income is negligible or zero, the actor's demand for the good will be positive, and that increases in his income will give rise to less-than-proportional increases in his demand for the good (for example, if $b = 0.8$, a 10% increase in income will result in an 8% increase in demand). Hence, it is not sufficient, in economic modelling, to state that a certain variable 'will depend' on another – for example, to state that a person's consumption choices 'will depend' on social class, or that a bilingual's choice to use one language or another 'will depend' on respective positions of power between himself and an interlocutor. *Quite obviously* it will, and the real questions are 'how?' and 'how much?'. Barring duly argued exceptions, the direction (if not the magnitude) of the implied cause-and-effect relationships must be specified.

No matter the discipline in which it is applied, this insistence on the specification of relationships offers the notable advantage of forcing the analyst to spell out her assumptions, which gives rise to a degree of transparency and logical rigour that other analytical devices do not always guarantee (on this question and its application to the study of language problems, see Pool, 1991a). Modelling 'makes explicit assumptions that would otherwise remain hidden and hence unexamined' (Mayer, 1993: 123). Yet this type of transparency and rigour does not come without a price, for two reasons. First, the approach is epistemologically perilous. Owing to their formal elegance, algebraic models can be seductive, and it is all too easy to assume that beauty of form will necessarily be matched by relevance of content. This is obviously a logical error of major proportions, but one to which many users of formal modelling fall prey. If only because economists more systematically use this type of tool, this error occurs

more frequently among economists than among practitioners of other social sciences. Therefore, it bears repeating that a model is nothing but a form of discourse about reality. This restriction should be taken one step further by stressing that the rationale of this type of discourse is not to *resemble*, let alone to *replicate* reality, but to constitute a useful instrument helping us to reflect upon and understand reality. When seen in this light, analytical, possibly formalised (algebraic) models can be uniquely powerful and transparent tools in the study of selected relationships between selected sets of variables. Models serve to clarify the logical implications of a relationship between pairs of variables, and force analysts to apply demanding standards of logical consistency. However, these benefits will accrue only if the limitations of formal modelling are clearly acknowledged.

Second, because formal modelling, particularly in the form favoured by economists, insists on 'signing the effects' (that is, giving the *sign*, positive or negative, of the derivative of a dependent with respect to an independent variable – or combination of primary variables in a model), both categories of variables *must* lend themselves to a quantitative interpretation. In other words, the method demands that it always be possible to express each variable in terms of 'more' or 'less', that is, to project it on a quantitative scale. This is not a problem when studying relationships between variables that are *primarily* defined by their quantitative aspect, such as the unit price of a good or the quantity of that good exchanged on a market during a certain period. Hence, economic analysis is well-suited to the study of markets whose equilibrium is defined in terms of quantity and price. It is, however, much less satisfactory in the case of variables that may have a quantitative dimension (ultimately, *all* variables do), but whose quantitative dimension is neither particularly interesting in itself, nor particularly pertinent in a given analytical endeavour. For example, when studying the link between a person's social class and their education, representing the latter as a certain number of years of schooling may be useful, but will only allow investigation of a small part (not necessarily the most relevant one) of the links between socio-economic background and education, because it will fail to account for many of the *qualitative* dimensions of *that* person's education – as compared to the qualitative dimensions of the education received by *another* person from another socio-economic background. The application of multivariate analysis to quality data sets may mitigate this problem – but then only to a certain extent.

Still, an economist's path of least resistance is towards variables that have a more or less obvious quantitative interpretation and can be connected with one another using mathematical language. This unavoidably induces a bias in favour of the study of relationships between variables that can more easily be formulated in this way. It follows that variables that do not lend themselves to quantitative expression will often be simply ignored, or flattened out to the extent that most of the phenomenological depth is squeezed out of them. Formal modelling has a tendency to produce interesting analyses of the *relationships* between variables, but often terribly dry (and certainly reductionist) characterisations of the *variables* themselves. That these problems are not always solved to satisfaction is reflected in the ambiguity of economists' relationship to methodology. On the one hand, there is a constant insistence on the analytical rigour with which the algebraic formulation of relationships between variables is dissected. On the

other hand, one often encounters a certain reluctance to seriously address more fundamental questions pertaining to the soundness of the assumptions made about these relationships, and even more so about the variables which these relationships connect. Taken to extremes, this can result in disappointing analyses, which are far removed from perceived human experience. The economist Daly once derisively observed that 'Layer upon layer of abstruse mathematical models were erected higher and higher above the shallow concrete foundation of fact. The behavior of a peasant selling a cow was analyzed in terms of the calculus of variations and Lagrangian multipliers . . . ' (Daly, 1977: 3).

Is economics exclusionary and imperialistic?

The crux of the matter, therefore, is to use economics where it is useful, recognising its contribution to the analysis of some problems, but not to stretch it beyond what it can actually say. Unfortunately, economists do not always exercise similar caution, and before closing this section, it is useful to discuss the 'dismal' epithet in relation with the practices of economists as members of an academic profession.

Economists' work often lends itself to criticism for the reasons just discussed; yet what is at stake may be not so much the contents of economic research as the philosophy with which it is sometimes carried out. As we have seen, modern mainstream economics makes abundant use of formal modelling. However, whereas simple models can be illuminating and reveal aspects that other forms of analysis would have left in the dark,[10] many mathematically refined models (quite apart from the question of their topical relevance – see the quote by Herman Daly just above) are simply inaccessible to the layman – and, increasingly, to other economists who are not specialists of the specific class of models concerned. The inner dynamics of the profession, which primarily rewards dazzling mathematical prowess (usually a condition for publishing in the most prestigious academic journals) encourage economists to prioritise the display of mathematical apparatus, to the point that some economic research is closer to applied mathematics than to an investigation of the actual processes of allocation of scarce resources. In so doing, economists themselves disregard the law of diminishing returns, which, of course, also applies to mathematical sophistication as a tool of scientific inquiry. The actual practice of many economists sometimes ends up sterilising not just the answers, but the questions themselves. Furthermore, it is difficult to shake off the accusation of exclusiveness, or even arrogance that can be levied against some members of a profession whose choice of language (mathematics) shuts other scholars out: although the reluctance that economics sometimes inspires in some quarters may, in part, be due to simple frustration at not being able to follow its methodology, it probably also reflects an understandable impatience in the face of a sometimes deliberately esoteric discourse.

The issue of 'economic imperialism' is quite different, and can arise in two distinct guises. On the one hand, one might brand as 'imperialistic' the behaviour of researchers (say, economists) who work on issues that were traditionally treated by scholars from other disciplines (sociologists, anthropologists, historians, etc.). Such criticism, however, is hard to countenance, unless one is to adopt a deeply corporatist view of research, in which certain disciplines hold

a monopoly over certain types of issues. A sounder perspective must be to recognise the essential complementarity of different disciplines. As a consequence, no discipline is intrinsically more or less legitimate than any other to produce scientific discourse about any particular set of issues; simply, some disciplines will have more to say than others about them. Gary Becker, whose many publications have often been cited by critics as instances of crass imperialism, because, in particular, of his work on the family, accepts the label of 'economic imperialist' if it refers to his application of an economic approach to domains traditionally studied in other disciplines (see Swedberg, 1990, Chap. 1).

By contrast, the stance adopted by some economists with respect to this issue is questionable. One such example is a recent essay by Lazear (2000) in one of the most prestigious journals of the profession, which starts out by proclaiming that 'economics is not only a social science, it is a genuine science' (read: 'other social sciences are not'), and goes on to assert that 'economics is the premier social science'. In support of these claims, Lazear describes findings from economic modelling on demography, discrimination, social interaction, religion, law, etc., suggesting that these findings are more important and relevant than those which other disciplines have yielded. The argument, however, remains unconvincing. His brief account, among the various areas addressed, of economic contributions to language (which, surprisingly, ignores most of the work produced in language economics over the past 35 years) highlights only a couple of results from this literature, some truly important (e.g. Church & King, 1993), some not,[11] and it should be a cause for concern that a paper devoted to establishing the superiority of economics over other social sciences purports to make this case almost without a single reference (out of 110) to publications from disciplines other than economics or business. Readers may then legitimately wonder on what basis the critic judges the vast tracts of scholarly work he presumes to criticise.

A more reasonable path certainly lies far away from such extremist views. It requires neither a wholesale condemnation of all the work of economists as empty formalism and reductionist nonsense, or the dismissal of all sociological work as hopelessly illogical ramblings and flights of metaphor. It stands to reason that any social process or any aspect of human behaviour can be approached from the complementary perspective of the various social sciences. No process can be fully understood by using one perspective alone, and, depending on the case at hand, some disciplines will have relatively more to say than others. Most commentators will probably agree that the relative contribution of economics (by comparison with that of other disciplines) is high in the study of market equilibrium, and low in the study of intra-family exchange. Yet this does not mean that sociologists have nothing to say about market equilibrium, or that economists cannot offer insights into intra-family exchange. Quite simply, the *relative contribution* of each approach will vary from case to case. This general conclusion carries over to the study of language issues: economists will have many useful things to say regarding some language issues, and little regarding others.

Fortunately, recent evolution, particularly in the second half of the 1990s, suggests that entrenched battles between academic disciplines are progressively making way for a more balanced recognition of complementarities. In his interview with Swedberg (1990: 33ff.), Becker notes a greater readiness to exchange

between economists and sociologists in the United States. Mayer (1993) stresses, within economics itself, the legitimacy of two different strands of research, namely formalistic and empirical research. The (still modest) influence of socio-economics which, less than a field of investigation, describes a philosophy of research in the social sciences, may also be seen as a promising sign of more integrative work in years to come.

For the most part, economic research on language and language planning is a deeply interdisciplinary endeavour. Having described the epistemological background in which it originates, it is now time to move on to an overview of the literature in the economics of language.

The Economics of Language: History and Main Strands of Research

Historical overview

The history of the economics of language as a field of research on the fringes of economics as a discipline dates back to the mid 1960s. For a long time after, economists' contributions on language issues remained unrelated to each other, and it is only in recent years that a greater degree of interconnection has appeared, reflected in more frequent cross-referencing. Furthermore, early studies in the field directly responded to the social and political issues their authors were confronted with – namely, the relative socio-economic position of Latinos in the United States, or English–French earnings differentials in Canada, particularly Québec.

The beginnings of the economics of language can be represented in terms of three generations of studies. Since these are reflected in current strands of research to be reviewed in the following sub-section, references to the relevant literature are, for the most part, deferred until then.

The first generation of studies is mostly made up of empirical (that is, statistical) work and largely coincides with the 1960s, although its roots can be traced back to Becker's (1957) economic analysis of (racial) discrimination, and its formal analytical application to language proposed by Raynauld and Marion (1972). It views language primarily as an *ethnic attribute*: having a particular language as one's mother tongue *ascribes* a person to a particular group, and this language-based ascription may have an effect on that person's socio-economic status, particularly his or her earnings. This approach, which clearly harks back to the 'identity' function of language regularly mentioned in the sociolinguistic literature, has been used to analyse earnings differences between black and white United States residents, or between anglophones and francophones in Canada. In terms of economic analysis, it is closely related to the modern study of discrimination, which stresses empirical and methodological aspects and emphasises issues of gender and race (see e.g. Oaxaca, 1973), more than analytical aspects in relation to language.

A second generation of studies, which largely coincides with the 1970s and early 1980s, emphasises the *human capital* nature of language, about which more will be said in the following section. This opens the way to a different perspective on language, favouring, in particular, linkages with *education economics*, which had also emerged in the 1960s. The analysis, which is examined at closer range

below under the section heading 'An Application: Language Education Policy', goes as follows: particular language skills can be interpreted, in the same way as other types of skills, as a form of capital because it is an area in which individuals and societies can profitably invest. Deliberately acquired language skills can therefore be seen as a *source* of economic advantage. This approach harks back to the generic communication function of language encountered in sociolinguistic work, and has often been applied in empirical work on the socio-economic status of immigrants in the United States (particularly native speakers of Spanish) to assess the value to them of acquiring English.

A third generation of studies, opened up by Vaillancourt (1980), considers both language functions jointly as determinants of labour income. Languages are seen not only as elements of identity or as potentially valuable communication skills, but as a set of linguistic *attributes* (embodied in individuals) which together influence actors' socio-economic status.

Although the historical sources in language economics can, for the most part, be arranged in the categories just described, some isolated contributions since the early 1960s do not fit into this pattern. This is, for example, the case of an often-mentioned paper by Marschak (1965), simply entitled 'Economics of language', which discusses the internal evolution of linguistic codes as a permanent drive towards more effective communication (where effectiveness is understood as requiring the lowest possible time input to communicate a certain message). Therefore, apart from the chronological distinction just presented, a possibly more fundamental categorisation can be proposed, not only in order to accommodate the progressive expansion of language economics to a broader range of questions going beyond the study of earnings, but also to propose a general definition of language economics as a field of research in its own right.

A definition

Let us first observe that for the most part, the studies mentioned so far are due to North American scholars. They stress the role of language as an *explanatory* factor of economic variables – usually as a determinant of labour income. In the late 1980s, economists from other parts of the world became more active in the investigation of the language–economy relationship, often focusing on the reverse causation, namely, the role of economic variables as explanatory factors of linguistic variables. Examples include the effect of prices or earnings on individual patterns of language use or on language dynamics – with an occasional emphasis on the case of regional or minority languages in Western Europe.

This contrast suggests that a general definition of language economics may be articulated in terms of the causal directions investigated. Furthermore, particularly since the 1980s and more so since the 1990s, a rising number of contributions, both in Europe and North America, started looking at the role of economics as a tool for evaluating the effects of language policies, particularly in terms of the costs and benefits of different policy options.[13] In this case, standard economic variables such as prices, earnings, transaction costs, etc. do not necessarily intervene, and the 'economic' nature of the approach is evidenced by the fact that the advantages and drawbacks of language scenarios are weighed against each

other. This line of research is a direct illustration of the economic approach as defined by Robbins. Using this breakdown, a definition first proposed a few years ago (Grin, 1994a) and used again in later work seems to remain appropriate today:

> The economics of language refers to the paradigm of mainstream theoretical economics and uses the concepts and tools of economics in the study of relationships featuring linguistic variables. It focuses principally, but not exclusively, on those relationships in which economic variables also play a part.

The 'paradigm of mainstream theoretical economics' to which this definition refers is encapsulated in the Robbins definition presented above in the section headed 'The Need for an Economic Perspective on Language Issues', and stresses the utility-maximising choices made by actors whose resources are scarce.

The second half of the definition, which refers to relationships that do not *necessarily* feature economic variables, may deserve additional commentary. For most people, whether economists or not, economic variables typically include, in micro-economics, variables like prices, quantities supplied or demanded, wages, earnings, the return on capital, etc., and the way in which these variables tend towards an equilibrium value on markets for given goods and services. In the realm of macro-economics, typical economic variables include aggregates like consumption, investment, exports and imports, their combination into an aggregate product (for example GDP), the rate at which the latter changes (growth), an aggregate price level and its rate of change (inflation), unemployment, etc. However, such variables need not be present in an economic analysis of language policy. Consider, for example, the question of whether a policy to introduce a given minority language as a school subject should prioritise the formal training of language teachers or the development of teaching materials – both of which can be considered explanatory factors in the study of the resulting language skills of learners. None of the variables linked by this causal relationship are standard economic variables, yet the treatment of the question may be essentially economic, in that it puts forward a certain notion of effectiveness, both as an operational concept and as a *relevant* evaluation criterion. Incidentally, evaluations of this kind make up one of the core work areas of education economists – an area to which we shall return in 'An Application: Language Education Policy'.

Finally, readers will observe that the definition makes use of the concept of 'variable'. There is no question that variables are analytical *constructs* with a certain degree of arbitrariness, and that they should be understood as such, along with their limitations, as pointed out at the end of the section above on 'The Need for an Economic Perspective on Language Issues'. Nonetheless, they remain heuristically relevant concepts, which for the sake of definitional crispness may be preferable to the notion of 'processes'. The reason is that the characterisation of a process necessarily requires a no less arbitrary definition and use (whether explicitly or not) of variables. Hence, a strict reference to 'processes' could turn out to be merely euphemistic; it seems therefore preferable to refer to 'variables', it being clear that they have no existence of their own and are, quite simply, *useful*.

Main research directions

Let us now turn to a review of the main directions of research in language economics. For reasons explained in the introduction, this overview is kept deliberately short and the list of authors mentioned, though fairly extensive, is not intended as exhaustive. The interested reader is directed to other work (in particular Breton, 1999a, 1999b; Grin, 1996b; Grin & Vaillancourt, 1997; Vaillancourt, 1985a) for additional references. Two major topics, namely, the economics of language policy and the economics of language skills, which are introduced only briefly in this section, are examined at closer range below under 'The Economics of Language Policy', and 'An Application: Language Education Policy'. In this literature review, all formal notation is avoided. While this will prevent us from presenting the detail of the analytical models, it will suffice to offer an account of the main ideas on which they rest.

Language and labour income

The study of the effect of linguistic attributes (that is, a person's L1 *and/or* their skills in other languages, which will be referred to as a person's L2 or set of L2s) on earnings (or, equivalently, 'labour income') remains, throughout the history of language economics, the single most important area of research. It is also one which, as we shall see in 'An Application: Language Education Policy', has direct relevance for language education choices. Its basic idea is that linguistic attributes can influence earnings in two different ways.

First, *membership* of a language group may give some an edge in the labour market and put others at a disadvantage. This is the situation when a person's L1 can be seen as a *determinant* of labour income, and where the disadvantage (or privilege) of birth is reflected, in particular, in lower (or higher) wage rates.[14] Of course, if educational levels or other socially legitimate determinants of income are correlated with linguistic attributes, members of a particular language group will logically tend to earn *less* than members of another language group, independently of their language attributes. The question therefore is whether language itself, *other things being equal*, does result in earnings differentials.

In order to treat this question theoretically, economists have tried out a wide range of models. Let us first consider the case of L1 as a determinant of labour income. Such language-based differentials may result from a deliberate intent, by members of another (presumably dominant) language group, to exert discrimination, possibly by manipulating the rate at which the goods primarily produced by one of the two groups are bought and sold (Raynauld & Marion, 1972). If the relative price of labour-intensive goods goes down, and if the dominated group has relatively more labour than capital to contribute to the economy, the share of aggregate income accruing to this group will go down. This will also tend to reduce the income accruing to the owners of capital in the dominant group (because the combination of capital and labour in production will diverge from what it would have been in a non-discriminatory optimum), but this is a price that they may be willing to pay, just as Becker (1957) assumed that some people have a 'taste for discrimination' which will be satisfied at the cost of some forgone income.

A variant of this explanation, relying on another and presumably less deliberate discrimination strategy, has to do with the existence of different networks of

access to employment (Migué, 1970). Suppose that the population is made up of two language groups, *A* and *B*. The employer belonging to the *A* group may prefer to hire workforce from the same group, because cultural proximity will make it easier to assess *ex ante* the employee's productivity (this strategy is sometimes called 'statistical discrimination'). In a related model, Lang (1986) explains earnings differentials not as the result of any prejudice or discriminatory intent, but simply as the consequence of communication costs between *A*-speaking employers and *B*-speaking employees; this communication cost will largely be borne by the latter, whereas *A*-speaking employees, with whom employers are able to interact at no extra cost, are exempted from it.

Second (or foreign) language skills can be a profitable investment for a number of reasons, in particular if employers reward them. They will do so if a bilingual employee, all other things being equal, is more productive than a unilingual one – typically because he or she can carry out duties that a unilingual could not. Beyond this general interpretation derived from basic labour economics, the investigation of the micro-level processes that explain the value of second language skills remains limited to exploratory models (e.g. Sabourin, 1985) studying, for example, the role of matching between the linguistic characteristics of a job and the language attributes of a worker. The importance of language skills in a matching procedure that starts at hiring is confirmed by (non-representative) survey results in Canada (Chorney, 1998), but questioned by surveys of Australian business firms (ALLC, 1994). For the most part, however, the study of the role of L2s as determinants of income remains empirical.

Independently of the *reasons* behind language-based earnings differentials, their existence has been shown empirically in a variety of contexts. However, it is difficult in practice to separate empirical work focusing on the effect of L1 (in the sense of ethnic membership), or on the effect of L2 skills (as a form of human capital) or on the effect of both language attributes. As noted at the beginning of this section, almost all of the empirical work published after 1980 takes account both of L1 and L2 as determinants of labour income, and most of the work mentioned in this section does. It is therefore convenient to arrange empirical research on the relationship between language and earnings in four groups according to the *main* (but not necessarily exclusive) focus of the various contributions.[15]

- A. The measurement of *language-based discrimination* according to a person's first language has been studied in the United States (Fogel, 1966) and Canada (Raynauld *et al.*, 1969), and more recently in Switzerland (Grin, 1997b; Grin & Sfreddo, 1998). This research confirms the presence of earnings differentials between persons belonging to different language communities, even after controlling for their second language skills, including in the dominant language of the country or region considered.
- B. The estimation of the *value of second language skills*, when the second language in question is *demolinguistically dominant* in the region or country considered, makes up the bulk of the economics literature (particularly the work published in mainstream economic journals). This situation, of course, most directly reflects the experience of immigrants. It has been studied with sample data on immigrants on the United States (see pioneering work by Grenier, 1984; for an overview, see Bloom & Grenier, 1996; for a set of very

recent results, see Chiswick & Miller, 2002; for a more detailed examination of the link with skills *levels*, see Dávila & Mora, 2000), Canada (Chiswick & Miller, 2000), Israel (Chiswick & Repetto, 2001), Australia (Chiswick & Miller, 1985); and Germany (Dustmann, 1994; Dustmann & van Soest, 2001); for some international comparisons, see Chiswick & Miller (1995). Unsurprisingly, these publications indicate that immigrants benefit significantly from knowing the dominant language of their country of residence.

- C. The estimation of the *value of second or foreign language skills*, when the language in question is *not demolinguistically dominant* in the region or country considered. This case can be further subdivided in two typical situations: one concerns the residents of a particular country (say, Austria) who have learned a *foreign* language (say, English or Spanish); the other concerns the members of one established language community in a multilingual country (say, French-speaking Canadians or Flemish-speaking Belgians) who have learned another official or national language (in these examples, English or French respectively). Research into this question is very much a Canadian tradition reflected in a large number of papers, official reports and books (for an extensive review, see Vaillancourt, 1996; see also Christofides & Swidinsky, 1998) mainly using census results. The focus of the Canadian research is on earnings differentials between anglophones and francophones, with particular attention to Québec. Canadian results indicate significant variation between genders and across provinces. The rates of return to French–English bilingualism are high in Québec, but they tend to be modest elsewhere; they are also much more likely to be significant for men than for women.

  Swiss results using survey data on earnings and skills in the country's three main official languages (German, French and Italian), plus a foreign, non-official language (English) similarly reveal considerable variation depending on a respondent's gender, the language region where he or she resides, and the target language considered. For example, although the rates of return on English-language skills are high throughout the country, they come first (before French) in German-speaking Switzerland, but second (after German) in French-speaking Switzerland (Grin, 1999c, 2001). This case will be examined in more detail in 'An Application: Language Education Policy'.

  One rare example of research on this set of issues in a developing country is a paper by Chiswick *et al.* (2000) using survey data on Bolivia containing information about respondents' linguistic profile as 'monolingual Spanish', 'monolingual indigenous and bilingual (which may in fact mean competence in more than one indigenous language *plus* Spanish); results indicate that monolingual speakers of Spanish fare better than bilinguals – and, needless to say, monolingual speakers of indigenous languages. The most straightforward interpretation of this finding should be that this strongly suggests discrimination against speakers of languages like Aymara, Quechua or Guaraní.

  However, much hinges on the definition and reliability of language skills categories in the data set. Most of the studies quoted here rely on fairly

vague categories; these categories sometimes refer to language *use* rather than language *skills*. To my knowledge, the most detailed data base remains the Swiss one, where a distinction is made between four different types of skill (listening comprehension, speaking, reading and writing) and four different skills levels (fluent, good, basic, none), with reference to a self-evaluation grid inspired by the levels used in the *European Language Portfolio*.[16]

- D. Finally, there are (still exceedingly rare) investigations of the *rates of return on immigrant languages* in their new country of residence. They raise the question of whether – contrary to what seems assumed *a priori* by much of the research in group B above – immigrant languages might be an asset rather than a hindrance. Both a Canadian study using census data covering 13 non-official languages (Pendakur & Pendakur, 1998) and a Swiss study using survey data comparing Italian- and Turkish-speaking immigrants (Grin *et al.*, 2002) conclude that this value is, at best, very low; most of the time, coefficients for immigrant language skills in earnings regressions are either not statistically significant, or negative; some niche effects can be found where immigrant languages translate into economic advantage, but it would be hasty to generalise from mainly anecdotal evidence.

In the contributions falling in the B or C groups (and, to some extent, the D group as well, since competence in an immigrant language may require a deliberate choice to maintain this competence), languages are primarily seen as elements of human capital in which individuals invest. This interpretation, however, requires qualification, because the investment may not be entirely voluntary. Learners acquire other languages more or less successfully; language acquisition may also occur through informal learning, through residence in a foreign country, marriage with an L1 speaker of another language, or simply as a result of the fact that they are led to make this investment because the authorities require particular languages to be taught as school subjects as part of their education policy.

The strategic importance of empirical work on language-based earnings differentials, however, lies not only in its capacity to provide *estimates* of the actual effect of language attributes on earnings. It also enables us to reconsider critically some commonly held views, such as the oft-encountered metaphor of 'language as value', which, tempting as it is, usually falls short of a reliable guide for policy action (see 'The 'value' of language' below). A related line of inquiry focusing on the statistical link between linguistic identity (L1) and business ownership must be mentioned here (see e.g. Vaillancourt & Leblanc, 1993). It generates politically important information about the relative socio-economic position of different language communities, showing, in the case quoted, that francophone control over the economy of the Province of Québec has markedly increased since 1961. However, the scarcity of data severely restricts possibilities to replicate this research elsewhere.

Language dynamics

Sociolinguists themselves readily concede that their discipline has not produced a general theory of language dynamics[17] (e.g. Appel & Muysken, 1987). Understandably, this theme keeps attracting considerable attention among

language specialists, particularly in the case of language decline and language death (Crystal, 2000; Robins & Uhlenbeck, 1991; Skutnabb-Kangas, 2000), or in the case of the spread of English (Ammon, 1994; Crystal, 1997; Graddol, 1997; Pennycock, 1994; Phillipson, 1992; Watts & Murray, 2001). A *general* theory still needs to be developed, although an essential milestone was reached with Fishman's analysis of language revitalisation (under the expression of *reverse language shift*; see Fishman, 1991).

Economists have also tried their hand at this problem, developing various models of language behaviour yielding implications for language dynamics, starting with Hocevar (1983). Some models are static, in that they assume a one-period calculus in which (often bilingual) individuals will decide which language to use in different activities (e.g. Grin, 1990); other models are dynamic, in that the economic model of language use at time *t* influences language use at time *t+1*, then *t+2*, etc. (Grin, 1992; Pool, 1991b); these models lend support to the tentative conclusion proposed by Nettle (2000), who suggests that economic incentives determine language choices rather than the other way around.

A particularly interesting range of models examines the *network* effects associated with languages (apart from Pool, 1991b, see Church & King, 1993; Selten & Pool, 1991): one intriguing dimension of languages, which sets them apart from most other 'commodities' in an economic sense, is that when more people use a language, the more *useful* it becomes, all other things being equal, to *other* people. This is markedly different from, say, a public transport system (which becomes less and less *usable* the more people travel with it) and of course from a standard private good (say, an apple), which cannot be eaten (used) by different people simultaneously.[18]

Another key implication of the network dimension of language spread through deliberate language learning is that because some of the benefits that result from language acquisition do not accrue to the individual (whereas learning cost does), people may be led to *under-invest* in second language acquisition. This provides justification for state support to language learning not for political or cultural reasons, but on the basis of hard-nosed economic considerations. The reader is cautioned, however, that in the most direct applications of the approach, this argument usually yields the recommendation that non-anglophones should be encouraged to learn more English, rather than the other way around. A related result obtains in Choi's (2002) very abstract model of the influence of international trade on language spread, which amounts to *naturalising* the dominance of English. Therefore, further model development, with a more careful treatment of benefits and costs, is necessary to understand network effects and to derive their policy implications. This more sophisticated treatment, which should take *non-market* components of value into account (see 'The Economics of Language Policy' below), may justify state support for the learning of languages other than the most dominant one.

There is little doubt that the network effects of language play a major role in language dynamics, and hence in the attractiveness of learning particular languages. Hence, they also influence the context of language education policies. Network effects raise highly complex technical problems, which at this time are not solved in the literature (or can be solved only in part, at the cost of severely restrictive assumptions which detract from the practical usefulness of

the analysis). Further research into the 'network externality' effects of languages and their implications for spontaneous or policy-induced language dynamics should be considered a priority, particularly in order to explore long-term dynamics, whether in general terms or in relation to the macro-level process of globalisation (Grin & Rossiaud, 1999; see also Bruthiaux, this issue).

Language and economic activity

This category contains extremely diverse, even heterogeneous, lines of work, which focus on the processes of production, consumption and exchange and examine the role of language in them. Production does, of course, address the behaviour and inner workings of the firm, whether as a seller of final goods and services, as a seller and buyer of semi-finished goods, as a buyer of production factors, notably labour, and as a borrower of capital.[19] Consumption harks back to the behaviour of the household or individual person, both as a buyer of goods and services and as a supplier of production factors, first and foremost labour but also capital.[20] Lastly, exchange takes place on markets for final goods and services, for intermediate goods and services, and for production factors (labour and capital). These markets are characterised not only by the interaction of supply and demand and by the actual exchange, over a certain period of time, of a certain quantity of a good at a certain price, but also by their structure. Each market may be more or less competitive (which implies a large number of buyers and sellers) or, on the contrary, monopolistic (single seller) or monopsonistic (single buyer), with many gradations in between.

Despite the fact that research in this field could bank on a whole array of core concepts in economic theory, it remains a relatively under-developed area of language economics. This may be traced back to a point made above under 'The Need for an Economic Perspective on Language Issues': economic analysis is well-suited to the study of relationships between variables that have a clear quantitative interpretation, which typically is not the case for language. Hence, it should not come as a surprise that most of the work in this area proposes little in the way of general theory, and not much more in the way of formal applications of the standard economic theory of production, consumption and exchange. Rather, most publications are organised around more inductive approaches (offering a theoretically plausible explanation for an observed consumption, production or exchange situation in which language appears to make a difference), or simply describe or document patterns of language use in those economic activities. However, two important theoretical contributions focusing on the production side are those by Hocevar (1975), who analyses changes in production cost functions depending on the language characteristics of the outputs, and Sabourin (1985) mentioned earlier, who examines the process of 'matching' between employees with given linguistic attributes and specific positions in a firm, which require a higher or lesser degree of language skills (practically, more or less bilingualism). The lines of inquiry opened up by these two contributions remain in need of further work and empirical testing. It would also be useful to gather and confront descriptive evidence on language use in the workplace in different countries, since barring a few notable exceptions such as Lambert and Moore (1990), it remains rather scattered and difficult to access.

Issues of consumption are difficult to separate from issues of exchange in the

language economics literature. Using data on the 22 Organisation for Economic Cooperation and Development (OECD) member countries, Helliwell (1999) finds that the existence of a common language between two trading partners may have a positive effect on the volume of trade.[21] Cremer and Willes (1991) use small-scale survey data to analyse language use in trading activities in the Far East, showing that such trade can take place with a remarkably *low* degree of second language competence among the various trading partners. Some work attempts to model language use in advertising and consumer relations (Grin, 1994b), but most of the few contributions on this topic[22] are empirical or descriptive, documenting a general preference by bilingual customers in Catalonia or Québec (Vaillancourt, 1985b) for being offered goods and services in their own language (even if they can perfectly well understand another – usually dominant – language).

Separate mention should be made of some research grounded in 'intercultural management', which is inspired less by the paradigm of economics than by concepts from business administration and management, sometimes also by economic geography. Connections with language economics arise, however, from the fact that these contributions sometimes discuss the role of minority language maintenance as a factor of regional economic vitality (e.g. Price, 1994; Taddei & Antomarchi, 1997). Generally, the conceptual basis of this line of work replicates that of research on immigration and 'ethnic business' (see e.g. Berset *et al.*, 2000) and does not single out analytically the role of language as an explanatory variable in a causal process. Instead, it points to the importance of culture (which, ultimately, turns out to be in part defined by language) in given aspects of production and exchange.

Progressively moving from micro-economic issues (to which most of language economics belongs) to more macro-economic issues, some of the contributions in this group try to quantify the impact, on the regional economy, of the presence of language-specific activities (e.g. Ó Cinnéide & Keane, 1988; Sproull, 1996). Others have attempted to relate the linguistic profile of workers in an economy to the economy's external trade patterns (Stanton & Lee, 1995); the implied theoretical links are, at this time, not elucidated, and no empirical results stand out. Arcand's work (1996), though primarily micro-economic in concepts and methodology, also addresses macro-economic implications, revisiting economic models of development and growth in Third World countries to discuss the possibilities of integrating language as an explanatory factor in development processes.[23]

Interestingly, the production, consumption and exchange of 'language goods' and 'language services' (such as courses, books or other cultural products in a particular language, etc.) do *not* constitute a significant part of language economics. One may even argue that there would be no reason at all for such topics to be included in language economics. This is because the production, consumption and exchange of such commodities is not markedly different from the production, consumption and exchange of *other* (i.e. *non-linguistic*) commodities, and therefore does not justify specific analysis – other than, possibly, in the form of case studies on a specific market. Generally, the analytical concepts of supply, demand and market for any given good or service also apply to language goods. The situation is different, of course, when talking about supply and demand for a

[particular] language (that is, when the commodity is a language taken as a whole, not specific goods and services *in* this language) which are, of course, perfectly relevant areas of research for language economics, but where it is important to reconstruct the concepts of supply and demand carefully (we shall return to this question later on in this section). However, one range of services that do not merely have linguistic dimensions (like books *in language X*), but are *intrinsically* linguistic have been inadequately studied in economic perspective and deserve serious study – namely, the production, consumption and exchange of translation and interpretation.[24] In the same way, there is, to my knowledge, hardly any theoretical or empirical work on the economics of terminological development or, more generally, on the economics of language *corpus*.

The economics of language policy

Because a section below is devoted to the economic perspective on language policy, I shall confine myself here to a brief account. Let us first recall the point made earlier that if economics can make useful contributions to the analysis of language policy, it is not so much because it brings linguistic and economic variables in relation with each other (with causal links flowing in either direction), but rather because it helps to look at different choices about language in terms of advantages and drawbacks. This does not imply looking at languages in a narrowly materialistic perspective, or gauging them strictly in terms of the monetary advantages or money costs associated with them. Nonetheless, economics is particularly useful because it helps, if so desired, to re-express advantages and drawbacks in monetary terms, thus facilitating comparison. That economists should enter the fray of language policy is a logical consequence of the fact that society is confronted with choices regarding language (or, more to the point, *languages*) and has to make decisions in this area – just as it does regarding transport, health, the environment, etc. Economics is relatively better equipped than other social sciences, conceptually and perhaps methodologically, to process decision-making problems.

The whole endeavour, however, also raises the question of the *nature* of language policy and what language policy is expected to modify. Most of the economic work on language policy addresses the position of one language *vis-à-vis* other languages, or the broader question of *linguistic diversity*. Status issues (in a broad sense) are therefore central in the economic approach to language policy, whereas corpus questions have practically never been studied; the approach is mainly about how human action can affect our *linguistic environment*. The concept of linguistic environment used here as well as in some earlier work (Grin, 1997a, 1999b) may differ from that encountered elsewhere, for example in the literature on linguistic ecology (Mühlhäusler, 1996, 2000). I do not use it to imply any biological parallel, but because it helps to formulate the links between *language policy* on the one hand, and the field of *policy analysis* on the other hand. The basic idea is that language policy aims to change the linguistic dimensions of the surroundings (or of the environment) in which we live.

Clearly, much of the theoretical literature on the mutual influences between linguistic and economic variables (in particular work quoted elsewhere in this paper, e.g. Carr, 1985; Church & King, 1993; Hocevar, 1983; Pool, 1991b, 1991c) has direct implications for language policy, and a concern for language policy

implications has been present in the literature for a long time. At the same time, the connection to language policy, in most of the earlier language economics literature, was somewhat derivative, because it responded to specific developments of which authors had personal experience.[25] This focus on policy issues has become much more explicit in recent years. Possibly echoing calls to this effect more than 30 years ago (Jernudd, 1971; Thorburn, 1971), much of the ongoing economic work on language policies addresses the benefits and costs which *characterise* policy options (Grin & Vaillancourt, 1999; Pool, 1996) or attempts to transpose basic decision-making criteria in the context of language policy (Grin, 2003). The thrust of most recent research in this area is on the identification of the main sources of benefits and costs, from the perspective of individuals *and* of society, attaching to various policy alternatives, and to propose estimates of the order of magnitude of such benefits and costs.

Most of the literature focuses on 'allocative' rather than 'distributive' issues, and this important distinction requires a few words of commentary.

The *allocative* level focuses on efficient resource allocation, but not on who gains and who loses as a result of a policy choice. It is merely concerned with ensuring that a policy generates a gain in *aggregate welfare*, opening the *possibility* for winners to compensate losers, so that no one is worse off at the end of the process. By contrast, the *distributive* level of analysis does raise the issue of fairness and focuses on the identification of winners and losers, as well as on the estimation of respective gains and losses. This examination is a precondition for proposing systems of compensation as well as for investigating ways of ensuring compliance in the case of incentive-based policies.

Following pioneering work by Pool (1991c),[26] there has been renewed interest in distributive issues in recent years (Grin & Vaillancourt, 2000; Van Parijs, 2001), and a closer analysis of distributive dimensions is undoubtedly among the most challenging and useful lines of inquiry to pursue. In particular, it has direct relevance to pressing problems such as the choice of official languages in multilingual structures like the European Union.

The fundamental concepts of language policy evaluation in economic perspective are presented in the sub-section on 'Language policy: Diversity, and the "fundamental rule"' below. However, it is useful to point out at this stage that *education economics* also provides relevant inputs, principally because education tends to be the single most important channel of government intervention in the sphere of language. Other channels of intervention do of course exist, such as the regulation of language use in the administration or in the judicial system, state financing or at least state support to audio-visual media, cultural policy in literature and the fine arts, etc. Still, education in general remains a major area of competence of states, typically representing between 10% and 20% of aggregate[27] government expenditure in developed countries. As such, it usually represents the single largest budget item and is often the most important vehicle of language policy. Accordingly, the benefits and costs associated with education-based language policies also tend to be larger, in monetary terms, than those that proceed from intervention in other domains. Given the importance of education, the whole of the section below 'An Application: Language Education Policy' is devoted to the principles guiding the evaluation of language education policy.

Other research directions

This brief overview does not exhaust the field of language economics. In addition to further detail and references which could be provided for each of the above categories, other, most of the time analytically isolated, contributions on other dimensions of the language experience also exist. Marschak's (1965) attempt to explain patterns of internal language change as a drive towards efficiency in communication has been mentioned earlier.[28] Colomer's (1991) models of the choice of language in conversations between people having different linguistic attributes explains how the quest for effectiveness will, depending on the numbers of those present, favour the use of one or another language. Using a similar type of model, Colomer (1996a) argues that under very general assumptions, generalised foreign (or second) language learning, which generates widespread individual multilingualism, is likely to be a more cost-effective solution to the problem of communication in plural societies than systematic resort to translation and interpretation facilities; these approaches are combined in Colomer (1996b).

A word also needs to be said of the *language-as-currency* analogy, because the metaphor is proving to be a very tempting (usually for non-economists more than for economists), but also, potentially, a very misleading one. From the non-economic side, this analogy was put forward by Rossi-Landi well over 30 years ago, when he compared a linguistic community to 'a sort of huge market in which words, expressions and messages circulate as commodities' (Rossi-Landi, 1968: 49). Seductive as it may appear, the metaphor is not sound. A market in the economic sense emerges from the existence of supply and demand functions. Supply is defined as the willingness by producers to offer a certain quantity of a certain good or service at a certain unit price over a certain period. Demand is defined as the willingness by consumers to buy a certain quantity of that good or service at a certain unit price over a certain period. Normally, supply is an increasing function of price, while demand is a decreasing function of price. Hence, the supply curve and the demand curve will intersect in a two-dimensional {price-quantity} space, determining an *equilibrium* level both for quantity (q*) and price (p*), as shown in Figure 1.

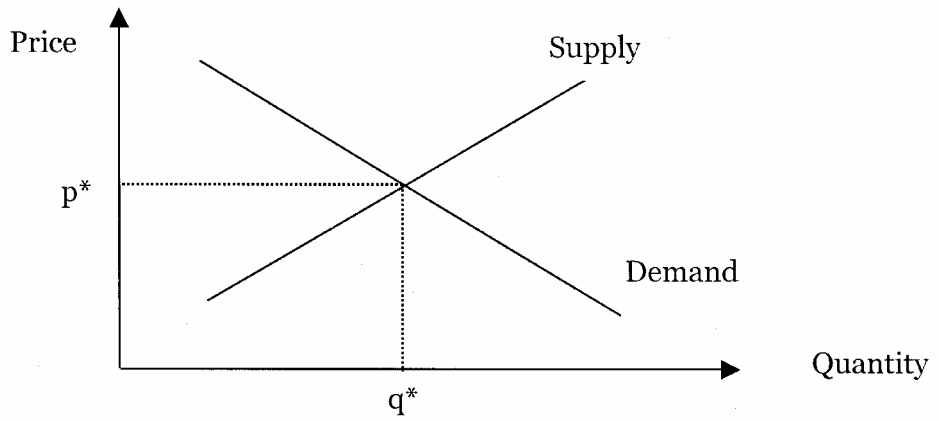

Figure 1 The market diagram

Each of these elements is missing from Rossi-Landi's account, making the reference to a 'market' a purely metaphorical one with little heuristic pertinence. To some extent, the same can be said of Bourdieu's (1982) often-quoted essay on 'linguistic exchange'. Bourdieu's text makes constant reference to 'markets', 'profit' and 'capital', thereby creating with some readers the impression that his is an *economic* theory of language use. It would be more appropriate to describe his contribution as a sociological one in which standard economic terms are given another, somewhat idiosyncratic interpretation. Bourdieu's analysis certainly amounts to excellent *sociology* of language – but from an *economic* standpoint, his use of economic terminology is no less metaphorical than Rossi Landi's,[29] and does not amount to 'economics of language'.

The true meaning of a possible parallel between language and currency has been developed by Carr (1985). Carr shows that the parallel to be drawn is not between language on the one hand and currency on the other hand, but between the fact that there exist different languages and the fact that there exist different currencies. In the same way as the use of a common currency facilitates exchange by reducing trading costs, so does the use of a common language. The actual extent of cost reduction, incidentally, is an empirical question that crucially depends on the trading partners' reliance on linguistic communication. As noted before, the evidence is patchy, and more detailed examination remains necessary.[30]

Another oft-repeated (and sometimes hasty) analogy is that of language as a form of 'wealth'. Since this question is crucial to the whole language policy endeavour, its treatment is deferred until the next section.

Finally, the reader should be aware that there exists a strand of literature on *the language of economics*. However, it largely consists in an analysis of economics discourse, from an economic (McCloskey, 1990) or linguistic perspective (Henderson *et al.*, 1993). As such, it clearly falls outside the definition of language economics proposed earlier and will not be discussed in this paper.

The Economics of Language Policy

A working definition of language policy

Language planning and language policy are fast developing as major areas of analytical and practical work in the language disciplines, particularly sociolinguistics and applied linguistics. The same is true in language economics, and the more valuable contributions that an economic analysis can make to language issues are those that directly or indirectly help to make informed choices about language issues – and ultimately, making informed choices is precisely what language planning or policy (as distinct from language *politics*; see below) are about.

This section does not attempt to discuss language policy and planning in sociolinguistic perspective, instead referring the reader to the growing literature in this field (e.g. Calvet, 1996; Cooper, 1989; Fishman, 1991; Kaplan & Baldauf, 1997; Labrie, 1993; Maurais, 1987; Schiffman, 1996; various contributions published by the *Generalitat de Catalunya*, 1997, 1999; or in *European Cultural Foundation*, 1998; etc.).

No distinction is made here (nor is it made in the economics literature)

between 'language policy' and 'language planning'. In this paper, both expressions refer to:

> a systematic, rational, theory-based effort at the societal level to modify the linguistic environment with a view to increasing aggregate welfare. It is typically conducted by official bodies or their surrogates and aimed at part or all of the population living under their jurisdiction. (Grin, 1999a: 18, adapted from Cooper, 1989, Chap. 2)

A few comments about this definition are in order.

'Systematic'

The use of this adjective means that language policy is assumed to be (even if informally) organised according to a certain method and aims at certain goals, which may be overt or covert. The assumption of rationality follows logically: to the extent that a certain method is applied to reach certain goals with certain means, rationality implies that the latter are judiciously applied to achieve the former. Of course, this does *in no way* imply that no improvements could be made. *Rationality is a process, not an achieved state of affairs*. It only implies that actors involved in the selection, design and implementation of language policy are using certain means towards certain ends in a way that is, to the best of their (necessarily incomplete) knowledge, rational.

'Linguistic environment'

The concept of linguistic environment has been introduced in the preceding section. 'Linguistic environment' must be understood as the *object* of language policy. Whether it aims to increase the visibility of an autochthonous minority language in cultural life, to develop foreign language skills among the school-age population, or even to *suppress* the use of certain languages,[31] language policy is intended to modify the linguistic features of our environment.[32]

'Welfare'

Whether this is explicitly stated or not, the goal of *all* language policy is to increase 'welfare' – and this, of course, opens the Pandora's box of the question of *what* welfare is or, more precisely, what contributes to make welfare higher. Obviously, there need not be agreement on this matter, but fundamental economic analysis normally eschews this issue and adopts a deeply liberal stance: welfare is seen as something that *only* individuals can define for themselves, and it is not up to the economist (or, for that matter, the sociologist, the politician, the priest or the guru) to decide what will make someone else, or society as a whole, happier. One can only *assume*, in an analytically distinct step, that most individuals will *generally* feel happier (that is, their level of welfare will be higher) if they are healthier, if they are more socially integrated, if they enjoy higher levels of consumption of goods and services, if the air they breathe is cleaner, their roads safer, and so on. Dismissing this analytical approach as 'utilitarianism', as noted in 'The Need for an Economic Perspective on Language Issues' above, would be either absurd or perfectly trite. One may of course reject the notion that individuals enjoying all the above will be genuinely happier, but then one will be hard put to come up with a better, more credible assumption about human preferences.

At this point, it is important to note once more that no restrictions apply regarding the sources of the 'welfare' referred to in economics in general or in the definition of language economics just proposed. In line with fundamental economic theory, welfare is not just a matter of material consumption or well-being. It can also include any non-material elements, including a feeling of safety in one's identity or the preservation of markers of cultural heritage. This, of course, establishes links with other branches of economics in which non-material or symbolic values are taken into account, such as 'cultural economics'. However, contrary to a frequently encountered belief, the closest relative of language economics is *not* cultural economics, but environmental economics. There are two main reasons for this. The first is that environmental economics is largely concerned with weighing the advantages and drawbacks of different policy options, and that the conceptual and methodological problems that arise in this endeavour are strikingly similar to those encountered in language policy evaluation. The second is that language, just like the biophysical environment, is much more pervasive in human experience than the type of goods and services on which most of 'cultural economics' concentrates.

Welfare becomes more problematic once we move from the individual to the collective level. Because policies affect societies as a whole, the problem is whether society's welfare *as a whole* will be higher *as a result of the policy*; this is why the definition indicates that language policy takes place 'at the societal level'.[33] Apart from the fact, discussed below, that this gives a key role to the state, it raises the question of the criteria according to which the authorities conclude that a policy will indeed increase *aggregate* welfare, given that policies typically create winners and losers – or at least drive a wedge between big winners and small winners. Economists will, however, readily concede that welfare analysis takes place within a political and moral framework reflected in institutional arrangements, and agree that policy choice must abide by a democratic process based on majority rule with appropriate safeguards for the interests of the minority – or, most probably, minorities.

'The state and its surrogates'

Anyone, down to the individual, can have a language policy.[34] A multinational company can have a language policy. However, using the notion of policy for such a broad range of situations would expose us to the risk of stripping the concept of much of its meaning, which is why, in line with most of the literature, I stick to the notion of a *society* taking steps to influence its linguistic environment, just as it may develop an environmental policy affecting land use, waste disposal or gas emissions. In other words, what I mean here is actual or potential *public* policy.

Typically, the organ through which society takes such action is the state, and we shall see below that there are intrinsic reasons linked to the *nature* of linguistic environments which require the state itself to act, because in the absence of state intervention, the private (market) sector would give rise to behaviour which would *not* result in the linguistic environment desired. This does not imply, however, that the state cannot *delegate* the implementation of some parts of language policy to other bodies. For example, private operators can run minority-language television channels. The point here is that in the absence of state

intervention through deliberate language policy, private operators may not provide the service.

Policy v. politics

Finally, readers will observe that 'policy' is understood here not in terms of political power play between actors holding opposing views, but in terms of a comparison between different solutions, each of which has *a priori* advantages and drawbacks, which can usually be expressed as 'benefits' and 'costs'. This emphasis harks back to a definition in policy analysis discussed for example by Scharpf (1997) between 'interaction-oriented' and 'results-oriented' policy analysis. The definition used here clearly focuses on results-oriented analysis, while interaction-oriented analysis would be considered closer to the *politics* of language, on which a substantial literature exists,[35] and which in general does not translate into economic questions as defined at the beginning of this paper.

This distinction between what is part of 'politics' and what is part of 'policy' directly ties into the question of involvement by the state and the reasons for the latter.

Language policy and state involvement

It is generally accepted that in modern democratic societies, a certain range of duties is among the responsibilities of the state. Why this should be so is an issue that has occupied political philosophers since antiquity. From the standpoint of mainstream (neoclassical) economics, however, the question may be approached without resorting to moral or philosophical considerations, referring instead, just like the rest of fundamental theory, to the problem of scarce resources that have alternative use. This is not to say that economic analysis necessarily rejects moral or philosophical considerations. These may offer the most convenient way to provide a logical basis to some forms of state intervention – for example, in distributive issues. However, it is technical, rather than moral or philosophical, arguments that establish, within the systemic rationality of economic analysis, the *necessity* of state involvement in certain cases.

We have seen that *language policy* aims at modifying a linguistic environment in order to increase welfare. The question then arises of why the linguistic environment that exists independently of deliberate state intervention in language is *not* the best, and on what grounds we can presume to improve it through deliberate intervention. One could indeed have argued, following a standard *laissez-faire* ideology, that government should not intervene, and that maximum welfare will automatically flow from the decentralised actions of people (individuals, firms, third-sector organisations[36]), allowing market mechanisms to regulate the linguistic environment. This will be expected to produce, as it were, the right amount of each of the features of this environment, such as levels of skills in different languages, patterns of use of different languages, types of attitudes towards different languages, extent of visibility of different languages, etc.

If the free market could be seen as an appropriate mechanism whereby all of society's goals can always be reached and maximum aggregate welfare delivered, there would be no grounds, in mainstream economic theory, for state intervention, and everything should be left to private initiative. The underlying adjustment mechanism goes as follows: if not enough of something is produced,

its price rises, and producers will respond by increasing output to the desired level (while the rise in price simultaneously discourages some consumers); and if too much of something is being produced, its price will drop, meaning that more of the good will be absorbed by consumers, while some producers will simply turn away from a production line that no longer generates sufficient profits. Let me repeat that there is no exogenous notion of 'too much' or 'too little'. 'Too much' is *revealed* by the presence of excess supply, and 'too little' by the presence of excess demand.

While all this constitutes a fairly credible line of argument for simple goods such as tomatoes, television sets or car tyres, it becomes more difficult to accept in the case of complex commodities such as education, health, or the environment – and, of course, language. Even from the standpoint of mainstream economics, there are strong analytical reasons for state intervention.

According to economic theory, there are some cases where the market is not enough. These cases are known as 'market failure'. When there is 'market failure', the unregulated interplay of supply and demand results in an inappropriate level of production of some commodity, where 'inappropriate' can mean 'too little' or 'too much'. If the market does not work, the state has to step in.[37] In theory, there are essentially six sources of market failure:[38]

(1) insufficient information, which prevents economic agents (producers and consumers) from making the right decisions in terms of output, purchases, lending and borrowing;
(2) high transaction costs, which move agents *not* to do something that would eventually have been economically beneficial;
(3) the fact that some markets cannot exist (for example, yet-unborn generations cannot be present on today's oil market to express their valuation of this non-renewable resource);
(4) the existence of 'market structure imperfections' such as monopolies and oligopolies;
(5) the presence of 'externalities', that is, of a situation where the behaviour of one agent affects (positively or negatively) the position of another agent, without the gain or loss so created giving rise to a corresponding compensation;
(6) the existence of so-called 'public goods', which in the 'pure' textbook case display two main characteristics described below: 'non-rival consumption' and 'impossibility of exclusion'.

If some linguistic environments are socially preferable to other linguistic environments, and if at least one form of market failure occurs in the production of at least one feature of linguistic environments, then state intervention is justified from the standpoint of economic welfare theory.

Simple as at is, this result is far from innocent. Contrary to a widely held belief, language policy is not an 'un-economic' endeavour; quite the contrary, it may be *the* economic thing to do, if it promises to deliver an increase in welfare. Different reasons can be invoked to explain resistance to this interpretation. Experience suggests that one sometimes encounters, among non-economists, an automatic assumption that economic analysis necessarily views language policy as a costly indulgence. This perception may, of course, have been encouraged by the very narrow vision of benefits and costs adopted by some economists themselves (see

e.g. Jones, 2000) not to mention omission by the same of the *distributive* (as distinct from *allocative*) dimensions of linguistic environments; many economists instinctively view all language policy as ill-advised tampering with the free interplay of market forces. From an analytical standpoint, however, all this is plain wrong, and language policy can be justified economically for reasons very similar to those brought to bear on environmental policy.

This point, however, deserves a closer look. In the case of linguistic diversity, market failure certainly emerges through more than one of the six channels just mentioned. In fact, a strong case could be made that *all* six sources of market failure are present, providing as many economic reasons to engage in language policy. Furthermore, these manifestations of market failure are often interconnected. Let us briefly consider them in turn:

(1) The presence of *insufficient information* can be invoked, but it may prove a weak argument. Such a claim would imply, for example, that actors do not realise how dependent the quality of their linguistic environment is on linguistic diversity. Consequently, out of their ignorance, they fail to allocate by themselves sufficient resources to the maintenance of linguistic diversity, with the result that minority languages (whether these are seen as 'indigenous languages' spoken by 'indigenous peoples' or as 'autochthonous languages' spoken by 'linguistic minorities'[39]) suffer attrition and decline. To use another example, some commentators claim that social actors in non-anglophone countries fail to realise that their linguistic environment will not just be affected, but *adversely* affected, by encroachments of English, and therefore fail to behave in a way that would secure a certain quality of their linguistic environment.[40] This line of argument, however, suffers from one major flaw, namely, the implication that people don't know what they are doing and what is good for them – and its corollary that the enlightened academic or politician knows better. Outside of addictive goods (which may therefore be seen not as 'goods', but as 'bads'), this line is unconvincing (at least in democratic societies), and economists will usually defer to people's expression of preferences as revealed by their behaviour, whatever these preferences may be.

(2) The case of *high transaction costs* is more interesting, though paradoxically little-explored in the case of language policy. The issue is analytically not quite the same as that mentioned in the preceding section, namely, that transaction costs may be lower when people adopt a common language. The issue here is that owing to the existence of costs attaching to the practical conditions needed to make exchange possible, people may abstain from a potentially profitable exchange. Transposing this problem to our case means that people must be shown to behave in a way that results in the emergence of a sub-optimal linguistic environment. If the notion of transaction costs is broadened to include the costs of *transition* from one type of linguistic environment to another, this line of argument can certainly hold. For example, one might argue that the interests a supra-national organisation such as the European Union, which currently uses 11 official languages,[41] would be better served if internal communication took place in Esperanto, without translation and interpretation (Grin, 1997c; Pool, 1996).

This would require civil servants and elected parliamentarians to learn the language. Until the time when all participants have adequate command of the language, extra costs will emerge (for example, language-learning costs), and these will only be worth shouldering if all participants adopt the same strategy; until they commit themselves to it, transaction costs will be deemed excessive and the *status quo* (or some alternative, non-optimal solution) will prevail.

(3) *Non-existent markets* represent a perfectly relevant concern in the case of language. If languages are allowed to die out *now* or in the near future, they will no longer be available in the more distant future for yet-unborn generations to express, *even through market mechanisms*, their preference for having these languages around. Sticking to a pure market rationality at a given point in time is tantamount to assuming that future (market) demand for various threatened languages *will* be zero, and nothing bears out this assumption (or, more precisely, nothing bears it out more than it bears out the reverse assumption, namely, that future generations will highly value linguistic diversity). Furthermore, linguistic environments do not lend themselves to a popular logical fallacy regarding non-renewable resources, according to which reserves of non-renewable resources *increase* (despite the burning of fossil fuels) because new reserves are regularly *discovered*, or because rising energy prices would make known resources, previously considered too costly to exploit, suddenly economical. First, despite the re-creation of expressions of diversity through the process of globalisation, it is unlikely that yet untapped repositories of linguistic diversity will replace languages now on the verge of extinction; second, even if this were the case, one ton of crude oil may be a perfect substitute for any other, whereas a manifestation of diversity, once lost, cannot be simply replaced by another. Hence, the 'non-existent markets' source of market failure is arguably present in the case of linguistic environments. However, it is exceedingly difficult to move from this general observation to any kind of policy implications. It is not possible to claim that future generations do *not* care about the characteristics of their linguistic environment(s); but it is no more possible that they *do*, thereby considerably lessening the strength of the missing markets argument as a basis for state intervention.

(4) The issue of *market imperfections* needs to be understood against the background of competition as a 'perfect' market. 'Perfection' involves no moral judgement – rather, it refers to the idea that owing to its specific characteristics,[42] a competitive market is one where the uncoordinated behaviour of actors will result in an optimal level of production of various commodities, from foodstuffs and energy to live arts performances, all of this at the lowest possible price that covers production costs. To the extent that the 'good' which language policy may help to 'produce' is a certain linguistic environment, it should be clear that the exceedingly complex nature of the latter resists analogy with the more simple goods that may be traded on a neatly demarcated market. Nonetheless, addressing the issue at a highly aggregate level, one may argue that linguistic environments are the result of behaviour by innumerable actors in highly contrasted positions of power, which violates the 'freedom of entry' condition.[43] In a related manner, one may

claim that when the behaviour of actors is analysed not in individual, but in group terms, some groups of actors (for example users of some major language L_Y) *can* influence the relative 'value' of different linguistic environments, thereby artificially lowering the 'price' of some linguistic environments while 'pricing' others out of the market. This violates the 'atomicity' condition, with the result that actors will be tempted to demand the 'lower-price' (and presumably less diverse) linguistic environment, whereas their choices would have been different in the absence of undue influence by speakers of L_Y. The current vogue of English in advertising and youth culture provides an example. This line of inquiry, however, still awaits closer examination than the literature now has to offer. In particular, it is important to note that it is predicated on a fairly direct application of the standard market model to linguistic environments, and considerable conceptual clarification is still necessary for such applications to come to fruition. Hence, it remains difficult, at this time, to give precise policy substance to the *a priori* defensible idea, on the analytical plane, that linguistic environments should be 'produced' in 'more competitive' conditions.

(5) *Externalities* are a crucially important dimension of linguistic environments, and also one where promising avenues for research have been opened in recent years by Church and King (1993); (see also Dalmazzone, 1999, for an accessible introduction). A *positive externality* arises when the behaviour of some actor h gives rise not only to the result that she anticipated (and which initially moved her to action), but also to positive effects accruing to *other* actors. Such positive effects can be seen as pure windfall profits, because these lucky 'other actors' do not have to compensate actor h. Consider the case of a language community comprising N individuals speaking language L_X. Suppose now that the outsider h, who speaks language L_Y, decides to learn their language, and that none of the N members of the L_X language community speaks L_Y. Actor h therefore stands to gain the possibility of communicating with N persons, and will be ready to invest time and money in language learning as long as the value of her communicative gain exceeds the value of her investment. At the same time, she provides to N individuals, at no cost to them, the possibility of interacting directly with one more person – herself. All externalities are not positive, however, and language learning can give rise to negative externalities too: suppose now that some members of the L_X language community do speak L_Y, and make a living as interpreters between L_X and L_Y, charging a certain rate for their services. The fact that h learns L_X amounts to new competition, which will tend to push downwards the rate they can charge. This is a negative externality, for which they are not compensated, because actor h will have no reason to give them a subsidy that would leave their income unchanged.

The key point is that because of the presence of positive and negative externalities, decentralised decisions made by actors are unlikely to result in the best possible linguistic environment. State intervention is required to modify behaviour through policy, which may rely on incentives or on mandatory regulation. Typically, the externality argument is used in the literature to justify support for the learning of a common language – in practice, to push for more learning of English. This recommendation, of course,

is predicated on analytical decisions made regarding *what* counts as a benefit or as a cost. More precisely, one needs to assume jointly: (a) that language learning is justified by communication needs, and that the learning of a common language will consequently be beneficial because it will make communication easier, and will in particular reduce trading costs; (b) that the generalised learning of a common language does not harm linguistic diversity *or* that diversity counts for nothing. Remove either of these two assumptions, and the externality argument, while still analytically relevant, may be used in support of rather different recommendations, such as massive investment in the learning of Esperanto, or even, in given areas, of regional or minority languages.

(6) Market failure related to the *public good* nature of language may be the most fundamental way to justify state intervention. Linguistic environments have some features in common with biodiversity, which is generally recognised as a type of public good. Without engaging in debatable biological metaphors, it is useful to observe that the same analytical reasons that justify intervention to preserve and maintain our natural environment (which, for the analytical reasons already explained, simply cannot be left over to market forces) also apply to *linguistic environments*.

Just like other amenities that surround us, such as street lighting or the quality of air and water, languages, as well as the greater or lesser diversity of these languages, constitute an environment which presents the core characteristics of 'public goods'. To explain this point, it is useful to define the concepts of 'non-rival consumption' and 'impossibility of exclusion'. Apples provide an example of 'rival consumption', because the fact that I eat an apple means that no one else can eat it. Languages are cases of '*non*-rival consumption' because the use of a language by one person does not reduce the 'amount' of language available for use by another person – quite the contrary, as has just been shown. Returning to the case of apples, there is a 'possibility of exclusion' (from consumption) because whoever does not pay for the apple (or does not make the effort to grow it) will not be able to eat it. In the case of language, by contrast, there is 'impossibility of exclusion' since there is no practical mechanism (particularly a price-based one) for keeping a person from experiencing a particular linguistic environment. Hence, there is absolutely no guarantee that the free market (that is, decentralised decisions made by social actors) generates the behaviour that will result in the establishment and maintenance of the socially optimal linguistic environment. Decentralised behaviour may fail, for example, to guarantee an adequate degree of overall linguistic diversity or an appropriate presence, use, learning, etc. of minority languages in our environment.

Nevertheless, some dimensions of the linguistic environment can in principle be left to private initiative. This may be the case, for example, when one considers only the acquisition of languages of wider communication, because private actors can be directly rewarded for learning or teaching them. Hence, people will normally invest in language learning (demand) in proportion to the benefits they derive from it; and the language teaching (supply) required can be provided and paid for as a result of this demand. This, however, does not hold for several dimensions of our

linguistic environment, such as the visibility or presence of regional or minority languages. To the extent that the preservation of those languages has been, at the outset, recognised as a 'good', it follows that only the state or its surrogates can be counted on to take the measures that will result in an appropriate presence and visibility of regional or minority languages in our linguistic environment.

Let us repeat what may be the most important point in this discussion, namely, that the case for state support may very well be made *not* on the basis of political arguments or of an appeal to human rights or minority rights, but on the basis of economic welfare theory, and taking account of some specific features of diverse linguistic environments as a valuable commodity. All this raises the question of the value of language, to which I now turn.

The 'value' of language

As we have seen in the preceding paragraphs, the rationale for policy intervention hinges crucially on the identification and measurement of advantages and drawbacks, which it is often *convenient* to translate into 'benefits' and 'costs'. However, these terms have no meaning unless they are underpinned by a clear concept of 'value'. It is therefore unsurprising that at some stage or other, much of the political debate about language raises the question of the 'value of language', with some participants in this debate referring to language as a 'treasure', a form of wealth, etc. It is easy to forget that most of the time, such statements amount to little more than metaphor; some seem to consider the notion that language is 'valuable' as a foregone conclusion, and go on to assume that *as a consequence*, languages are obviously valuable *in an economic sense*. This is not necessarily so. Limitations of time and space prevent us from entering a full discussion of economic concepts of value and their implications for language (Grin, 1997a). Let us simply observe that when something is valuable in the eyes of social actors, this is usually reflected in their behaviour. For example, if learning Sámi were obviously valuable, people would take notice without being told, they would learn and use it, the language probably would not be in such dire straits, and would not be, as it is, in need of strong support measures. This is not to say that Sámi (or any other minority language) is *not* valuable. However, to make this point clear, it is important to consider different forms of value.

Let us first consider the question of value from the standpoint of the individual actor, who experiences what I shall call 'private value'. Within it, a distinction must be made between 'market' and 'non-market' values. Market values are reflected in prices or some such indicator. Suppose for example that speaking language L_X makes it easier to sell goods to the L_X-speaking public and thereby gives rise to higher profits, or that an L_X-speaking employee earns more, all other things being equal, because he knows language L_X: in this case, L_X has *market* value.

However, *non-market* value also exists. For example, knowing language L_X gives access to the associated cultural sphere, facilitates social contact with members of the L_X-speaking community, etc. Such value is typically *not* reflected in market prices, but it will be experienced by individual actors if their tastes, or preferences, include contact with L_X-ish culture and communities. The argument

may be extended from the case of one specific language (L_X) to the *diversity* of languages; non-market value attaches to linguistic diversity for people who value diversity in their *linguistic environment*, in the same way as they may value a certain (natural) environmental quality. Advocates of diversity must not forget, however, that some people may simply not care.

The market and non-market value that attaches to language L_X for a given individual can serve to explain his choice to learn or not to learn language L_X, and to agree or not to agree to the spending of tax resources for programmes in favour of language L_X. Yet an additional step is required to analyse choices at a social level – and hence to tackle policy questions.

So far, market and non-market value have been described at the private level. At the social level, which refers to value for society as a whole, the distinction between 'market' and 'non-market' is still relevant, but social value is different from private value and has to be computed somehow. Most economists would agree that social values should be seen as the *aggregate* of private values. As a first approximation, aggregation amounts to a simple sum; this means that the sum of private market valuations, over all individuals in a given society, yields social market value, while the sum of private non-market valuations yields social non-market value. In our example, the value of language L_X or of a particular linguistic environment defined, among other traits, by the status of language L_X in it, is therefore the sum of social market value and social non-market value. This is summarised in Table 1.

Table 1 Elements of value

	Private	***Social***
Market	A	C
Non-market	B	D

A represents private market value, *B* private non-market value, *C* social market value, and *D* social non-market value. Total social value *SV* is therefore equal to *C+D*. How should this be computed? Generally, for a society with *N* persons *(1,2, . . . ,i, . . . ,N)* whose individual market valuation of language L_X or of a given linguistic environment is mv_i, and non-market valuation is nmv_i, total social value *SV* is given by:

$$SV = \sum_{i=1}^{N} mv_i + nmv_i$$

A simple yet general decision rule can be derived from this way of formulating language policy choices: the policy that ought to be selected and implemented, all other things being equal, is the one which maximises *SV*, *minus* the corresponding costs of the policy, because this means adopting the policy from which maximum net welfare can be expected. This may sound like stating the obvious; unfortunately, macro-level language policy recommendations are routinely made with only the most tenuous attempt at checking that welfare would indeed

be increased. However, while this provides a general structure for estimating value, several conceptual and empirical questions arise:

(1) First, simple summation can be an inappropriate mode of aggregation, because of the possibility of externalities, as discussed earlier. If person *h* (a native speaker of language L_Y) learns language L_X, anticipating a money return on this investment, she increases the pool of speakers who know L_X. This will affect the situation of another person, say *j*, in different ways. Suppose that *j* already knows language L_X. On the one hand, the fact that *h* has learned L_X increases the *relevance* of language L_X and hence the value of *j*'s language skills. At the same time, one more L_X-speaking person on the labour market may erode the wage premiums accruing to L_X speakers, and *j* may see his wage situation deteriorate. The social market value of teaching language L_X to those who do not speak it therefore cannot be computed as the *sum* of the gains that each non-speaker stands to make by learning L_X, if only because, among other reasons, (a) existing speakers may gain or lose; (b) the potential gains to non-speakers of L_X who decide to learn it will be affected by the numbers of other non-speakers who subsequently decide to learn it once they observe that some fellow L_Y-speakers have gained from this move. At this time, the problem of aggregation (which is typically a network externality one) does not seem to have found a satisfactory solution in the theoretical literature.
(2) The components of non-market value are very difficult to identify theoretically, and no less difficult to measure empirically; furthermore, they are likely also to be subject to the network externality problem just described in the case of market value.
(3) Policy is about moving from an existing linguistic environment to another linguistic environment giving rise to higher welfare. This move entails benefits, but also costs. While some elements of cost have been mentioned (in the form of losses for some members of society), the precise amount of presumably straightforward direct costs, based on the expenditure required to achieve the benefits expected from a policy, is often very difficult to evaluate.

It is therefore not possible, at this time, to really compute the 'value' of a language, and this expression must be handled with caution; unfortunately, not all commentators do. It is equally delicate to estimate the 'value' of a linguistic environment as compared to another.[44] A considerable investment in research on the identification and measurement of the benefits (market and non-market) that can be expected from a particular policy and of most of the costs, direct and indirect, associated with such a policy move, now needs to be made. This means that in practice, analysts need to settle for more modest goals, and to concentrate on parts of the problem of value. Evaluation work usually proceeds as follows:

- network or externality effects are ignored, largely on the grounds that some are positive while others are negative, and are thus likely to cancel each other out to a significant extent;
- the emphasis is placed on private market value, mainly by estimating its most important component, namely, the statistical relationship between language skills and wage rates;

- these estimates of (average) private market benefits associated with language skills can then be combined with average (per person) public spending for imparting those skills in order to compute social market value;
- non-market values are kept out of the calculation, largely on the grounds that for lack of data, there is practically no alternative (although some useful evaluation methods could be imported from environmental economics).

In practice, therefore, the question of value is reduced to a subset which essentially coincides with cell A in Table 1. In the section of this paper on language education policy, we shall therefore mostly focus on this subset of the general problem of the value of language.

Language policy, diversity, and the 'fundamental rule'

If one wishes to inform policy choices about language with reference to the concept of 'value', it is important to steer clear of metaphors, and to parse the problem in order to identify and measure components of value; yet we have just seen that conceptual and empirical difficulties are such that a full estimation of the respective social value of alternative linguistic environments remains largely out of reach, forcing us to concentrate on the evaluation of private market values. The general inference is that an economic approach cannot provide readily applicable recipes for solving language policy problems.

Nonetheless, it offers the advantage of providing a structure which is often lacking from many policy discussions, and one general theoretical result can be ventured regarding the relative value of different linguistic environments. In order to present this point, let us assume that these linguistic environments are differentiated from one another by the extent of *diversity* they accommodate. The application of basic economic concepts then suggests that society is likely to be best off not when it tries to eliminate diversity, nor when it attempts to embrace limitless diversity.

The argument rests on a 'fundamental rule' of policy choice (Stokey & Zeckhauser, 1978), which requires selecting that option which promises to deliver the highest *net* benefit – that is, 'benefit minus cost'. As a general starting point, it is probably easy to agree that diversity, like most things, carries *both* advantages *and* drawbacks, which for simplicity we may call benefits and costs. It is understood that these are not confined to monetary ones and that non-market elements, as a matter of sound principle, must be taken into consideration. More diversity will entail more benefits *and* more costs. However, benefits tend to rise at a *decreasing* rate, while costs tend to rise at an *increasing* rate.[45] This implies that benefit and cost curves will generally behave as in Figure 2. This means, in turn, that there is a point where the difference between benefits and costs is largest, indicating the maximum level of *net* benefit. This corresponds to an optimal level of diversity at d^*, which is *neither* zero *nor* infinite.

Though apparently innocuous, the result that socially optimal diversity is likely to be *positive* and *finite* has major political implications, because it indicates that from an economic standpoint, policies striving to preserve or impose linguistic homogeneity – or, in other words, 'zero diversity' – are ill-advised, since they underestimate the benefits and overestimate the costs of diversity.

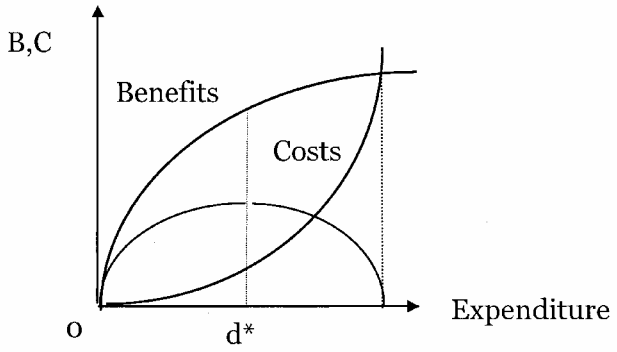

Figure 2 Optimal diversity

Conversely, generous calls (often motivated by human rights concerns) to embrace boundless linguistic diversity and to set up policies for the integral recognition of all languages in society, including those of immigrant groups, however small, tend to make the symmetrical mistake. These basic principles of scale and optimisation are surprisingly under-used in economic analysis, as pointed out some 20 years ago by Gilman (1983: 40).[46] It is also worth noting that on the basis of the very general assumptions adopted here, one would be led to question the widely held belief that diversity is negatively correlated with macro-economic welfare (for a considered discussion, see Nettle, 2000).

As a shortcut to the estimation of benefits and costs, three strategies can be adopted. The first is simply to leave the comparison procedure to the political debate, possibly after presenting, to the extent possible, detailed information to voters about the practical consequences of the various options considered. In theory, preferences expressed through the vote will embody voters' valuation of market and non-market benefits and costs, and even if majority voting offers no solution to the problem of externalities, particularly network externalities as discussed above, the procedure at least presents commendable democratic credentials.[47]

Another strategy, which yields a clearer picture of the non-market components of value involved, is theoretically possible, though, to my knowledge, untried as yet. Evaluation methods derived from environmental economics can be applied to language choices (Grin, 1994c): a representative sample of residents can be asked in a survey *how much* they would be willing to pay (for example through extra taxes, or as a percentage of their total tax burden) for society to move from the current linguistic environment to another, presumably more desirable, linguistic environment which a proposed policy would aim at achieving. Conversely, respondents may be asked how much they would be willing to pay towards a policy whose aim would be to *prevent* a presumably undesirable change in their linguistic environment from happening. An example of the first situation is people's willingness to pay to achieve a substantial increase in average second language skills in the population – implicitly defined as a benefit – perhaps through a generalisation of bilingual classes in the education system. An example of the second situation is people's willingness to pay to stop the decline

of threatened language – whose final demise, implicitly defined as a loss, would become unavoidable in the absence of such a policy.

Thirdly, estimates of the aggregate cost of a given language policy can be presented to survey respondents, who are then asked if they consider this cost acceptable or not. This implies that costs have first been estimated, which, most of the time, is not done. It is important to point out that in cases where such calculations have been carried out, the costs entailed by language policy often turn out to be much lower than is commonly assumed (see 'From unilingual to bilingual education' below) and fall within a range that a majority of voters are probably quite willing to pay in order to secure the linguistic environment they desire.

On cost-effectiveness evaluation

The relevance of economics to language planning lies chiefly in its capacity to draw on a robust conceptual framework that helps guarantee logical consistency, as well as the general character of analytical work. The latter proceeds from a constant effort to use as few explanatory variables as possible in order to explain a given phenomenon. This guards against the temptation to explain a situation by case-specific, *ad hoc* reasons – which would of course strip the explanation of any relevance as a (general) theory or as an illustration of a theory; it is no accident that 'adhockery' is one of the most scathing insults that economists can hurl at one another. The downside of the approach is that the application of tools such as 'benefits' and 'costs' quickly runs into daunting conceptual and methodological problems – unless one is prepared to use these terms in a much looser sense, with the unsurprising result that propositions formulated on their basis may not hold up to closer scrutiny. Hence, economics can be of service in language policy work and offer insights and information that other approaches usually do not provide, but only within limits. Accordingly, economic contributions over recent years have tended to emphasise various forms of policy evaluation using a limited range of well-established concepts, such as 'effectiveness' and 'cost-effectiveness'.

Policy evaluation is a field of specialisation in its own right. It has its basis in political science but it usually displays an essentially economic concern for the effective use of scarce resources (Dunn, 1994; Stokey & Zeckhauser, 1978). In this framework, policy goals are exogenously set, and will normally have been adopted as a result of political debate. The role of the policy analyst will then be to compare possible courses of action for the transposition of political choices into a set of policy options. The comparison must be based on information regarding the relative advantages and drawbacks of each policy option, and recommendations regarding implementation. This focus on the selection, design and evaluation of policy options cannot be exclusive, nor can it be completely insulated from political debate; moreover, it is not intended to replace it.[48]

Despite these limitations, this type of exercise will require a logically rigorous analysis, possibly referring to a policy-to-outcome path linking the policy decision at one end with its expected outcomes at the other end, parsing the way in between into successive cause-and-effect steps (Grin, 2003; Grin & Vaillancourt, 1999). This type of policy evaluation exercise entails the following stages, which can best be explained with the use of an example. Let us therefore consider the case of a policy whose goal is to ensure the long-term maintenance of a minority

language L_X, and work backwards from the ultimate policy outcome to the policy measure:

- First, policy outcomes must be expressed in terms of the ultimate goals of a policy. In our example, one would use some indicator of language *use* or language *vitality*. This is obviously more relevant to evaluating success than information about the direct outputs of specific measures, such as the number of teachers undergoing training in order to be able to teach the minority language in schools. While an increase in the number of qualified teachers should *per se* be conducive to the success of the policy, it is only an intermediate goal, and merely a means to an end.
- Second, the desired policy outcome must be modelled, even if informally, as part of a set of causal relationships. The policy outcome will be cast as a dependent or 'explained' variable, while the policy measure will be cast as an independent or 'explanatory' variable. Any contextual elements deemed relevant by the analyst may of course be included in the model, as long as such inclusion is not confined to vague statements to the effect that 'the success of the measure will also depend on factors x, y, and z', but formulates an explicit directionality about this dependence. No major insight is gained by simply mentioning the fairly obvious fact that reality is complex and that the density of interconnections between processes is boundless (Pool, 1991a).
- Third (assuming that the policy being evaluated is concerned with language maintenance as reflected in the extent of its *use*), these cause-and-effect relationships must be grounded in a relevant representation of language use which should, explicitly or not, be anchored in a theory of behaviour. This will make it possible to assess the difference that a policy has made, and ensure that certain policy measures are not credited, say, for increases in language use that might have occurred anyway, even in the absence of those measures.
- Fourth, once this general framework is in place, the workings of a policy measure can be followed in proper sequence all the way from its adoption by the authorities through its direct effects and ultimately to its more distant effects on relevant indicators of language maintenance.

Effectiveness can be defined in different ways. Unfortunately, some of them obliterate the crucial distinction between 'effectiveness' and 'cost-effectiveness'. Let us therefore adopt the following convention: 'effectiveness' will simply mean 'having an effect' or 'making a difference', while 'cost-effectiveness' will imply that a given effect is achieved *with the lowest possible use of resources* or, alternatively, that given a certain use of resources, the *best (highest) possible effect is achieved*. In this sense, assessing effectiveness will require analysts to establish whether the implementation of a particular policy measure should be expected to have (or has had, in the case of *ex-post* evaluations) an effect on the indicator of language maintenance chosen at the outset.

In order to evaluate cost-effectiveness, it is of course necessary to evaluate costs. The question of cost evaluation would require a full-fledged paper of its own, and the reader is referred to materials quoted in this section for details. Let us simply point out two essential principles.

- First, cost must not be confused with expenditure. Expenditure is an accounting concept that attaches to the resources invested in a policy (for example, the salaries of the teachers hired to teach the minority language). Cost, by contrast, attaches to the outcomes of a policy (for example: 'how much does it cost to increase by 5% the percentage of their leisure time that school-age children spend using the minority language *instead* of the majority language?'). Moving from expenditure to cost figures requires approximations (sometimes rough ones) in order to apportion items of expenditure to units of outcome. Though often intellectually frustrating, this exercise cannot be side-stepped, given, precisely, the very complexity of the causal relationships involved.
- Second, what matters is not total cost, but the difference between the cost society incurs if a given policy is implemented, and the cost it would have incurred if the policy had not been implemented. One classical example is that of potentially damaging tensions or even conflict that may arise between a majority and a minority if the latter is denied recognition – possibly through negation of its language. Granting official status to the minority language may be costly, but these costs should be weighed against those that would have occurred in case of worsening inter-group conflict. This problem can be defined as that of identifying the proper 'counterfactual'.[49]

Once an evaluation of cost has been produced, it becomes possible to estimate, for each proposed policy, an indicator of cost-effectiveness. This can be done either by dividing total outcome by total cost (which yields an index of what can be achieved per euro, mark, franc or dollar spent) or by dividing total cost by total outcome (which yields an index of the cost to be faced in order to obtain one unit of output).

The procedure can, in theory, be applied across completely different policy areas, as long as they have a common goal that can be expressed in terms of a common unit of measurement (Grin & Vaillancourt, 1999). Such generalised comparisons, however, may be replaced by more circumscribed procedures *within* policy domains, such as education or the media, thereby reducing the need to resort to a string of assumptions in order to express the outcomes of very different types of intervention along the same scale.

Before closing this section, it seems necessary to stress once more that the instruments that economic analysis can provide are just that – instruments – and that they cannot serve as a substitute to the inputs and insights offered by other approaches. The specific contribution of economics often operates by recasting language problems in a new light, and redefining them in terms of alternatives whose implications must be spelled out, and between which choices have to be made. The making of such choices, however, must remain a political process, which policy analysis is not intended to replace.[50]

An Application: Language Education Policy

Education plays a key part in language policies, because it is the single most important vehicle of language policy. This is why this closing section, devoted to an empirical application of some of the tools presented earlier, focuses on educational issues. The following points will be examined: the estimation of private

returns on investment in second (or foreign) language learning; the estimation of social rates of return on language teaching; and the bilingualisation of education systems.

The market value of language skills

Private benefits

For the sake of brevity, this example focuses on *second* or *foreign* language skills (two notions between which no major distinction needs to be made from the standpoint of economic analysis). Ultimately, the analytical principles are the same for *all* language skills, including proficiency in one's first or main language (usually the mother tongue), but in the course of an account concerning first languages as well, interpretation and commentary would need to be expanded accordingly and considerably lengthen the discussion.

Let us therefore consider the common situation where the level of language skills acquired by actors is, to a large extent, the outcome of language education policy. This requires a brief excursus in the field of *education economics*, which will be confined to some essentials; for a textbook treatment, see e.g. Lemelin (1998), and for an extensive survey of its subfields, Psacharopoulos (1987).

Education economics as a recognised field of specialisation in economics emerged in the early 1960s. One of its main pillars is human capital theory, whose thrust is as follows. An actor with specific skills will tend to be more productive than another without those skills. Since wage rates generally reflect productivity, a more skilled person will tend to earn more. If skills are acquired through the education process, education yields benefits represented by wage premiums. Even if education is costly, both for individuals and for society, it may therefore be seen as an investment whose rate of return can be estimated. Typically, most of the investment takes place in the early years, while the returns on the investment appear during working life. Let us compare two education scenarios: the 'long' (A) and 'short' (B) ones, which are associated with different earnings levels. These scenarios, which start diverging for individuals reaching the age of 15, are represented with age-earnings profiles as shown in Figure 3.

Area FE stands for 'forgone earnings', while area SE stands for 'schooling expenditure' (by the individual or the parents), and surface GH represents the gains resulting from longer education. At first sight, the investment is profitable if $GH > FE + SE$. However, time must be taken into account. Let us assume, for simplicity, that we are considering the choices of a young person contemplating either scenario, and that all the extra expenditure entailed by choosing long studies would take place in the *current* period; the current values of FE and SE therefore represent costs reasonably accurately. However, the gains will only appear over successive years in that person's working life. This means that the *present value* of future earnings needs to be compared with the sum of FE and SE.

Assume that working life stretches over 40 years, from 25 to 65. Let us define the earnings profiles as A and B respectively, stretching over those 40 successive years $(1,2, \ldots, j, \ldots 40)$. The *rate of return* on the investment is the value i which verifies the equation:

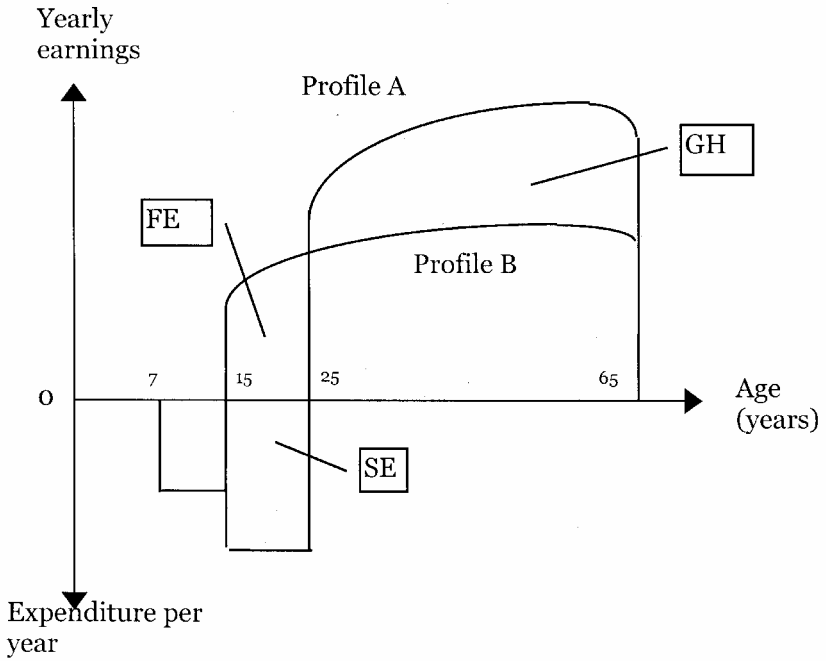

Figure 3 Age earnings profiles

$$\sum_{j=1}^{40} \frac{A_j - B_j}{(1+r)^j} - FE - SE = 0$$

Hence, calculating private market value comes down to estimating the value of r in the above equation, using appropriate data and standard econometric tools. A similar logic can be applied when comparing the profiles of actors *with* or *without* second language skills, yielding estimates of benefits (which take the form of language-based earnings differentials), usually in percentage terms.

Private investment costs

Evaluating the costs of investment in second languages raises a number of difficulties.

Costs borne by the individual acquiring an education include two parts: direct expenditure on books, tuition, etc., and forgone earnings. For our purposes, these costs can be omitted for the following reasons. In most countries where education is publicly provided and languages taught as part of this education, students' direct expenditure on school materials, though not nil, is relatively minor and can be assumed away (if it were taken into account, it would not result in a major difference in the estimated rates of return). As regards forgone earnings, they tend towards zero for learners under legal working age, because they would not be allowed to sell, on the labour market, time *not* spent at school. Furthermore, even beyond the legal minimum working age, it would be impractical to trade for a wage the amount of time specifically taken away from language classes scattered over the weekly schedule. Hence, FE and SE can be

assumed to tend towards zero. Finally, there are also other elements of private expenditure, such as fees paid for evening classes as part of adult education. Usually, however, adult or continuing education is a privately made decision, not a state-imposed policy, and hence not part of the costs of a public education policy.

The main component of expenditure is therefore made up of state spending on language teaching. These costs, however, are borne indirectly through taxation, which means that they are unrelated to a young learner's actual consumption of language education. They are therefore not relevant elements of *private* investment cost, and treatment of this part of cost is postponed to the examination of social rates of return below.

Private earnings differentials

One of the most strongly established models for the selection and design of language education policies is derived from the combination of the language economics perspective with human capital theory developed in education economics. The fundamental set of concepts used in this combination has been described in the preceding paragraphs. I now turn to the application of this model to the statistical estimation of what is often referred to as the 'private rates of return' on second language skills.

The term 'rate of return', in this context, is not fully appropriate. As explained above, the concept of rate of return presupposes that human capital is treated as an investment entailing (mostly) current expenditure in order to generate future benefits. In other words, the passage of time should be explicitly taken into account. However, the overwhelming majority of existing statistical work on the *private* value of second language skills eschews the question of time. Typically, information will be gathered on the *current* value of a range of variables for individual observations, and these values related to one another through multivariate analysis; hence, it is more appropriate to speak about 'earnings differentials'. Hence, most of the literature in this area therefore presents differentials, not rates of return.

The example used below is that of English as a foreign language in the case of Switzerland. The reason for this choice is that it is, at this time, the only one for which data make it possible to assess the value of English as an international language, that is, in a country where it is neither an official nor a demolinguistically dominant language. At the same time, the data set used includes unusually detailed information about the levels and types of language skills. The data cover a representative sample of 2400 observations over three of Switzerland's four language regions. A specific methodology was developed in this survey for the collection of language competence variables through telephone interviews, in order to ensure the stability and comparability of the information gathered. All this probably makes this data base one of the richest internationally in this field. It contains questions on the following items:

- respondents' L2 skills, differentiating between the 'four skills' (understanding, speaking, reading and writing) and within each skill, four skill levels (fluent, good, basic, none);
- non-school channels of L2 acquisition;
- L2 use on the workplace;

- standard socio-economic characteristics (education, etc.), including labour income.

The computation of average labour income by level of English language skills reveals a strong positive correlation. However, English-language skills are also correlated to other determinants of income, particularly education, and higher earnings accruing to those who speak English may simply reflect the fact that, having a higher education, they can hold better-paying jobs. Hence, wage premiums may have nothing to do with competence in English. The same problem can be illustrated by the following example: better-educated people who earn more are more likely to have had more Latin at school than others, but one would not necessarily conclude that they are rewarded for some (residual) ability to translate Cicero.

In order to circumvent this problem, the classical solution is to use a statistical instrument called 'ordinary least squares regression' (OLS for short). OLS methodology will not be presented here, and readers interested in explanations on technical treatment are referred to successive studies on Quebec and Canada by Vaillancourt (in particular 1988, 1991) and, as regards the data used here, to Grin (1999c). OLS are particularly useful to separate the effect of various determinants of income. Typically, an equation with the following form will be estimated:

$$\ln Y = \alpha + \beta_1 E + \beta_2 X + \beta_3 X^2 + \beta_4 L + \beta_5 F + \varepsilon$$

where lnY stands for the logarithm of labour income, E for educational level (measured in years), X for experience (also measured in years), L for some indicator of language skills, and F (depending on the data available) for other factors considered relevant in the determination of labour income (for example, a respondent's type of employment). Finally, ε is a random term whose expected value is zero. Using, in the example below, not just English language skills, but also education and experience as regressors, we obtain the set of results presented in Table 2. In this table, the coefficient for each level of competence in English reports, in percentage points, by how much the earnings of an individual displaying that level of competence will exceed those of someone who has no competence in English, but has equivalent education and work experience.[51]

The results in Table 2 indicate that English language skills are highly rewarded on the Swiss labour market. Even controlling for education and experi-

Table 2 Net earnings differentials (%) for English language skills Switzerland 1994/95 (language coefficients only)

	Men (n = 1141)	*Women (n = 803)*
Fluent	24.09	25.19
Good	18.03	39.52
Basic	8.93	18.09
Adj. R2	0.360	0.095

Source: Grin (1999c: 164). All reported coefficients are significant at the 99% level

ence as is done here, the premiums clearly rise along with the level of competence in English. Extended analysis with additional control variables confirms the econometric robustness of the results; it also shows, however, that reality is more complex than these simple figures suggest. First, there are significant differences between Switzerland's language *regions*. When the analysis is carried out for the three regions separately (German, French and Italian-speaking) much higher rates of return for competence in English appear in German-speaking Switzerland. In French-speaking Switzerland, by contrast, knowledge of German as a second language is more highly rewarded than knowledge of English. Second, returns are sector-dependent: in some economic sectors (typically, those that display a strong orientation towards international trade), English is highly rewarded; in other sectors, the earnings differentials are low.

Estimations of earnings differentials according to foreign or second language skills constitute relevant information for individuals who contemplate learning another language, but from a language policy perspective, social rates of return (see below) would in principle matter more. However, social rates of return on language teaching are usually not available, and private earnings differentials already provide ample material for public debate. The type of use to which these figures can be put will, however, be case-specific. In the Swiss context discussed here, these figures are quoted in the ongoing debate on the relative relevance of teaching national languages (as opposed to English) as part of the curriculum (see e.g. Lüdi, 1998; Watts & Murray, 2001), because they show that the return on teaching them is high (and, in the case of French- and Italian-speaking Switzerland, that knowledge of another national language, German, is more financially profitable than knowledge of English).

If comparable data were available for other European countries, it would be possible to carry out similar calculations and to assess whether the current trend towards increased investment in the teaching of English and the concomitant neglect of other languages amounts to a financially well-advised attitude or not. Such results would be particularly interesting for Britain and Ireland, where investment in foreign language learning is reputedly very low (Graddol, 1997), and where foreign languages are no longer part of the subjects required for 'A levels' at the end of secondary education. In the case of Québec, estimates of (private) language-based earnings differentials confirm the value of English as a second language, and have major political significance as tools for monitoring over time the evolution of the respective socio-economic status of anglophones and francophones – with or without knowledge of the other language (Vaillancourt, 1996). If figures on provincial spending for the teaching of English were combined with this information, in order to yield estimates of social rates of return, it would become possible to address the issue of social over- or under-investment in the teaching of English – or, for that matter, of other languages like German and Spanish.

Social rates of return on foreign language teaching

The estimation of social rates of return tends to be technically more demanding, because it does take the time dimension into account through actualisation, and estimates therefore *do* deserve the label of 'rate of return'. Furthermore, data

on government expenditure for language teaching also need to be gathered and processed.

However, data on this component of education spending are practically non-existent, or at least extremely rare, because current education accounting practices generally fall short of 'analytical accounting', and hence do not yield figures on expenditure *by subject* (OECD, 1998). The costs of specific school programmes offered through the medium of a specific language have occasionally been estimated (e.g. Patrinos & Velez, 1996); to my knowledge, however, the only example of such cost figures having been systematically derived from aggregate spending figures is a study on language teaching in Switzerland (Grin & Sfreddo, 1997). They suggest a total spending of CHF1500 (approximately €1000 or US$ 1000) per student and per year for the teaching of all second languages. On average, 10% of total education spending is devoted to second-language teaching. This figure excludes post-secondary education. It can nevertheless be used as a reference point, taking account of the fact that it reflects an education system in which learners in short streams typically learn one foreign language for three years, while learners in long streams learn one foreign language for seven years and another for four years.[52] This figure of 10% is probably not markedly different from shares observable in other Western European countries, so that a range of 5% to 15% of total education spending can be seen as an acceptable a priori approximation of public spending on second language teaching for those countries.

The estimation procedure is the following (for a detailed explanation, see Grin, 1999b, Chapter 9):

- two distinct age-earnings profiles are estimated, for unilinguals and bilinguals respectively – or for some similar alternative;
- respective figures for labour income in each period are estimated;
- the difference between both profiles at each period is obtained by subtracting the lower from the higher profile;
- if resulting figures reflect (as may be the case depending on the nature of the data used) underlying monthly earnings, they will be multiplied by 12 to obtain yearly amounts;
- an assumption is made regarding the period of time for which estimations are carried out – usually, the outset of the typical agent's working life;
- future earnings differentials, estimated for one typical agent, are discounted over the time horizon from the starting point of the period of time considered;
- figures on per-capita spending on the teaching of the language concerned are then brought into the calculation;
- earnings differentials on the one hand, and per-capita spending on the other hand, are entered into a rate-of-return equation as presented above in the sub-section on 'Private benefits';
- the discount rate which annuls the left-hand term of the equation represents the social rate of return on the teaching of the language concerned, given estimated earnings differentials and teaching expenditure.

A selection of social rates of return on foreign language teaching in Switzerland is

Table 3 Social rates of return on foreign language teaching (%), men, Switzerland 1994[a]

L2	*Language region*		
	French	*German*	*Italian*
German	6.5	n.a.	21.5
French	n.a.	10.0	11.7
English	4.7	12.6	n.s.

Source: Grin (1999c: 194)
a: Expenditure figures for 1993–94 school year. Earnings information from late 1994 (96% of weighted sample) or early 1995 (remaining 4%). Control variables in underlying earnings equations: age, age squared, education (years). n.a.: not applicable. n.s.: not significant. Reported values are based on coefficients significant at the 99% level

Table 4 Social rates of return on foreign language teaching (%) Switzerland 1994[a]

L2	*Language region*		
	French	*German*	*Italian*
German	7.4	n.a.	n.s.
French	n.a.	7.8	n.s.
English	6.4	13.1	n.s.

Source: Grin (1999c: 194)
a: Expenditure figures for 1993/94 school year. Earnings information from late 1994 (96% of weighted sample) or early 1995 (remaining 4%). Control variables in underlying earnings equations: age, age squared, education (years). n.a.: not applicable. n.s.: not significant

provided in Table 3. Only results for the male part of the sample, which are all statistically robust, are reported in the table, because results for women do not display the same degree of statistical reliability.[53]

If one is willing to admit results for women, where one of the underlying coefficients is not statistically significant at the 99% (but where significance, for the coefficients concerned, is usually in the 80% to 95% range, making them worthy of attention), it becomes possible to combine rates for men and for women and to compute a weighted average of social rates of return for the entire sample. The corresponding figures are reported in Table 4.

Social rates of return for the teaching of foreign languages therefore vary, according to L2 and to language region, from 6% to 13%. Clearly, the most profitable of the social investments is for English in German-speaking Switzerland. However, the teaching of English in French-speaking Switzerland is a valuable investment as well. All these figures compare favourably with the average rate of return on financial capital, since real rates of return (net of inflation) on riskless assets normally lie in the 3–5% range, while the opportunity cost of capital conventionally used in cost-benefit analyses is 10%. In the Swiss case at least, therefore, the teaching of foreign languages is a very valuable investment, even on the basis of

strict *market* value. If *non-market* value were also taken into account (to reflect in particular the political and cultural reasons that may be called upon for teaching foreign languages), the social rates of return would, of course, be higher.

Figures are unlikely to be markedly different in other Western European countries. However, it would be hazardous to attempt to generalise directly from the Swiss case. In order to gain knowledge about the rates of return on public investment in language teaching in other countries, it is essential to gather appropriate data.

Two limitations of the social rate-of-return approach must be recalled here. The first one is that it combines information on benefits currently observed with information on current cost. In reality, however, current cost is incurred in order to generate future benefits. Even if the estimation procedure implies a projection of benefits into future periods (and then the actualisation of benefits), the causal relationship between cost and benefit that the calculation implicitly assumes amounts to an act of faith in the fact that benefits will remain in the same range in the future. This assumption is acceptable for planning over relatively short horizons (certainly up to five years, possibly a little more), since the market value of foreign language skills is unlikely to change markedly over a relatively short period. However, longer-term assumptions about the value of specific skills (from foreign languages to mathematics or computer literacy) can only be tentative.

Similar acts of faith are routinely made in the well-established field of education economics for the estimations of returns on education as a whole; unfortunately, it is far from certain that significantly better-performing strategies exist. First, analytical refinements aiming to replace current figures by hypothetical future figures may entail considerable effort for precious little gain in reliability. Second, incomplete as it is, the type of knowledge provided by rate-of-return calculations remains better than total ignorance – or than the purely arbitrary pronouncements that may otherwise replace them in the media and political space.

The second limitation has already been mentioned, but it bears repeating. Even if the problem of time discrepancy were magically solved thanks to perfect foresight, social rates of return, based as they are on *private market benefits*, can only give part of the picture. The information they provide must be seen in the broader context of political debate of language policies, in which non-market values (usually under the label of 'culture', 'history' or 'identity') have a leading role to play.

From unilingual to bilingual education

The issue of minority language revitalisation has in recent years been receiving increasing attention in sociolinguistic debate, largely as a result of a growing concern for minority rights, language rights and linguistic human rights (Kontra *et al.*, 1999; May, 2001; Phillipson, 2000; Skutnabb-Kangas & Phillipson, 1994). The literature extends to law (e.g. de Varennes, 1996; Henrard, 2000) and political philosophy (e.g. Kymlicka, 1995). Beyond the considerable variety of more or less successful experiences to date with revitalisation efforts, specialists' assessment of their feasibility ranges from the reserved (e.g. Edwards, 1994) to the cautiously optimistic (e.g. Fishman, 1991).

Generally, whether based on linguistics, sociology, law or political philoso-

phy, the literature stresses either practical feasibility or desirability in terms of certain legal, moral or political standards. Economic analysis shifts attention to another plane.

As regards (legal) 'standards' (e.g., for minority protection), economists tend to look at them as a fundamentally extra-economic concern, because they are, in essence, normative. Economists generally view norms as a context within which agents' behaviour may be studied, but the study of norms themselves would then fall within the purview of other social scientists, or of lawyers. The economic approach to 'rights' as a reflection of norms, however, starts out by noting that rights are social and political constructs. Hence, there is no such thing as an *absolute* right. Putting it differently, the weak may avail themselves of a 'right' only to the extent that the strong have an interest in granting and upholding this right (Simonnot, 1998).

As regards feasibility, economists will usually contend that it cannot be the issue: provided enough resources are invested into it, there is no reason why language revitalisation should be radically impossible. The problem is that it may be an extraordinarily expensive goal to achieve. Hence, the real question, from an economic standpoint, is whether the outcome is worth the resources devoted to achieving it. This, of course, brings us back to the problem of advantages and drawbacks, their identification, and their measurement. It is no surprise that in political debate, attacks on revitalisation policies often criticise them as an egregious waste of resources (on Welsh, see e.g. Davies, quoted by May, 2001: 266; on Scottish Gaelic, see McLeod, 2001).

Hence, an allocative argument (that is, a case made in terms of efficient allocation of resources) in favour of minority languages must logically offer proof that resources spent on minority languages – or on 'diversity', which is a *consequence* of minority language preservation – are well-spent. This means, as a minimum, that the *benefits* must be higher than the costs; applying a more demanding standard of proof, the net difference between benefits and costs must be higher under the policy pursued (which aims at revitalisation through a given set of measures) than under any alternative policy.

As shown in the sections of this paper on 'The Economics of Language Policy' and 'An Application: Language Education Policy', difficulties of identification and measurement make benefit evaluation particularly speculative: benefits ultimately rest on individual valuations of different linguistic environments, and these valuations may be extremely different; and the presence of network externality effects can turn the aggregation of individual valuations into an intractable problem. Generally, however, it stands to reason that a positive difference between benefits and costs is more likely to arise if benefits are high, *or* if costs are low. In this case, economic analysis can be used to devise a shortcut towards informed decision making, which will again be illustrated by the case of language revitalisation policy.

Let us start out from a current linguistic environment in which the survival of minority language L_X is seriously impaired. Suppose now that the authorities are contemplating a policy for the long-term maintenance of L_X. If successfully implemented, this policy would yield another, presumably more diverse, linguistic environment characterised by the continuing presence of L_X. For social actors, both linguistic environments have a certain value, made up of the usual

market and non-market components. Even if this value cannot be expressed in euros, rupees or dollars, actors will generally be able to say if they prefer one or the other, or if they are absolutely indifferent between them. Against this background, however, actors can be asked *how much they would be willing to pay* to move from the current to the more diverse linguistic environment. Alternatively, an estimation of the cost of doing so can be computed, and people (the general public, or voters in a referendum, or parliamentarians, as the case may be) can be asked if they consider the amount justified or not. In this case, the whole problem of benefit evaluation is simply sidestepped, and costs alone move to the foreground, giving cost evaluation a major strategic importance in policy debates. As it turns out, estimates of language policy costs are quite low – much lower, at any rate, than many commentators appear to assume, usually on the basis of little evidence. To clinch this point, I shall confine myself to one example, namely, that of moving from a unilingual education system (dominant language only: L_Y) to a bilingual education system (L_X+L_Y) in which both languages are used as a medium of instruction.

As a general starting point, let us remember that states have a general responsibility to provide and finance compulsory education. Given this responsibility, there is a certain *cost* attaching to it. Hence, the real cost of bilingual education is the cost it entails *over and above* the counterfactual – that is, a unilingual education system. What deserves inclusion as a relevant cost figure constitutes a potentially complex and still little-explored domain of inquiry, and for the sake of brevity, I shall move on directly to some simple figures.

Calculations have been made in the case of the teaching through Basque in the Basque country in Spain (Grin & Vaillancourt, 1999), or through indigenous languages (particularly Maya) in Guatemala (Patrinos & Velez, 1996). These independently produced studies arrive at very close estimates, all in the 4% to 5% range. Such figures probably represent upper-bound estimates, because of the evolution, in the long run, of some cost components, which have mainly transitory relevance. In the case of the Basque country, the figures for 1997 (later converted into euros) are as follows:

Training for Basque-medium teachers:	€20.947m
Production of Basque teaching materials:	€0.950m
Institutional overhead:	€1.160m
Total	€23.0570m

Given that in the same year, some 180,000 pupils were schooled in wholly or partly Basque-medium streams, this amounts to approximately €133 per pupil and per year.[54] This is an amount that a majority of residents of the Basque country are presumably quite willing to pay through their taxes – with many residents possibly prepared to pay more. One should also point out that the largest item in the above sum (training for Basque-medium teachers) is one that should be considered a temporary cost. The reason is that in the long run, there is no reason why it should cost significantly more to train teachers to teach through the medium of Basque rather than Spanish. Therefore, such costs cease to be relevant

elements in the calculation, and the long-term cost of bilingualisation, consequently, is even lower than the figure just estimated.

Further developments on such questions are possible, but they largely remain at the theoretical stage (Vaillancourt & Grin, 2000). For example, in certain contexts, moving from a unilingual to a bilingual school system means that pupils will be able to get education in a language that they understand well, instead of a language that they understand poorly. This has the following effects:

- a decline in the repetition rate (children taking the same class twice because of failing grades), which entails a reduction in costs;
- a decline in the dropout rate (children leaving the system because of failing grades), which entails an increase in costs;
- better results in terms of cognitive acquisition, entailing higher productivity and ultimately a more prosperous economy and higher tax revenue.

For lack of data, it is not possible, at this time, to estimate these effects. However, simulations can be carried out. They consistently suggest, even with conservative assumptions, that the benefits (lower costs and higher productivity) largely offset the costs of lower dropout rates *plus* the extra expenditure. In other words, the decision to move from a unilingual to a bilingual education system very probably pays for itself, even when non-market benefits are not brought into the calculation.

More generally, available evidence indicates that the costs of language policy, across policy domains, are quite modest. The cost of Québec's language policy over the 1974–1984 period, using minimum and maximum estimates and including not only direct expenditure but also the value of output loss, ranges from C$2.770m to C$4.785m. This is from 0.28% to 0.48% of provincial GDP, that is, less than half a percentage point (Vaillancourt, 1992: 212). As to the cost of Canada's federal policy of official bilingualism, an estimate by the Office of the Commissioner of Official Languages (1991: 23) stands at C$25.8 per resident per year.

This conclusion can only be a temporary one, since a considerable amount of theoretical and empirical work remains to be done in order to increase our knowledge of the costs of minority language promotion; even more work remains to evaluate benefits. Yet on the basis of available evidence, policies aiming at the protection and promotion of threatened languages appear to be well worth their cost.

Concluding Remarks

In this essay, I have attempted to provide a complete overview of economic approaches to language and language planning. Following the introduction and a discussion in the second section of the reasons that make the endeavour useful, I have examined some epistemological and methodological issues in the third section, 'Language: Too Much Alive for the Dismal Science?'. 'In The Economics of Language: History and Main Strands of Research', an extensive review of the literature has been presented. The fifth section, 'The Economics of Language Policy', has focused on the way in which language policy issues can be handled in economic perspective. 'An Application: Language Education Policy' has presented

in more detail one of the most important areas of study in language economics, namely, the returns on investment in language learning, and linked this up with language policy questions.

This panorama highlights the strengths and limitations of economics as an analytical vehicle to approach language matters. The strengths lie in economics' capacity to apply a robust analytical methodology to the questions at hand, stressing logical consistency and anchoring language processes (particularly at the 'status' rather than 'corpus' level) in well-structured theories of agency and public policy. These aspects, as well as economists' relative familiarity with problems of evaluation, make economics a very useful tool in language policy analysis. The limitations, largely derived from the methodology itself, have to do with the fact that many qualitative aspects, which are highly relevant to the study of language issues, are difficult to combine with the fundamentally quantitative orientation that underpins most economic analysis, in particular its chief tool, modelling. In other words, it is not easy to make the subject matter (namely, the reciprocal links between language and economics) amenable to economic analysis.

The general conclusion, therefore, should be a nuanced one: the economics of language can provide useful insights on certain language-related issues (in particular, it can shed light on processes that other analytical approaches would largely leave unexplored), but it certainly does not replace them. Clearly, there is *complementarity* between the contributions that various disciplines can make in the study of language processes, including those in which the latter influence, or are influenced by, economic processes.

The economic approach to language is also useful in that it helps us consider critically several hasty analogies. We have seen, for example, that the rhetoric of 'language as a treasure', just like its converse, 'linguistic diversity as a burden', generally do not hold up to closer scrutiny. The fallacy of the former analogy can be shown by recalling that when something is indeed a treasure, social actors usually know this, and do not need to be told. At the same time, it would be wrong to conclude that actors' apparent disregard for diversity, as reflected in non-diversity-maintaining patterns of behaviour, proves that diversity is not valuable in an economic sense. Given the 'public good' character of language, decentralised choices by social actors may fail to ensure the socially most desirable level of linguistic diversity. Moreover, language does not serve a simple communication function, and non-market values, even in an essentially orthodox economic analytical framework, must be taken into account.

The study of the links between language and economics is, at times, dangerously exposed to oversimplifications. Some seem reasonable enough at first sight, but closer examination reveals our ignorance of the specific processes at play. Consider for example the widespread notion that the fact that the United States (with all its economic weight), is English-speaking 'explains' the current dominance of English. Economic weight certainly plays a major role, but our understanding of the implied cause-and-effect relationships remains incomplete. Such relationships certainly bring into play a plurality of factors, which are also logically interconnected; and these interconnections are not, at this time, fully identified, let alone explained, whether by economists of language, sociolinguists, or other specialists. This is but one example, but it helps to illustrate the

need for a significant research effort to develop our understanding of issues about which Pool (1991a) once observed that people often hold 'extraordinarily stubborn beliefs'.

As noted in 'The Economics of Language: History and Main Strands of Research' section of this paper, as well as in other papers included in this issue, many topics deserve closer scrutiny. They range from the role of language in trade to the economic dimensions of translation and interpretation or the proper identification of network externalities. One of the most pressing issues, however, is that of the distributive impacts of language policies, which are only beginning to be explored (Durand, 2001; Pool, 1991c; Vaillancourt & Grin, 2000; Van Parijs, 2001). Yet it is one with growing political relevance – to wit, discontent over the treatment of different languages in multilingual structures such as the European Union.[55]

Generally, there is a rising need for economic expertise in policy evaluation, whether on the plane of allocative or on that of distributive issues, as evidenced, for example, by requests from international organisations and governments. This raises the question of whether academic institutions provide the context within which this necessary research can be developed. On this count, there are a few promising signs, marginal as they may be. For example, the economics profession is beginning to notice the relevance of language matters as an object of study. This is evidenced by the recent publication of a reader in language economics, in a series devoted to emerging areas of economics (Lamberton, 2002). More importantly, the intellectual climate is progressively becoming more favourable to taking interdisciplinarity seriously, also (modestly) in economics departments.

We can therefore close this paper on a note of cautious optimism. There is socially useful and intellectually challenging work to be done, and the framework conditions for embarking on further work on the manifold links between economic and linguistic processes are progressively improving. It is important, however, not to lose sight of one absolute necessity of the endeavour: its spirit must remain truly interdisciplinary, and strive for the combination of tools, concepts and methods from a broad range of disciplines.

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Notes

1. The first version of this text was written in early 2001, and the author expresses thanks to François Vaillancourt, Jean-Jacques Ducret and Monica Heller for helpful suggestions and comments. This revised version (2003) has also benefited from the papers written in the meantime by Bruthiaux and Ozolins, which offer comment on the original version and are included in this issue of *CILP*. The usual disclaimer applies.
2. The Commonwealth of Independent States comprises the former Soviet Union minus the three Baltic Republics.
3. The adjective 'classical' is used, by and large, for most economists from the time of Adam Smith (whose *Wealth of Nations* was published in 1776) to the time of Léon Walras, best known for his 'Principes d'économie politique' published in 1874. This

includes Marx, who is generally regarded as a non-mainstream classical economist. Walras's writings, which mark the 'marginalist revolution' and the overwhelming adoption of the 'utility theory of value', open the era of mainstream, also called 'neo-classical' economics. Modern mainstream economics remains steeped in neo-classical orthodoxy, but it has regularly been expanded to accommodate more complex aspects of human behaviour while retaining the core tenets of the theory, such as the notion that social actors act rationally in order to maximise their satisfaction. For an overview of the development of economic thought, the reader is referred to Blaug (1985), or more succinct treatments in Wolff (1993) or Simonnot (1998).

4. Interestingly, an on-line provider of free economic data calls itself 'the dismal scientist' (see http://www.dismal.com).
5. This assumption does not imply a wholesale rejection of alternative philosophical principles, in particular those that would inspire one to live a life of renunciation. However, economists consider this philosophy to be non-representative of the majority of humankind.
6. The term 'agency' is used here in its standard sociological meaning to refer to the behaviour of actors enjoying a certain degree of autonomy in their action. Interestingly, economists routinely use the term 'agent' where sociologists talk of 'actor'. However, in some specialist subfields of economic theory, the 'agent' acts on behalf of a 'principal', and his autonomy tends to be constrained as a result.
7. In later writings (e.g. Becker, 1981), Becker insisted that the relevance of economics is not limited to *human* choices, but that it applies to *any* type of choice. I shall not enter this debate, which is beyond the scope of this paper.
8. Assigning behavioural patterns to social 'norms', for example, may involve rather reductionist assumptions about the contents of these norms, the way in which they are perceived and possibly internalised by social actors, and the latters' reaction to these norms; ultimately, the analyst will end up not with a theory of agency, but with a collection of *ad hoc* accounts of behaviour for different specific cases.
9. This characterisation of economic modelling, which applies almost systematically in micro-economics, may be qualified in the case of macro-economics. For example, a national economy may be represented by a set of equations (which constitute the formal expression of *relationships* between *variables*), and this set of equations will be regarded as a model even if each of them represents an accounting identity rather than a causal link.
10. A particularly good example, in the field of language economics, is Lang's elegant analysis (1986) of the effect of communication costs on wage rate differentials between speakers of different languages.
11. For example, his reference (2000: 140) to an earlier finding (Lazear, 1999) that immigrants who live in 'ghettos with many others from their native land are much less likely to be fluent in English than those who live in communities in which they are a smaller minority' is, at best, unsurprising. Basic sociolinguistic research yields the same result, along with considerably more phenomenological substance.
12. For general introductions to the economics of language, see e.g. Grin (1994a, 1996a, 1996b, 1999a); Vaillancourt (1985a); Grin and Vaillancourt (1997).
13. The first paper that specifically focuses on this question, however, is an earlier one by Vaillancourt (1978).
14. Some commentators use, somewhat loosely, the term 'ethnicity' as a quasi-synonym for a person's linguistic 'belongingness'. In such cases, it is not clear if language is *ipso facto* seen as a proxy for ethnicity, or the other way around.
15. Statistical work typically resorts to multivariate analysis using ordinary least squares (OLS) regressions. The application of this instrument is discussed under 'An Application: Language Education Policy' in this paper.
16. See information on the *ELP* on the Council of Europe web site (http://culture2.coe.int/portfolio/).
17. I am referring here to *external* language dynamics, that is, the position of languages *vis-à-vis* each other, not to patterns of *internal* language change.
18. Unless, of course, the apple is cut up in smaller pieces; but then different consumers

will not get the apple, but a small part of it; furthermore, it is difficult to see how a language could be cut up into small bits, for different bits to be used by different people. The reader should note, however, that the network effect is *not* unambiguously positive; see the sub-section on 'A working definition of language policy' in this paper.

19. Alternatively, firms may be said to *buy* the *flow of services* from capital.
20. Although the ownership of capital, as a production factor, is much more concentrated than the ownership of labour, households remain, ultimately, the owners of capital.
21. However, this effect is strong in the case of English, noticeable in the case of German, and non-significant in the case of French (the same result holds for Spanish when the sample is broadened to include developing countries, a sufficient number of which are Spanish-speaking). There seems to be no clear interpretation of these findings, other than the obvious conclusion that it is not the *commonality of language per se* that matters, but other variables which *may* be correlated with language – or which may also, considering the relatively small number of countries considered, be purely idiosyncratic. Helliwell (1999: 16) also points out that in the specific case of Canada, language commonality through French does have a positive and significant impact on foreign trade patterns.
22. On the relative lack of attention to language matters in the advertising literature, see Holden (1987) or Grin (1995).
23. On the relevance of development as an area in which economics and language disciplines could fruitfully cooperate, see Bruthiaux (2000).
24. However, the question of economies of scale in the translation and distribution of books is currently being investigated by Mélitz (2000); the issue of the value of language services is addressed by Ozolins (this issue).
25. Often in the case of Quebec; see e.g. Breton (1964, 1978); Breton and Mieszkowski (1977); Vaillancourt (1978).
26. Some economists might object that Pool's work is less part of 'economics' than of 'rational choice', a field of specialisation in political science. However, this objection cannot be sustained, since the boundaries between 'rational choice' (particularly applications of it) and parts of 'public economics' are not very meaningful.
27. 'Aggregate' in that it sums up the public expenditure of local, regional and national authorities.
28. Recent work by Rubinstein (1999) is probably the first instance of the same issue to be taken up by an economist, and one of the very few economic contributions that can be seen as addressing language *corpus*. Rubinstein proposes a mathematical analysis of language seen as the product of an 'optimiser' developing a communication code.
29. Some commentators have noted that much of Rossi-Landi's earlier exposé can be found, in remarkably similar wording, in Bourdieu, without any credit being given by the latter to the former.
30. The importance of language skills may be a positive, but probably not a linear, function of the monetary value of exchange. While language plays a major part in negotiating a first deal between buyer and seller, renewals of a similar deal afterwards may require nothing but the most elementary foreign language skills. Furthermore, language is likely to have relatively greater importance when market exchange concerns goods and services whose abstract components are more important–and need to be formulated linguistically. Yet it is often scientifically perilous to venture generalisations about this type of goods. All this suggests that a much closer analysis of the language of various types of market exchange should be undertaken, from business deals between companies to retail trade on the internet.
31. For example, Singapore's 'Speak Mandarin' campaign which aimed at replacing southern Chinese dialects by Mandarin (Chee, 1990; Gopinathan & Pakir, 1994).
32. A collection of case studies recently edited by Mackey (2000) provides a good description of linguistic environments in multilingual urban settings, where these environments are jointly characterised by 'source factors' grounded in history, politics, demolinguistics, and reflected in indicators of language visibility, patterns of language use, etc.

33. In this perspective, the resistance of the Macedonian government (summer 2001) to granting co-official status to Albania illustrates its opinion that the nation's welfare is higher if Macedonian is its sole official language. Most Albanian-speaking citizens of Macedonia hold the opposite view. In policy analysis terms, it could be reformulated as a claim that aggregate welfare will be higher if both languages are official.
34. For example, one may have a personal policy, for ideological reasons, to deliberately go against convention and *not* to use certain dominant languages in certain contexts.
35. The conceptual distinction between 'politics' and 'policy' is not always clearly made, with the result that the literature pays much more attention to matters that should be considered part of 'political', not 'policy' analysis. On recent developments bridging language politics and language policy, see e.g. Ricento (2000). On the cultural embedding of language policies, see Schiffman (1996).
36. Third-sector organisations are not-for-profit and non-government suppliers of various kinds of services, and can include volunteering activities organised by civil society associations.
37. Readers will observe that the autonomy of actors operating on free markets is therefore viewed as a starting point and implicitly 'normal' state of affairs, and that state intervention *needs* to be justified because it consecrates a departure from it. A reverse stand could be adopted, rejecting the liberal position *from the outset*, in line for example with Marxian theory.
38. For a detailed treatment, see Cornes and Sandler (1996).
39. Many commentators would mention 'ethnic minorities' at this stage. For reasons explained in the concluding section, references to ethnicity are deliberately avoided in this paper.
40. At the time of writing, this debate is gaining momentum in Germany and is no longer confined to narrow academic circles, with public calls to protect the German language from anglicisims (see *Welt Am Sonntag*, 11 February 2001). France has adopted legislation on this some time ago (the well-known 'Loi Toubon' of 4 August 1994) which regulates language use in the public sphere (for regular updates on the debate in France, see http://www.langue-francaise.org). There is broad consensus among professionals to the effect that English is particularly likely to (adversely) affect linguistic environments, not so much through any kind of deleterious influence on major languages like German and French, but mainly because it displaces small languages, even in contexts where English is not, a priori, the most directly threatening language (*The Economist*, 6 June 1998, quoting the founder of the *Foundation for Endangered Languages*).
41. Danish, Dutch, English, Finnish, French, German, Greek, Italian, Portuguese, Spanish, and Swedish. This total is due to increase to 20 with the current round of EU enlargement.
42. Competitive markets require four conditions: 'atomicity' (meaning that there is such a high number of buyers *and* sellers that no buyer or seller can influence the price at which the good or service is traded); freedom of entry and exit (anyone can buy or sell on the market, which implies, in the case of high fixed production costs, that anyone will have access to enough capital to finance the necessary investment); transparency (buyers and sellers are in a position to know – or infer – other participants' willingness to buy or sell); and homogeneity (the good or service exchanged is fully defined, and each unit of a good or service, on its market, is identical with any other unit).
43. This interpretation is borne out by the observation that processes of language spread can usually be traced back to a typically *non-market* relationship between groups of actors, such as military conquest; this point is acknowledged even by authors most hostile to language policy intervention (e.g. Jones, 2000).
44. Although one might argue that if the *same* errors and omissions are made in the evaluation of *two* linguistic environments, these errors and omissions on both sides of the ledger will cancel each other out, making comparison paradoxically safer than isolated evaluation.
45. The economically minded reader will recognise the concepts of decreasing marginal utility (from consumption theory) and rising marginal cost (from production theory).

46. Of course, the benefit and cost curves do not *necessarily* behave as shown in Figure 2. Even under the assumption of rising marginal cost and decreasing marginal benefits, it is possible to map a case where d^* is zero or very close to zero; alternatively, very high estimates of benefits together with very low estimates of costs will generally push d^* ever further to the right. Such extreme representations, however, are much less plausible.
47. However, the results of majority voting cannot be interpreted as necessarily yielding the best solution in the sense of economic theory, as suggested by Arrow's 'impossibility theorem'.
48. Policy is not the work of 'a single rational and disinterested mind [who] analyses the situation, develops . . . optimal policy options, chooses between them, embodies parts of them in the law, embodies others in administrative mechanisms, and closes the cycle by monitoring results. [Rather,] the political function of policy analysis is to contribute to the continuous debate between coalitions . . . ' (Wimberley, 2000).
49. The costs that do *not* arise thanks to the adoption of a policy, instead of being computed as elements of the cost of the counterfactual, may be computed as benefits of the policy. The net value of the policy remains unchanged.
50. It is often difficult for this simple message to be heard, despite detailed explanation (also in this paper) and constant epistemological precautions; to wit, the disagreement by one author in this issue with my reference (in the section on 'The Economics of Language Policy' in this paper) to the Macedonian situation. My experience of various instances of ethnic or linguistic conflict (particularly over three years spent at the European Centre for Minority Issues) suggests that the assessment of this type of conflict situation can benefit from a conceptual recasting of the issue, including in policy analysis terms. Such conceptual recasting, however, is merely an instrument to help us think about the issue in a fresh way, not a ready-made recipe.
51. Technically, this estimation procedure yields results in *log* points; these have, however, been converted to *percentage* points in Table 2 for easier interpretation.
52. These figures do not include hours of second language instruction at primary level (usually in grades 4 to 6), since instruction starts afresh at secondary school (which usually means grade 7), without formally banking on skills that learners have presumably had the opportunity to acquire in the preceding years.
53. Each figure is based on a combination of two rates of return estimated with two different earnings equations (one for men who 'know' and one for men who 'don't know' the foreign language considered, taking as a cut-off point knowledge at the 'fluent' or 'good' level on the one hand, at the 'basic' or 'nil' level on the other hand). The rates reported in Table 3 are based on coefficients that are all significant at the 99% level.
54. Given an average expenditure in Spain of €2800 per pupil per year, the extra cost of having a bilingual education system can be estimated at approximately 4.75%.
55. A written question by European MP B. Staes (10 January 2001) raises the question of linguistic discrimination in European institutions following a spate of job advertisements looking for native speakers of English (http://europa.eu.int/eur-lex/pri/en/oj/dat/2001/ce174/ce17420010619en02330233.pdf).

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