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What is justice in education? Sketch of answer based on theories of justice and economics'¥

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Abstract

What is justice in education? How can we evaluate whether given distributions of educational inputs or educational outcomes are just or not? How should a society distribute its educational resources? How can we evaluate the level of (un)fairness of a schooling system? In this paper, we try to provide a basic framework for thinking about these normative questions in what we consider to be a rigorous way. In order to accomplish such task, we interrelate different strands of literature, namely: theories of distributive justice, developed by political philosophers, concepts and tools used in microeconomics (especially in welfare economics), and insights from positive economics of education. We present, illustrate, and criticize what 'justice in education' is, according to four normative positions – utilitarianism, libertarianism, egalitarianism and egalitarian liberalism.

1. Introduction

What is justice in education? How can we evaluate whether given distributions of educational inputs or educational outcomes are just or not? How should a society distribute its educational resources? How can we evaluate the level of (un)fairness of a schooling system?

In this paper, we try to provide a basic framework for thinking about such normative questions in what we consider to be a rigorous and systematic way. In order to accomplish such task, we interrelate different strands of literature, namely: theories of distributive justice, developed by political philosophers, concepts and tools used in microeconomics (especially in welfare economics), and insights from positive economics of education. Some simple graphics and mathematics are used in order to present some points in a clearer manner or to illustrate some points that are made or examples that are shown. The reader who does not feel comfortable with them can skip them without compromising the understanding of the content of the text.

The paper is organized as follows. Section 2 distinguishes positive and normative approaches in economics of education, and presents the welfare economics tools that are used throughout the paper. In sections 3 to 6, we discuss what an equitable educational system amounts to, according to four main sets of contemporary theories of social justice – utilitarianism (section 3), libertarianism (sec. 4), egalitarianism (sec. 5) and egalitarian liberalism (sec. 6). Section 7 summarizes the ideas presented at previous sections through a simple example, as well as through a brief discussion about intermediary cases. In section 8, we point out the main virtues and limitations of this work.

2. Justice in education

Many economists take it for granted that the social objective of an educational system is that of maximizing its efficiency, frequently understood as maximizing the aggregate performance of students. By choosing this objective, the economist would not be required to do any particular – contestable and possibly embarrassing – normative choice and could comfortably keep on working within positive economics. Nevertheless, the apparent neutrality or impartiality of this procedure hides, in fact, some particular normative assumptions. In a certain sense, aiming at the maximization of aggregate performance reflects a particular kind of *utilitarian* view of the educational system (educationist utilitarian, as it will be shown later). In its simplest version, educationist utilitarianism does not attach any importance at all to the distribution of education, caring only about the sum total of educational output.

Not only in education, but also in various other settings, many economists explicitly or implicitly adopt a utilitarian normative position. Indeed, for Sen (2000), "in many respects, utilitarianism serves as the "default program" in welfare-economic analysis". One of the reasons for this could be that, for many years, normative investigation was not the field that had improved more noticeably within economics (Arnsperger & Van Parijs, 2000). Another possible reason is that the economic science has been nurtured in a utilitarian normative framework for years making it difficult to incorporate and develop analyses based on other normative standpoints. Whatever the reason, the fact is that for long time utilitarianism, and the related Pareto-optimality principle, were the normative criteria more frequently taken into account in economic analysis.

Nevertheless, many social scientists (including economists) insist on the fact that an important social objective of an educational system is to achieve equity. There is no agreement, neither on what an equitable educational system is, nor on what kinds of inequalities should be considered inequitable or unfair (of access?, of treatment?, of opportunities?, of outcomes?, …). Despite these differences, *egalitarian* observers agree that priority must be turned to equality issues, and not solely to efficiency.

In more general terms, however, *utilitarian* and *egalitarian* views of justice represent only two particular and somewhat extreme normative viewpoints, which, alongside *libertarianism* and *egalitarian liberalism*, are classified by Arnsperger & Van Parijs (2000) as the four main approaches in contemporary theories of social justice. Each of these four grand theories provide very different interpretations of what justice stands for. In education, each of these theories would provide completely different answers to the questions stated in the introduction of this paper.

But how exactly can a normative economics of education analysis be done? A promising strategy seems to consist of translating, as rigorously as possible, the main philosophical theories of justice into normative criteria and objectives in the particular field of education. These criteria and objectives should be as concrete, measurable and comparable as possible, respecting pre-defined mathematical properties. This methodological strategy is indeed recommended by a prominent normative economist in a paper about a similar topic (Kolm, 2002, on the relationship between health and justice), and justified in terms of recent "important advances in the systematization of the analysis of justice on the one hand", and "in the rather technical sub-field of the measures of unjust inequalities on the other hand". In this paper, we explore some aspects related essentially to the first issue raised by Kolm, that is, the systematization of the analysis of justice.

However, such *normative* analysis should not ignore the knowledge accumulated by *positive* economics of education, especially the extensive available literature on educational production functions. Recent works have emphasized the importance of taking into account factors such as the educational institutional setting (Vandenberghe, 1996), principal-agent networks (Woessman, 2000), non-monetary inputs such as personal effort, peer effects and other kinds of social interactions (Vandenberghe, 1999; Trannoy, 1999; Akerlof & Kranton, 2000), among many other essential ingredients to the production of education.

2.1. Positive economics of education : education production functions

So before proceeding to the normative analysis, it is worthwhile to take a quick look at what positive economics of education – essentially education production function – is worried about.

Education production functions literature treats entities of the schooling system – schools, universities, and the whole schooling system – as firms that allocate a vector of inputs (call it Z) in order to achieve some outcome (call it A). Investigating the relationship between inputs and outputs would eventually allow us to identify the available technology for producing educational outcomes. Knowing this technology would then allow us to design policies which, by making an appropriate mix of inputs, would improve the level (or the quality) of the output, according to previously defined normative objectives.

There is no consensus about the most correct specification of an education production function but many studies take into account about the same sets of inputs as components of the vector Z. In fact, an ideal or complete production function may never be estimated in any empirical study due to the lack of data. But in an abstract level this 'complete production function' can be stated and take the following form:

$$A_i = f(A_i^{-1}, T_i, E_i, S_i, N_i, I_i) \quad \text{(Equation 1)}$$ [1]

(A_i) represents the achievement of a pupil i in the present time. Typically it can represent an individual's score in a centralized national exam, or the attainment of a particular educational level (e.g.: finishing secondary school), the total years of schooling etc.. It is a function of:

(A_i^{-1}): previous achievement;

(T_i): innate talent or ability;

(E_i): effort, which is a function of motivation, personality, talent etc.;

(S_i): a vector of school resources such as teacher's wages, quality of infra-structure, per-pupil expenditure, class size, teacher's and principal's education and experience, and so on;

(I_i): institutional and organizational features, such as the source of funding (private versus public), kind of hiring procedure (decentralized versus centralized), whether central cognitive exams for the assessment of students are employed or not etc..

(N_i): a vector of non-monetary resources such as characteristics of peers (average E, T, P etc.) and the so-called social capital (characteristics of community and family);

As an illustration, consider that the achievement variable, A_i, represents the score each student attains in an international assessment examination such as OECD's PISA 2000, for example, in mathematics. Suppose pupil j achieves a high score (say, 600), while pupils k has a low score (say, 400). Knowing that each pupil had at her disposal different mixes of the inputs listed above, positive economists of education would try to find out, among other things, what is the contribution of each input to explain the scores of the students, and what are the possible trade-offs between the inputs to achieve a given score level. As a consequence, at least indirectly, they will also be able to find out the reasons underlying the score gap between the two individuals – for example, does the gaps exist primarily due to a different amount of transferable inputs, such as school resources, S, or is it largely due to nontransferable inputs, such as the amounts of talent, T?

The bottom line is that these analyses of educational production functions should eventually reveal the 'technology' for producing education, with visible policy implications.

2.2. Normative economics of education : how to distribute resources?

Knowing the technology of education by means of educational production function is certainly a relevant matter. But even if the technology for producing education was a settled issue – which is not, since there are many open questions in that field –, the normative questions of the introduction would still not have been answered.

In education it is particularly problematic to tear apart production from distribution decisions, that is, it is

[1] Typically, in econometric studies, a vector of personal characteristics (P_i) such as race, age etc. is also included in the estimation of educational production functions.

more difficult than in others sectors to clearly distinguish positive and normative concerns. Partly this derives from the fact that it is impossible to redistribute educational outcomes once a person has acquired it. If some redistribution is to be accomplished, it has to take place during the very moment of its production, that is, during schooling years - by contrast with monetary income, which can be taxed and transferred at any point of individuals' lifetime. Another reason is that it is impossible to redistribute some of the relevant inputs, such as talents, ability or family environment, since they are obviously not transferable from one person to another – again, in a clear contrast with respect to monetary income. Finally, a policy may be feasible but perhaps too invasive if it aims at influencing some family or community practices, in order for them to become 'good inputs' in the education process (that is, trying to shift N_i up in equation 1). Thus policies whose objective is to (re)distribute educational inputs are limited to acting only on some inputs and possibly on those that are not the most crucial ones.

Therefore a given society cannot simply produce the total amount of education and then redistribute a fraction of it to each person, in line with some normative prescription. The form of the ex post distribution of educational outcome requires an ex ante normative decision concerning which is the desirable final distribution.

Thus in order to decide how society should (re) distribute educational inputs it is important to define which are the desirable socio-economic criteria and objectives. The primary source for these criteria and objectives are moral values in general, and systematizations of them made by theories of distributive justice in particular. These criteria and objectives are the basis on which one can judge whether a society or a particular instance of socio-economic life is *just or not* or to rank different situations and assess *how just* they are according to some benchmark or as compared to other societies. In our case, the desirable or optimal socio-economic objective we want to define is the social objective of a schooling system. It is equivalent to determining what is the optimal (or desirable or fair) way in which one can aggregate A_i over a series of individuals (that is, when j =1,…,n).[2]

[2] If one is not consequentialist, he might not care about the results, but rather exclusively about the process. We will turn back to this issue later on, especially in the discussion about libertarianism.

In sections 3 to 6, we expose our interpretation of what four main sets of theories of social justice have to say about justice in education. We don't have the ambition to scrutinize them deeply.[3] Instead, we intend to present only their crucial points and to discuss in what sense they can be related to education. Before turning to them, we introduce some useful welfare economics tools.

2.3. Welfare economics

When presenting each normative position in sections 3-6 we make use of some straightforward graphic representations often employed in microeconomics, and particularly in welfare economics. For non-economists to understand these graphics, some brief explanations are necessary.

We will be working in a two-dimensional setting. The y-axis represents j, which can be a particular individual, or a demographic group (such as, for instance, a majority race group in a given population). The x-axis represents k, another individual or group (say, a minority race group).

The attributes measured in both axes are sometimes the level of utility, U_i, and sometimes the level of educational achievements, A_i. Utility is a subjective measure which represents the well-being of individuals, or equivalently, their welfare (that is why the term "welfare economics" is used). An individual i is said to have a higher level of utility in situation A as compared to situation B if his personal preferences (which are subjective) are satisfied to a greater extent under A than under B. This individual i is said to have a higher level of utility than individual g when both are under situation C if the preferences of the former are satisfied to a greater extent than those of the latter. In *welfarist* approaches the relevant attribute is the level of satisfaction of preferences of individuals, that is, their welfare or utility levels. Within this framework, different individuals can reach the same level of welfare while having different levels of educational achievements. For example, it is not excluded the possibility that a highly educated person and a poorly educated person be equally satisfied in their lives, that is, that they reach the same level of utility or welfare.

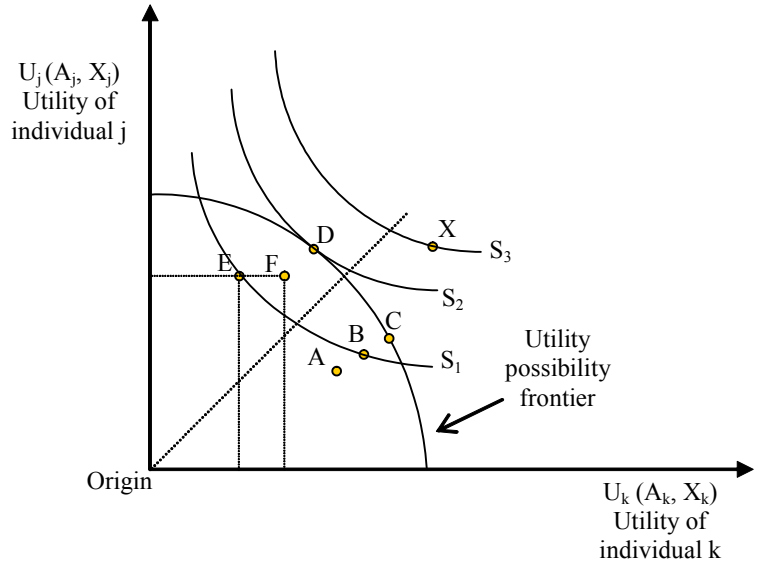
[3] The reader can find deep expositions and discussions of the strengths and vulnerabilities of each of these theories, for example, in Van Parijs (1991), Roemer (1996), Fleurbaey (1996). For a brief survey refer to Sen (2000).

The level of utility of an individual, U_i, is a function of his achievement level, A_i, but also of a vector of other relevant variables, X_i. A variable representing the health status of an individual could arguably be one component of this vector X_i – a highly educated individual possibly cannot transform his education achievement into utility if his health condition is too poor. The reasoning applies to a series of other possible components of X_i.

Achievement, A_i, on the contrary, is an objective attribute. In what we will call *educationist* approaches, the center of attention is set to be the educational achievement itself, regardless of the impact that educational achievement might have on welfare (that is, on utility or preference satisfaction). Two individuals with the same level of educational achievement (say, both holding a degree from the same university) could have different levels of welfare, but that aspect would be overlooked by educationists.

As it will become clear throughout the text, *educationists* are concerned with a mesojustice issue – they care about justice in education, despite the consequences education might have on other relevant variables. *Welfarists*, on the other hand, are worried about a macrojustice issue – they care about justice as a whole, and education is only one component of it.

Figure 1: Basic graph.



The feasible levels of utility, are represented in the graphs by a set of points (such as A to F in graph 1), which is called the possibility set. The highest feasible levels under the available technology (such as C and D) define a frontier. It is technically impossible to reach a point which is located at the north-east of such frontier (such as X). If we are on the frontier the utility of one individual can be improved only by sacrificing a fraction of the utility of the other. In technical terms, we assume that the utility possibility set generates a frontier which is: (i) continuous, (ii) concave to the origin, and (iii) monotonically decreasing from left to right.[4]

Positive economics of education can inform us on how to move from an interior point in the possibility set to a

[4] These assumptions are related in the last graph in section 7.

frontier point over this set (for example, from A to C or from A to D in graph 1).[5] Suppose evidences from education production function studies show that teacher's wages have a stronger impact on students' performance than the number of computers per pupil. A policy that reduced the fraction of the educational budget which is allocated to the acquisition computers and increased its fraction allocated to paying teachers' wages could, in principle, lead this schooling system from a point closer to the origin (say, A) to a point closer to the possibility frontier (say, B).

The impact of such a policy may not be neutral across individuals, but instead it might be such that one individual (say, k) benefits more from that policy than another individual (say, j). If such a non-neutral-across-pupils policy was implemented, society could move from point E to F (exclusively to the benefit of individual k).

Each normative position will be represented in the graphs by a different shape of social welfare functions (SWF). SWF can be seen as a representation of 'social preferences'. All the points of a higher SWF (such as S_3) are preferred to any point of S_1 (X is preferred to B or to E). All the points over a particular SWF (such as S_1 in graph 1) are equally desirable (such as B and E). The expression 'equally desirable' is used here as a synonymous with 'equally fair' or 'both optimal'.

A point located at the highest SWF (that is, the one which is more to the northeast) that is feasible under the currently available technology gives us an optimal allocation according to a given theory of justice (for example, point D in graph 1).

3. Utilitarianism and Pareto-optimality

Utilitarians believe that *a just society is a happy society*. The objective at which society should aim is to maximize its sum total (or average, according to alternative formulations) of happiness, or equivalently, of "utility".[6] Suppose that while a certain policy reduces the happiness, or the utility, of individual A by x units, it increases the utility of individual B by y units. Suppose also that it has no effects whatsoever on the utility levels of other individuals. If y is greater than x, a utilitarian would be in favor of that policy, since it would increase aggregate (and average) utility of society. Accordingly, if y is smaller than x, a coherent utilitarian would be against that policy.

According to a pure utilitarian approach (welfarist utilitarianism), the objective of the schooling system is to maximize the total utility. With regards to education, the utilitarian position does not necessarily require the maximization of the total level of education, but rather the maximization of the total utility derived from education. A very simple mathematical formulation of the welfarist utilitarian maximand is as follows:

$$\mathbf{W = \sum U_i (A_i, X_i)}$$

(Equation 2 : Welfarist utilitarianism)

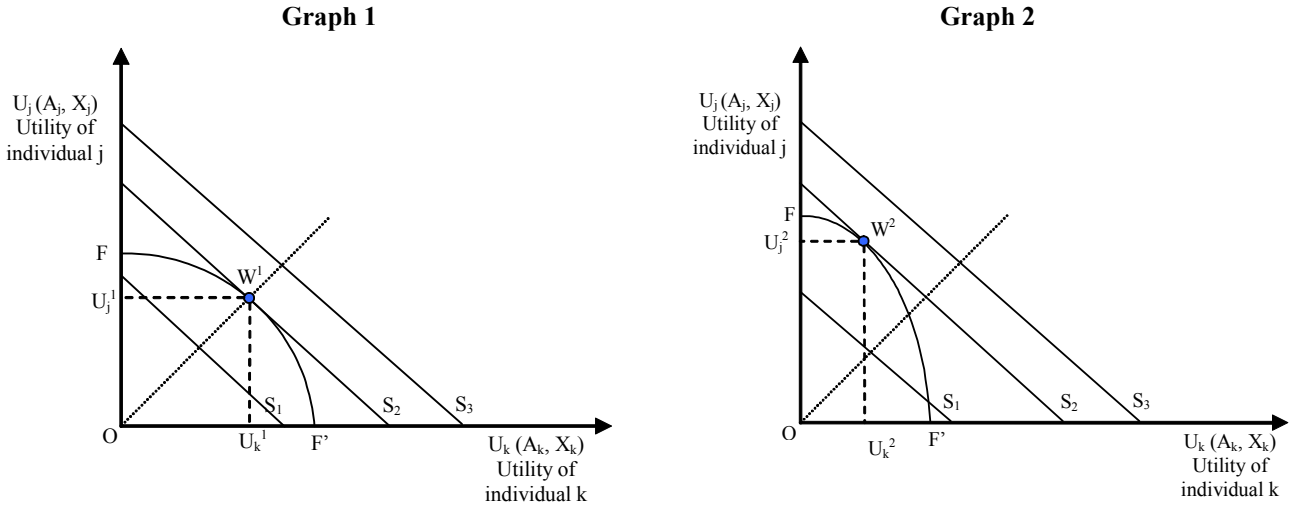
where: i = 1,…n. The normative objective in terms of social welfare (W) is defined as the sum of utilities (U_i) that each individual derives from his or her educational achievements (A_i) and of other relevant variables (X_i).

In a society of two individuals, k and j (or two groups of individuals, say autochthones and foreign-born), the welfarist utilitarian position can be expressed graphically in figure 2.

[5] Assuming that utility, Ui, is an increasing function of educational achievements, Ai.

[6] Utilitarianism was stated by 19th century English economists, such as J. Bentham, J.S. Stuart Mill and H. Sidgwick. A.C. Pigou and J. Harsanyi followed the tradition in the 20th century. For a 21st century approach, refer to Blackorby et al. (2002).

Figure 2: Welfarist utilitarianism, with symmetric and asymmetric possibility sets



Where: O: origin; FF': utility possibility frontier; Wn : optimal allocation; Sn: social welfare contours S3 ≥ S2 ≥ S1; Ui: utility of individual i; Ai: educational achievement of individual I ; Xi: vector of other variables influencing utility of individual i.

In graph 1 of figure 2, we assume a symmetric possibility set, meaning that the two individuals (or groups of individuals) have been endowed with a similar capacity for producing utility. The optimal allocation according to a utilitarian would then be the point W^1, in which both individuals would have the same amount of utility ($U_k^1 = U_j^1$). In graph 2 of figure 2, the possibility set is asymmetric, that is, we assume that individual j is capable of producing more utility than individual k out of a given amount of educational achievements. The optimal point, W^2, is not anymore over the 45° line, that is, the optimal outcomes for each of the individuals are different ($U_k^2 < U_j^2$).

Standard welfare economics frequently takes income (or consumption) as the relevant component of the utility function of each individual. Empirical evidences show that education is an important determinant of future productivity and future earning capacity of an individual. Combining the latter fact and the former assumption one could conclude that what really matters for determining the future amount of utility of an individual are her educational achievements. Schematically, we would have: Educational achievements determine wages, which in turn, determine the utility level. In such a setting, utilitarians could conclude that the objective of the schooling system is that of *maximizing post-schooling outcomes* (especially aggregate wages).

Utilitarian educational policies would then care about enhancing the future earning capacity of pupils, without particular concerns regarding any skills which would be deprived of future market value. In this crude version of utilitarianism, there would be no reason whatsoever to care about the distribution of educational outcomes. Policies would probably be set to 'pick the winners', that is, to select the most efficient utility-producers-out-of-education (such as individual j in graph 2 of figure 2) and invest in them a great amount of the available educational resources.

Measurement problems and interpersonal comparability of utilities

A utilitarian would support a particular policy if it implied an increased total, or average, utility. It is, however, impossible to compute all gains and losses derived from the implementation of such a policy. Take the example of the implementation of a positive discrimination policy, which would allocate a certain proportion of available places at good schools to individuals belonging to a given minority group. An individual who benefits from such a policy is certainly better off in terms of present benefits, since she has the possibility of consuming a scarce good – studying at a good school – which would not have been available to her without the policy. And she is probably also better off in terms of future benefits: she will enhance her probability of reaching higher steps in the schooling system and, eventually, of having a good social position in the future (higher wages, higher utility level).

Nonetheless, the same individual could well have losses due to that policy. For example, if the positive discrimination policy were very widespread and ambitious, it could be the case that the average quality of students fell drastically in some of the 'good schools'. If this is so, not only the aggregate previous achievement ($\sum A_i^{-1}$), but also the aggregate quality of the peers (a component of N_i), and possibly other inputs, would be lower, leading to a lower aggregate achievement (lower $\sum A_i$). Under reasonable assumptions, $\sum A_i$ being lower, $\sum U_i$ would also be lower. Developing the utilitarian reasoning, one could claim that such an ambitious positive discrimination policy would have a negative effect on the quality of the best students, reducing future aggregate wages and aggregate utility level in that community. Thus, even the individual that benefited from that policy could possibly lose utility.[7]

Clearly, it is difficult to assess whether a particular policy would bring more benefits than costs even to an individual. Moreover, if we take into account that at least one other individual would lose his place at the good school, the difficulties involved in actually computing gains and losses, both in the present and in the future, become enormous.

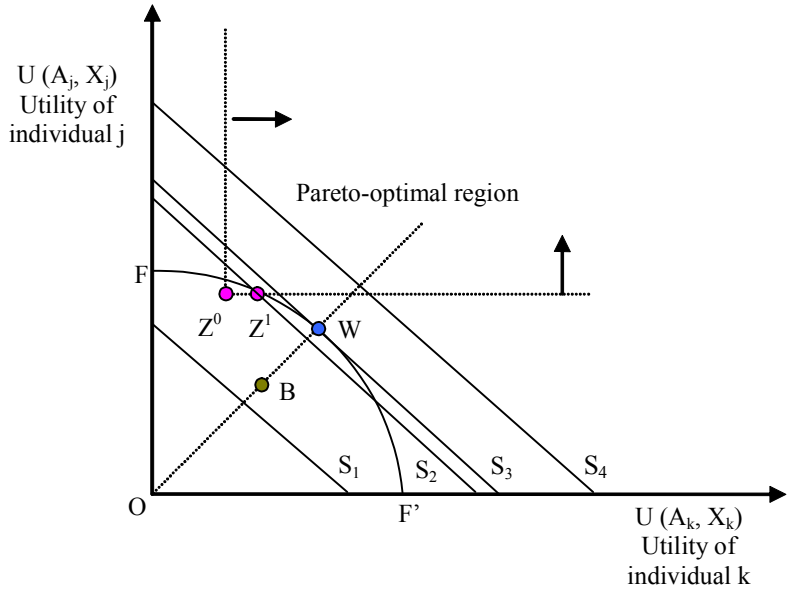
The example we used reveals another problem of the utilitarian approach, both on the theoretical and on the empirical level: the fact that it requires interpersonal comparison of utilities. The difficulties regarding such a requirement have probably been the most frequent criticism on utilitarianism. What metric should we use to measure x and y in the above example? How could one compare the increase of happiness or utility incurred by individual A, who received the right to get into the good school, with the level or decrease incurred by individual B, who has just lost the same right? Should we assume that their utility functions are the same? Isn't it arbitrary an assumption, given that people have so different preferences?

Ordinal approach, Pareto-optimality and unanimity

The traditional solution adopted by economics to deal with the problem of interpersonal comparison of utilities has been, for a long time, to simply put it aside. This has been done through the use of a normative criterion that dispenses with interpersonal comparison of utilities – the so-called *Pareto optimality*. This criterion requires that each individual ranks different allocations according to the utility he obtains from each of them. By relying on ordinal utility, this criterion does not demand any kind of comparison of utilities between different individuals. At the aggregate level, an allocation A is known to be Pareto-preferred to an allocation B if *all* individuals either prefer A to B, or are indifferent between A and B. Thus, an allocation which cannot be replaced by any other without harming at least one individual is said to be Pareto-optimal.

[7] Obviously, we are not talking about a zero-sum game here.

Figure 3: Ordinal welfarist Pareto criterion (with a utilitarian SWF[8])



Where: O: origin; FF': utility possibility frontier; Sn: social welfare contours S4 ≥ S3 ≥ S2 ≥ S1; Ui: utility of individual i; Ai: educational achievement of individual i; Xi: vector of other variables influencing utility of individual i; Z0: initial allocation; Z1: optimal final allocation according to ordinal welfarist Pareto criterion, with a welfarist utilitarian SWF; W: optimal allocation according to (cardinal) welfarist utilitarianism.

In figure 3, we assume a symmetric possibility set. We assume that in the first moment, the actual allocation is Z^0. An educational policy will only we approved of by the Pareto criterion if it does not harm any of the two individuals (or group of individuals), that is, if it does not reduces the utility neither of j, nor of k. So, given the initial allocation, the region of Pareto-optimal solutions is defined as the region located at the north-east of Z^0. The point Z^1 represents an optimal solution. We can see that even with a symmetric possibility set (i.e. both individuals have the same capacity to derive utility from their educational achievements), the ordinal welfarist solution is not over the 45° line, as it would be the case of an utilitarian optimal allocation (point W).

One of the problems in taking Pareto-optimality as a normative criterion is that it allows for multiple equilibria, since more than one allocation are Pareto-optimal (generally, all the allocations located on the utility possibility frontier are potential Pareto-optimal points), and one might have no clue regarding how to choose between them. More broadly speaking, this criterion does not necessarily allow us to rank unequivocally all allocations. Indeed, not even allocations with different sums of utilities can be unambiguously ranked by the Pareto criterion, contrary to what happens in the welfarist utilitarian case. For example, suppose that allo-

[8] The Pareto criterion cannot be classified as a theory of justice as such, but rather as a normative assumption, namely, that social welfare is an increasing function of utilities of individuals, $\partial W/\partial U^i>0$, for any i. It is potentially respected by some theories of justice (utilitarianism, for example), but violated by others (strict egalitarianism, for example). Instead of the utilitarian one, various social welfare functions could be used, which would also respect the Pareto criterion.

cation A provides a level of educational achievements of 5 to individual j and of 4 to individual k, and that allocation B provides 12 to individual j and of 3 to individual k. Welfarist utilitarians would prefer B to A, since the sum in B is 15, and it is 9 in A. But these distributions of outcomes would not be ranked by the Pareto criterion since, for individual j, B is preferred to A, while for individual k, A is preferred to B.

Moreover, it is clear that the Pareto-optimal solution will always depend on the location of the initial allocation (Z^0), which could have been determined in an absolutely arbitrary manner. For example, if in the initial state all the resources had been allocated to only one individual, in which case point Z^0 would coincide with point F, the optimal allocation point would also be the initial one. The optimal policy would then amount to "not doing anything", otherwise individual j would be – unfairly according to the Pareto criterion – harmed.[9]

The bottom line is that the requirement of unanimity makes the Pareto solution too restrictive a criterion. It is inadequate as a tool for informing on most policy decisions, since virtually any real-world policy is potentially harmful for one or for more individuals.[10]

Educationist utilitarianism[11]

An alternative to escape both the problems of cardinal utilitarianism and those of ordinal Paretianity could consist of restricting the analysis to an attribute that would be accurately measurable and comparable between different individuals. In education, this could be done by choosing the following maximand: *maximizing the educational achievements of students*. The difference with respect to welfarist utilitarianism is that now the objective function is not a utility function anymore, but rather a function of educational achievements. The impact that the latter might have on utility is completely ignored, as shown in the expression below.

$$W = \sum A_i \quad \text{(Equation 3 : Educationist utilitarianism)}$$

where: i = 1,…n. The normative objective in terms of social welfare (W) is defined as the sum of educational achievements of each individual (A_i).

The graphic representation of this normative position is equivalent to those shown in figure 2, but replacing, on the graph's axes, utility (U_i), by educational achievements (A_i).

Strictly speaking, focusing on an objective measure (education) instead of focusing on a subjective measure (utility) means a net departure from utilitarianism. Indeed, one important trait – and, in a sense, strength – of utilitarianism is that *it refuses any kind of paternalism*. Utilitarians do not expect some entity such as the state to take decisions regarding what is good and what is bad for each individual, or regarding how much of each good an individual is to consume (e.g. what education level each individual is to achieve). It is because they want to respect individuals' preferences that they focus on a subjective measure of well-being such as utility, and not on an objective measure such as educational achievements.

Having said that, another important feature of utilitarianism is *their emphasis on aggregates*. Utilitarians are typically not worried about the distribution of a relevant attribute, but rather on the overall sum of this attribute. While usually the attribute is taken to be utility, the possibility of choosing another one, such as educational achievements, is not excluded. Because the latter feature is respected (emphasis on aggregates), we classify the normative position currently at issue as 'utilitarian'. The adjective 'educationist' is there though, in order to qualify this classification due to the violation of the former feature of utilitarianism (no paternalism).

We have seen that in a pure utilitarian framework (welfarist utilitarianism), weighing losses and gains would be an infeasible task. In an educationist utilitar-

[9] So, we would have $Z_0=F=Z_1$

[10] If society is not on the possibility frontier, there will always exist a Pareto-improvement movement which is neutral in terms of distribution. For example, starting from point B, society would move to point W (Pareto-improvement movement), but utility distribution would remain unaltered.

[11] The terms 'welfarist utilitarianism' and 'educationist utilitarianism' are adapted from Schneider-Bunner (1997), who uses "welfarist" to refer to a utility-based objective approach, and uses "healthist" to refer to a health-based approach.

ian approach, instead, the endeavor is less demanding: it is, indeed, possible to assess the scores of students in cognitive exams, to know more or less precisely the years of schooling or the highest schooling level attained, or to obtain measures of other educational outcomes. So the difficulties related to measurement and to interpersonal comparability do not constitute obstacles in this case.

There is also another heuristic advantage of the educationist approach. In the welfarist utilitarian case, designing educational policies require: (i) either assuming that 'other variables' (X_i in equation 2) are not important at all, in order to focus solely on the effect of educational achievements on utility, (ii) or admitting that 'other variables' are important, but thus having to deal with normative issues that go far beyond the educational sector. In the educationist approach, questions of macrojustice can be ignored and the attentions can be turned to smaller-scale normative issues (mesojustice), that is, to limit the attention to the educational sector. If we think small-scale normative issues are easier to handle and policy design is less problematic in this case, as compared to large scale normative issues, we understand in what sense this is a heuristic advantage of the educationist approach.

Hence in terms of normative objective of the schooling system, whilst a welfarist utilitarian takes it to be the maximization of post-schooling outcomes (especially aggregate wages), an educationist utilitarian takes it to be maximization of schooling outcomes.

One of the prescriptions of the educationists is prima-facie not essentially different from one of the welfarists' prescriptions – pick the winners and invest the educational budget mainly on them. But in this case, there is no need to pass by the intermediary step of utility: picking the winners here means picking the most-talented kids in terms of cognitive ability (the 'good students'), and not in terms of utility production. The adoption of educationist utilitarianism precludes one from picking bad students who are good utility producers.

Simultaneously, utilitarians would try to find out which inputs are the most effective in the process of producing education. Knowing that, they would recommend investing the educational budget especially in those inputs that would maximize the sum total of educational achievements.

Sen criticizes welfarist utilitarianism since it "…cannot tell between two distributions of the same total utility" (Sen, 2000: 67). Analogously, a coherent educationist utilitarian would not tell between two distributions of the same total educational achievements, since he is only worried about the aggregate. Thus, he would not care about the distribution of educational achievements, nor would he bother to support affirmative action or positive discrimination policies, or, generally, any educational policy with a distributive component.

4. Libertarianism

For libertarians such as Nozick (1974), *a just society is a free society*. Libertarianism is not a consequentialist theory such as utilitarianism or egalitarianism (discussed in the previous and following sections, respectively), which only care about final outcomes, but rather a theory that places a lot of importance on individual's rights and on procedures (it is sometimes classified as a procedural justice theory). Liberties of the individuals and respect to property are given maximal priority. State intervention should be restricted to a minimum. Libertarians believe that, once a historical process has been put in motion, with initial conditions justly set, any intervention by the state or by any other third party is a violation of individual liberties, an attack on legal rights, or even a theft if it involves the compulsory confiscation of economic assets (e.g. through taxation).

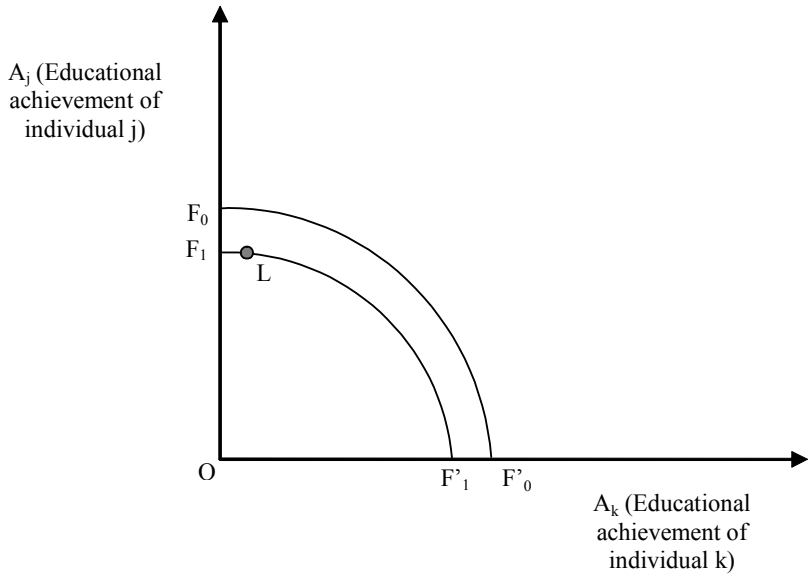
Libertarians defend three principles: (i) property of oneself: the individual has the property of himself and cannot renounce to it, (ii) transfer fairness: transfers of holdings must be done voluntarily, (iii) fairness in the original acquisition of goods. If these rights have not been respected, that is, if the "historical process" has not been fair, then libertarians need to evoke a fourth principle: (iv) rectification of past injustice in holdings. Clearly it is not possible to properly identify and meas-

ure past injustices, in order to rectify them. To solve this problem, some libertarians defend that all valuable assets should be equally distributed to all individuals before the 'race' restarted, respecting now the three main principles (Arnsperger & Van Parijs, 2000: 39).

One of the main strengths of libertarianism – its refusal to care about consequences and its focus on processes – is also one of its main weaknesses. To Sen (2000), this normative position precludes tradeoffs and is too constraining, since it has a binary nature: either a right is respected or not; either a society is just or not. Sen criticizes the libertarians for their neglect of the social consequences of the constraints and requirements their theories impose, especially the privileged position given to rights and liberties. Even conceding that liberty is important, he is particularly reticent towards libertarians: "It is hard to argue that a libertarian theory with its extremely narrow informational focus, and its neglect of human welfare and misery, can provide an adequate theory of justice in general, and in particular a sufficient theory for analyzing inequality and inequity" (Sen, 2000: 69).

Indeed, given its main features, libertarianism usefulness in guiding the design of policies is quite limited. This normative position may not be represented by a maximand, since there is nothing to be maximized, but only restrictions to be respected. According to Williams & Cookson (2000: 1889), libertarianism can be interpreted as a way of "restricting the feasible opportunity set". This set can be a utility set in a welfarist setting, or, in an extra-welfarist setting, a health set, an educational set etc.. As some rights and liberties have to be respected by society and enforced by the state, the final outcome may be one in which there is less educational output for each individual than in a hypothetical case where society would not even be asked to respect these constraints[12]

Figure 4: Educationist libertarianism



Where: O: origin; F0F'0: unrestricted educational achievements possibility frontier; F1F'1: restricted possibility frontier; Ai: educational achievement of individual i; L: possible "optimal" allocation. (As there is no maximand, the outcome of the market is the optimal. Any allocation along the possibility set is potentially an optimal solution.)

[12] The latter case is classified as "radical nihilism" or "moral skepticism" by Williams & Cookson (2000), who ignore it as a normative position.

For example, suppose it was possible to know exactly which individuals, among a given population, had the better teaching skills. If these individuals actually became teachers, the aggregate level of educational achievements of the students of this community would be maximal. Utilitarians would not be against a consequentialist policy that obliged such individuals to become teachers, since utilitarians only care about the final outcome. Libertarians, in turn, would not accept such a policy, since they believe individuals must be free to choose their occupations, regardless of the consequences of their choices. In this example, without the policy, some of the individuals with potentially high teaching skills would choose to do something else and not become teachers, and other individuals with lower teaching capacity would become teachers. The final outcome would probably be one of less educational output for each individual as compared to the case in which the consequentialist policy would have been implemented.

Graphically, the education possibility set is shrunk towards the southwest (towards the origin) by the libertarian constraints, that is, the frontier moves from F_0-F'_0 to F_1-F'_1.

Educationist libertarianism

Strictly speaking, any discussion about redistributions of educational inputs and outcomes for a libertarian is senseless. Affirmative action and positive discrimination are senseless. A pure libertarian would consider education as an ordinary good, and as such, a good whose production and distribution should not be provided, nor funded, nor regulated by the state. Parents should be free to choose what kind of education they want for their children. Principals and professors should be free to choose what kind of education they want to offer the pupils. The state would not have any particular role in the market for this ordinary good. It would be limited to two kinds of action: to prevent violence, theft, or violation of rights, and to enforce contracts (Atkinson & Stiglitz, 1980).

Under the strict libertarian framework, there remains some scope for "private charity for the poor and the disabled" (Williams & Cookson, 2000). In education, this would take the form of private schools that would have as an aim to teach poor and/or untalented pupils. They would exist only if market forces required or allowed them to exist. This could happen if the rich felt sorry about the uneducated people or if, for some reason, they considered that it would be in their own interest to provide at least a small amount of education to all individuals.

A less strict libertarianism (labeled here *educationist libertarianism*) could be taken into account for the purpose of investigating issues related to education. We know that a libertarian would not care about differences in educational outcomes, provided that the historical process that conducted to such a state of affairs had been just. Suppose we consider the notion of "historical process" in a very restricted sense, which consists of treating it as synonymous with 'educational process'. It could be argued that the *absence of barriers to education* for all individuals would constitute a sufficient condition to satisfy a libertarian. This educationist libertarian would not care about rights in any other instance, except from the educational process. If individual A differs from individual B in terms of talent, for example, and if A is more capable than B in translating his advantages of talent into better educational performance or achievement, it is fair, from a libertarian viewpoint, that A extracts all the benefits from the fruit of his own efforts or innate talent (for example, that A stays longer than B at the schooling system). Any state policy aiming at distributing educational resources would be considered illegitimate.

According to this latter version of libertarianism, the state would be allowed to intervene in the schooling system only to make sure that nobody is precluded from enrolling at school. However, this intervention would have to be done exclusively in the very early stage of the schooling process, and never in one of the more advanced stages, such as secondary and higher education. No intervention would be permitted after the start of the 'schooling race'.

5. Strict outcome egalitarianism

The distinguishing feature of egalitarianism, as opposed to other strands, is that their advocates reject inequality because they find it intrinsically unacceptable. This rejection of inequality might lead to recommendations which are similar to the utilitarian approach when the latter takes into account the diminishing marginal utility of education and when possibility sets are symmetric[13] – both would recommend the equalization of educational outcomes across individuals. However, utilitarians adhere to such prescription because they are worried about maximizing the sum total of utility. Sen (2000) says their concern for inequality is somewhat "misplaced", since it is done only "through the indirect channel of inefficiency". Egalitarians, in turn, don't really care about efficiency: they defend the equalization of education outcomes across individuals on moral grounds.

Egalitarians do not constitute a homogeneous group. As it has been said in the introduction, each type of egalitarian have a particular conception on what attribute is to be equalized in any socio-economic setting: access, treatment, inputs, opportunities, outcomes, and so on. Amartya Sen's question "equality of what?", formulated more than 20 years ago (Sen, 1980), has not lost its relevance.

Moreover, there are different levels of commitment to the egalitarian cause. The case of a less strict egalitarianism, which allows for some trade-off with efficiency or liberty will be discussed later on, in section 7. For the moment we concentrate in 'strict outcome egalitarianism', represented by Marxism[14]. Contemporaneous Marxists, especially analytical Marxists, have been trying to update Marx's theory, by using concepts and research methods developed over the last decades in the social sciences, and by adapting that theory to contemporaneous reality. Such people condemn any kind of inequality in the property of economically invaluable assets, since these inequalities reflect or give birth to some kind of exploitation. For a Marxist, a just society is one in which there is no exploitation. [15]

As we did before for utilitarians and libertarians, it is useful to distinguish two types of egalitarianism: welfarist and educationist. Welfarist egalitarians would have a macrojustice view and would condemn inequalities in the utility levels of individuals. Due to their extreme aversion to inequality, welfarist egalitarians would want to minimize, or ideally to eliminate, the dispersion of utility levels across individuals and would not give any importance to the total, or average, amount of utility, in a clear contrast with utilitarians. Assuming a high correlation between educational outcomes and wages – which means that education is an invaluable economic asset – the reduction of the dispersion in educational performances would be a *sine qua non* condition in the path towards a less unequal society in terms of income distribution, and, therefore, of utility levels. Such a utility-egalitarian society would be a less exploitative society.

Educationist egalitarians, in turn, would consider that dispersions in educational outcomes are undesirable *per se*, even if the link with dispersions in terms of income is, for whatever reason, not established or ignored: "for most parents children quality schooling is a highly valued end in its own right; a redistribution of opportunity for quality schooling would be egalitarian even if it did not effect later earnings." (Bowles & Gintis, 1995:57). These people have a mesojustice view and would condemn inequalities in educational achievements, regardless of their effects on the well-being (utility) of individuals.

So both types of egalitarians are interested in equalizing an attribute (respectively, utility or educational achievements) across individuals. They only care about the distance between, say, the amount of the

[13] Utilitarians recommend equality of an attribute (utility or education) in the particular case in which individuals are identical. In a two-individual graph, this is a situation in which the possibility set is symmetric.

[14] In a sense, Marxists can be said to be perfect egalitarians, that is, whose aversion to inequality is maximal.

[15] Arnsperger & Van Parijs (2000) also mention an alternative interpretation of Marxism, according to which a just society is one in which there is no alienation. It is more difficult, however, to relate this second interpretation straightforwardly to a discussion within the boundaries of normative economics of education. For this reason, issues related to alienation have been ignored here.

attribute possessed by individual k ('poor') and the amount possessed by individual j ('rich'). The welfarist egalitarian maximand may be expressed as follows:

$$W = U_k - \delta (U_j - U_k), \text{ and } \delta \rightarrow \infty$$

(Equation 4 : Welfarist strict egalitarianism)

where: i = 1,…n, and $U_i = U(A_i, X_i)$. The normative objective in terms of social welfare (W) is defined as the difference between the utility level of the 'poor' individual (U_k) and the social loss due to the existence of a gap between the utilities of the 'rich' and the 'poor' ($U_j - U_k$), multiplied by a inequality aversion parameter δ, that, in the case of a strict egalitarian, goes to infinity.

Analogously, the educationist egalitarian maximand may be expressed as:

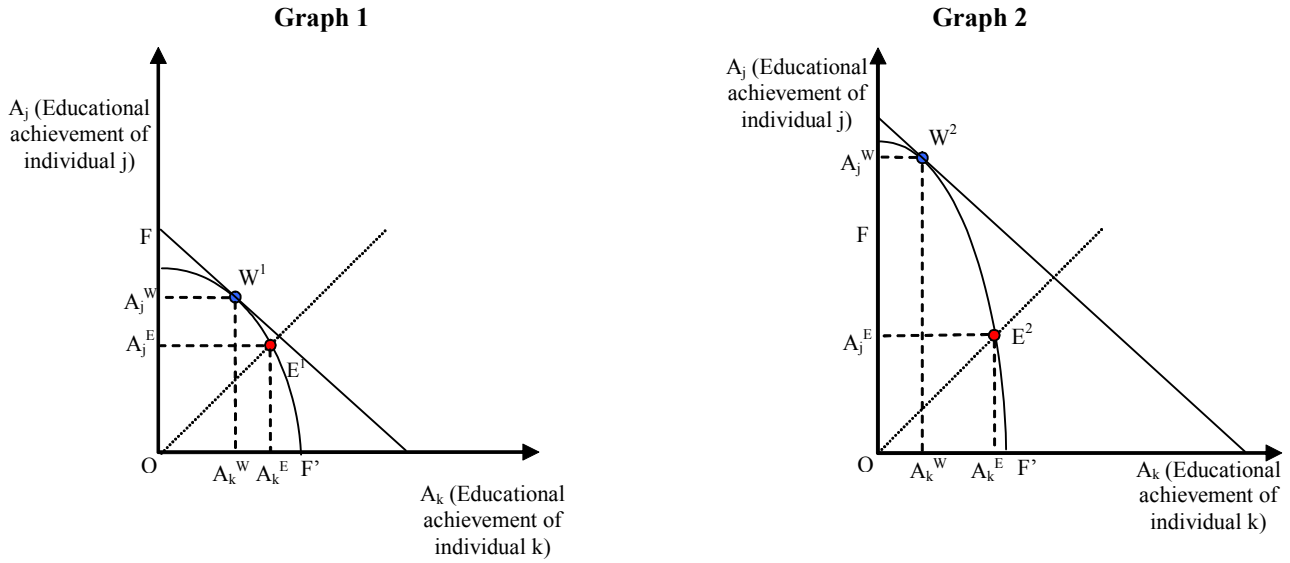
$$W = A_k - \delta (A_j - A_k), \text{ and } \delta \rightarrow \infty$$

(Equation 5 : "Educationist" strict egalitarianism)

where: i = 1,…n, and A_i is the educational achievement levels of individuals j and k.

Such maximands can be represented graphically, both in the utility-space and in the education-achievements-space. The distinguishing feature of egalitarianism in both cases is that an optimal egalitarian allocation must necessarily lie over the 45° line. In figure 5 we see two graphic representations of educationist egalitarianism.

Figure 5: Educationist egalitarianism



Where: O: origin; FF': educational achievement possibility frontier; Ui: utility of individual i; Ai: educational achievement of individual I; Xi: vector of other variables influencing utility of individual i; En: optimal allocations according to educationist egalitarianism; (Wn: educationist utilitarian optimal allocations).

In order to minimize or eliminate the dispersion of educational outcomes, egalitarians would recommend the implementation of compensatory policies, that is, policies that would allocate educational resources differently across individuals. They should be designed in order to minimize, or eliminate, inequalities observed in each stage of the educational process, such that society moves towards a final allocation which is closer to the 45° line. For example, an egalitarian teacher in this two-student world would decide to allocate more teaching time to the less-talented student than to the more-talented student such that the final marks both obtain are the same (or as close as possible).

The problem with outcome-egalitarianism is that the 'price' some individuals have to pay in order for society to reach point E might be quite high. Suppose that we have two students, one of which is more talented (j) and the other of while is less talented (k). In graph 1 of figure 5, the difference in terms of talent is not very strong (the possibility set is almost symmetric), such that the solution that maximizes total level of educational achievement (point W^1) is not very far from the egalitarian optimal allocation. In this case, individual j would have to renounce (e.g. by having less teacher's time) to only a small amount of educational achievement ($A_j^W - A_j^E$) for the egalitarian allocation to be reached. However, if the situation is that of graph 2 in figure 5, then the 'price' to be paid would be dramatically high (much longer distance between points W^2 and E^2 as compared to the distance between W^1 and E^1). The more-talented student would have no attention at all from the teacher, since the latter would devote most of the teaching time to the less-talented student. The final egalitarian allocation in graph 2 represents a case in which a great amount of talent (of individual j) would have been 'wasted', or at least not turned into educational achievements, in the name of equality.

Undoubtedly a place at the university is an economic asset. An unequal distribution of such asset in the population clearly constitutes an injustice to a strict egalitarian. There are at least two interpretations of an egalitarian reaction towards affirmative actions policy (quotas for a minority group at the universities). Firstly, they could argue that a policy of quotas would not be enough to eliminate the exploitation of which the minority group the policy is victim (they are exploited by the majority group). Eliminating this kind of exploitation would require that we equalized the relative presence of all groups at the university, respecting, for example, the demographic pattern. If the population counts 50% of native people, in order for this group not to be exploited by non-native people, the affirmative action policy would have to make sure that 50% of the students at the university are native students. In practice, in many situations, for this principle to be respected, extremely ambitious (and unfeasible) policies would have to be implemented.

Secondly, egalitarians could extend the argument and defend that each and every individual should have the right for a place at the university. Although quotas could be used as a good instrument for reducing racial or ethnic exploitation, they would not be sufficient to eliminate exploitation of some individuals by others. Concretely, even if an ambitious system of quotas were implemented, there would still exist rich and poor individuals in the population and thereby, exploitation of the latter by the former. A just society would thus not have been achieved. Society should then, either make sure every person gets a university degree (at a prohibitive cost), or implement a mechanism of monetary compensation to be paid from those who study at the university to those who cannot have this social privilege.[16]

Indirectly, a place at a good primary or secondary schools is also an economic asset, although much more indirect than the place at the university. To a certain extent, the above discussion concerning quotas at the university also makes sense in the case of a place at a good school. The concrete actions at issue would then be affirmative action policies (quotas for minority groups at good schools) or, more realistically, positive discrimination policies (allocation of more resources to schools that teach minority students). Real examples are the Zones d'Education Prioritaires in France and the SES-sensitive schooling funding mechanism in place in Belgium. In both cases, more resources are allocated to minority students, which are known to attain, on average, lower levels of educational achievement.

The kind of egalitarianism that is being discussed here is mainly an outcome egalitarianism. One of the major problems with such a view is that it looks only at the

[16] Of course, a system progressive taxation plus redistributive transfers is one of the forms that this compensation could take.

final result or outcome, and does not devote any attention to the process. Of course, the educational achievements of two individuals at the end of a particular educational stage may be different due to differentials in the resources they received during that educational stage (e.g. $S_j>S_k$, $N_j>N_k$, $I_j>I_k$, leading to $A_j>A_k$). If this is so, and if it is possible to identify the types of students who are likely to receive less of these resources (say, minority groups students), it seems legitimate to try to rebalance the situation, by giving them a larger fraction of school resources. However, it might also be the case that the educational achievement gap was due to differences in inputs which depend on the students themselves, such as talent and effort ($T_j>T_k$, $E_j>E_k$ leading to $A_j>A_k$), and not on the resources they have been attributed. Should a student be 'punished', through the reduction of his school resources, because he is using his talents in order to attain higher educational achievements, moving society away from the 45° line? Should he be punished for exerting more efforts than his peers? Accordingly, why should a less-talented or 'lazy' student be rewarded to the detriment of more brilliant or more hard-working ones?

Although talent and effort are quite different in nature (the former is given by chance, the latter requires personal commitment), it seems difficult to condemn any student who makes use of both of them. And it seems difficult to defend a policy of differentiated attribution of resources, intended to reduce educational achievement gaps, if one thinks those gaps are mainly due to differences in these personal inputs. In outcome egalitarianism no role is given to the *responsibility* of the individuals, which constitutes a major vulnerability of this normative viewpoint.

6. Egalitarian liberalism and John Rawls

The work of political philosopher John Rawls is the basis of the fourth "cardinal point" in contemporary theories of social justice according to the classification of Arnsperger & Van Parijs (2000). Rawls' theory combines normative values which are at the core of the first three previous sets of theories. It balances the social importance that is attributed to equality and to liberty, without neglecting efficiency issues.

Rawls states two principles of justice, the second of which is composed of two parts:

1. Principle of equal liberty. Each person is to have an equal right to the most extensive basic liberties compatible with a similar scheme of liberty for others (Rawls, 1971: 60).

2. Social and economic inequalities are to be arranged so that they are both

a. To the greatest benefit of the least advantaged (difference principle), and

b. Attached to offices and positions open to all under conditions of fair equality of opportunity (principle of fair equality of opportunities). (Rawls, 1971: 83).

Basic liberties are "political liberty (the right to vote and to be eligible for public office); freedom of speech and assembly; liberty of conscience and freedom of thought; freedom of the person along with the right to hold (personal) property; and freedom from arrest and seizure" (Rawls, 1971: 61). Note that these liberties include neither current property rights arrangement, nor current bequest law, since none of them is actually "basic".

The difference principle admits the existence of strong income inequalities, provided that they benefit the worst-off individual (or group of individuals) when compared to a hypothetical income-egalitarian society. The principle of fair equality of opportunity says that at given innate talents or natural endowments, all individuals should have the same opportunities. It should be noted that Rawls is not concerned with actual realizations, but with expected outcomes.

These principles should be respected in a lexicographic way: principle 1 has priority over principle 2b, which, in turn has priority over 2a. It means that basic liberties cannot be traded-off against, for example, benefits to the least advantaged individual(s): these benefits can only be maximized subject to respecting the constraint imposed by principle of equal liberty. The same is true for principle 2b with respect to principle 1.

But where do these principles come from? Rawls believes that they would be obtained as a result of a

thought experience undertaken under very precise informational and behavioral assumptions. Suppose that individuals ignore what position they will occupy in a hypothetical society ("veil of ignorance"), and that they are asked to choose in which society they would prefer to live. These individuals are assumed to be rational and able to understand moral notions of right and wrong. They are also assumed to live in a society in which there is moderate scarcity, that is, a society where most basic needs are not a pressing problem for the individuals. They are also (implicitly) assumed to have an infinite risk aversion. Finally, they are assumed to know the distribution of relevant socio-economic outcomes (for example, the distribution of income or the distribution of social positions) over the population, but they do not know the position they would occupy in the income distribution or in the distribution of social positions of this society. Under these assumptions, each individual is then asked to choose in which society he would prefer to live. According to Rawls, such a thought experiment would lead individuals to agree on those principles.

From those two principles, Rawls infers that *a just society is the one that assigns the highest possible level of "primary goods" to the worst-off group of individuals*. In other words, it is a society that maximizes the amount of primary goods that are available to the individuals who are to have the minimal amount of those goods (whence the terminology "maximin", usually associated with Rawlsian maximand).

Primary goods are those which every rational individual would want, whatever his or her conception of justice, and whatever his or her life project or plan. They are: (a) basic liberties, (b) freedom of movement and choice of occupation, (c) powers and prerogatives of offices and positions of responsibility, (d) income and wealth, (e) self-respect.

Rawls' concerns about liberty are made explicit in the principle of equal liberty. His concerns about equality – however moderate the latter may look like from the viewpoint of an egalitarian – are made explicit in the difference principle. What about efficiency? A possible neglect with respect to efficiency issues has constituted one of the sources of criticism to the theory of John Rawls, coming mainly from utilitarian thinkers. In a recent brief survey of theories of justice, Sen (2000: 71) says that "the maximin form (…) can be 'extremist' in giving complete priority to the worst-off's gain (no matter how small) over the better-off's loss (no matter how great), and there is some indifference here to considerations of aggregative efficiency". However, Sen admits that Rawlsian normative maximand, either in the maximin version, or in the leximin[17] version, can be restated so that they incorporate efficiency concerns. Indeed, it can be deduced from the very difference principle that Rawls do not believe that great amounts of precious (scarce) resources of the society should be used to achieve egalitarian objectives. For example, Rawls would not approve of a policy that would have as its ambition to transform every less-talented individual of society into a graduate student at a huge cost. Society would lose, even – or maybe, especially – the worst-off individuals.

Rawlsianism: economists' version

The theory of John Rawls has been adopted by economists in a simplified form, which does not take into account all the complexities and minutiae of the philosopher's work. Concretely, the version which has been popularized in economics limits itself to using the maximand according to which society should maximize utility of the worst-off individual or group of individuals – and not an index of primary goods as recommended by Rawls. The maximin criterion is very conveniently represented by a social welfare function expressed by a CES[18] function, in which the parameter that represents aversion to inequality goes to infinity. This social welfare function in this case is equivalent to a Leontief-like preference representation in consumer theory (complementary goods).

The maximand according to which society should maximize the utility of the worst-off individual (or group of individuals) is the most usual interpretation of the Rawlsian theory among economists. We can call it a

[17] Suppose there are two different allocations of primary goods, but that the worst-off individual is indifferent with respect to them. According to maximin criteria, these two allocations would be considered equally desirable, irrespectively of the distribution of primary goods for other individuals. However, leximin criteria recommends that, in such a situation, we should look at the level of primary goods that would be available to the second worst-off individual, and so on. It is clear that, with the leximin, one can order more allocations than with the maximin.

[18] CES: Constant Elasticity of Substitution.

welfarist Rawlsian position. An alternative position would be an 'educationist' one, such as the ones we discussed for other theories of justice. In this case, the unity of measure would be education, and the maximand would consist of maximizing the educational achievements of the individuals whose educational achievements are the lowest in the society. Mathematically, these two cases could be represented as follows:

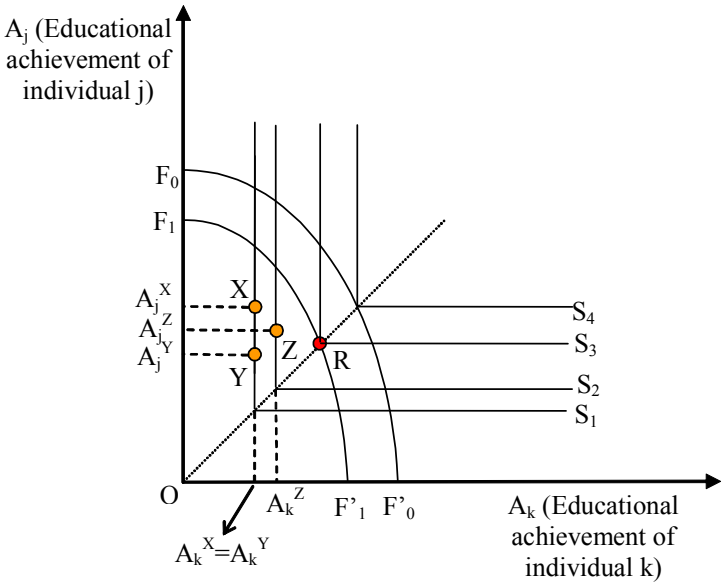
$W = \min \{U_k, U_j\}$ (Equation 6 : *welfarist* Rawlsianism)

$W = \min \{A_k, A_j\}$ (Equation 7 : "Educationist" Rawlsianism)

where: $U_i = U(A_i, X_i)$. The normative objective in terms of social welfare (W) is assessed as the minimum level among the two individuals (or groups). Even if one is very rich (in terms of utility or educational achievement), what matters here is the fortune of the poor one.

As has been said previously, Rawls first principle – equal liberty – has priority over the other two, that is, basic liberties cannot be traded-off in any circumstances. Graphically, this is equivalent to restraining the production possibility set, as in the case of the libertarians. If the principle of basic liberty were not to be respected, we could simply apply the maximin, without any restrictions concerning rights.

Figure 6: Educationist Rawlsianism



Where: F0F'0: unrestricted educational achievements possibility frontier; F1F'1: restricted possibility frontier; Sn: social welfare contours S4 ≥ S3 ≥ S2 ≥ S1; Ai: educational achievement of individual i; R: optimal allocation, according to Rawlsianism; X, Y, Z: allocations, such that X~Y<Z.

When plotted in a graph, Leontief-like social welfare functions are kinked (L-form), implying that an increase in the utility or well-being (or educational achievements) of an individual that has already attained a given level of utility (or education) does not move the social welfare function where society is. Points X and Y in Figure 6 are equally desirable from a social viewpoint (even though $A_j^X > A_j^Y$ and $A_k^X = A_k^Y$).[19] However, a slight increase in the utility (or education) of an individual who departs from a very low level of utility (or education) can make a great difference in terms of social welfare. For example, point Z is socially-preferred to point Y, which is not surprising since both individuals (j and k) are better-off under Z than under Y. More interestingly, point Z is socially-preferred to point X, due to the fact that the worst-off individual (k) is better-off under Z than under X ($A_k^Z > A_k^X$), even though the better-off individual (j) is in a worst position under Z than under X ($A_j^Z < A_j^X$).

The problem with both welfarist Rawlsianism and educationist Rawlsianism is that they use the theoretical framework of welfare economics, namely the possibility set and some social welfare functions that express particular normative objective (in this case, the maximin). Nonetheless, this framework does not correspond with the one in which Rawls conceived this theory. He firmly rejects the possibility of interpreting his theory in the space of utilities, of well-being, of education or health. The space of primary goods – which does not include education – is the right one according to Rawls.

We ignore these important problems in this paper, otherwise we would have to deal extensively with speculations relating to the effects of educational outcomes on the distribution of the different primary goods. Rather, we stick here to this simplified version of Rawls' theory (as defined by the maximin criterion), since we can still draw useful insights from this particular normative social position, especially by contrasting it with other normative criteria discussed through the text.

Assuming that basic liberties are not threatened, we have to understand how the two parts of the second principle would guide educational policy decisions. One possible interpretation is that egalitarian liberals would search for ways of maximizing the schooling attainments of the less-talented (in terms of schooling potential) pupils without reducing attainments of the more-talented ones. They could defend, for example, that educational resources were distributed in such a way that every pupil, regardless of his or her socio-economic status, would be able to attain a minimal level of education. Simultaneously, they would like to make sure that more-talented pupils, whatever the source of their 'talents' (more effort in previous stages of the schooling process or more social capital at their disposable), be able of reaching higher steps of the schooling system. This position would be legitimate in Rawls' view as long as the less-talented students extracted benefits, be indirectly, from the good educational performances of the more-talented students.

Going back to the example of the affirmative action policies (quotas for minority students at the university), we could prima facie fear that a policy of quotas violated the principle of fair equality of opportunities. At equal talents, an individual belonging to a group that benefits from the quotas (minority group) would have a higher probability of being accepted at the university than an individual belonging to a group affected by the quotas (majority group). However, the principle of fair equality of opportunity refers to *innate* talent, while the admission to the university does not evaluate only innate talents, but also, and mainly, the results of the whole process of production of education, which depends on many inputs, as we saw in equation 1.

The schooling system, broadly considered, is one of the institutions in which some kinds of compensation can be given to individuals who have not been able to convert potential innate talents into access to social positions. Accepting the assumption that different groups do not present statistically different distributions of innate talent, a policy of quotas or any other positive discrimination policy would not necessarily violate Rawlsian theory. In fact, these compensatory policies could even act in support of the principle of fair equality of opportunity.

[19] With a leximin maximand, X would be preferred to Y

7. Summary: an example and possible intermediary cases

In this section, we summarize the ideas presented at sections 3 to 6 by means of a simple example, as well as by a brief discussion about possible hybrid or intermediary cases.

A simple example

Table 1 shows a simple numerical example that is useful to summarize the ideas presented before. There are three possible situations: A, B and C. In panel I, we see that, under situation A, individuals k and j would acquire, each of them, 10 units of educational achievements, A_i. Under situation B, individual k would acquire 15 units of education, whereas individual j would acquire only 9 units. In situation C, the numbers would be, respectively, 13 and 11.

Table 1 : Simple illustration

Panel I

Education	Situation A	Situation B	Situation C
Ak	10	15	13
Aj	10	9	11
Total	20	24	24
Difference	0	6	2

Panel II

Utility	Situation A	Situation B	Situation C
U (Ak, Xk)	9	13,5	11,7
U (Aj, Xj)	10	9	11
Total	19	22,5	22,7
Difference	1	4,5	0,7

What situation would be preferred according to each type of *educationist* observer? An utilitarian is indifferent between B or C, since both provide the same total amount of educational achievement, 24, but they are both preferred to situation A, which provides a lower total amount of educational achievement, 20. According to the Pareto criterion, the initial allocation can not be ignored. A move from A to C does not violate the Pareto criterion, since both students would be better-off in the final situation (from 10 and 10 to 13 and 11). However, any other shift would not be allowed by the Pareto criterion, as, for example, going from A to B, since individual j would be harmed. Suppose the outcome egalitarian adopted as the relevant measure of inequality simply the difference between the educational achievements of both individuals. The egalitarian would prefer situation A to any of the other two, since the difference is zero under A, while it is 6 under B, and 2 under C. So it implies that he would prefer C to B. An egalitarian liberal, defined simply as a maximin advocate, would prefer C to A, and A to B. Under C, the worst-off individual (j) gets 11 units of educational achievement. In A he gets 10 and in B he gets 9. Libertarians, in turn, do not care about the final result, but rather about initial conditions and the process. They can not say anything based on the available information, which concerns exclusively educational outcomes and not characteristics of the whole education process.

What situation would be preferred according to each type of *welfarist* observer – of course, assuming that utilities can be measured and compared across individuals? We suppose here that individual j is a better utility-producer than individual k. So, when both receive 1 unit of education, while individual j transforms it into 1 unit of utility, individual k transforms it only into 0,9 unit of utility. The fact that one individual is more efficient than the other in producing utility out of his educational achievements level causes some welfarists observers to adopt different ordering of situations A, B and C, with regards to their educationist counterparts' orderings. For example, a welfarist utilitarian would not be indifferent between situations C and B as would be an educationist, but would rather prefer C to

B, since the total utilities are, respectively, 22,7 and 22,5. The preferences for each normative position, and for both educationists and welfarists, are summarized in table 2.

Table 2 : Social preferences according to different normative views

	Educationist*	Welfarist*
Utilitarianism	B ~ C > A	C > B > A
Pareto	A ---> C: ok! Other cases: no!	A ---> C: ok! Other cases: no!
Egalitarianism	A > C > B	C > A > B
Liberal egalitarianism	C > A > B	C > A ~ B
Libertarianism	Fairness of process?	Fairness of process?

*: The symbol '>' means 'preferred to', while the symbol '~' means 'indifferent to'.

Intermediary (general) cases

In the previous sections we restricted our analysis to normative positions that can be classified as extreme or pure ones. The reason is that our objective was to show the essential features and the implications of contrasted theories of justice. Broadly we characterize utilitarianism as a normative position which cares exclusively about efficiency; egalitarians, only with outcome equality; libertarians, only about freedom and rights. Egalitarian liberals, even in their pure form, already adopt a more complex and intricate line of reasoning, given that they combine the fundamental moral values of the other three theories.

But it is possible to combine these theories trough an alternative approach, in order to represent intermediary normative positions in a more general formulation. For example, it might be interesting to express a normative position which is essentially egalitarian, but that contrary to the strict outcome egalitarian case discussed in the text, *admits some inequality to exist*. This non-strict outcome egalitarian could be evoked, for example, whenever the losses in terms of efficiency that would be necessary to perfectly equalize the final educational achievements (or utility) would have to be massive. Non-strict outcome egalitarianism is a normative position that would admit the possibility of arbitration between efficiency and equality (what is known in economics jargon as an "efficiency-equality trade-off" or even as an "efficiency-equity trade-off").

For an economist, it is natural to express intermediary positions through parameterized objective functions, such as *CES*[20] *social welfare functions* or what we could call '*parameterized egalitarian social welfare functions*', as opposed to the strict egalitarian case discussed in section 5. For concision, we only present the educationist cases here.

$$W = [A_j^{\rho} + A_k^{\rho}]^{1/\rho}$$ (Equation 8 : CES social welfare functions)

$$W = A_k - \delta\,(A_j - A_k)$$ (Equation 9 : Parameterized egalitarian social welfare functions)

where: A_k = represents the educational achievements of a weak student (or group of students), and A_j stands for the educational achievements of a strong student (or group of students); ρ and δ are inequality aversion parameters. Specifically, δ represents the social cost of inequality (or 'social disutility of inequality', in economic jargon).

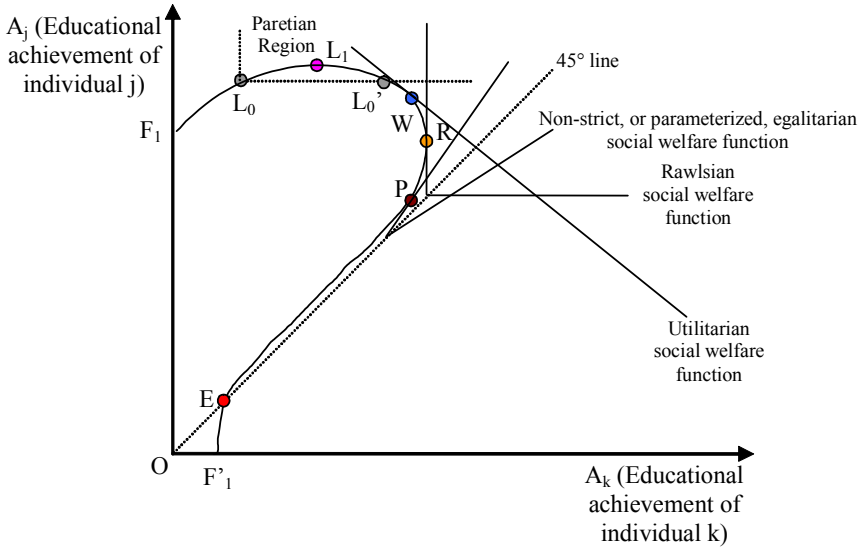
These expressions allow us to understand that there is not an absolute opposition between the objective functions derived from each theory of justice. There is in fact a *continuum of objective functions*, which vary in accordance with the values attributed to ρ and δ, the inequality aversion parameters. In the CES case, the

[20] CES: Constant Elasticity of Substitution.

objective function becomes the utilitarian one when $\rho=1$, a generic Cobb-Douglas function when $\rho=0$ or a Rawlsian one, when $\rho \rightarrow -\infty$. In the parameterized egalitarian case, the social welfare function ranges from the Rawlsian case, when $\delta = 0$ to the purely egalitarian case, when $\delta \rightarrow \infty$. The intermediary cases, represented by finite values of δ, allow for the existence of trade-offs between the distance between the weak and the strong students, (A_j-A_k) and the level obtained by the weak student (A_k).

The last graph (figure 7) shows the optimal points according to each of the normative positions discussed in the previous sections, but including intermediary positions, such as the one represented by point P (which is in segment E-R). Therefore, P is a position which stands between the pure Rawlsian case and the strict egalitarian one. But to allow for the existence of a difference between the Rawlsian position and the strict egalitarian one, it is necessary to relax the assumption that the possibility set is convex in all its extension. Indeed, in figure 7, the education possibility set has a different shape when compared to the previous ones. The assumptions stated in section 2.3 do not hold anymore. Now there are segments in which an increase in the educational achievement of one individual can be accompanied by an increase in the educational achievement of the other (for example, when we go from point F1 to L1). This possibility set also allows for the educational achievements of both individuals to be simultaneously reduced (going from point R to point P).

Figure 7: Educationist normative position – synthesys



Where: O: origin; F1-F'1: (restricted) educational achievements possibility set (not monotonically decreasing from left to right anymore); Ai: educational achievement of individual i; E: egalitarian optimal allocation; R: Rawlsian; optimal allocation; W: utilitarian optimal allocation; P: possible non-strict, or "parametrized", egalitarian optimal allocation; L0 and L1: possible libertarian optimal allocation; L0-L0': segment of Pareto-optimal allocations when the starting point is allocation L0; L1: allocation for which there is no possible Pareto-improvement.

8. Discussion: virtues and limits of this text

In this paper, we tried to provide a basic framework for thinking about normative questions related to education. We presented our interpretation of what justice in education is, according to four main sets of contemporary theories of social justice, utilitarianism, libertarianism, egalitarianism and egalitarian liberalism. In the case of utilitarianism, we distinguished the cardinal from the ordinal version. To all four normative positions, we discussed educationist and welfarist approaches, and interpreted them as being related, respectively, to a mesojustice perspective (only education matters to justice), and to a macrojustice perspective (not only education matters to justice). We tried to point out the main traits and features, strengths and vulnerabilities, of each of these four theories of justice, as well as of their variations.

We believe that this text is worthwhile for many reasons. First of all, at a purely abstract level, it contributes to *clarifying the conception of fair (or optimal) schooling system* each one of us has. Intuitive conceptions of justice in education, based on our moral beliefs, can be better framed through a careful transposition to the education sector of some of the main theories of distributive justice, a task we accomplished here to a certain extent. That should help each of us think about which inequalities are unacceptable or inequitable (what is more illegitimate: inequalities of educational outcomes or inequalities of utility level?) and which are not, and what moral values are worth taking into account and what are not (what relative weight should one give to equality, to efficiency, and to freedom?). Depending on what definition of justice in education one adheres to, the *educational policies* he or she will support, suggest, or struggle against, will be different. Different (normative) conceptions of optimal educational allocations require different (positive) policies, since each policy is expected to drive the schooling system into a different direction. This issue has been largely illustrated throughout the paper.

Secondly, this text is also useful as a means of *more accurately interpreting* the normative objectives underlying actual educational prescriptions, as well as the structure of arguments that underlie actual educational policies and policy proposals. For example, criticizing a particular educational policy by saying it is "liberal" is unsatisfactory for someone who is minimally acquainted to theories of justice – since most of them have some "liberal" feature. But by identifying that such policy contains clear features of libertarianism or utilitarianism, the criticisms can be more accurate, targeted and probably rightful, especially if they take into account the potential problems of the alternative policies (say, an egalitarian policy) suggested by such critics.

Thirdly, the normative analysis accomplished here should help providing us a better understanding of the actual characteristics, weaknesses and strengths of *systems already in place*. For example, although it is certainly not a pure market system, but rather a system in which the government plays an important role, the Belgian schooling system has freedom of choice, for both parents and schools, as one of its cornerstones. Is freedom too highly prized in such system or is it valued in the appropriate measure? Is the Belgian system closer to a libertarian system or to a Rawlsian system?

Fourthly, the *interrelation between political philosophy and welfare economics* is not useless. The text makes us think about the difficulties involved in any normative analysis. Difficult choices have to be made; trade-offs are often unavoidable. Can we fully subscribe to any of the extreme normative views described here? Probably not. Fortunately, as shown in section 7, some of the normative positions which originate from political philosophy can be expressed in more general terms by mathematical formulations more frequently used in economics. These general formulations have the advantage of allowing the representation of intermediary or hybrid normative concerns, and not only the extreme cases.

It should be noted that the mathematical formulations have remained at a very simple level, since this text is just an introduction to the subject, and it has not been written to an economist's audience. This means that *there is a lot of scope for improvements in this respect*. For example, in a world with many individuals (and not only two as in the examples shown), what

would Rawls recommend: to maximize the educational level of the 5% of worst student or the 10% of worst student? More generally, to define optimal allocations and to compare different distributions of A_i or U_i when many individuals are involved, the issue of the method used for aggregating A_i or U_i across individuals becomes extremely relevant. To deal with that, "the rather technical sub-field of the measures of unjust inequalities", as stated by Kolm (2001), has to be investigated in a close relationship with what we have done here, a (brief) systematized analysis of justice.

A sixth point we would like to emphasize is another issue which is partly lifted up due to the use of economic reasoning here. It is a broad question, concerning the contrast between welfarist and educationist approaches. Fleurbaey (1996) claims an essential element of any theory of economic justice is its "extent or field of application". Nevertheless, he admits that with respect to that, it still lacks an appropriate device that would allow us to determine the appropriate extent or field of application of a given theory of justice. Kolm (2002), in turn, points out that achieving macrojustice is the most important objective, but he also argues that pursuing mesojustice can be justified on two grounds: (i) aiming at attaining macrojustice may be too ambitious an objective; so achieving justice in particular aspects, sectors or domains may be useful intermediary steps in the long path of driving a society into global justice, (ii) he argues that people ordinarily think in a 'segmented way' and they intuitively want justice to be made in each domain. But if theories of social justice are concerned with general justice, is it legitimate to derive from them prescriptions that are 'applied to' particular socio-economic situations, such as education? Can we say that an objective approach (educationist, mesojustice) is intrinsically more appropriate or is it attractive simply because it is easier to handle or less ambitious? Should we abandon the subjective approach (welfarist, mesojustice), which has received lots of criticisms over the last decades inside the economics profession and from outside of it (see section 3) or should we keep on trying to use it because of its advantages (namely, that it dispenses with paternalism)? We do not resolve this issue here; we just wanted to point it out as an interesting open question.[21]

Finally, this text is certainly useful as a general introduction to a (tentative and brief) application of those four sets of theories of distributive justice to the particular domain of education. But although the four theories have been presented as equally relevant, it is clear that the fourth set of theories – egalitarian liberalism – is intuitively richer than the other ones, in the sense that it combines different moral values in its core. Following the seminal work of John Rawls, a series of scholars have written their own normative oeuvres during the last three decades, deeply inspired by Rawls or overtly criticizing him: Sen, Van Parijs, Dworkin, Roemer, Fleurbaey. These writings can be classified, somewhat vaguely, as "post-Rawlsian distributive justice theories" (Maguain, 2003). Most of them have led to the outset of a conception of justice which is highly intuitive and has become very widespread lately, is known under the name of "equality of opportunity". *So the section on egalitarian liberalism is an introduction to such notion*. The link between egalitarian liberalism and contemporaneous notions of equality of (educational) opportunity is left as a task for a future work.

[21] Theories of justice not treated here, like communitarianisms (esp. Michael Walzer), have a clear vision on this issue: justice should be considered separately, and according to different principles and criteria, in each sphere of life.

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