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# An Economics Approach to Language Policy and Linguistic Justice

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# An Economics Approach to Language Policy and Linguistic Justice

## Abstract

The essay gives an overview of how language planning and language policy can be motivated and analyzed by economic methods. It is discussed what type of value language-related goods possess and what type of goods they are. Properties like degrees of rivalry, exclusion, and shielding and how they can justify language planning are treated. A cost-benefit approach to language planning is suggested and critically discussed. Especially the structure of costs and its significance for the cost-benefit analysis is scrutinized. It is shown that the cost structure has some clear implications for practical language planning. Finally, the focus is directed towards distributional issues related to language policy.

JEL-Codes: D610.

Keywords: language planning, language policy, cost-benefit analysis.

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## 1 SETTING THE STAGE: WHY WE NEED MORE ECONOMICS IN LANGUAGE POLICY AND PLANNING

The goal of this introductory chapter is to present and thoroughly discuss some fundamental concepts used in economics and policy analysis, and to clarify how such concepts can enrich research on language policy and planning (LPP), both from a positive and a normative perspective. Particular importance is given to issues dealing with the distributive implications of language policies (sometimes subsumed under the label “linguistic justice”), in addition to efficiency issues. The use of terms such as “economic rationality”, “resource allocation”, “economic value of languages”, “benefits of language policies”, “public good”, and “network externality” is not entirely new in language policy and planning.<sup>1</sup>

These terms still tend to be used mostly by economists involved in LPP research, although the chapters of this book show that also different contributions based on the philosophical and sociolinguistic tradition employ and apply economic concepts and theories to language-policy issues. These notions have enriched the set of conceptual tools at our disposal that are relevant for the study of language policies. In addition, the interdisciplinary dialogue among social scientists and applied linguists has unveiled various weaknesses of economic metaphors and analogies sometimes used in sociolinguistics, such as “language as currency”, or misleading juxtapositions such as “language planning versus linguistic free market”, and “linguistic protectionism versus linguistic *laissez-faire*”.<sup>2</sup> In some quarters of sociolinguistics that follow the analytical approach to language issues developed by ROSSI-LANDI (1968) and BOURDIEU (1982), the terms “linguistic market”, “commodity”, and “linguistic exchange” are sometimes used. Nevertheless, as Grin notes:

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 [*sic*][endnote omitted], and does not amount to ‘economics of language’. (GRIN, 2003, p. 27, italics in the original)

In spite of the occasional use of concepts imported from economics, what has not been widely discussed so far is the implications of using these concepts and economic theory in general for research on language planning and linguistic justice, the underlying theme of this book. This is not simply an academic exercise of interdisciplinary research. This book starts from the observation that the employment of concepts and analytic tools from economics and policy analysis in the study of language policy and planning has become not only desirable but perhaps also unavoidable for at least three interrelated reasons.

First, a certain level of involvement of the State in the linguistic environment is necessary. As De Schutter, among others, notes:

<sup>1</sup> For an overview, see VAILLANCOURT (1983) and GRIN (2003).

<sup>2</sup> For example, the analogy between currency and language is employed by CALVET (2002), the notion of “linguistic market”, among others, by EHLICH (2007) and INOUE (2007), and the term “linguistic protectionism” by SCHULZKE (2014). For a critical discussion of these metaphors from an economics point of view, see, among others, GRIN (2005a) and GAZZOLA (2014b).

[I]n making policies on, among other things, education or simply courtroom practices, states unavoidably have to make linguistic decisions: fully a-linguistic state policies simply do not exist. The correct opposition is therefore not one between linguistic freedom and linguistic regulation but rather between different forms of linguistic regulation. In other words, there is no zero-option in the field of language policy. We cannot not intervene. (DE SCHUTTER, 2007, p. 17)

In other words, a situation of pure linguistic *laisser-faire* does not (and cannot) exist in practice. In addition, even if linguistic *laisser-faire* existed, its outcomes would not necessarily be better than those resulting from language planning. As Crystal notes,

Many linguists have held the view that language change is a natural, spontaneous phenomenon, the result of underlying social and/or linguistic forces that it is impossible or undesirable to tamper with. We should ‘leave our language alone’ [...]. However, language planning studies have shown that is quite possible for social groups to alter the course of a language, and that the question of desirability is a highly controversial one. It is still unclear how far languages can be permanently influenced by social manipulation, but there is now strong evidence that such factors must be taken seriously when considering historical linguistic matters. (CRYSTAL, 2010, p. 366)

The “question of desirability” to which Crystal refers, can be addressed also from the point of view of economic theory. The fact that some language-related goods, such as bilingual road signs and information contained in official documents and institutional websites of an organization in different languages, have the typical properties of collective goods, would in general justify state intervention in the linguistic environment both for efficiency reasons (this question is thoroughly discussed below) and out of equity concerns. In other words, some degree of intervention of the State in the linguistic environment is not only unavoidable for the reasons already explained, but in many circumstances also desirable for both efficiency and equity reasons. Insights from economics, however, have not been widely used for the study of the normative, especially distributive, aspects of language policies. Further, language spread and language decline are often associated with the typical problem of free-riding arising from the presence of positive or negative externalities; this raises interesting and important normative (efficiency as well as equity) concerns that might require state interventions in order to be properly addressed.<sup>3</sup>

Second, economic arguments may have a value in the normative debate and discourse on language-policy choices. In many circumstances, policy makers employ economic arguments to justify their language-policy choices and/or recommendations. A good example is provided by the working document *Language competences for employability, mobility and growth* published by the European Commission in 2012. It is well-known that the EU recommends its Member States to teach two foreign languages in addition to the mother tongue or first language of the children beginning in early childhood education (this is known as the “Mother Tongue + 2” formula). In the aforementioned document, the Commission writes:

Europe’s vision for 2020 is to become a smart, sustainable and inclusive economy. Therefore, improving the outcomes of education and training and investing

<sup>3</sup> See, for example, VAN PARIJS (2003), ROBICHAUD (2011) and ROBICHAUD (2017).

in skills in general – and *language skills in particular* – are important prerequisites to achieve the EU goal of increasing growth, creating jobs, promoting employability and increasing competitiveness. The ambition is to achieve better functioning of EU labour markets, to provide the right skills for the right jobs and to improve the quality of work and working conditions. In this context, foreign language proficiency is one of the *main determinants* of learning and professional mobility, as well as of domestic and international *employability*. Poor language skills thus constitute a *major obstacle* to free movement of workers and to the international *competitiveness* of EU enterprises. [...] it is clear, however, that the benefits of improved language learning go well beyond the immediate economic advantages, encompassing a range of cultural, cognitive, social, civic, academic and security aspects. (EUROPEAN COMMISSION, 2012, p. 4, italics added)

Another example is provided by a “Position Statement” of the British Academy titled *Language matters more and more*:

Languages for *competitiveness, trade and emerging markets*: the UK’s social and economic future relies on our ability to *compete on the international stage*. It is not coincidental that within months of entering office the coalition government has organised very large and high profile teams led by the Prime Minister to visit India and China. Within the European context too, our neighbours are important trading partners yet we are rapidly becoming a nation of monolinguals. With an increasing number of companies having international dealings, *mobility* and *language skills* are being viewed as vital by employers. The proficiency that graduates with language and international experience bring goes beyond just the acquisition of a single language, demonstrating in addition initiative, motivation, independence and an ability to engage with those who have different backgrounds and experience. (BRITISH ACADEMY, 2011, p. 5, italics added)

Knowledge of quintessentially economic concepts such as “competitiveness” and “employability”, therefore, are necessary to properly understand and interpret discourses on language policy like those just presented, and even more importantly, to critically analyze them in the light of theoretical and empirical results available in language economics. For example, is it true that foreign language proficiency is one of the *main determinants* of learning in general and professional mobility? If so, in comparison to what other determinants? Do poor language skills actually constitute a *major obstacle* to free movement of workers and to the international competitiveness of EU enterprises? If yes, to what extent?<sup>4</sup> Do language skills really have an impact on employability? If yes, is this impact significant? What differences can be observed among countries in this respect? Theoretical and empirical research in language economics aims at addressing such questions.<sup>5</sup>

Third, “the fundamentally economic approach enshrined in policy analysis is relevant to decision-making in LPP just as it is in other public policies in areas such as health, transportation, or the environment” (GRIN, 2016, p. 37). Just like any other public policy, language policies

<sup>4</sup> Cf. BURCKHARDT (2018).

<sup>5</sup> Academic literature in language economics currently includes some 500 titles. A recent bibliography is provided by GAZZOLA, GRIN, and WICKSTRÖM (2016).

must be designed, implemented, managed, and finally evaluated. The design and the execution of any policy necessarily involves the investment of human, financial and material resources that must be measured or estimated; the implementation of any policy may (or may not) entail effects and tangible results that have to be evaluated and quantified. Surprisingly, the literature on LPP has been mostly silent on this topic. Although the need for evaluation in LPP was already clear at the time of the origins of the field in the 1970s<sup>6</sup>, little attention (if any) has been paid to the evaluation of language policies in most LPP handbooks, no matter to which national tradition they belong.<sup>7</sup> This does not mean, of course, that no evaluation of language policies has been carried out in the last decades.<sup>8</sup> Nevertheless, theories and methods from economics and policy analysis are still not common among LPP scholars and practitioners. As Johnson notes,

a lot of language policy analysis is, essentially, discourse analysis since it involves looking at various texts (both spoken and written) and analyzing policy discourse that are instantiated within or engendered by policy texts. As well, language policy processes are essentially discursive – generated, sustained, and manipulated in spoken interaction and policy documents that, in turn, interact with each other – and may appropriate, resist, and/or possibly change dominant and alternative discourses about language and language policy. (JOHNSON, 2013, p. 152)<sup>9</sup>

Yet, this is not likely to be enough. There is an increasing need for expertise in the area of the evaluation of the allocative and distributive effects of language policies,<sup>10</sup> their benefits and their costs. In the last decade, new international networks of language policy makers and practitioners have been established. In 2013, for example, the *International Association of Language Commissioners* was founded in order to facilitate the international exchange of experiences and models of policy interventions in officially multilingual countries such as Canada, Switzerland, and Finland. One of the central concerns of language commissioners is to make sure that multilingualism at the administrative level be respected in order for citizens to feel included, and that language policies be effectively enforced. In 2009, the *European Network for the Promotion of Linguistic Diversity* was established. This network consists of language policy agencies and bodies at the regional level (e.g. the Catalan Government, or the Regional Agency for the Friulian language), and it aims, among other things, at promoting the exchange of practices and policy models regarding the support for minority languages. Language policy agencies and decision makers involved in such networks seek to improve the understanding of

<sup>6</sup> The papers of THORBURN (1971) and B. H. JERNUDD (1971) are illuminating examples. For a brief history of LPP, see B. JERNUDD and NEKVAPIL (2012).

<sup>7</sup> E.g. BEACCO (2016), CALVET (1996), DELL'AQUILA and IANNACCARO (2004), SPOLSKY (2004), SPOLSKY (2012), JOHNSON (2013), MARTEN (2016), or TOLLEFSON and PÉREZ-MILANS (2017). The books edited by RICENTO (2006a) and by HULT and JOHNSON (2015) are partial exceptions.

<sup>8</sup> See GAZZOLA and GRIN (2017) for an overview.

<sup>9</sup> The literature in discourse analysis is vast and cannot be summarized here. For an introduction, see, among others, GEE and HANDFORD (2012).

<sup>10</sup> The term allocation refers to how goods are used in individual consumption and in the production of individual firms. The goal of efficient allocation basically means that no resources are wasted; they are on the margin employed where they provide the highest benefits. This is independent of who is reaping the benefits. Distribution, on the other hand, is concerned with who benefits from economic activities in comparison to other individuals. We return to this distinction in section 1.1 where the concept of allocative efficiency is discussed in some detail. Distributive issues are discussed in section 6.



multilingual language policies from a practical point of view, and to explore new strategies to evaluate the effectiveness and the fairness of policies promoting and protecting language rights. In other words, the central question is how to get things done, at what cost and for which group of people. Consider that provisions concerning languages are contained in the Constitutions of 125 of some 200 sovereign states in the world (MARTEN, 2016, p. 76), and therefore the potential need for evaluation is very large.

The dominant research methods in LPP satisfy this need only to a certain extent. As Ricento appropriately notes,

what has not been much discussed is the practice of language planning, that is, the development, implementation, and evaluation of specific language policies. To be sure, this is an understudied facet of LPP research, a legacy no doubt of the focus on theory from earliest days of the field [...]. Another reason for the lack of attention to the mechanisms of language planning is that most sociolinguists and applied linguists have little or no training in the policy sciences. (RICENTO, 2006b, p. 18)

Hence, perhaps more attention should be paid to inputs from the social sciences, policy analysis, and economics in particular. Ultimately,

in order to advocate specific policies or policy direction, scholars need to demonstrate *empirically* – as well as conceptually – the societal benefits, costs, of such policies. (RICENTO, 2006b, p. 11, italics in the original)

Although this book aims at giving attention to the importance of an approach to language policy among researchers and practitioners based on economics, we are, of course, aware of the decades-long tradition of reasoning, centered in the field of political philosophy, about the rôle of language in a democratic society and the significance of cultural diversity for the liberal state.<sup>11</sup> An influential political-science orientation within this normative tradition has been the defense of a theory of language rights within a liberal multicultural framework.<sup>12</sup>

It has been argued, however, that these approaches from political and social sciences rely too heavily on a vision of languages as discrete and geographically defined ignoring important everyday facts in today's globalized world about the ways in which languages co-exist and influence one another.<sup>13</sup> In response, a variety of theorists have been attempting to develop a more inclusive concept or framework of linguistic justice, as a way of capturing the notion of an overall social good related to the political economy of language in a given society.<sup>14</sup> Especially

<sup>11</sup> See, for instance, KYMLICKA (1995), KYMLICKA and PATTEN (2003), VAN PARIJS (2011), RICENTO, PELED, and IVES (2015), or DE SCHUTTER and ROBICHAUD (2016).

<sup>12</sup> KYMLICKA (1995) and PATTEN (2009) reflect this tradition very well. PATTEN (2009), for instance, lists five basic approaches. First, *toleration* basically implies that prohibitions on language use are absent; individuals in their private lives can use whatever language they desire. Second, *accommodation* is a minimal right; an individual should in certain situations receive assistance, if he/she is severely disadvantaged because of language. Third, *context of choice* signifies that the individual should be able to live a “full” life in his or her “own” culture. Fourth, the *end-state argument* attributes an intrinsic value to linguistic diversity, drawing parallels to biological diversity. Fifth, the *fairness argument* is used to argue for equality of opportunities of members of all groups; a minority should not be disadvantaged in comparison to a dominant majority. Our approach in this essay comes close to the fairness argument. See also PATTEN (2014).

<sup>13</sup> See DE SCHUTTER (2007), PELED (2010), RICENTO (2014), and SCHMIDT SR. (2014).

<sup>14</sup> See DE SCHUTTER (2007), MOWBRAY (2012), PELED (2010), and VAN PARIJS (2011).

research in the area of sociolinguistics illustrates linguistic diversity on the ground, analyzes real-life linguistic practices as well as discourses, etc.<sup>15</sup> This also applies to several chapters in this book, especially in part IV. Without rejecting such efforts, we see a need to connect language policy more closely with the evaluation and comparison of its actual effects in today's world. To this end, the fiction of languages being discrete phenomena and groups of speakers being located in defined regions is both a sensible and a fruitful abstraction, which allows us to develop implementable models analyzing and guiding language policy and planning.

In doing so, we claim that applied public economics provides us with very useful tools for the analysis of language policy and language planning. In the literature on language policy, as we noted above, concepts from economics such as “public” – or “collective” – good, “external effects”, “*laissez-faire*”, “efficiency”, “invisible hand”, “language market”, and many more are employed by various authors, often without clear definitions and at times in a contradictory manner. We first of all see a need to clarify and systematize the use of these and similar concepts with respect to language, language use, language policy, and the evaluation thereof.

We will argue that spontaneous interactions, *laissez-faire*, rarely lead to efficient results and an involvement of the public sector is required to improve situations of classic market failure, this holding true in general and especially in language-related issues. We will note that the benefit side of language policies is difficult to estimate, in many cases necessitating a cost-effectiveness analysis. The benefits will then be replaced by policy goals fixed by a planner. The goals of the planner will in general be politically determined and reflect the political situation in society. We will also claim that the cost side has not been given sufficient attention in the literature and argue that a sensible language policy has to take costs into account to a much higher degree than until now. We show that a normalization to per-person costs of different planning measures allows us to categorize language-planning measures into a small number of categories based on the cost structures and that practical decision criteria for language policy can be reduced to a relatively small number of decision rules for the different kinds of cost categories. This allows for flexibility in the policy leading to a higher level of welfare. Finally, we point to the necessity of introducing distributional issues into the analysis. The focus in this essay is, hence, on conceptual tools which form a solid background for empirical and applied evaluation of language policy.

## 1.1 ECONOMIC CONCEPTS AND LANGUAGE POLICY

In the tradition of Western liberalism, any public or collective interference in the spontaneous order of individual life needs a justification, be it a correction of a “market failure”<sup>16</sup>, a desire to make society more “fair” based on some system of individual or collective ethics, or simply “we-know-better” paternalism. As a consequence, the *raison d'être* for government intervention from the point of view of economics is generally to be found in a desire to improve distributional “justice” (affecting the distribution of resources or access to resources, such as equal opportuni-

<sup>15</sup> Two representative collections of papers in this area are SKUTNABB-KANGAS, PHILLIPSON, MOHANTY, and PANDA (2009) as well as MAY and HORNBERGER (2008).

<sup>16</sup> That is, a situation where the spontaneous interaction in the market leads to undesirable consequences. Common examples are environmental problems or monopolistic structures. The various concepts used will be explained in detail, as we go along.

ties) and/or allocative “efficiency” (such as correcting market failures) in a society.<sup>17</sup>

Many aspects of language policy, as we noted above, can be seen as a form of public policy,<sup>18</sup> and – when selecting policies – it is necessary to compare the advantages and the drawbacks of different alternatives with respect to stated goal (or “welfare”).<sup>19</sup> Public economics provides relevant frameworks to guide such choices.<sup>20</sup> Concepts such as efficiency and fairness are central in this respect. The analytical tool that suggests itself, is cost-benefit (or cost-effectiveness) analysis. This requires us to define a benefit, “demand”, and a cost, “supply”, side for the analysis of language policy. In the literature the analysis of the demand side – the benefits of language policy –, including distributional aspects, is well developed.<sup>21</sup> The supply side – the costs of language policy –, on the other hand, is often neglected.<sup>22</sup>

Allocative efficiency has a very clear definition in the concept of Pareto efficiency, which is closely related to unanimity and the so called equivalence principle of taxation. It simply states that an allocation is efficient if all other theoretically possible allocations in the economy would make the situation of at least one individual worse. That is, one cannot find an alternative allocation that would not be blocked by a popular vote if unanimity is required.<sup>23</sup> Pareto efficiency, hence, describes a given situation of society.

Clearly, in general there is no unique efficient allocation, and one would have to choose among several ones.<sup>24</sup> Here various concepts of distributive justice enter. The choice between possible efficient allocations can be made in a manner to minimize inequality (in some well-defined sense).<sup>25</sup> However, the distribution problem is more complex. It might well be that equitable allocations are inefficient and that all feasible efficient allocations are rather inequitable and unacceptable to the policy maker.<sup>26</sup> Then the question arises, should one accept non-equitable efficient allocations or more equitable, but inefficient ones? That is, the choice can involve a trade-off between efficiency and equity.

The problem facing a policy maker, however, is to find out if a change is beneficial for

<sup>17</sup> The separation of the normative analysis of distribution (fairness or justice) and of allocation (efficiency) generally goes back to the work of Richard Musgrave, see MUSGRAVE (1956/1957).

<sup>18</sup> This includes actions taken by any public authority in order to influence the functioning of society with the goal of increasing efficiency or improving justice, for instance by providing equal opportunities in the access to various functions of society to people speaking different languages.

<sup>19</sup> It is important to understand that optimality or maximization only makes sense with respect to well-defined goals. The definition of the goals is basically a political issue outside the realm of rational analysis. The analysis can only try to find and compare the ways leading towards the given goal.

<sup>20</sup> There are numerous introductory texts giving an overview of the field. HINDRIKS and MYLES (2006) is a good example, theoretically stringent without losing the contact to empirical reality.

<sup>21</sup> See, for instance, GAZZOLA (2014b), GAZZOLA and GRIN (2017), GRIN (2003), or WICKSTRÖM (2016b).

<sup>22</sup> For a notable exception, see the work of François Vaillancourt and coauthors, for instance, VAILLANCOURT (1997), DESGAGNÉ and VAILLANCOURT (2016), or VAILLANCOURT (2018).

<sup>23</sup> Generally, it is assumed that people only care about their own well-being and ignore inter-dependencies such as altruism and envy. Conceptually, there is no problem introducing such elements into the preferences. However, this might make an efficiency analysis very opaque and render it useless. A more fruitful approach might be to introduce distributional issues exogenously, see below.

<sup>24</sup> Consider the trivial example of two cookie monsters dividing a cake. All divisions of the cake giving a bigger piece to one monster when the other one receives less is (Pareto) efficient.

<sup>25</sup> In our cake example, we could choose an equal division of the cake between the two cake-eaters.

<sup>26</sup> A drastic example can be found in the Talmud, see HILLMAN (2009): two men are in the desert far away from a water source and have only enough water for one of them reaching the source. There are three possible outcomes; one equitable one: both die, and two efficient ones: only one of them dies.

society or not. We are interested in whether a certain policy leads to a Pareto improvement or not. A Pareto improvement simply means that everyone in society would at least not be in a worse situation than before and at least some individual would be in a better situation (in their own evaluation of their situation). It is obvious that in practice hardly any policy would lead to a Pareto improvement; there are always losers.

This problem becomes more realistic if we abandon Pareto efficiency strictly defined for potential Pareto efficiency, comparing aggregated benefits with aggregated costs (in some well-defined fashion) of a policy measure. The idea is that winners would in principle be able to compensate losers and still be better off than before the introduction of the measure.<sup>27</sup> This is the basis for cost-benefit analysis. In cost-benefit analysis, comparing the sum of all individual propensities to pay<sup>28</sup> for a given policy with its implementation costs, the policy is called a (potential) efficiency gain if the sum of the propensities to pay – the total benefits – exceeds the costs.<sup>29</sup>

In reality, transfer payments converting a potential Pareto improvement into a real Pareto improvement are not practically feasible and we again have a trade-off between efficiency and equity. On the one hand, we have the difference between aggregated benefits and aggregated costs (potential Pareto efficiency) and, on the other hand, the distribution of the differences between individual benefits and individual costs (fairness or justice). In a complete analysis of a policy measure we would have to consider both aspects.<sup>30</sup> This can be done, however, incorporating distributional arguments into the cost-benefit analysis by introducing an additional benefit term reflecting the degree of equity (or justice) of the allocation resulting from the public policy. The relative importance of the two terms reflect the preferences of the policy maker for efficiency *versus* equity.

In order to apply the economic concepts to the analysis of language policy, we first have to know what type of goods results from the policy and how this affects the individuals in society. In the following, we will first look at what type of good language is, or, more specifically, how

<sup>27</sup> The concepts, known as the Kaldor-Hicks criteria, go back to KALDOR (1939) and HICKS (1939). See also NG (2004).

<sup>28</sup> Basically, what the policy is worth to the individual. The concept and its drawbacks are further discussed in some detail in section 4.

<sup>29</sup> The underlying idea is that if transfers of resources between individuals were freely feasible, one should ask the question whether the gain of the winners due to some policy measure is high enough for the winners to fully compensate the losers and still have a net gain. If the policy issue changes the utility distribution (expressed in money terms and net of costs for the policy measure) between two individuals from (5, 4) to (7, 3), the two individuals would not agree upon which is the better one; both are Pareto efficient. However, if income transfers were possible, the first individual could transfer 1.5 money units to the second person if the policy is enacted. This would lead to the income distribution (5.5, 4.5) which is Pareto superior to (5, 4). Hence the policy measure leads to a potential Pareto improvement. In a cost-benefit analysis, one would simply compare the sums  $5 + 4 = 9$  and  $7 + 3 = 10$  and conclude that the aggregated net benefits increase due to the policy.

<sup>30</sup> This is a standard problem in economic policy analysis. See, for instance, the theory of optimal taxation. Applied to our cake example from footnote 24, if the original distribution of the cake is very unequal, and the monster on the losing side has to struggle harder and harder, *i.e.* using up more and more of his slice of cake, in order to introduce a policy measure forcing the monster with the bigger slice to transfer some more cake to him, part of the cake is lost in the process of dividing it more equally – its size decreases with increasingly just distributions. Is it better for the monster on the losing side to have a small slice of a big cake or a big slice of a small cake, and should we only consider the size of the slice of the losing monster, or also the size of the slice of the stronger monster in making an evaluation?

language, language use, and language rights can be incorporated into an economic analysis.<sup>31</sup> Then, we will relate this to the concepts of “linguistic repertoire” and “linguistic environment”. From this we can discuss language policy and language rights as (partial) determinants of these concepts, considering both the benefit and cost sides of the policy. Finally, we will ask how to evaluate the distributional consequences of language policy, attempting possible definitions of linguistic justice in this framework. First, however, we will illustrate the efficiency-equity trade-off with an example.

## 1.2 AN ILLUSTRATIVE EXAMPLE

That language policy can lead to very different outcomes, both in relation to efficiency and distribution, can be seen in the following stylized example with a linguistic majority and a linguistic minority in a given society. Efficiency is defined in section 1.1 as the realization of potential Pareto improvements and distributional fairness is here seen as equal treatment of a member of the majority and of the minority. Reducing the problem to one of communication in the bilingual society, language policy can lead to several communicative outcomes in society. We characterize and analyze several stylized situations.<sup>32</sup>

- If without policy intervention<sup>33</sup>
  - the members of the majority do not learn the language of the minority
    - \* and the members of the minority also do not learn the idiom of the majority, communication will only take place within the two separate sub-communities. **(I)**
    - \* and all members of the minority learn the majority language, an individual of the majority can communicate with all individuals in his or her own language, whereas a person from the minority can communicate with other minority members in her or his own language and with a member of the majority only in the majority language. **(II)**
- With policy intervention
  - forcing the teaching of both languages on all individuals, everyone will be enabled to use his or her own language actively and the other one actively or passively. **(III)**
  - forcing the teaching of the majority language to all individuals of the minority, an individual of the majority can communicate with all individuals in his or her own language, whereas a person from the minority can communicate with other minority members in her or his own language and with a member of the majority only in the majority language. **(IIa)**
  - forcing a *lingua franca* that is neither the majority nor minority language on both communities, communication would be enabled between individuals of the two groups in the *lingua franca*. **(IV)**

<sup>31</sup> This has, of course, been done by a number of authors. See the bibliography by GAZZOLA, GRIN, and WICKSTRÖM (2016) for references.

<sup>32</sup> We are only considering a few of all logically possible situations.

<sup>33</sup> No policy intervention means that the school system is totally privatized and each set of parents freely chooses how to educate their own offspring.

There are four possible stable short-term<sup>34</sup> outcomes in this example; which of them will be realized depends both on individual choice (which can depend on an individual cost-benefit calculation) and on public policy.<sup>35</sup> In modeling individual choice we assume that there are some learning costs of the non-native language and that the benefits are given by the number of potential interlocutors. In our for the sake of argument rather stylized world with rational decision-makers, the parents in each family weigh the learning costs against the perceived communicative benefits in deciding on whether the children are to learn the other language or not.

We can analyze the different outcomes from the point of view of fairness (or justice) as well as efficiency. Situation **I** could, depending on learning costs, be either efficient or inefficient because of the network-externality property of language learning. That is, since a member of the minority neglects the value to the members of the majority of being able to communicate with him or her after he or she learns the majority language, the minority individual creates benefits for the members of the majority that are not taken into account when the learning decision is being made.<sup>36</sup> If the learning costs are lower than the benefits to the majority speakers, the latter could in principle successfully bribe the members of the minority to learn the majority language. Without the bribe the members of the minority acting in their self-interest would not learn the majority language and the potential Pareto improvement would not be realized. The situation is inefficient. If, on the other hand, the learning costs exceed the benefits to the majority population of the minority members learning the majority language, their not learning it is efficient. Situation **I** is unfair in the sense that a member of the minority has fewer possible interlocutors than a member of the majority.

Situation **II** is efficient from the communication viewpoint but unfair since a minority member has to communicate with a majority member in the language of the latter, whereas a majority individual can communicate with everyone in his or her own language; a disadvantage for the minority individual. In addition, the minority speakers have learning costs that the majority speakers do not have. Situation **IIa** is unfair because of the asymmetric communication situation, even if the learning costs are equally distributed in society (the members of the majority paying part of the learning costs of the minority). It would be inefficient if **I** or **IV** is efficient and efficient if **I** and **IV** are inefficient. In the latter case, the policy intervention would increase efficiency.

Situation **III** is fair (assuming that learning costs are equally distributed), but inefficient since resources could be saved by implementing situation **IIa**.<sup>37</sup> Situation **IV** is fair (neglecting the fact that majority speakers can communicate in their own language with more people than minority speakers since there are more majority speakers than minority speakers), but could be inefficient, depending on learning costs, in which case situation **IIa** is efficient. If it is efficient, the public intervention would be efficiency increasing.

<sup>34</sup> The dynamics, involving language shift, is not being considered. For a short discussion of language dynamics, see section 4.3.

<sup>35</sup> Compare the situation involving traffic congestion in a city with some people owning cars and others only bicycles. In *laissez-faire* the cars might dominate and bicyclists will suffer many accidents. A government policy taxing driving and constructing bicycle paths, will lead to a totally different transport equilibrium.

<sup>36</sup> For a more detailed discussion of the concept of a network externality, see CHURCH and KING (1993) or DALMAZZONE (1999) as well as the discussion in section 3.2 below.

<sup>37</sup> The individuals in this example are only interested in communicating. However, if people gain extra utility from using their mother tongue in communication with others, and if this utility is high compared to learning costs, then **III** might be fair and efficient. See also CAMINAL and DI PAOLO (2018).

That is, the spontaneous order (language policy: “doing nothing”) could produce a result that is unfair and efficient (**II**, and under certain circumstances, **I**) as well as unfair and inefficient (**I** under certain conditions). Also interventionist policies can have similar results: **III** is fair and inefficient, **IV** is fair, but can be both efficient and inefficient depending on learning costs. **IIa** is unfair, and could be both efficient and inefficient.<sup>38</sup>

### 1.3 A VADE NOBISCUM THROUGH THIS CHAPTER

First, in section 2, we discuss how the values individuals attribute to language can be structured in an economic analysis. The concepts of human and social capital are used to explain value creation. Then, in section 3, we look at how this value is reflected in different types of language-related goods over which the individual has preferences. The different properties of goods, such as rivalry, exclusion, and shielding, lead to different outcomes of spontaneous interactions between individuals. We will show that these outcomes are not always desirable from the point of view of efficiency and/or fair distributions (however defined), and that the properties of the language-related goods are, as a consequence, important determinants of the need for public interventions in the spontaneous order and, hence, a *raison d'être* for language planning. It is then discussed how language planning measures can improve the efficiency of the economy, but also can have both desirable and undesirable distributional implications. For an evaluation of language policy, it is necessary to attach values both to the benefits and the costs of the policy. This is addressed in sections 4 and 5, respectively. While it is conceptually relatively easy to measure the costs, the value of the benefits often relies on indirect methods and lacks a solid foundation. How to evaluate the distributional effects of language planning measures is the topic of section 6. The analytic part of the chapter closes in section 7 with some general inferences for practical language policy that can be drawn from the economic framework.

## 2 THE ECONOMIC VALUE OF LANGUAGE

Language *per se* as a collection of utterances and rules describing how to combine those utterances as well as relating them to the real world, is not what directly benefits an individual.<sup>39</sup> One of the main – if not the main – benefits is the ability and possibility to function in society with the help of the language(s) one is able and likes to use, the tangible value. One might also see the language as a carrier of cultural values that one wants to be known and adopted by other individuals as well as by future generations. Some people also see languages as stores of knowledge about the possible varieties in and of human societies.

The communication function of language as a good is then the possibility or desire to use the language in different situations such as communicating with other now living individuals, with historical ones through existing historical sources, or future ones through media being presently created. In that way, one could say that language is an intermediate good or a tool that opens up various possibilities for those mastering the language, be it the ability to read Plato in the

<sup>38</sup> We stress that we have assumed that the costs in the intervention cases are covered over the general government budget, to which everyone contributes in a fashion that is independent of language use. If compensation payments were possible, the unfair allocations could be made fair(er) with the help of such compensations.

<sup>39</sup> Of course, one could look at language as a piece of art just like a beautiful painting, a mathematical theorem, or a poem and admire its structure *sui generis*. This seems, at least partially, to be one of the main motivations of the online “conlang” community.

original or the knowledge that our grandchildren will be able to appreciate the culture we are creating today. The “good” is then the access to Plato or the knowledge that the grandchildren will consume something we find valuable.

That is, the concept of economic value of language includes the immaterial and symbolic aspects of languages, and it is in no way limited to the productive value of language skills.

## 2.1 LANGUAGE, ABILITIES, HUMAN, AND SOCIAL CAPITAL

Economists talk about abilities and human-capital creation. Individuals are born with certain desirable attributes, like a beautiful voice, and acquire different skills, like using the voice in producing an aria. Knowledge of a certain language is such an acquired skill.<sup>40</sup> The skills, or abilities, form the human capital of the individuals.<sup>41</sup> That is, learning a language (or training the voice if you are a singer) is an investment in human capital, thereby developing the abilities (or capabilities) of the individual. We can distinguish between *potential* human capital – the beautiful voice or the ability to acquire a foreign language – and *realized* human capital – the trained voice or the knowledge of the foreign language. An individual’s (realized) human capital can then be seen as an input in two “production processes”: First, it is an important determinant of the formation and ranking of consumption possibilities; that is, the behavior (or preferences) of the individual – an “internal” production process. Second, it influences the individual’s skills in the production of goods and services in the market place – an “external” production process.

If I learn Spanish, I can read the poems of Federico García Lorca in the original and might be willing to pay a certain amount of money<sup>42</sup> for a book containing a collection of his poems; had I not learned Spanish, this amount would probably be lower: the ability to read and understand Spanish has an influence on my demand for books in Spanish (as well as for holiday trips to Buenos Aires and many other goods). The ability to speak Spanish, hence, influences my preferences and my demand in the market place. Knowing Spanish, however, also makes me more useful as an employee in a firm dealing with Guatemala, say. My knowledge of Spanish alters my supply of labor and its value in the market place.

The extent to which various goods can be consumed and have a value for an individual depends on his or her abilities to use different languages. We will talk about the “linguistic repertoire” of the individual. On the other hand, we also have the constraints facing the individual. If I invest in learning Volapük, thereby changing my human capital by adding this new ability, and as a consequence develop a taste for modern drama performed in Volapük, this is of little use to me if there are no theaters performing in Volapük in my city. This part of the constraints facing an individual that are directly related to language we call the “linguistic environment”. The linguistic environment is part of the social capital.<sup>43</sup> The ability to communicate

<sup>40</sup> The ability to learn a language is probably an attribute with which the individual is born. This is, however, controversially discussed among some linguists.

<sup>41</sup> The concept of human capital from knowing languages plays a very central rôle in BUZÁSI and FÖLDVÁRI (2018).

<sup>42</sup> Economists talk about the propensity – or willingness – to pay; see section 4.

<sup>43</sup> Social capital is made up of norms and trust between individuals, which can be fostered through interactions. Here, the connection to the linguistic environment is close. In a seminal article on the concept, James S. Coleman writes:

Social capital, however, comes about through changes in the relations among persons that facilitate action. If physical capital is wholly tangible, being embodied in observable material form, and



easily with other individuals certainly belongs to social capital, influencing not only physical production possibilities, but also trust and cohesion in society. The linguistic environment also has an influence on preferences for certain language-related goods. The fact that there are no theaters playing in Volapük (part of the linguistic environment) will decrease the demand for learning Volapük (the individual preferences).

Your linguistic repertoire will depend on your upbringing and on your own choices. But it will also strongly depend on public policy. The language learning taking place in schools is to a large extent determined by curricula fixed by government authorities – acquisition planning. Additionally, the linguistic environment is to a considerable degree determined by public authorities. Through acquisition planning not only your linguistic repertoire is influenced, but that of your potential interlocutors who are subjected to the same acquisition planning, as well. Changes in the distribution of language skills in society in turn can have an influence on the demand and supply of language-related goods. This, in turn, influences your linguistic environment. Also status planning, rules as to which language(s) has (have) to/can be used in different situations (such as in contact with public offices), strongly influences your linguistic environment.<sup>44</sup>

The actual consumption of goods related to language then depends both on your linguistic repertoire and on the linguistic environment. The first, as noted above, is a function of your upbringing, of public policy, and of your own conscious choice. The latter depends on the behavior of other individuals (which directly or indirectly might depend on public policy) as well as directly on public policy. That is, public policy has an effect both on the linguistic repertoires (the preferences and productive abilities) of the individuals, on the one side, and on the linguistic environment (the restrictions on individual behavior), on the other side. One can then define the linguistic “market place” as the interaction and possible outcomes in terms of language usage, *given a certain public policy*.

The formation of preferences, as we see it, is schematically illustrated in table 1, and the formation of productive abilities in table 2. The light rules in the tables indicate that what is above the rule influences what is below the rule. In table 1, for instance, human capital is part of the idiosyncratic influence on preferences, but not of the general, universal one, and both the idiosyncratic and universal influence determine (partially)<sup>45</sup> the individual preferences. We model individual behavior as being influenced by the conditions under which the individual is socialized into society – the social surroundings or social capital – as well as by the realized

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human capital is less tangible, being embodied in the skills and knowledge acquired by an individual, social capital is less tangible yet, for it exists in the *relation* among persons. Just as physical capital and human capital facilitate productive activity, social capital does as well. For example, a group within which there is extensive trustworthiness and extensive trust is able to accomplish much more than a comparable group without that trustworthiness and trust. (COLEMAN, 1988, p. S100-S101, italics in the original)

<sup>44</sup> Compare the situation in the EU labor market with its free movement of labor between the member states. The possibility of realizing this freedom depends to a large extent on the linguistic repertoire of the workers in different countries, see also BURCKHARDT (2018) or APARICIO-FENOLL and KUEHN (2016). One may speculate over the extent to which acquisition planning – the teaching of English in almost all European schools – contributed to Brexit: Due to the facts that English is spoken in the United Kingdom and that English is the best-known foreign language in other EU countries, the transaction costs for most workers, who want to take advantage of the free movement of labor are the lowest if they go to Britain. The considerable presence of workers from other EU countries in Great Britain was one of the main arguments for Brexit used by the Brexit proponents.

<sup>45</sup> We assume that a large part of individual preferences is determined by chance, just like many talents.

Preference formation	
linguistic repertoire → human capital	linguistic environment → social capital
idiosyncratic influence on preferences	universal influence on preferences
individual preferences	

Table 1. Determination of language related individual preferences

individual human capital. That is, we distinguish between socially determined formation of preferences and norms, on the one hand, which – although to a large extent being unexplained, individual, and different for different individuals, but not individually systematic – is influenced by the collective conditions in society, and the additional preference formation, on the other hand, which is the result of the acquired human capital of the individual. The collective factor, the social capital, is common to all individuals and the individual factor, the human capital, is specific to each person.<sup>46</sup>

On the productive side, we see a similar structure. The general production possibilities are, on the one hand, given by technological restrictions with the basis in the laws of physics, chemistry, biology etc. that are the same in the whole world, but, on the other hand, production possibilities are also – in addition to the physical and climatic surroundings – influenced by the social conditions in each specific society – the social capital. The individual productivity and individual skills are strongly influenced by the individual human capital.

We can hence conclude that the linguistic behavior of an individual, at least partially, is determined by his or her linguistic repertoire – operating through the individual's preferences – under the constraints laid down by the linguistic environment. The problem in the evaluation of a policy measure is then that the policy does not only change the linguistic environment, but could also change the linguistic repertoire – and, hence, the preferences – of the individual. In other words, not only the constraints on linguistic behavior, but also the individual's evaluation of the results of the given policy measure can be different before and after the realization of the policy. Since the individual evaluations – the propensities to pay – are given by the individual preferences and determine the benefit side of a cost-benefit analysis, the benefits and, hence, the result of the analysis can be radically different *ex ante* and *ex post*, making the cost-benefit analysis to a certain extent impotent. We will return to this in section 4.1 below.

The individual productivity illustrated in table 2 is seen in a similar fashion. Language skills are part of an individual's human capital and strongly influence individual production skills. However, the linguistic environment is important for the cohesion and general norms of society – its social capital. This, in turn, will influence how smoothly production processes function. Of course, social capital has no direct influence on the technological side of the production process which is given by the state of knowledge in physics, chemistry, biology, etc.<sup>47</sup> However, the “softer” side of the production process, how well people work together, can be strongly dependent on social capital in society, of which the linguistic environment is an important component. The resulting social production possibilities then determine individual productivity, given the individual skills.

<sup>46</sup> Compare the analysis in STIEGLER and BECKER (1977).

<sup>47</sup> It could, however, influence the rate of innovation, thereby altering the state of knowledge.

Productivity formation	
linguistic repertoire → human capital	linguistic environment → social capital
individual skills	production possibilities
individual productivity	

Table 2. Determination of language related individual productivity

## 2.2 A CLASSIFICATION OF THE ECONOMIC VALUE OF LANGUAGE

In addition to most people agreeing that learning languages is a worthwhile activity and that sharing a common language is useful for many practical reasons, most people also attach a positive value to the existence and general use of at least their first language (usually, the mother tongue). The value of a language could then be broadly divided in two major classes: use and non-use values.<sup>48</sup> In tables 3 and 4, that we have partially adapted from GRIN and VAILLANCOURT (1998) and GORTER, CENOZ, NUNES, RIGANTI, ONOFRI, PUZZO, and SACHDEVA (2007), we have tried to systematize the various aspects of the value of language existence, knowledge, and use from the point of view of an individual, using the traditional economic division between tastes, table 3, and productive abilities, table 4.

The possibility of using a language to communicate with an international institution, say, clearly has a direct use value the precondition for the realization of which is acquiring skills in the language. If a person knows the language in question, he or she may be willing to pay for making certain services of the organization available in it. Since this is often realized by giving the language a certain official status, the value of the services would be reflected in propensities to pay for status-planning measures. However, non-use values are often at least equally important. Assume that the citizens of a given country are bilingual in a minority language and the official language of the state. These persons may assign a value to making the minority language official even if they do not need to use it in day-to-day communication with public authorities.<sup>49</sup>

The value of language existence, knowledge, and use to an individual can, in addition to use and non-use value, be categorized in values that are directly related to the individual (autocentric) and to the individual's altruistic concerns for others (ecocentric).<sup>50</sup> The practical communication usage as well as the productive skills are clear examples of autocentric values. Language as a determinant of a person's identity is also an autocentric value, whereas the pure vitality value of linguistic diversity can be seen as a ecocentric value. One justification for the latter is that it

<sup>48</sup> We could also talk about direct and indirect values of language instead of use and non-use value. In communication, language plays a crucial rôle but in the provision of cultural identity, many other factors are important such as religion, traditions etc. Language is not necessarily crucial.

<sup>49</sup> Compare the situation of the Welsh-speaking community in Wales or of the Basque speakers in Spain. There is hardly any Welsh speaker in today's Wales who is not competent in English or Basque speaker in Spain who does not master *Castilliano* on a very high level. In spite of this, there seems to be a considerable demand for services in Welsh and Basque in the respective countries.

<sup>50</sup> The distinction between autocentric and ecocentric values is not very clearcut. There is no fundamental difference between "egoistic" and "altruistic" preferences. If I derive the same pleasure from making my friend enjoying my bottle of the 1961 Château Palmer as if I had drunk it myself my pleasure is equally "egoistic" in both cases. The distinction has more to do with who has the control over the action and if the action produces positive externalities (presuming my friend enjoys the wine).

Value structure I					
individual preferences					
use value		non-use value			
autocentric	ecocentric	autocentric		ecocentric	
present	future	present	future	present	future
tangible value	option value	identity value	bequest value	vitality value	precaution value

Table 3. Consumption values attached to languages

could also be an indirect determinant of future productivity (precaution value).

More specifically, we see two aspects of the communication value of language. The auto-centric one, the tangible value, is the ability to use the language to communicate directly and indirectly with the rest of the world by reading books, going to the theater, talking to the grandchildren, etc. The option value is the continued existence of the communication possibilities for future generations like reading and appreciating texts, produced today, in 200 years. The identity value of language focuses on language as a vehicle for the own culture and conveys a sense of belonging to the individual. The social and cultural identity has a value to most people and insofar as language plays a rôle here, this is the identity value. The importance of language in preserving the own cultural traditions for future generations is the basis of the bequest value. The autocentric identity and bequest values have their ecocentric equivalents in the vitality and precaution values. Nothing excludes the possibility that people attach value also to other languages being used in society and not only to their mother tongue (vitality value), but some people could also consider the existence of other idioms a nuisance or a source of costs. Finally, in considerations similar to the arguments for preserving biological variety, there are arguments that human knowledge is transported through languages, and that beneficial discoveries for humanity might be made in the future (precaution value).

Production value is in comparison with consumption value relatively simple. One can acquire a language today, in order to be more productive in the present job (production value) or

Value structure II	
individual productivity	
use value	
autocentric	
present	future
production value	speculation value

Table 4. Production values attached to languages

one might hope to find a better job in a few years due to the language knowledge (speculation value). Of course, behind the speculation value one finds a certain amount of insurance against future changes in the condition on the labor market, too. That is, speculation value cannot always be clearly separated from precaution value.

### 3 LANGUAGE-RELATED GOODS AND THE JUSTIFICATION FOR LANGUAGE PLANNING

In an economic analysis, the benefits of a certain policy have to be traced to individual benefits. The types of value discussed in the previous section can be realized in the form of different goods consumed by the individuals. The goods can be provided by language policy measures. The values of the goods provided differ between the individuals, and each individual evaluates them with the help of his or her preferences. The goods can take the form of physical commodities or can be largely immaterial and symbolic; they can also be the enabling of services. A relevant question, then, is how to classify the goods from the side of individual preferences and costs. For the latter, see also section 5 below. A sensible classification of relevance both to the preference and cost sides builds on three dimensions and is given in table 5. Dimension *R* describes to what extent a good can be consumed by several individuals simultaneously without reducing the quality of any person's consumption. A language policy providing radio transmissions in a given language is perfectly non-rival, since one person's listening to the the radio program in the chosen language does not in any way interfere with other individuals' access to the same program. Dimension *E* describes the extent to which it is *technically* possible to exclude someone from the consumption of a given good, once it has been produced. If the radio program is coded and one needs to acquire a password to listen to it, we have perfect exclusion; if it is freely transmitted over the ether, we have perfect non-exclusion. Finally, dimension *S* is an indication of the extent one can exclude oneself from consuming a good. If the radio program is distributed over loudspeakers in a department store or a restaurant, anyone shopping in the store or eating in the restaurant is perfectly non-shielded. In your home, where you can turn the radio on and off you are perfectly shielded.

A "pure individual (or private) good" is generally defined as being characterized by rivalry, exclusion, and shielding, and one defines a "pure collective good" or "pure public good" as a good characterized by non-rivalry, non-exclusion, and non-shielding.<sup>51</sup> Any degree of rivalry, exclusion, or shielding between the extremes is possible. If I smoke a fine *Habano*, the people

Dimension	Individual	Collective
R	rivalry	non-rivalry
E	exclusion	non-exclusion
S	shielding	non-shielding

Table 5. Classification of goods

<sup>51</sup> A third type of good, a common, can also be found in the literature. A common is a rival non-excludable good. Usual examples are fish in the see or our environment in general.

around me also get to consume part of the exquisite aroma of the *puro*, but cannot enjoy it fully – the smoking is partially rival, economists talk about an externality. Similarly, taking the bus at rush hour an additional passenger is not fully crowding out another passenger, but nevertheless decreasing the value of the transport for the fellow passengers. The transport service is not fully non-rival – one talks about an impure (or adjacently) collective good. On a scale from zero to one, with zero characterizing pure rivalry and one pure non-rivalry, the two examples above would receive values somewhere between zero and one.

The type of good determines the need for public action and planning. Generally speaking, for a pure individual good the individual demand will lead to optimal usage through spontaneous interaction – *laissez-faire* – of independent individuals. In other cases, the spontaneous interaction generally leads to sub-optimal results, and public policy can improve the allocation.<sup>52</sup>

### 3.1 LANGUAGE-RELATED INDIVIDUAL GOODS

Learning a language on your own only in order to read the *avant-garde* poetry written in it, would be a good example. It is rival, if you need your own individual teacher. Your acquiring the language competence does not lead to anyone else acquiring it.<sup>53</sup> It is excludable, if you meet with the teacher at your and her convenience. Since it is optional, it is shielding.

By the same token, a language planning measure forcing a minority to learn the majority language (or forcing the majority to learn the minority language) would not produce a pure individual good: the learning process, although basically rival, could involve both positive and negative externalities in the classroom. It is compulsory and, hence, non-shielding. It is also, by default, non-excludable. The good leads to an important network externality, though: it enables the members of the majority to communicate with the minority. The latter is the important reason for the good not being a pure individual good.

If a good is fully rival, there is generally no good reason, on efficiency grounds, for the public sector to provide it. There might be distributional grounds, however, if the consumption of the good that is realized through voluntary interactions is judged to be too unevenly distributed and, hence, unjust.<sup>54</sup> Public education, including the teaching of one or two important languages, can probably be justified on distributional grounds.<sup>55</sup>

There are also a number of individual goods that become available through learning a language, such as vacation trips to places where the language is spoken, literature or films in the language, living and working where the language is used, and many more. This does not – generally – justify a public policy in favor of teaching the languages in question. Such a policy

<sup>52</sup> For a further principal discussion of these issues, the reader is referred to any of the many standard texts on public economics, for instance HINDRIKS and MYLES (2006).

<sup>53</sup> If we are dealing with a group of people learning a given language, the situation is more complicated. Take the case of providing education in an immigrant language in a school district. After a class in the language in question has been set up, the quality of education can vary with the number of pupils; our hypothesis (which can be tested) is that if an additional pupil comes to a class with only one or two pupils, the quality of the education of the first pupils probably increases, that is, the new pupil constitutes a positive externality. However, if there are already 15 pupils in the class, an additional one could reduce the attention the teacher can give to the other pupils and, hence, cause a reduction in the quality of education; we have a negative externality due to the new pupil.

<sup>54</sup> This argument seems to apply to the distribution of health care in most societies, basically an individual good, but not to the distribution of Porsche cars, another individual good.

<sup>55</sup> We are here neglecting the network-externality property, see below. There are, of course, also arguments of the type that universal education increases the social capital, hence creating a collective good.

could, however, possibly be justified on grounds that learning languages in the youth is a merit good; see section 4.2.

### 3.2 NETWORK AND OTHER EXTERNALITIES

The concept “externality” designates degrees of rivalry of goods whose consumption as a rule is decided upon by individual people (or firms).<sup>56</sup>

The most important externality related to language is probably the “network externality”. When one person decides to learn a language, this alters the linguistic environment of all other people using the language: they now have one more person with whom they can communicate. In other words, the individual, who on the basis of an individual calculation decides to invest in his human capital, learning Bislama, say, reaps some individual benefits that exceed the learning costs, else he or she would not go through the trouble of learning Bislama. Some benefits to the person considered here are that he or she can now communicate with more people and they can communicate with him or her. However, he or she also provides benefits to the other speakers of Bislama who now can, if they so desire, communicate with him or her in that language; these benefits for the other people did not enter our individual’s cost-benefit calculation.<sup>57</sup> This is the network externality of language learning.<sup>58</sup> Since the individual calculus here differs from the social one, a planning measure through the public sector is called for. The compulsory teaching of a *lingua franca* in all schools would be such a planning measure.

However, the concentration on one language, like English in European schools, although sensible from the communication point of view due to the associated network externality, might carry other, negative, externalities such as the reduction in the knowledge of other languages and, hence, in the knowledge of other cultures than the ones using English as the medium of expression.<sup>59</sup> Here, a policy directed at compulsory teaching of several different languages is called for.

Another possible externality due to learning only one foreign language was addressed in footnote 44. In this case, the policy goal of the European Union of a free and mobile labor market in the entire Union is hampered by the limited language knowledge of the potential migrants. The compulsory teaching of many different languages would again be the best policy to neutralize this externality, assuming that the benefits of the increased mobility exceeds the learning costs.<sup>60</sup>

<sup>56</sup> Generally, externality also has to do with non-shielding, the impossibility to exclude oneself, in the case of a negative externality and with non-exclusion, the impossibility to exclude someone, in the case of a positive externality.

<sup>57</sup> We are implicitly assuming that the individuals are not altruistic. Altruism could internalize the network externality.

<sup>58</sup> See CHURCH and KING (1993) as well as DALMAZZONE (1999) for interesting analyses of the consequences for language policy of this property. In SWAAN (2001) a good displaying network externalities is referred to as a “hypercollective” good.

<sup>59</sup> Cf. WICKSTRÖM (2016a).

<sup>60</sup> One might speculate about which policy would be the best to meet this goal. Given that it is illusory to teach all major languages in the schools of all countries, a second-best policy might take its point of departure in the fact that, with few exceptions, the major European languages belong to three big families and are relatively closely related within each family. A sensible policy could then be to make all pupils competent in a Germanic, Romance, and Slavic language. A migrant worker, having learned German, say, would relatively fast acquire a receptive knowledge of Swedish if working in Sweden. The same would hold for someone having learned Polish

### 3.3 LANGUAGE-RELATED COLLECTIVE GOODS

Collective goods are rarely provided through individual initiatives. Intermediate goods between pure individual and pure collective goods are often referred to as impure (or adjacently) collective (or public) goods as mentioned above.

It is well-known that spontaneous interactions only in exceptional cases lead to an optimal provision of collective goods. Generally, we have a market failure due to the incentives to “free ride”, that is, enjoy the good without contributing to its provision. Hence, an intervention through the public sector is in general needed. Also, since the financing of public goods comes from general taxes, more or less evenly distributed in the population, whereas the individual evaluations can vary considerably from one individual to another, benefits as a rule differ from the costs at the individual level even if they are balanced at the aggregated societal level. That is, there are substantial distributional implications of the provision of collective goods. A good example of a pure collective good is our environment. There is little hope for a reduction in global warming without organized collective action.

Many aspects of language usage have the characteristics of a pure collective good, and government intervention is therefore called for.<sup>61</sup> Several policies influencing or determining the linguistic environment clearly create such goods.<sup>62</sup> The fact that a person lives in and enjoys a certain multilingual environment, that is, the fact that he or she can carry out activities in several languages such as seeing bilingual advertisement posters, listening to radio programs in different languages, does not detract from other people’s consumption of this good nor exclude them from consuming it. Living in an environment characterized by a certain degree of individual and societal multilingualism (rather than a strictly monolingual environment) is a good that people, for whatever reason, might be willing to pay for. Hence, policies aimed at preserving or increasing the degree of linguistic diversity in a given context can have a social value. Related to this – and in addition to the network-externality property discussed above – is a policy guaranteeing the existence or providing a *lingua franca* to people speaking different languages. Also this would be a policy providing a pure collective good.<sup>63</sup> The publication of documents in different languages are also pure public goods and part of the linguistic environment.<sup>64</sup>

Negative externalities, or less than full non-rivalry, are, for instance, to be expected in most public services with given capacities, like health services, courts, theaters, social aid, etc.<sup>65</sup> If

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and working in Croatia, or for someone having learned Spanish and working in Romania. High costs of mobility would then remain if working in countries like Hungary, Finland, Greece, or the Baltic States. Of course, there are many alternative approaches that might reduce the language problem in connection with mobility. A more direct one is combined investments in language skills pre- and post-mobility, see GRIN, ROSSIAUD, and KAYA (2002) as well as CHISWICK and MILLER (2015), or GAZZOLA (2016a).

<sup>61</sup> This, of course, does not imply that government provision in all such cases is more efficient – or egalitarian – than leaving the issue to individual initiatives. *Public choice* scholars have pointed out that in many instances public action can be inefficient or even detrimental; see, for instance, BUCHANAN and TULLOCK (1962) or BUCHANAN (1987). This shows the need for evaluation of language policy.

<sup>62</sup> See, for instance, GRIN (1994) or GRIN and VAILLANCOURT (1997).

<sup>63</sup> See, for instance, BRIEY and VAN PARIJS (2002) or SWAAN (2001).

<sup>64</sup> See, for instance, JAN FIDRMUC and GINSBURGH (2007).

<sup>65</sup> The closer is one to the given capacity (the number of available physicians, say), the more detracts an additional individual from the consumption of the other individuals. Note that the good here is the availability of a physician with certain medical skills; it is not the availability of the one and only Dr. Smith. The availability of the dermatologist Dr. Smith is an individual good characterized by full rivalry, but the availability of a competent dermatologist, who can be Dr. Smith or any of fifteen other physicians, is a good with a certain degree of non-rivalry.



there are capacity limits (soft or strict), non-rivalry characterizes situations with a low usage and perfect rivalry, on the other end, situations when the capacity is exhausted. This, of course, holds for such services in any language. We can also turn this around and ask what capacities are needed, and as a consequence, what costs result, if a given level of service is to be provided for everyone requesting it. This will be discussed in section 5.

Of course, the appreciation of such policies, as noted above, varies between different individuals. That is, the language policy can have, and usually has, considerable distributional consequences. For instance, the value of the provision of documents in a given language depends on whether a person understands the language(s) in question or not.<sup>66</sup> That is, the individual evaluations of a given public good can vary considerably. Indeed, for some people it can even be negative (a “public bad”). For some people, linguistic diversity *per se* is a public bad, like pollution, giving people disutility instead of utility from being exposed to it. Some people might agree that while the existence of a *lingua franca* is a public good, the presence of several languages in a given linguistic environment could be regarded as a nuisance, something hampering trade,<sup>67</sup> or a factor that may negatively affect economic solidarity between communities,<sup>68</sup> or the mobility of workforce, knowledge creation and diffusion across linguistic borders,<sup>69</sup> or simply as something that hinders the achievement of “the great collective benefits of universal communicability”.<sup>70</sup>

In table 6 we exemplify the connection between types of value and language-related goods. We have here used the three dimensions from above as variables *R*, *E*, and *S*. *R* being the degree of rivalry in consumption of the language-related good, has received the value zero if the good is perfectly rival and the value one if it is perfectly non-rival. The presence of an externality (basically a non-rival by-product of the good) has been given the value *small*, since the value of the consumption of the good is less than perfectly transmitted to the second person. By the same token, a good characterized by a certain degree of crowding has been given the value *large*. Here,  $0 < s < l < 1$ . *Mutatis mutandis*, the same holds for the other two dimensions, exclusion (*E*) and shielding (*S*). In the last column, the type of good is given which is relevant for the need of government involvement in the spontaneous order of society.

The tangible value can easily be found in goods that span the full range from individual to collective. The process of reading a book is individual, using a language to communicate creates a positive network externality. Using a service in a given language, like being tried in court, has both a non-rival part, the set-up of the institution and determination of its capacity and a partially rival part, the actual trial, where one might have to wait for a free slot. Reading street signs in different languages is almost a pure collective good; the only departure from the traditional conditions being that one can refuse to look at the signs. That is, shielding is possible.

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Also, since there are set-up or fixed costs that are independent of the number of individuals using the service as well as variable costs directly dependent on the number of users, average costs will in general exceed marginal costs. One often talks about “natural monopolies”. See also section 5 below on the structure of costs.

<sup>66</sup> Cf. GAZZOLA (2014a) and GAZZOLA (2016b), who shows that language knowledge in the EU, and as a consequence access to various documents and services of the EU, strongly depends on citizens’ education and income. However, the distributional consequences also depend on the individual’s evaluation of this access. Therefore, it is difficult to make a clear conclusion about the distributional consequences of the language policy in the EU.

<sup>67</sup> See JAN FIDRMUC and JARKO FIDRMUC (2016).

<sup>68</sup> See DESMET, ORTUÑO-ORTÍN, and WEBER (2009).

<sup>69</sup> See JAN FIDRMUC, GINSBURGH, and WEBER (2005).

<sup>70</sup> VAN PARIJS (2008, p. 27).

Type of value	Language-related good determining the “utility” of an individual	R	E	S	Type of good
tangible	reading a poem by García Lorca in the original language	0	0	0	individual
	communicating in a foreign country after moving there for retirement	s	0	0	adjacently individual
	being tried in court in a given language	l	0	0	adjacently collective
	reading street signs in a given language	1	1	0	adjacently collective
option	language economists reading this book in 200 years and learning from it	1	1	1	collective
identity	possibility of communicating with my children in my preferred language	1	0	1	adjacently collective
	right to be tried in court in my preferred language	1	0	1	adjacently collective
	usage of my preferred language in the linguistic environment	1	1	1	collective
bequest	possibility for future generations of using my preferred language	1	1	1	collective
vitality	the usage of more than 100 languages in Vanuatu	1	1	1	collective
precaution	possibility of finding a cure for Alzheimer’s by studying the structure of Cherokee	1	1	1	collective

Table 6. Examples of types of value created by language-related goods of various types

All goods leading to the other type of values have very strong collective properties, all being non-rival. The access to literature written today for future generations is a pure collective good for anyone alive today. Goods creating non-use values by their very nature are non-rival, as far as the values are autocentric there is a possibility of exclusion. However, one can hardly imagine that they are shielding. The right to be tried in court in a given language – as opposed to the actual trial – is purely non-rival; my enjoying the right does not interfere with your enjoying it. Exclusion is possible, however, but shielding not. Goods creating ecocentric values are all pure collective ones; the fact that many languages are spoken in the world today, and the prospect that some until now undiscovered properties of some of them will teach us something useful, are goods, the enjoyment of which is clearly non-rival and from which nobody can be excluded nor exclude him- or herself.

In table 7, we have tried to illustrate how this is related to language planning. We first

Type of language-related good	Example	Outcome of individually rational behavior	Efficient language policy ⌘ <i>Effect on distribution of welfare between individuals</i>
individual	learning Icelandic for vacation trips to Iceland	an optimal provision	no public intervention ⌘ <i>distributionally neutral</i>
adjacently individual (a non-rival byproduct of the individual decision-making – an externality)	shifting to the majority language in a bilingual setting thereby reducing the opportunities for minority-language speakers	a negative externality	acquisition and status planning increasing the teaching and use of the minority language ⌘ <i>decrease in distributional disadvantage of members of the minority</i>
	learning a <i>lingua franca</i> for communication thereby creating a network externality	a positive externality	acquisition planning increasing the teaching and use of the <i>lingua franca</i> ⌘ <i>redistribution in favor of native speakers of the lingua franca and those in need of inter-lingual communication</i>
adjacently collective	social services in a minority language	free riding and under-provision	status planning providing the language-related goods ⌘ <i>redistribution in favor of individuals with a high propensity to pay for the good</i>
collective	multilingual street signs and official publications	free riding and strong under-provision	status planning providing the language-related goods ⌘ <i>redistribution in favor of individuals with a high propensity to pay for the good</i>

Table 7. Examples of efficiency-increasing policies and their (re)distributional effects

describe the outcomes in society of spontaneous interaction by different types of goods and then indicate what type of planning is necessary to improve efficiency as well as its (re)distributional consequences.<sup>71</sup> In the case of pure individual goods, individual actions have no negative or positive effects on others and there is no need for public intervention. The consumption of the

<sup>71</sup> Recall that we use the word “distribution” as a *terminus technicus* referring to the distribution of resources (or welfare) between individuals. See section 1.1.

good does not influence the distributional situation in society, which, however, for other reasons could be desirable or non-desirable.

As an example of a negative externality, we refer to the case of a minority community losing speakers because of language shift (for instance, due to the fact that some people move into urban areas) – a very frequent occurrence. The people abandoning the minority language cause a negative network externality for the remaining speakers who lose interlocutors. That is, the individual rational decision to leave the community causes costs for others that are not taken into account in the individual calculus. The first-best reaction<sup>72</sup> to counteract, or internalize, these costs would be to tax the “language shifters”. That way the cost side in the individual calculus of the potential language shifter would reflect both his or her own individual costs and the costs the decision would levy on the rest of society, the minority speakers remaining; the basis for the possible decision to leave would include all relevant factors for making it socially rational. This not being practically – or politically – possible, other planning measures are called for, for instance, various status or acquisition planning actions.<sup>73</sup> The case of a positive network externality, the learning of a *lingua franca*, is similar. The first best policy would be subsidizing the learners of the *lingua franca*. That not being feasible, acquisition planning is a good second-best policy. In both cases there can be considerable redistributive effects in favor of the speakers of the minority language (which might be desired) and to the advantage of the mother-tongue speakers of the *lingua franca* (which for distributional reasons might be undesirable if this already is a privileged group).

For collective goods the individual incentives to contribute voluntarily are very weak, indeed. The costs of a contribution are covered by the contributing individual, and benefits are created for everyone. Spontaneous interaction will grossly under-provide society with the good, and only collective provision through the public sector can balance aggregated benefits and costs. The distributional effects can also be massive depending upon how the costs are divided. If the costs are covered by general revenues, everyone contributing more or less equally through the tax system, the people who want services in a certain language will gain relative to people who do not care.

### 3.4 THE LANGUAGE POLICY

A set of language planning measures can be called a (public) language policy. Typically, a language planning measure specifies for example in which languages public documents should be made available, in which languages one can be tried in court, which are the languages of the elementary education, in which languages social services will be provided, or which languages are to be used for symbolic purposes, like the name of the country on banknotes or the name of cities on street signs, etc. Each such language-planning rule can be said to be applied to a certain domain. For analytic purposes it is sensible to treat each domain as an independent object of language policy. Of course, the propensity to pay for a right to use one language in one domain can be strongly influenced by the realization of such a right for another language in the same domain. See an example in the next section.

<sup>72</sup> First-best reaction basically means that one looks for the optimal response under the assumption that there are no binding institutional restrictions. A second-best reaction would be the optimal response given that institutional constraints would have to be respected.

<sup>73</sup> Compare the situation in the Spanish Basque area, as described by CENOZ (2008).

A language policy can then be defined as a specification of language rules applied to a set of relevant domains and a set of languages. These rules influence both the linguistic repertoire and the linguistic environment and, as a consequence, indirectly the linguistic outcome in society.<sup>74</sup>

#### 4 EVALUATION OF THE BENEFITS OF LANGUAGE POLICY

The theory of public economics provides a justification for public intervention in the linguistic environment, but this does not mean that any concrete policy is equally effective or efficient. In order to compare different public policies, we need to employ tools from policy analysis and policy evaluation. In this section we will discuss the evaluation of the benefit side of a policy. The cost side will be discussed in section 5.

The individual evaluation of the benefits of a given policy in a cost-benefit analysis – the individual's propensity to pay – can operationally be defined as the amount of money an individual would be prepared to give up in order to enjoy the fruits of a given policy. In economic theory, this builds on the concept of “consumer surplus” and is an attempt to translate preferences into monetary units. The concept is theoretically not well-defined because of income effects.<sup>75</sup> An individual's propensity to pay for a good or a service in general depends on the individual's (implicit) income.<sup>76</sup> That is, the propensity to pay can be different before and after a policy has been enacted, since the policy might alter the implicit income of the individual; there is an income effect of the provision of the enacted service. This can lead to path dependencies and to what is known as the Scitovsky paradox.<sup>77</sup> Nevertheless, the propensity to pay is the only practical tool available for the evaluation of most public policies.

If the good provided as a result of the policy is a pure public good, the aggregated propensity to pay is simply the sum of the individual propensities to pay or the number of beneficiaries multiplied by the average propensity to pay of the beneficiaries. If the result of the policy is an adjacently (or impure) public good with less than perfect non-rivalry, the average propensity to pay can be expected to diminish with a higher number of beneficiaries due to congestion effects.<sup>78</sup> This argument can be turned around, and we can ask for the costs of giving a certain service at a given quality to everyone in a community. In the case of the pure public good the cost will be constant and independent of the number of beneficiaries. In the case of the adjacently (or impure) public good or a pure individual good with fixed costs in the provision, the costs will increase with the number of beneficiaries, but less than proportionally and in the case of pure individual goods without fixed costs, the costs are proportional to the number of beneficiaries. This will be further discussed in section 5.

<sup>74</sup> Our definition, albeit analytically rather specific, is also quite “narrow”. That this can lead to serious drawbacks is pointed out by SHORTEN (2018). On the other hand, in the evaluation of the outcomes we are very close to Shorten's “wide” definition of justice.

<sup>75</sup> Its practical usefulness is also put in doubt by many economists; see, for instance, GINSBURGH'S (2017) very critical assessment.

<sup>76</sup> The implicit income also include intangibles available to the individual and to which he or she attaches a certain value.

<sup>77</sup> See SCITOVSKY (1941). For a lucid discussion of the concept of consumer surplus, see MOREY (1984). Intuitively, the provision of a certain good or service alters the propensities to pay for this and other goods due to a perceived change in implicit income. In that way, the evaluations *ex post* and *ex ante* differ and the evaluation of a policy measure providing a certain good can be different before and after it is implemented.

<sup>78</sup> For example, in court one might have to wait a long time for a trial in the chosen language when the number of cases increase. One observes the same effect in a swim club or golf club when it becomes crowded.

Of course, several factors may have an impact on an individual's propensity to pay. The most obvious one is the linguistic repertoire. If an individual does not master Tok Pisin, he or she probably has a very limited interest in having official publications appear in that language. By the same token if a person masters Italian and English and official publications already appear in English, the propensity to pay for translations into Italian might be limited and *vice versa* if the publications already exist in Italian. In the language of the economists, publications in Italian and English would be substitutes for this person.

#### **4.1 FEEDBACK MECHANISMS AND OTHER ENDOGENOUS FACTORS THAT HAMPER THE EVALUATION OF THE BENEFITS OF LANGUAGE POLICY**

As we have already noted, the determination of the propensities to pay for language policy might depend on the linguistic environment. The status of a language might influence pride in the language and this might in turn influence the propensities to pay for rights for the language. This argument applies to a single individual as well as to the transmission of preferences over generations. The linguistic environment into which a young individual is socialized can have a strong influence on the formation of his or her life-long preferences, but a changing environment might also modify these individual preferences as time goes by.<sup>79</sup>

##### **4.1.1 Positive indirect effects**

We can distinguish two positive indirect effects of a supportive language policy in favor of a given language. First, the preferences and, consequently, the propensities to pay of a given individual are affected by the policy, and, second, the number of users of the language in the next generation is also affected by the policy.

##### ***Individual status effect***

An individual's propensity to pay for rights for a language might depend directly on the status this language enjoys in society, which in turn depends on the rights already in effect. From an *ex ante* point of view the realization of additional rights for the language in question then carries a positive external effect in that it leads to higher propensities to pay, hence modifying the cost-benefit calculation. The implication is that the simple analysis recommends too few rights for a minority language.

##### ***Cohort status effects***

A similar argument applies if we consider the socialization of young individuals. If the status of a minority language increases as a result of a supportive language policy, parents are more likely to socialize their offspring into the minority language, and the young generation of adherents to the language will increase as a result of the favorable policy. In addition, by the argument above, the propensity to pay of each and every adherents might also increase.<sup>80</sup> The implication above is strengthened.

<sup>79</sup> Cf. also VAILLANCOURT (2018)), where he, among other things, discusses the *ex ante/ex post* problematic.

<sup>80</sup> This is a frequent argument in dynamic models. See TEMPLIN, SEIDL, WICKSTRÖM, and FEICHTINGER (2016) for a review of the literature and an example.

### *Negative indirect effects*

The arguments above, however, can easily be turned around. A discriminatory policy leads to less support for the minority language and fewer adherents. This would strengthen arguments for a discriminatory policy.

#### **4.1.2 Multiple solutions and “paradoxes”**

Due to the symmetry of the endogeneity of the preferences, the existence of path dependencies and multiple solutions, as well as “paradoxes”, cannot be excluded. Imagine two states of the world,  $I$  and  $II$ , and the corresponding allocation of rights,  $R^I$  and  $R^{II}$  with  $R^{II}$  being the more extensive rights allocation. The difference in the propensities to pay for  $R^{II}$  in comparison to  $R^I$ ,  $\Delta P$ , depends on the state of the world, due to the status effects:  $0 < \Delta P^I < \Delta P^{II}$ .  $\Delta P^I$  is the difference in the propensities to pay if state  $I$  is in effect and  $\Delta P^{II}$  the corresponding difference if we are in state  $II$ . The difference in the implementation costs is state independent and given by  $\Delta C$ . Several possible orderings of the costs and propensities to pay are possible:

$$\Delta P^{II} > \Delta P^I > \Delta C \quad (4.1)$$

$$\Delta C > \Delta P^{II} > \Delta P^I \quad (4.2)$$

$$\Delta P^{II} > \Delta C > \Delta P^I \quad (4.3)$$

In case 4.1, the analysis tells us that state  $II$  is to be preferred since the cost difference between rights allocation  $R^{II}$  and  $R^I$  is less than the perceived benefits independently of the actual state of the world; in case 4.2, the answer is also clear: state  $I$  is preferable since the costs exceed the benefits in both states of the world. Case 4.3, however, is not as clear-cut: If we are in state  $I$  – rights allocation  $R^I$  prevailing – the costs of introducing rights allocation  $R^{II}$  exceed the perceived benefits of this policy and the naïve analysis, ignoring the externality on the preferences, tells us that state  $I$  is preferable. If we are in state  $II$ , the result is similar. Ignoring the externality on the preferences, we come to the conclusion that state  $II$  is preferred. In other words, the analysis does not lead to any conclusion as to the preferred policy. However, a more sophisticated analysis, taking the externality due to the status effects into account, tells us to change to the other state, independently of the state we are in. Again, the analysis is inconclusive.<sup>81</sup>

## **4.2 MERIT-GOOD, EX POST, AND END-STATE ARGUMENTS**

Closely related to the discussion in section 4.1.2 are the merit-good and *ex post* arguments.<sup>82</sup> Both types of arguments are based on a kind of paternalism. This in turn can be justified by

<sup>81</sup> This “paradox” has the same structure as the original Scitovsky paradox (SCITOVSKY, 1941). There income effects in the different states of the world influence individual preferences, here the “status effects” in different states of the world do the same thing.

<sup>82</sup> The concept of merit good was introduced by MUSGRAVE (1956/1957) in order to justify public intervention when evaluation is not strictly based on individual preferences. The departure from individual preferences could be justified by individuals’ uncertainty or limited access to information, as well as differences between *ex post* and *ex ante* evaluation. An example of the latter could be education. After having received an education, I value it more than before I received it.

a lack of information about future preferences in which case an *ex post* evaluation is the only sensible one; a policy decision should then be based on the expected evaluation *ex post*. This could justify both a harsh assimilation policy and a generous support for minority rights. On the one side, educating the young in a little-used language limits their opportunities on the labor market and is an argument for limiting the opportunities of using minority languages, forcing assimilation into the majority community. At the end, the minority language is dead, and there is nobody around to mourn it.<sup>83</sup> After the complete assimilation everyone is happy being assimilated and nobody looks back with nostalgia to the society of their forefathers. On the other side, generously supporting a minority language causes its community to survive as a socially active minority, and everyone in the minority community is happy *ex post* being part of such a rich flourishing culture. The argument that the use of only one language minimizes both communication and administrative costs, also belongs in this category.

The end-state argument that linguistic and cultural diversity *per se* is desirable, is related to our precaution value, which due to imperfect information might not be expressed clearly enough by the individuals.<sup>84</sup> The merit-good analysis can again be applied.

In conclusion, these arguments imply more extensive linguistic rights in two cases and less extensive rights in one case. However, as we have seen, they are also at times contradictory and then of limited value.

### 4.3 DYNAMICS AND THE SURVIVAL OF LINGUISTIC MINORITIES

For the long-term survival of a linguistic minority, the family structure and the choices made in the family are of crucial importance. The family structure, which in this essay is taken to mean the linguistic repertoires of the parents, is determined by the “matching market” and typically will depend on the strength of the ethnicity in the various language groups as well as on the relative sizes of the groups. The behavior of the families, that is, in which language(s) the children are brought up, can broadly be assumed to depend on the use value of the languages (with whom one can communicate) and the identity value (how proud one is of the language). Language policy can influence both; the second one comes through the status effect discussed above in section 4.1.1.

There are a number of models of language dynamics that consider the status effect, but do not consider family behavior and inevitably conclude that language dynamics leads to the death of minority languages.<sup>85</sup> Other models consider family behavior and the status effect and show that the long-term survival of linguistic minorities is indeed possible.<sup>86</sup> Language policy influencing the status effect is explicitly analyzed in some models, showing how the planning measures can govern the dynamics of the use of minority languages.<sup>87</sup> Some empirical evidence of language policy influencing the development of minority-language use can also be found in the literature.<sup>88</sup>

<sup>83</sup> Compare, however, the efforts to revive languages like Cornish or Manx, which seems to contradict this conclusion.

<sup>84</sup> The end-state argument can be found in PATTEN (2009), among others.

<sup>85</sup> See, for instance, ABRAMS and STROGATZ (2003).

<sup>86</sup> See WICKSTRÖM (2005).

<sup>87</sup> See MINETT and WANG (2008), FERNANDO, VALIJÄRVI, and GOLDSTEIN (2010), or TEMPLIN, SEIDL, WICKSTRÖM, and FEICHTINGER (2016).

<sup>88</sup> See, for instance, CENOZ (2008).



#### 4.4 SECOND-BEST EVALUATION

Although economists have developed more or less exact methods to estimate propensities to pay, often such methods are rather cumbersome and not very practical.<sup>89</sup> An alternative is to specify the desired outcomes and not their value. That is, the cost-benefit analysis is replaced by a cost-effectiveness analysis. Different policies can have different effects that have to be compared and measured by non-monetary methods. It is important to emphasize that cost-effectiveness analysis is based on a comparison of the costs of a policy with the outcome achieved, measured in a non-monetary form (for example, number of student who successfully complete a language training). Outcomes, therefore, are measured through quantitative non-monetary indicators. The most efficient policy is the alternative in which the ratio of costs to the desired outcome (for instance, costs per successful student) is the lowest.<sup>90</sup> The analysis of the costs and the structure of costs is the same in a cost-benefit and a cost-effectiveness analysis, though.

In the decision whether to enact a given policy or not, however, there has to be some type of evaluation of the benefits of the policy and comparison of costs and those benefits. If the benefits cannot be estimated on the basis of individual preferences, some other method has to be used. In practice the “benefits” are fixed by the policy maker.<sup>91</sup> We could say that the measurement of the benefits has been moved from a simulated market to the political sphere. In the determination of the budget for policy measures, we can distinguish two polar cases: either a certain budget per individual beneficiary is decided upon; or a general budget for each language planning measure is set.<sup>92</sup> In the first case, the individual average propensity to pay based on individual preferences is simply replaced by the planner’s politically determined propensity to provide different benefits. This does not alter the economic analysis *per se*; it only removes the estimation of benefits from individual preferences and substitutes instead administratively determined values for the benefits. These values can, of course, vary between different language planning measures, permitting the setting of analytically sensible priorities in the language policy. In the second case, priorities can also be set between language planning measures, but the resulting policy might give non-intuitive results. If the budget is the same for different minority languages and thereby independent of the number of beneficiaries, we would end up with more rights for speakers of small minority languages than of big ones if the implementation costs depend on the number of beneficiaries.<sup>93</sup>

In the sections above, we argued from the point of view of average propensities to pay. The arguments would also be valid if the politically determined budgets more or less directly reflect the preferences of the voters in society. It is a matter of how sensitive the political system is to changes in the opinions of the voters.

<sup>89</sup> Compare VAILLANCOURT (2018). He finds a lower limit for the propensity to pay by considering the necessary costs that are imposed on an individual in the absence of a given right (for instance the cost of translation). See also the critical assessment of GINSBURGH (2017).

<sup>90</sup> For a detailed presentation of cost-effectiveness analysis, see LEVIN and MACEWAN (2001).

<sup>91</sup> The policy makers’ decisions are part of the political process and the political pressure from the voters presumably have an influence. In this way, one could say that the propensity to provide language planning measures are indirectly based on the voters politically expressed propensities to pay.

<sup>92</sup> Also intermediate cases are, of course, possible: a fixed sum per measure plus a certain sum per individual beneficiary.

<sup>93</sup> Imagine that there are two minority languages in a country, one spoken by a fairly big community and the other one by a rather small group. If the budget for social services is the same for both language groups, the quality of the services for the speakers of the smaller language would be higher than for the speakers of the larger one.

<b>The costs of the implementation of a measure</b>	<i>do not depend on the size of the territory</i>	<i>are proportional to the size of the territory</i>
<i>do not depend on the number of individuals</i>	non-spatial and non-rival good	spatial and non-rival good
<i>are proportional to the number of individuals</i>	non-spatial and rival good	spatial and rival good

Table 8. A classification of language policy measures according to the realized good

## 5 COSTS OF LANGUAGE POLICY

As in any situation involving choices and the use of resources, the implementation of language policy causes (opportunity) costs.<sup>94</sup> We can differentiate between fixed and variable costs. The variable costs can vary according to the size of the territory in which the rights are implemented, but also according to the number of individuals enjoying the rights. The latter is, of course, closely related to the demand side discussed in section 3. From the point of view of production processes and associated costs there is really no principal difference between producing street signs and individual social services. The crucial difference is found on the demand side with street signs being non-rival and social services to a considerable extent rival.<sup>95</sup> Hence, the cost of the policy in the first case is independent of the number of beneficiaries and in the second case more or less proportional to the number of beneficiaries. One could also say that in the first case the costs in relation to the number of beneficiaries are fixed and in the second case mainly variable.

### 5.1 DIFFERENT COST STRUCTURES

For cost-benefit analysis, and especially for cost-effectiveness analysis, it is convenient to focus on the costs as a function of the number of beneficiaries. Instead of looking at the reduced quality of a good or service displaying less than perfect rivalry when the number of users increase, for our purposes it makes more sense to study how costs change with the size of the territory and the number of beneficiaries under the condition that the quality of the service for each beneficiary be constant and given. If the fruits of the policy implementation display less than perfect rivalry and there are economies of scale in the spatial dimension, this implies that the costs are a concave function in both variables;<sup>96</sup> if the function relating costs to number of beneficiaries and to the

<sup>94</sup> Opportunity costs is the value of the best alternative we give up in order to realize the policy adopted.

<sup>95</sup> One might think of the example of public signs in a certain language in a given region. Here all costs are fixed and independent of the number of users, but varies with the size of the territory. Less clear-cut examples are services of a public office or public education in a given language. Here one part of the costs, like those for producing printed documents or text books, are more or less fixed and one part, like the time of the public servants or school teachers, are almost proportional to the number of users of the language. In each case, the cost structure can be assumed to be concave, see below.

<sup>96</sup> For our purposes, a concave function can be defined as a function whose value divided by the value of any of the variables decreases, as the value of the variable increases. Put in other terms: the costs per person – the average

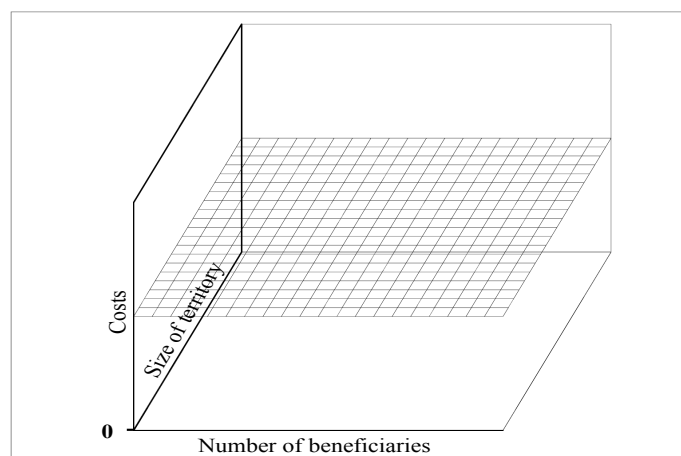


Figure 1. The cost structure of a non-spatial and non-rival good

size of the relevant area of implementation is maximally concave (namely constant) we talk of a non-spatial and non-rival good and if, at the other extreme, it is minimally concave (namely proportional) we talk of a spatial and rival implementation. In table 8, we illustrate this and attempt to classify language-policy measures according to the cost structure of the resulting goods.<sup>97</sup>

We illustrate the different cost structures in five diagrams. In figure 1 – the non-spatial and non-rival case – the costs are constant. An example might be the use of the name of the country in a minority language on banknotes. At the opposite extreme, figure 2 – spatial and rival policies –, the costs are proportional in both variables. Public schools in a minority language might come close to this case.<sup>98</sup> There are some locally fixed costs, such as setup costs. The totality of these costs will then be proportional to the number of schools, which is more or less proportional to the size of the area offering schools in the minority language. With a given class size the costs of teachers and classrooms will be approximately proportional to the number of classes and, hence, the number of pupils, which, in turn, will be proportional to the size of the minority population. The two mixed cases – spatial and non-rival as well as non-spatial and rival goods, respectively –, leading to proportionality in one of the variables and no dependency on the other one, are depicted in figures 3 and 4. A good example of the first case is the provision of street signs in a minority language, and simultaneous interpretation services from a minority language

costs with respect to beneficiaries – decrease when the number of individuals increases and *mutatis mutandis* for the size of the territory.

<sup>97</sup> The table gives only the extreme cases. All intermediate cases are possible, and each policy implementation could be seen as a point in a two-dimensional space. The formalization of this requires a normalization of the degrees of rivalry. Here a number of choices are possible. A sensible one is to use the partial elasticities of costs with respect to the number of beneficiaries and with respect to the size of the territory, respectively. If the costs are independent of the number of individuals, the respective elasticity would be zero, and if the costs are proportional to the number of individuals, the elasticity would be one. *Mutatis mutandis* the same holds for the elasticity with respect to territorial size. However, since the elasticities are not necessarily constant, one would have to work with a local definition. That goes beyond the scope of this chapter, though.

<sup>98</sup> Of course, the costs here are the *additional* costs of providing education in the minority language compared to providing the same education to the minority pupils in the majority language. That is, a part of the costs of the minority school system is offset by the cost reduction in the majority school system.

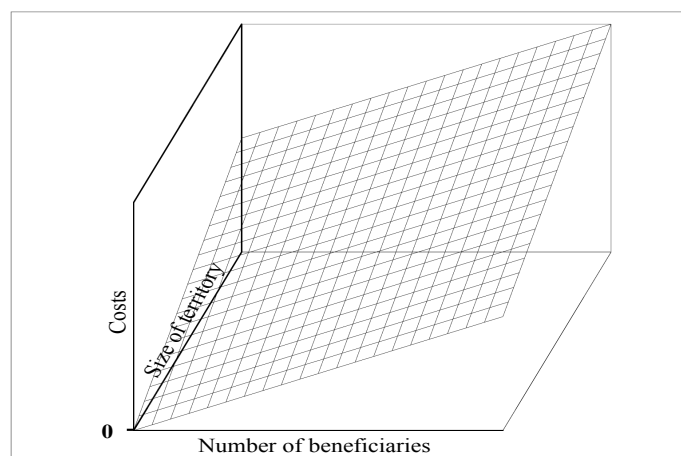


Figure 2. The cost structure of a spatial and rival good

in the national parliament belong of the second one.<sup>99</sup> Finally, an example of a partially rival and partially spatial good is depicted in figure 5. Here, one might think of social services in a minority language.<sup>100</sup> In contrast to the school example, use will vary over time and a certain extra capacity, which can also be shared between different locations, has to be available to cover periods with local top demand. If there is not a high positive correlation between the individual demands, we would find a concave cost structure in both variables.

The increased use of the internet has in many cases altered the cost structures, reducing or eliminating the dependence on both the size of the territory and the number of beneficiaries. A broadcasting service provided in a given language, for instance, whose costs were strongly dependent on the territory covered when broadcasts were relayed over the ether, now, due to the use of the internet, reaches the whole world at virtually no additional cost.

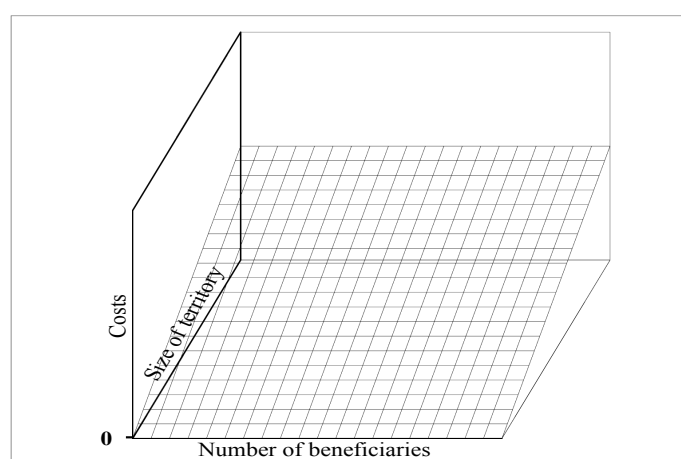


Figure 3. The cost structure of a spatial and non-rival good

<sup>99</sup> We are assuming that no translations from the majority language into the that of minority occur.

<sup>100</sup> Again, we are here talking of additional costs of a parallel system. See footnote 98.

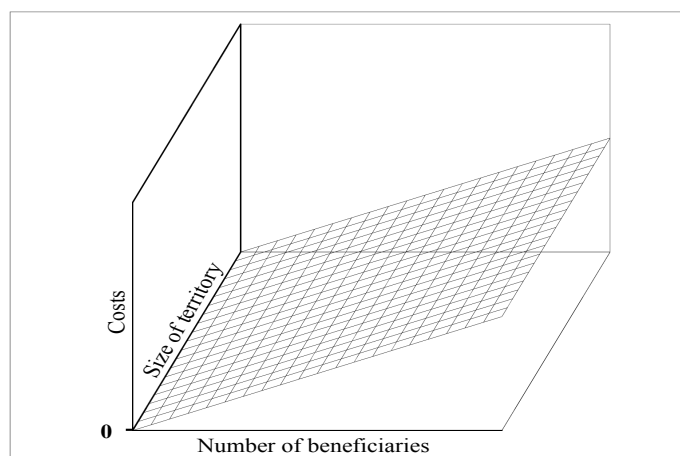


Figure 4. The cost structure of a non-spatial and rival good

## 5.2 CHOICE OF FORMAL RULES FOR DIFFERENT CATEGORIES OF PLANNING MEASURES

Any responsible language policy would have to weigh costs against benefits. Since benefits of a certain allocation of rights in favor of a given language are largely proportional to the number of beneficiaries, whereas the costs of implementing the allocation are normally represented by a concave function of the number of users, the cost-benefit argument, as a rule, leads to a critical-mass decision rule in the case of non-spatial goods. That is, the larger is a language community in absolute numbers in the relevant area, the more extensive should be the rights allocated to the language in question.<sup>101</sup> On the other hand, the size of the territory where the right is implemented can vary. The consequence of this is that a minority-population density rule makes sense in most cases involving spatial goods. In other cases, a mixed rule – a combination of a population-density and a critical-mass rule – might be the best choice.

Of course, not every language-planning measure brings the same level of benefits, nor are

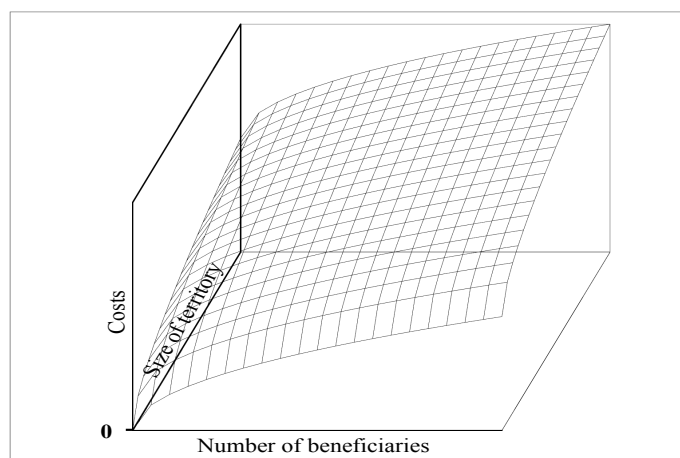


Figure 5. The cost structure of a partially spatial and partially rival good

<sup>101</sup> For a more detailed discussion, see WICKSTRÖM (2016b).

all effects in a cost-effectiveness analysis equally attractive in the eyes of the policy maker.<sup>102</sup> Here, however, we only want to stress that the qualitative part of the decision rules (like requiring a critical mass of beneficiaries or a certain population density of beneficiaries) have to suit the type of good being considered, and that the cost structure is very important for the choice of qualitative decision criteria. The next step, that is choosing the quantitative part of the rule (the actual size of the critical mass or the minority-population density) is, of course, more difficult. Our discussion in this section only throws light on the simple types of rules to be used depending of the cost *structure* in evaluating different planning measures, which in turn make up the language policy.

The cost structure, then, has clear implications for the general implementation of a language policy. Since one cannot have a different formal policy rule for each conceivable domain of language planning, an efficient organization of the language policy requires that sets of domains be collected into categories. A different set of policy rules can then be applied to each such category. Our classification of cost structures is a good point of departure for the definition of such categories.

There could be domains where policies result in non-spatial non-rival goods, for instance mostly symbolic uses of a language such as in the official name of a country on banknotes, in the names of public institutions, etc. Language policies in such domains, as a rule, cause low costs and could be implemented for many minority languages with a relatively small number of speakers, thereby increasing the status of the language. At the other extreme, we have the category providing spatial and rival goods. This would include various social services in a certain language. The language policy here requires a minimal concentration of the speakers of the language in order to be sensible. The category of domains resulting in spatial and non-rival goods would include street signs in different languages, and an example from the category of policy domains dealing with non-spatial and rival goods could be various uses of different languages in national political institutions.

For each category one would have to find a different formal rule for the implementation of planning measures, such as a minimal density of beneficiaries in the area considered or a certain minimal number of speakers of a language. For the categories “non-spatial non-rival” and “non-spatial rival”, the spatial dimension is absent and we have seen above that a critical-mass decision rule would be the natural choice if the costs are concave in the number of beneficiaries. For the spatial cases a density rule, sometimes combined with a critical-mass rule, would make sense.

## 6 EVALUATION OF LINGUISTIC JUSTICE

In discussing evaluation criteria for linguistic justice, we basically take an accommodation approach structuring the problem to deal with the presence or absence of legal rights for an individual to be accommodated in a certain language in given (public) domains as well as the implementation of such rights. This captures the possibility that language policies can have several distributive consequences for different groups of people, thereby creating “winners” and “losers”. The right to use a certain minority language in a given domain is modeled to apply to all individuals, independently of the “need” for accommodation of the specific individual. That is, the right to use a minority language in court, say, applies to all individuals equally and is a

<sup>102</sup> See, for instance, GRIN and VAILLANCOURT (1999) for a comparison of the effects of different policies.

matter of individual choice. Since the right is independent of whether the person masters the majority language or not, the individual value of the right can be very high for the person not knowing the majority language, and the right might not be particularly valuable for a fully bilingual individual.<sup>103</sup> The prohibition on the use of a language would then simply be a negative right with in fact, symmetrical distributive consequences. Most language-planning measures will indeed have distributional consequences as noted above in section 3.3 in table 7.

Here the discipline of economics, in particular public economics and policy analysis, can make an essential contribution. The individual propensities to pay for different language policies varies, as we have argued above. The policies, hence, have distributional effects and can be viewed as means for distributing resources as well as opportunities among the members of a diverse population.<sup>104</sup> A general analysis of language policies, of course, is not only a static or short-term analysis, but these policies also shape the long-term distribution of language use.<sup>105</sup>

## 6.1 BENCHMARK

We can analyze the distributional consequences of language-planning measures by looking at winners and losers from the measure. This, however, does not say anything about whether the policy leads to more or less justice. To address such a question, we need a definition of “justice” allowing us to discuss degrees of justice. This is possible by defining a benchmark as just and looking at deviations from this benchmark.

As benchmark we take a situation characterized by strict equality of all individuals.<sup>106</sup> All individuals should have the right to express themselves (and to be understood) in any language of their choice in any situation in society.<sup>107</sup> In reality this is, of course, not implementable and the interesting problem is to analyze the trade-offs and modifications of this mirage that become necessary and desirable.<sup>108</sup> The necessary modifications and departures from the benchmark can be separated into two categories: one free of any institutional restrictions and one due to institutional restriction in the real world. In the first type of modifications it is basically assumed that different theoretically possible reallocations of resources between individuals are also feasible. In the second type, there are institutional limits due to the real existing institutions in society on what is feasible. These limits are often given by political power structures. The two

<sup>103</sup> PATTEN’S (2009) accommodation argument is hence extended to cover all individuals who want to take advantage of the right.

<sup>104</sup> See GRIN and VAILLANCOURT (1999), GRIN (2003), GRIN (2005b), and GRIN and GAZZOLA (2013).

<sup>105</sup> Compare WICKSTRÖM (2005), FERNANDO, VALIJÄRVI, and GOLDSTEIN (2010), WICKSTRÖM (2014), as well as TEMPLIN, SEIDL, WICKSTRÖM, and FEICHTINGER (2016).

<sup>106</sup> To us equality means that speakers of different languages are treated equally. In the literature other definitions of equality can be found, for instance, equality of languages, that is, treating all languages equally independently of the number of speakers. This comes close to PATTEN’S (2009) end-state argument. See POOL (1987) for a further discussion of this issue.

<sup>107</sup> This is related to PATTEN’S (2009) context-of-choice and fairness criteria.

<sup>108</sup> One could define the benchmark in a diametrically opposite way. In this case, no rights are inherently in effect, and all provisions of specific rights have to be consciously decided upon. With our chosen benchmark, all individuals are provided with all possible rights to use their language of choice in any social situation, and restrictions have to be motivated. We call this approach “liberalism”. The opposite one could then be labeled “absolutism”. Compare also the basic legal philosophy behind the Anglo-Saxon common-law tradition and the continental one associated with the *Code Napoléon*. Of course, the two benchmarks are distributionally very different. See also WICKSTRÖM (2007).

categories are of course intimately related, but from an analytic point of view the separation is useful. We, hence, discuss them in turn.

## 6.2 ARGUMENTS WITHOUT INSTITUTIONAL RESTRICTIONS

As we have suggested above, the welfare-economics approach can be based on cost-benefit or cost-effectiveness analysis. The benefits of the language policies are measured as the aggregated propensities to pay of the individuals in society for the goods provided as a result of the policy measures. These benefits are then compared to the implementation costs of the policy.<sup>109</sup> In a cost-effectiveness analysis, the policy maker decides on the priorities of the effects resulting from different planning measures and possibly assigns administratively determined benefit values.

The most obvious problem with the benchmark is that the resulting costs can be prohibitively high. It is simply not economically feasible to provide equal individual language rights to all people. If one deviates from the situation characterized by equality between all individuals, one can often achieve a considerable gain in efficiency, defined as the difference between aggregate benefits (defined as aggregated propensities to pay or aggregated administratively assigned benefit values) and implementation costs, by not considering policy measures leading to a strongly negative benefit-cost difference.<sup>110</sup> By not implementing measures with high costs relative to the benefits, some individuals will be disadvantaged. The efficient policy will lead to inequities, and we will have a trade-off between equity and efficiency. The benchmark case above hence has to be abandoned due to implementation costs. How far we move away from the benchmark will depend on the decision criterion adopted. With a given criterion, the policy chosen could also be influenced by the fact that preference distributions in a population as well as the planner's priorities might be endogenous and consequently not expected to be stationary and stable over time.

The straight-forward way to deal with the trade-off between equity and efficiency would be to combine the efficiency-increasing policy with individual transfers. This first-best policy would lead to an egalitarian and efficient society. However, due to incentive problems and other restrictions, this is, as a rule, not possible.<sup>111</sup> Only limited compensation payments are possible and the trade-off remains. We discuss this in section 6.2.2.

### 6.2.1 Trade-off between equity and efficiency

The trade-off can be broken up, though, into distributional effects on two levels. On one level, it is the difference between language groups, where one group can be advantaged relative to another. On another level, there are distributional effects within a language group, where individuals attach different values to a given planning measure. If, for instance, the European Union were to introduce Russian (a language that has more first-language speakers among the citizens of the EU than some languages with an official status) as an official language,<sup>112</sup> this would be

<sup>109</sup> For a more detailed discussion, see WICKSTRÖM (2016b) and the references therein.

<sup>110</sup> Using the difference between aggregated benefits and implementation costs, is an example of potential Pareto efficiency, see section 1.1. Were all types of compensation payments possible, this could bring us to Pareto efficiency.

<sup>111</sup> Compare this situation with the optimal-taxation problem; see, for instance, HINDRIKS and MYLES (2006).

<sup>112</sup> Cf. HASELHUBER (2012).



a redistribution in favor of the group of Russian-speaking citizens of the EU who now can use the language of their own choosing in communications with Brussels, and a possible cost for speakers of other languages, depending on how the implementation costs are divided. At the same time, within the group of Russian speakers some individuals will value the possibility of communicating with Brussels in their mother tongue very highly, whereas for others it has no value at all. There would be considerable distributional effects, and the consequence of the measure for linguistic equity could go in both directions depending on the individual propensities to pay of the Russian-speaking citizens of the EU (although there would probably be an increase in efficiency). A different language-planning measure, like making Russian an official language in countries like Latvia, might increase both the level of linguistic justice and efficiency, due to a stronger “need” of the members of the Russian-speaking community in Latvia to communicate with the local authorities in Riga than with the Brussels bureaucracy.

In section 5 we discussed selection criteria for language-planning measures based on efficiency defined as the comparison of aggregated benefits and costs. In practice, one has to evaluate and compare the effects on both efficiency and distribution of a given policy measure and ask whether a distributional loss can be justified by an increase in efficiency.<sup>113</sup>

### 6.2.2 Compensations

In discussing efficiency, we made a direct comparison between aggregated benefits and costs or benefits *per capita* and costs *per capita*. When discussing distributional effects between groups or between individuals, benefits and costs attributed to the group or to the individual have to be compared with those attributed to other groups or individuals. The policy maker could in principle achieve any distributional effect through personalized taxes. For practical reasons individual taxes are, of course, not possible, and taxes are at best correlated with some general characteristics of the subjects, such as income, wealth, or age. The question to be asked then is if the linguistic injustice due to language-planning measures or the absence thereof can find a compensation in the tax system, or if a minority speaker without extensive rights for his or her language can receive a compensation for this disadvantage in some other manner. The simplest form of compensation would be direct transfers, for instance in the form of tax breaks or subsidies.<sup>114</sup>

#### *Efficiency costs versus distributional injustice*

Often direct or indirect transfers are not politically feasible. That is, a disenfranchised<sup>115</sup> person can for practical or administrative reasons not be compensated for his or her disadvantage. Then a second-best solution would be to return to the trade-off between efficiency and distribution.

<sup>113</sup> This trade-off is present BURCKHARDT (2018), who looks at the unequal “mobility disenfranchisement” that could be overcome with more resources invested in language-learning in European schools at a certain cost, and in VOGLAMBER (2018).

<sup>114</sup> This type of argument can be found in the work of Van Parijs, who argues for the introduction of English as the sole official language in the European Union. He argues that this could be fair if the speakers of other languages are adequately compensated for learning English; see, for instance, VAN PARIJS (2011). See also POOL (1987) and POOL (1991) for the original discussion of the topic.

<sup>115</sup> In the context of language policy, a person who because of insufficient language knowledge cannot communicate with a public institution in one of its official languages. See, for instance, GINSBURGH, ORTUÑO-ORTÍN, and WEBER (2005).

That is, one would compare the efficiency loss if the right is implemented – the difference between implementation costs and aggregated benefits to the members of the minority – with the distributional consequences due to the non-implementation of the right – the perceived loss of the individuals belonging to the minority in comparison to those belonging to the majority due to the absence of the right. Depending on the planner's preferences for redistribution, the latter value will be given a positive weight in the comparison with the former, and more minority rights will be realized than implied by the pure cost-benefit analysis (with weight zero given to the distributional loss).<sup>116</sup>

In addition, the propensities to pay could be correlated with the income or education of the individuals. Then the provision of language rights would redistribute implicit income in favor of the rich and well-educated in the case of a positive correlation and in favor of the poor and uneducated in the case of a negative correlation.<sup>117</sup>

The analysis of linguistic justice justifying a deviation from absolute equality of all individuals with respect to their linguistic preferences necessitates a general analysis to weigh many arguments one against the other. Ideally it should reflect the judgment of an impartial external observer.<sup>118</sup> Here ends the input of the economist concerning linguistic justice.<sup>119</sup>

The relative weights between the alternatives in the various trade-offs between justice and efficiency in the real world have to be fixed exogenously. Making such choices is a political issue reflecting the preferences, not of an impartial observer, but of a policy maker. Policy mak-

<sup>116</sup> Consider the calculations in JAN FIDRMUC and GINSBURGH (2007). One can look at the analysis here as a cost-effectiveness analysis. The effect is that a given individual has the ability to communicate with the institutions of the European Union (the authors use the expression “disenfranchisement” for the inability to communicate with the EU; other values of language use for the individual, like boosting his or her identity are ignored in the analysis). This can be achieved by giving various languages an official status. The data are based on EU25 with then 20 official languages. By adding Maltese to a policy with only English, French, and German as official languages, Maltese speakers who do not master English, French, or German, will be enabled to communicate directly with the institutions in Brussels. This would, according to the authors, come at an annual cost of 831.30 euros per disenfranchised speaker of Maltese in the absence of official status for Maltese. If we consider a situation where the alternatives are 19 languages (excluding Maltese) or 20 (including Maltese), this sum would increase somewhat, but probably not very much. Assuming that the language planner attaches a value of less than 800 euros to enabling the direct communication with Brussels of an average European citizen, it would be efficient not to give Maltese an official status. This situation is, of course, not just, and we have the trade-off between efficiency (no official status for Maltese) and justice (official status for Maltese). The fact that Maltese is an official language in the EU can be interpreted in such a way that the rational planner gives a weight greater than zero to justice in the trade-off between efficiency and justice. (Whether the language policy in the EU is based on rational arguments or not is a different question.)

<sup>117</sup> In the European Union the *knowledge* of languages other than the mother tongue, especially the knowledge of English, is as a rule positively correlated with income and education, see GAZZOLA (2016b). However, this does not necessarily imply that propensities to pay for an official status of the non-English mother tongues are negatively correlated with income and education; it might be much more important for the rich to communicate with Brussels than for the poor, and, hence, the rich might have a higher propensity to pay for the right to use their mother tongue in such communication in spite of the fact that they could use English at a sufficiently high level. The rich might also have higher propensities to pay in general, because their income is higher and the demand for communication ease is a “normal” good (a good with a positive income elasticity of demand; that is, the demand for the good increases with increasing income).

<sup>118</sup> The intuitive argument that one should “put oneself in the shoes of others” to make fair and impartial decisions – to decide behind a veil of ignorance – goes back at least to PLATO (1888, 1980) and has its most prominent modern exponent in RAWLS (1971). For a critique of the veil-of-ignorance approach, see PELED (2018).

<sup>119</sup> In VAILLANCOURT (2018), François Vaillancourt in his conclusions discusses the limits of the possible input of the economist. See also CARDINAL and SONNTAG (2015).

ers are politically appointed agents and respond to voters through the political system. In that way they are partial. However, identifying the trade-offs between, for instance, efficiency and distributional justice (or equity, see section 6.2.2) or between current and future generations (see section 4.1.1) is an empirical issue, and the empirical investigation can be based on transparent theoretical arguments. The choice of specific positions in those trade-offs is a policy issue for which there is no scientific basis. It is a matter of political ideology that can be a reflection of political power, which in turn depends on the number of voters in the different groups. What our analysis can do is to compare various policies and their outcomes for each ideological approach adopted by a policy maker.

### 6.3 ARGUMENTS FROM AN INSTITUTIONAL VIEWPOINT

Language policy is not conducted in a vacuum. Geographical facts and spatial population structure are important determinants of the federal structure of a country or region. This, in turn, influences a sensible language policy. In addition, a very detailed set of rules is costlier to administer than a few general rules. Therefore, a long catalog of specific rights is not practical to implement, but rather a few categories like official state language, national language, working language, local official language etc. See also the discussion in section 5.

#### 6.3.1 Formal rules

For the implementation of policies, the state needs some simple general rules. In the implementation of language policy, such rules can depend on the absolute size of a language group or on its population density. In section 5 above it was argued that costs depend both on the number of beneficiaries of a planning measure and the size of the relevant geographic area. This leads to formal rules based on the two indicators, namely absolute size of the minority population and its density. In practice, however, one generally finds a percentage rule, sometimes combined with a critical-mass rule.<sup>120</sup> A percentage rule, however, is not sensible; a density rule, that is the number of speakers of the language per unit of land, is what comes out of the analysis. Migration of members of the majority population to mixed areas will lower the percentage of the minority population, and if a percentage rule is in effect, minority rights will be lost, although nothing has changed in the cost-benefit or cost-effectiveness analysis; a rather unfortunate situation from the point of view of welfare economics. A combination of a critical mass and a density (or percentage) rule is also less prone to political manipulation through changes in the jurisdiction borders.<sup>121</sup>

#### 6.3.2 Federal structure

The theoretically oriented literature on federalism brings important arguments both for federal structures and for centralized structures of a state. These arguments should be weighed against one another when writing a constitution.<sup>122</sup> One important argument speaking in favor of a fed-

<sup>120</sup> The combination is found in Finland, for example. There, a critical mass of 3 000 people or a fraction of at least 8% of the population is required for giving rights to the local language minority; see ÖSTERLUND (2018). Romania, in comparison, requires 20% of the population and Slovakia 15% of the population for local language rights.

<sup>121</sup> See, for instance, WICKSTRÖM (2015).

<sup>122</sup> See, for instance, BOADWAY and SHAH (2009).

eral structure is the possibility to arrange jurisdictions such that the preference structure within a jurisdiction is fairly homogeneous, and rather heterogeneous between jurisdictions. This way it is everywhere easier to provide (public) services locally and closer to what the citizens demand than in the case of centralized identical services in the whole state. The main argument for centralization is that in the case of economies of scale, the per-person costs are smaller the bigger the jurisdiction.

The argument above can easily be applied to language policy. If a minority population of a given size is concentrated in a specific geographic area, this is an argument for a federal structure with the areas with a high concentration of the minority forming their own jurisdictions.<sup>123</sup>

If the minority population is concentrated, the implementation costs, being more or less proportional to the size of the jurisdiction, will be lower than if the same population is spread over a larger area. The immediate conclusion is that more extensive rights should be present in the case when the minority is concentrated than in the case when it is spread over the whole country.

Of course, there can be a political argument against making jurisdictions ethnically homogeneous, as it can lead to secession movements and a disintegration of the state. On the other hand, a happy minority population might be more inclined to support the existing political structures than a population whose members feel discriminated against. If the unity of the state is important, such arguments have to be taken seriously.

## 7 INFERENCES AND CONCLUSIONS

Four main points made in this chapter are worth stressing.

To start with, we have attempted to justify an approach to language planning and policy that builds on economic theory. This is based on the observation that most language-related goods have properties that differ from those of pure individual goods: rivalry, exclusion, and shielding. We can hence infer that spontaneous interactions, *laissez-faire*, do not lead to efficient results. Hence, an involvement of the public sector is required. We have a number of situations of classic market failure. This justifies government involvement and provides a solid basis for a public language policy.

Second, the benefit side of language policies is difficult to estimate. This calls for a cost-effectiveness analysis and, as a consequence, the effectiveness of different planning measures for achieving some desired effect has to be compared with the cost of the measures. The cost side then becomes more important. We have argued that a normalization to per-person costs allows us to categorize language-planning measures into a small number of categories based on the cost structures. Each category has similar properties, and the main decision criteria for language-planning decisions are closely related. These decision criteria can be reduced to a relatively small number of decision rules for the different kinds of cost categories. These rules are based on population densities, critical number of beneficiaries or a combination of both.

Third, language policy can be differentiated and in each category different rules can be used to reach optimal decisions. By differentiating the language policy according to these categories, more flexibility is introduced and a higher level of welfare could be reached. The level of welfare that can be reached with an optimal uniform rule being applied to all planning measures

<sup>123</sup> Compare this with the situation in Finland described by ÖSTERLUND (2018). The currently discussed reform of the jurisdictions in Finland seems to distance Finland from this ideal.

can, of course, also be reached with separate rules. One simply has to use the same rule in each separate case. By making the separate rules different and optimal with respect to the measures to which they are applied (and taking possible externalities on benefits and costs of other measures into account), welfare is bound to increase if the separate optimal rules differ from the uniform optimal rule.

Fourth, distributional issues can be incorporated into the cost-benefit or cost-effectiveness analysis by making the efficiency-equity trade-off operational. The relative weights of efficiency and equity, however, is a political issue.

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