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Equal liberties and the resulting optimum income distribution and taxation

Serge-Christophe KOLM

Abstract

Equal liberty turns out to be the necessary principle of optimum overall income distribution, taxation and transfers. After explaining why, this paper proposes principles of equal liberty ("social liberty" plus possibilities) which yield the same simple result also justified by a number of very meaningful ethical properties. It then shows the ways of implementation of this fiscal scheme and situates it in economic and ethical thought.

1. Macrojustice

Equal freedom has to be the principle of the bulk of the distribution in society, as we shall see. Therefore, this principle has to be specified, and the policy it implies has to be derived. This is the object of this study, which obtains its result thanks to two facts: it considers an actual problem (overall distribution and the income tax), and it relies on the basic legal and philosophical properties of the concept of liberty.

Section 1 shows that the necessary principle of "macrojustice" is equal liberty, notably because general opinion – investigated in Appendix A – rejects, for answering this important but specific question, the comparisons between individuals' welfares or their variations that result from the maximization of some a priori specified aggregate of these welfares (although the outcome is Pareto efficient). Section 2 specifies equal freedom. It first reminds us that two kinds of freedoms have to be considered. One, social liberty, defined by the nature of the constraint, is the freedom from forceful interference which is the basis of our societies. When the other individual means and rights are added, one obtains the total freedom described by the possibility set. Equal total freedom has to be for non-identical domains of choice, in order to respect social liberty and Pareto efficiency while utilities (welfare) are irrelevant and people have different earning capacities. Various possible definitions of equal liberty lead to

the same conclusion about the structure of income transfers. Section 3 shows the important diverse meanings of this structure, and the question of implementation of the corresponding policy. Section 4 specifies the relevant solution and shows its incentive-compatibility. The questions of information, of the determination of the degree of income equalization, and of the relation with the rest of public finance are considered in Section 5. Finally, the result obtained is compared with the best known economic and ethical results and positions in Section 6.

When all the people who can influence a policy – such as voters and officials – share a certain possible view about it, this view is implemented and any alternative proposal has no chance to be. This remark applies in particular to the role of "welfarism" – that is, taking individuals' "welfare" as ultimate social ethical reference – for judging a distribution.[1] The conclusion turns out to be that welfarism is judged relevant to evaluate a distribution when it means lower suffering, or for some distributions among people who sufficiently know one another and more or less "empathize" others' satisfaction. There results, as shown in Appendix A, that welfarism is not held relevant for the issue of *macrojustice*. Macrojustice is justice in the general overall distribution of the value of the main resources of society according to general rules. It opposes the concept and field of *microjustice* concerned with allocations that are specific according to beneficiaries, reasons, circumstances, or goods.[2] Macrojustice includes the general rules of economic allocation (free exchange and property rights in our societies) and the general distributive policies such as the income tax or equivalent taxes and general income transfers. We consider here distribution in a large-scale society (e.g. a nation) not in a state of emergency as a result of some general catastrophe (war, natural disaster, etc.), and where basic rights, overall distribution and specific and basic insurance schemes are in place. There results two consequences. First, policies aiming at the relief of suffering are particular with respect to reasons, circumstances, scope and beneficiaries, and hence refer to issues of microjustice. Second, the distribution is essentially not among people who know one another. This eliminates, from the reasons for the choices of macrojustice, the two reasons one of which – at least – is present when people hold that the comparison of individuals' welfare is relevant to judge the distribution.

[1] The term welfarism has been coined by John Hicks (1959) to criticize the use of this principle when individual liberty is the proper value.
[2] It is also sometimes fruitful to distinguish a field of "mesojustice" for goods that are particular but particularly important and concern everybody, such as education or health.

If, in choice theory, utility is deleted, there remains the domain of free choice. More philosophically, man is both a sentient being feeling pleasure ad pain, and an agent capable of free choice and action. These are the two possible general bases of individual-oriented social ethics. Hence, when welfarism is not deemed relevant, the value has to be liberty. However, two types of liberty are considered. Social liberty is freedom from the forceful interference of other people acting individually, in groups or in institutions. This is the basic principle of "liberal" societies, in the form of the basic (constitutional) rights which have priority.[3] Individuals are only forced not to force others. Free exchange is therefore allowed and is important – and it a priori implies freedom from the forceful interference of agents not party to the exchange. The respect of people's respectful actions implies the respect of the intended consequences of these actions, such as rights acquired from action or exchange. Moreover, people have other means which, along with social freedom, determine their domain of possible choice (opportunity set). Individuals' social liberty is non-rival: the social liberty of one does not hamper that of others. When individuals' desires, intentions or actions oppose one another, the limit is defined by the allocation of rights, which is an aspect of the general issue of the distribution of social possibilities and resources.[4] Therefore, social liberty can be full for all individuals, and it is then equal in this sense.

Fiscal policy that respects social liberty has to be based on items that individuals cannot affect, i.e. on inelastic items. This is also a classical condition for Pareto efficiency. Pareto efficiency is also valuable per se for several reasons. Its failure is a kind of collective lack of freedom: something prevents society from going to a possible state that everybody prefers (with the possible indifference of some). A "perfect" democracy should not be prevented from reaching a possible state preferred by all (with the possible indifference of some) – for instance, in an electoral democracy, a contending party could choose such a program and win with the unanimity of votes. Moreover, the failure to achieve a possible increase in everybody's welfare (with the possible indifference of some) is also a priori

[3] The theory of social liberty is the full theory of classical concepts such as "negative freedom" (Kant, Berlin), "social or civic liberty" (J.S. Mill), "basic rights or liberties," etc. It is developed in legal theory and the relevant philosophy.

[4] Another classical conception wants to associate to each basic right – which is social liberty for a broad kind of application – material means that make it "real," and it wants the resulting freedom to be "equal for all and maximal" (Rousseau, Condorcet, the 1789 Declaration, J.S. Mill, Rawls). However, since there is no a priori limit to these associated means (to the size of the cathedral for the freedom of cult, of the various means of communication for the freedom of expression, of private planes and airports for the freedom to move, etc.), this would determine the totality of the allocation of goods, with no rule for choosing among the various goods.

regretted even when comparing individuals' welfares or their variations is not considered the adequate distributive criterion. These inelastic items are the classical "natural resources" (intertemporally, capital is produced). Pareto efficiency can then result from a distribution of these resources plus the working of an efficient market (with the correction of possible "market failures" by the public "allocation branch"). Natural resources divide into the human and the non-human ones. The contribution of labour to the economic value of the social product is very much larger than that of non-human natural resources (capital being an intermediate good, in an intertemporal view).[5] In addition, some productive capacities are not put to work. Therefore, overall distributive justice in macrojustice is essentially concerned with the allocation of the value of the given productive capacities.[6]

Moreover, "Justice is equality, as everybody thinks it is, apart from other considerations," Aristotle writes in *Nicomachean Ethics* and *Eudemian Ethics*. Justice being equality *prima facie* (i.e. in the absence of an overpowering reason such as impossibility or the joint relevance of some other principle) is in fact a requirement of rationality in the most standard sense of providing a reason or intending to. Indeed, if someone receives something for a reason based on certain characteristics of hers, some other person having the same relevant characteristics should a priori receive the same thing (possibly the same relevant value). A non-satisfaction of this equality implies a lack of justification, an arbitrariness, which arouses a sentiment of injustice.

Therefore, macrojustice is equality of liberty. Social liberty can be full and hence equal for all. This goes with Pareto efficiency. With social liberty, individuals freely choose their labour using productive capacities of theirs, and they buy goods with their income. Moreover, they can be submitted to transfers of the fiscal policy, based on their given productive capacities.[7] The problem is to determine this fiscal policy that achieves equality in overall individual liberty. Hence, the first task is to define this equality in economic liberty.

2. Equal economic liberty

2.1 Possibilities

[5] See Kolm 1985.
[6] This includes capacities to learn in education.
[7] The issue of information is considered below.

With (equal) social liberty to choose, exchange and earn, the remaining equality concerns the *initial given conditions*. This initial equality can take four forms:

1 – Equal initial allocation.

The other forms describe properties of the given domains of choice.

2 – Socially free individuals are susceptible to choose an equal allocation.

3 – Identical domains of choice.

4 – Equal overall freedom provided by different domains of choice.

We will see that solutions 1, 2 and 4 give the same result, whereas solution 3 is impossible in the sense that it violates Pareto efficiency and social liberty if individuals' preferences are not taken into account (from non-welfarism or ignorance) to define the domain – and it may violate them even without this qualification.[8]

2.2 The simple case, notations

We consider to begin with the simple case of unidimensional labour and constant individual wage rates (linear wage functions), because it is an important case, it simplifies the presentation a little, the concepts and results extend straightforwardly to the general case of multidimensional labour (duration, intensity, formation, etc.) and non-linear production (see Appendix B), and the general case can often be reduced to the simple case by defining a duration of labour qualified for its other characteristics (*id.*). The case of involuntary unemployment will be considered in Appendix C.

There are n individuals, and each is indexed by i and has labour ℓ_i (seen as duration), and hence leisure $\lambda_i=1-\ell_i$ by normalization to 1 of the total relevant time, a given wage rate w_i, and a tax or subsidy t_i ($t_i>0$ for a subsidy and <0 for a tax of $-t_i$). Her labour income is $w_i\ell_i$, her *disposable income* used to buy freely (non-leisure) consumption is

[8] There are other solutions that extend solution 3 into Pareto-efficient solutions, but they use individuals' preferences even more and have other intrinsic handicaps. One considers individuals' allocations that are equivalent, for each individual, to her best choice in the common possibility set (a case of "equivalence theory" – see Kolm 2004, Chapter 25). Another rests on the property that individuals can choose their allocations on identical domains of choice if and only if no individual prefers any other's allocation to her own (Kolm 1971/1998) and extends it to efficient maximins based on comparisons of potential freedom by inclusion of domains (Kolm 1999b).

$$y_i=w_i\ell_i+t_i, \quad (1)$$

and her *total income*, which adds the value of leisure at its market price w_i, is

$$v_i=y_i+w_i\lambda_i=w_i+t_i. \quad (2)$$

We consider now a balanced distributive budget (Musgrave's (1959) "distribution branch"), and hence $\Sigma t_i=0$.

2.3 Solution 1: Social liberty from an equal allocation

2.3.1 A solution

This solution is the classical (equal) social liberty from an equal allocation.[9] Social liberty implies free exchange. The allocation is that of the two goods, leisure (or labour), and income which can buy consumption (from free exchange). Free exchange is, first of all, of labour for earnings.

If this initial equal labour is k (leisure $1–k$), it provides each individual i with the income kw_i, and, if this income is transformed into an equal piece of disposable income with balance of the distributive budget and no waste, each now receives the average $k\overline{w}$, where $\overline{w}=(1/n)\Sigma w_i$ is the average wage rate. Then, individual i is taken away kw_i and provided with $k\overline{w}$ instead, that is, she receives the net subsidy-tax

$$t_i=k\cdot(\overline{w}-w_i). \quad (3)$$

We have $\Sigma t_i=0$. The described operation is "Equal-Labour Income Equalization" (the equal sharing of the incomes produced by a given labour equal for all) or ELIE. Labour k is the "equalization labour."

Individual i freely chooses her (full) actual labour ℓ_i and the corresponding earnings $w_i\ell_i$. Equivalently, this can be described as her choosing labour $\ell_i–k$ above labour k, and hence earning the corresponding $w_i\cdot(\ell_i–k)$ in addition to the given $k\overline{w}$ (we will shortly see that, for

[9] See Kolm 1971.

the problem of macrojustice, $\ell_i > k$ will happen to hold). At any rate, her disposable income and her total income are, respectively,

$$y_i = w_i \ell_i + t_i = k\overline{w} + (\ell_i - k)w_i, \quad (4)$$

$$v_i = w_i + t_i = k\overline{w} + (1 - k)w_i. \quad (5)$$

2.3.2 First properties

Formulas (3), (4) and (5) show remarkable properties in themselves. Form (4) shows that each individual income is made of two parts, an egalitarian part in which all individuals receive the same income $k\overline{w}$ for the same labour k, and a liberal-self-ownership part in which each individual i receives the full product of her extra labour $(\ell_i - k)$ at her wage rate w_i, $(\ell_i - k)w_i$. The equalization labour k is the cursor making the division between these two parts. Moreover, form (4) shows that y_i is close to $k\overline{w}$ if w_i is small, whatever ℓ_i. At any rate $y_i \geq k\overline{w}$ if $\ell_i \geq k$, which will happen to be the case relevant for macrojustice (see Section 5): there is a minimum income $k\overline{w}$ (hence a consensus about a minimum income implies a consensus about coefficient k, given that the properties that imply the structure ELIE are generally wanted).

Formula (3) shows that this distributive scheme amounts to a universal basic income $k\overline{w}$ financed by an equal labour k of all individuals, or according to capacities (each individual i pays her earnings for this labour, kw_i, which is also according to her capacities w_i).

The way in which the result has been obtained shows that the result amounts to each individual i yielding to each other the sum $kw_i/n = (k/n)w_i$, that is, the proceeds of the same labour k/n. This is a general equal labour reciprocity.

Formula (4) shows that an individual's total income is the weighed average between her productivity w_i and average productivity $\overline{w}$, with k and $1-k$ as weights.

2.3.3 Rawls's final solution

In 1974, John Rawls, at the instigation of Richard Musgrave (1974), added leisure to his list of "primary goods," thus bringing to two, income (related to wealth) and leisure, the

economic primary goods.[10] Rawls's solution consists of basic liberties, whose best description is social liberty which is full and hence equal for all and maximal, and an ideal of an equal initial allocation of primary goods in so far as this is not wasteful. The above solution consists of an initial allocation where all individuals have the same quantity of each good, $1–k$ for leisure and $k\overline{w}$ for income, from which each individual freely trades labour for income in application of social liberty. No individual can have more of one good in her initial allocation without any other initial allocation of any good to any person being lower, and the final outcome is Pareto efficient. This result can thus be said to be Rawls's full solution (as he posed the problem after 1974).[11]

2.3.4 The geometry of ELIE

The result is shown in figure 1, with axes λ_i and y_i, $\ell_i=1–\lambda_i$, budget lines with slopes $–w_i$, transfers t_i and total incomes v_i. The initial equal allocation is the point common to all budget lines $K(\ell_i=k, y_i=k\overline{w})$. When k varies from 0 to 1, point K describes the segment LM from point $L(\ell_i=y_i=0)$ to point $M(\lambda_i=0, y_i=\overline{w})$ – yet, only cases where $k<\ell_i$ will turn out to be relevant for macrojustice. The particular case $k=0$, and hence $t_i=0$ and $y_i=w_i\ell_i$ for all i, corresponds to the full self-ownership of "classical liberalism" (this is for example the position of – among scholars – Friedrich Hayek, Milton Friedman, Robert Nozick, and John Locke). The choice of the coefficient or "equalization labour" k will be considered in Section 6.1.

< Figure 1 about here >

2.4 Solution 2: Socially free individuals are susceptible to choose an equal allocation

Individuals who have social liberty and prefer higher income (consumption) and leisure choose an allocation on their budget line. If there is one individual allocation that they all are thus susceptible to choose, these lines pass through the same point representing this

[10] The expression "free time," rather than "leisure," would probably suggest better what seems to be valid in this addition, and would better fit Rawls's conception of primary goods as means.
[11] Coefficient k reflects the relative moral/social value attached to these two primary goods, and the choice of such a weight is a classical Rawlsian problem (see also Section 3-8).

allocation.[12] Equation (2) with some given t_i represents this budget line for individual *i*, and if this common point is $\ell_i=k$ ($\lambda_i=1-k$) and $y_i=\eta$, it entails

$$\eta+(1-k)w_i = w_i+t_i \qquad (6)$$

or

$$\eta= kw_i+t_i \qquad (6')$$

For a balanced distribution $\sum t_i =0$, and summing equation (6') for all *i* implies $\eta= k\overline{w}$, hence form (3) for t_i.

2.5 Solution 3: Identical domains of choice

2.5.1 Properties

If individuals' choices include the choice of effort or labour and they have different earning capacities, and if the policy maker does not take individuals' preferences into account, presenting identical domains of choice to all individuals violates both Pareto efficiency and social liberty (and hence it should be impossible in a well functioning democracy and it violates the basic rights).[13]

Consider, indeed, the five conditions:

(1) Individuals freely choose in identical domains of choice.

(2) They do not all have the same productivity.

(3) Their preferences or utilities are irrelevant or unknown to determine the domain of choice.

(4) Pareto efficiency.

(5) Social liberty.

Then, the two following results hold:

1) Properties (1), (2), (3), and (4) or/and (5), cannot hold jointly.

2) Properties (1), (2), and (4) or/and (5), may not hold jointly.

2.5.2 Proof of result 1)

[12] This form is a crucial axiom in Maniquet (1998).

[13] This is for instance done by proposals of equality of opportunity understood as identity of possibility sets.

The proof results from the conditions necessary for building such a common domain of choice. In the space of leisure or labour and disposable income (consumption), at an achieved state, (1) Pareto efficiency and social liberty imply that each individual's marginal rate of substitution is equal to her marginal productivity (w_i); and (2) because this individual freely chooses in the domain offered to her, this state is on the domain's border B and the marginal rate of substitution is equal to the border's rate of transformation. Hence, at this state this latter rate is equal to the individual's marginal productivity. If these productivities are identical and constant, this border can be a straight line with this slope. If not, this border should respect the following condition. Call E_i the "curve" (more generally, set of points) where individual i's rate of substitution is equal to w_i (an Engel curve). Then, border B should cut each E_i at a point where its slope should be w_i ($-w_i$ if the variable is leisure). This condition depends on the curves E_i, which are derived from the individuals' preference orderings or utility functions. This border, and hence the common domain, cannot be built without these preferences or utilities. Figure 2 illustrates this condition.[14]

< Figure 2 about here >

2.5.3 Proof of result 2)

A set of individual allocations can result from individual choices on identical domains if and only if no individual prefers another's allocation to her own (Kolm 1971/1998).[15] Moreover,

[14] More precisely, in the space (λ_i (or ℓ_i), y_i), call D such a common possibility set, B its border limiting it towards larger λ_i and y_i, and $t(\lambda_i, y_i)$ the set of slopes of the tangents to B at point $(\lambda_i, y_i) \in B$ ($|t| = 1$ if B is smooth). Call $u_i(\lambda_i, y_i)$ individual i's utility function assumed to be increasing and differentiable, u_1^i and u_2^i its two first derivatives, and $s_i(\lambda_i, y_i) = u_1^i(\lambda_i, y_i) / u_2^i(\lambda_i, y_i)$ the corresponding rate of substitution at point (λ_i, y_i). Denote (λ_i^*, y_i^*) for all i the realized state. Pareto efficiency and social freedom imply $s_i(\lambda_i^*, y_i^*) = w_i$. Individual i's free choice on D implies $(\lambda_i^*, y_i^*) \in B$ and $-s_i(\lambda_i^*, y_i^*) \in t(\lambda_i^*, y_i^*)$. Hence, $-w_i \in t(\lambda_i^*, y_i^*)$. Call $E_i = \{(\lambda_i, y_i): s_i(\lambda_i, y_i) = w_i\}$ individual i's relevant Engel curve. Therefore, B must satisfy the condition that, at its intersection with E_i, $(\lambda_i, y_i) \in B \cap E_i$, one has $-w_i \in t(\lambda_i, y_i)$. If all w_i were equal, any straight line with slope $-w_i$ can be such a B, whatever the E_i. Yet, if not all w_i are equal, the construction of B and D, to satisfy the condition, must take curves E_i into account, and, therefore, must take individuals' utility functions u_i into account. Therefore, if B is built without consideration of the u_i and the w_i are not all equal, the result violates Pareto efficiency and social liberty, except fortuitously. Note that the various solutions correspond to various distributions.

[15] Choices in identical domains clearly imply the absence of preferences for another person's allocation (which the former individual could also have chosen); and when this property of preferences

this latter property may be inconsistent with Pareto efficiency (Pazner and Schmeidler, 1974, whose example is a case of the present simple model). Finally, social liberty with perfect markets implies Pareto efficiency.

2.6 Solution 4: Equal liberty of unequal domains

To define equal freedom of choice for different domains of choice, consider that domains can offer more or less freedom, with neither more nor less being equal. Using these relations usually implicitly implies their transitivity, which we assume. Domains of choice are thus ranked by a (weak) ordering, the freedom ordering. This ordering will be assumed to be representable by an ordinal function, the "freedom function," since this will suffice here. If D is a domain of choice, (a set of possible choices), the freedom function $F(D)$ is such that, if D' is another domain, $F(D)= F(D')$ if D and D' offer equal freedoms, and $F(D')>F(D)$ if D' provides more freedom than D. (In particular, if the domains D and D' are identical, $F(D)= F(D')$). Let us apply this to the budget sets considered here. A generic individual can provide labor $\ell \geq 0$, hence enjoy leisure $\lambda=1-\ell \geq 0$, and consume consumption goods in amount $y \geq 0$. Let us choose an arbitrary but given and fixed unit of account, for which the price of consumption good is $P>0$ ($P=1$ if they are taken as this *numéraire*), and the generic individual's wage rate and total income are $W\geq 0$ and $V\geq 0$, respectively. For a specific individual i, ℓ, λ, y, W and V take the values ℓ_i, λ_i, y_i, W_i and V_i. An individual freely chooses her leisure $\lambda\in[0,1]$ (and hence her labour $\ell=1-\lambda$), and her consumption $y \geq 0$, subject to her budget constraint

$$Py + W\lambda \leq V \qquad (7)$$

which defines her budget set, which is her possibility set or domain of choice in the space of y and λ. This set is classically characterized by the (total) income V and the prices P and W. The freedom function can be written, therefore, as

$$F(V;P,W). \qquad (8)$$

If V, P and W are all multiplied by the same positive number, the budget set defined by condition (8) does not change. That is, function F is homogeneous of degree zero in its three variables V, P and W. Moreover, to describe market possibilities when incomes and prices can

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holds, the set of individual allocations constitute a domain of choice in which each individual's allocation is one that this person prefers (one can add, to this set, any individual allocation that no individual prefers to her own).

vary, the prices are usually summarized by a price index which is always taken as linear (as with the classical indexes of Paasche and Laspeyre and those derived from them). Write this index as

$$\pi=\alpha P+\beta W \qquad (9)$$

where α and β are constant numbers non-negative and not both zero. One has

$$F(V; P, W)\equiv \phi(V, \pi)= \phi(V, \alpha P+\beta W). \qquad (10)$$

Function ϕ is homogeneous of degree zero in its two variables V and π since multiplying V, P and W by the same positive number does not change the level $F=\phi$ and multiplies the index π by this number. Hence, dividing both arguments of function ϕ by π (when $\pi>0$) gives

$$F= \phi(V,\pi) = \phi(V/\pi, 1) = \varphi(V/\pi) \qquad (11)$$

by definition of function φ. Since functions F, ϕ and φ are ordinal and are increasing functions of V, V/π is a specification of function φ (this is real (total) income, fittingly usually called purchasing power). Therefore, the V, P and W that provide equal freedom are such that

$$V/\pi= \gamma \qquad (12)$$

for some given γ, or

$$V=\alpha\gamma P+\beta\gamma W. \qquad (12')$$

Hence, individuals i with possibly different wage rates W_i have the same freedom if their total incomes V_i are

$$V_i=\alpha\gamma P+\beta\gamma W_i, \qquad (13)$$

respectively. Hence, with real (i.e. in terms of consumption goods) wage rates $W_i/P=w_i$ and total incomes $V_i/P=v_i$,

$$v_i=\alpha\gamma+\beta\gamma w_i \qquad (14)$$

for all i. This implies that individual i receives the net real transfer

$$t_i=v_i-w_i =\alpha\gamma+(\beta\gamma-1)\, w_i. \qquad (15)$$

However, $\Sigma t_i=0$ entails

$$(1-\beta\gamma)\,\overline{w} =\alpha\gamma. \qquad (16)$$

Then, denoting $1-\beta\gamma=k$,

$$t_i=k\cdot(\overline{w}-w_i). \qquad (3)$$

This is the *same result as that of solutions 1 and 2*.

Moreover, individual i's budget line in space (λ_i, y_i) is

$$w_i\lambda_i+y_i=v_i, \qquad (2)$$

and it contains the point ($\ell_i=k$, $y_i=k\,\overline{w}$) since

$$(1-k)w_i+k\,\overline{w}=w_i+t_i=v_i.$$

This "equalization point" *K*, independent of *i*, is common to all budget lines (which, therefore, constitute a "pencil" of lines).

3. Equivalent properties and normative meanings

Judging something can, and a priori should, be done according to its various properties. The obtained distributive scheme has in particular a number of characteristic (necessary and sufficient) properties or sets of properties, which have (more or less) different *meanings* (the key issue). Each can be taken as the scheme's definition, and as its justification (or it can participate in it). Looking at the result from these different angles is necessary for fully "understanding" and finally evaluating it.[16] There are more than twenty such different (although logically equivalent) meanings, which regroup into several types of issues.

3.1 Equal liberty

The previous remarks have shown the following properties of the result.

1. Social liberty from an equal allocation.

2. Susceptibility to choose some equal allocation with social liberty.

3. Equal freedom of choice (for possibly non-identical domains).

4. Rawls's solution with leisure (post 1974).

3.2 ELIE

A few other notable aspects are straightforward.

5. Equal-labour income equalization: Redistribute equally the product of the same labour *k* of all individuals. *k* is the "equalization labour."

6. Equal pay for equal work, for labour *k* (the rate is the average wage rate $\overline{w}$). This is one of the most widespread claims of justice. However, it refers here to differences in productivities.

7. From each according to her capacities, to each equally (where "according to" is taken to mean, as it most commonly does, in proportion to): take kw_i proportional to w_i and give the same $k\,\overline{w}$. This associates two of the most widespread claims of justice.

[16] The requirement that a principle should be evaluated from all its angles and possible meanings is a classical and basic meta-principle of social ethics, related, for instance, to Plato's "dialectics" in *Republic* and to Rawls's "reflective equilibrium."

8. Everyone works for everyone for the same labour (k) and for herself for the rest.

3.3 Deserts and merit, equality and classical liberalism, work and works

Writing

$$y_i = k\,\overline{w} + w_i \cdot (\ell_i - k) \qquad (4)$$

has shown a decomposition of income into two parts induced by two different and opposed ethics, which can be seen in various ways.

9. Equality and classical liberalism. The two parts are an equal income $k\,\overline{w}$ and the market remuneration $w_i \cdot (\ell_i - k)$ of labour ℓ_i–k. These are the two basic and opposed principles of overall distributive justice in our world. The level of coefficient *k* favours one or the other and delimitates their respective scopes.

10. Each earns according to deserts for labour k *and to merit for the rest.* Deserts is according to labour or effort, here *k* for the share $k\,\overline{w}$. Merit means according to labour or effort and to capacities. This is the second part with individual labour $\ell_i - k$ and capacities w_i.

11. To each according to her work (effort, input) and to her works (product, output). This classical distinction refers here respectively to $k\,\overline{w}$ in proportion to work *k* and to the individual's product $w_i \cdot (\ell_i - k)$.

3.4 Financed universal basic income

12. Equal universal basic income financed by equal labour (equal sacrifice): The result $t_i = k\,\overline{w} - w_i k$ can be seen as providing the same basic income $k\,\overline{w}$ to each individual, and financing it by the same labour *k* from each (individual *i* pays the proceeds kw_i).

13. Equal universal basic income financed according to capacities (i.e. in proportion kw_i of w_i for individual *i*).

A universal, unconditional and equal basic income has often been proposed by scholars and political figures. Yet, Achilles's heel of such schemes is the specification of their financing which should be sufficient and fair, and should not induce Pareto inefficiency. ELIE satisfies these conditions. The fairness cannot be an equality in money terms since this would cancel out the distributive effect. Hence, without further considerations, it has to be equality in labour provided.

3.5 Reciprocity

A basic principle of fairness is reciprocity (in the framework of macrojustice, this is emphasized by Rawls).

14. General equal labour reciprocity: *Each individual hands out to each other the proceeds of the same labour* ($r=k/n$). Indeed, the ELIE operation amounts to equally sharing the proceeds kw_i of each individual i's labour k, hence to yield to each individual the proceeds $(k/n)w_i$ of the labour k/n of each individual i (and what an individual yields to herself can be discarded). That is,

$$t_i=k\cdot(\overline{w}-w_i)=r\Sigma w_j-nrw_i=\Sigma_{j\neq i}\, rw_j-(n-1)rw_i. \qquad (17)$$

This property has an aspect of fairness which is bound to be favourable to the acceptance of this scheme from sentiments of reciprocity.[17]

15. Each owns the rent of the same amount of each other's capacities (r).

3.6 Progressive transfers, total concentration

ELIE belongs to the question of reducing inequalities, in a particularly meaningful and straightforward way (see also note 43).

16. Equal partial compensation of productivity differences: Each individual yields to each less productive individual the same fraction of the difference in their productivities, $r\cdot(w_i-w_j)$ from i to j if $w_i>w_j$. It suffices to consolidate the two transfers of the general equal reciprocity in each pair of individuals. Hence, ELIE amounts to a set of "progressive transfers" for total incomes. This set is, in fact, quite specific (property 19).

17. Each individual's total income is the weighed average between average productivity and this individual's productivity, with weights k and $1-k$, since

$$v_i=k\overline{w}+(1+k)w_i. \qquad (5)$$

18. A concentration of total incomes: This formula also says that the set $\{v_i\}$ is a uniform linear concentration towards the mean of the set $\{w_i\}$, with degree k. This structure of transformation of a distribution is that which can be said to be the most inequality-reducing.[18]

3.7 Tax structure and reform

The fiscal structure and reform that realize ELIE are very simple, clear, natural, easy to implement, and made of a few elements each of which is classical.

[17] Cf. Kolm 1984, 2006b.
[18] Cf. Kolm 1966a, 1999a.

19. An equal tax credit or rebate, and an exemption of overtime labour over some given labour, from a flat tax.

Indeed, the transfer can be written as the net tax

$$-t_i=(k/\ell^o)w_i\ell^o-k\overline{w} \qquad (18)$$

for some given labour ℓ^o chosen such that $\ell^o \leq \ell_i$ for the chosen labours ℓ_i relevant for macrojustice (see Section 4.1). The first, positive, term is the flat tax with rate k/ℓ^o on the earnings $w_i\ell^o$ of labour ℓ^o, hence with a tax exemption of the corresponding overtime earnings of labour $\ell_i-\ell^o$. The second term is the tax credit or rebate $k\overline{w}$ equal for all. This tax structure is simple, clear, with two gratifications – an exemption and a rebate. For example, the tax exemption of overtime labour over a low duration is the new general law in France, which has also the equivalent of a universal equal rebate (resulting from an income tax credit).

20. Tax reform.

The ELIE distributive structure can be obtained from actual income taxation by a series of a few simple and rather classical tax reforms:

- A *negative income tax* or *income tax credit* for low incomes, which exists in many countries.
- Replace actual labour by a *given labour* in the tax schedule, which is obtainable by *exempting* earnings over a given labour not exceeding actual (full-time) labours.
- *Flatten* the tax schedule, which is often advocated for a reason of simplicity (and incentive)[19] – an ELIE scheme can a priori be made as redistributive as one wants by choosing a sufficiently high coefficient *k*.
- If the scheme concerns the "distribution branch" in "functional finance," *balance* the budget.

Formally, from the income tax on labour income $f(w_i\ell_i)$, one thus successively obtains, with constants $a>0$, $b>0$, c, and $\ell^o>0$: $f(w_i\ell_i)<0$ if $w_i\ell_i<a$; $f(w_i\ell^o)$ or $bw_i\ell_i+c$; $bw_i\ell^o+c$; and, if $\Sigma f(w_i\ell_i)=0$, $b\overline{w}\ \ell^o+c=0$ and hence, noting $b\ell^o=k$, $k\cdot(w_i-\overline{w})=-t_i$.

3.8 Other meanings

21. Bi-numéraire equal sharing of the value of productive capacities.

[19] A flat tax is for instance implemented in all Eastern European countries including the 9 fastest growing countries of the European Union.

An amount of a productive capacity (with a given productivity) can be measured by the labour that can use it (or time of use), or by the output it can produce. In an equal sharing, the choice of this measure makes a difference because individual productivities differ. If an amount of an individual's productive capacities is measured by the labour input that can use it, each individual has initially 1 and the given allocation without any transfer is equal. If this amount is measured by the output it can produce, however, the total initial endowment of individual *i* is w_i. Both goods – income-consumption and leisure-labour-lifetime – can be taken as numéraire. Amounts of both are classically compared across individuals. The general solution consists in measuring a fraction of the capacities, say *k*, in income-value, and the rest, 1–*k*, in labour-value. For individual *i*, the equalization of the first share transforms income kw_i into $k\overline{w}$, and the second share is already equal for all in labour-value, 1–*k*. The result is the net income transfer $t_i=k\cdot(\overline{w}-w_i)$. One can also directly write the total income of individual *i* from the two parts, $v_i=k\overline{w}+(1-k)w_i$.[20,21]

4. Real gains, incentive compatibility

4.1 Irrelevance of non-realized advantages

As we have noted, a concentration transformation of a distribution is, in a sense, the most inequality-reducing transfer structure. Hence, the inequality-reducing effect of a redistribution is meaningfully measured by the coefficient of the concentration which produces the same effect on some measure of inequality. For a redistribution and an inequality index, the "equivalent ELIE" produces the same "decrease" in inequality in total income: its *k* is the degree of inequality reduction or equalization of this redistribution.[22]

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[20] With ELIE as the solution of Rawls's full problem, *k* thus measures the relative importance attached to the two economic primary goods: income relative to leisure-labour. With the measure in labour value only, equality is satisfied by full self-ownership which is classical liberalism, but is also Marx's view (he defines "exploitation" by theft of this property by low wages).

[21] ELIE has other interesting and meaningful properties. For instance, Maniquet (1998) derives, from a number of basic axioms, a state which is about the one chosen by the individuals submitted to such a distributive scheme. Moreover, it is securing that ELIE can be derived from the most famous general presentation of principles of justice, that of Plato (*Laws*) and Aristotle (*Nicomachean Ethics*), with each person receiving the fruit of her labour $w_i\ell_i$ in "commutative justice," and an equal share (with the appropriate measure) of what is given to society in "distributive justice," achieved by compensatory transfers since their capacities are attached to the individuals ("*diorthic* justice") – see Kolm 2004, pp. 248-249.

[22] This degree of inequality reduction of a redistribution is equal to the *relative decrease in the absolute form of any synthetic index of inequality* (Kolm 1966b). Indeed, for any distribution of

Consider now the three following facts and judgments.

(1) Present redistributions in nations amount to equally redistributing the incomes of 1 to 2 days per week (from the USA to Scandinavia). Hence, de facto – even for the most redistributive policy a country could actually achieve –, for *normal full-time labour* one has $\ell_i > k$ (the cases of total or partial unemployment are the object of Appendix B).

(2) Moreover, people commonly understand that individuals who benefit from a high wage rate be taxed to help people who are not as lucky, but only when this provides an actual gain, not when it remains a mere possibility of income. Precisely, people do not agree with a tax on earning capacities that entail no earning because they are not used, that is, with a tax on leisure in measuring its value by the earnings this time could provide were it used at labour (taxing to induce work is something else and has to be justified). ELIE with $k > \ell_i$ would so imply, when demanding the amount kw_i, demanding the value of leisure $(k-\ell_i)$, $(k-\ell_i)w_i$, in addition to the value of the whole product $w_i\ell_i$ (for equally redistributing the proceeds). If the redistribution of $k\overline{w}$ is jointly taken into account, this would imply demanding $(k-\ell_i)(w_i-\overline{w})$ on leisure $(k-\ell_i)$ for $w_i > \overline{w}$, in addition to $(w_i-\overline{w})\,\ell_i$. If w_i is quite low, the tax kw_i is negligible and t_i and y_i are both about equal to $k\overline{w}$, whatever ℓ_i. If $w_i < \overline{w}$ remains substantial, and $\ell_i < k$, people would again not agree with taxing leisure $(k-\ell_i)$ at unit value w_i for the share $(k-\ell_i)w_i$ of the tax kw_i (then equally redistributed). If the subsidy $k\overline{w}$ is taken into account, people would similarly not agree to subsidize the unused and inactive productive capacities in leisure $(k-\ell_i)$ because they have a relatively low productivity $w_i < \overline{w}$, by the part $(k-\ell_i)(\overline{w}-w_i)$ of the subsidy $k\cdot(\overline{w}-w_i)$. Hence, this opinion implies that people who pay an actual

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incomes (or other quantity) x_i whose set is x and average $\overline{x} = (1/n)\Sigma x_i$, one can, for an index of inequality, distinguish the absolute form $I^a(x)$ and the relative form $I^r(x) = I^a(x)/\overline{x}$. A synthetic inequality index is by definition such that $I^a(x)$ is *equal-invariant* (invariant under any equal variation of all the x_i) and $I^r(x)$ is *intensive* (invariant under any multiplication of all the x_i by the same number). Then, the absolute form is also *extensive* (linearly homogeneous). A concentration coefficient k of the distribution amounts to an equiproportional decrease of all x_i in proportion k, which similarly decreases the absolute index, and an equal increase that restores the total sum or the mean, which does not affect this index. Hence the noted property. Examples of such indexes are $\Sigma * x_i - x_j *$ (absolute Gini), $\Sigma|x_i - \overline{x}|$, and the standard deviation.

distributive tax kw_i and receive $k\overline{w}$ as counterpart are people who choose to work $\ell_i > k$. This common view has to be obeyed in a democracy.

(3) The very few productive individuals who choose to work very little mostly choose not to benefit from society's supply of a favourable wage, and hence arguably do not have to be taxed for this advantage. They choose to drop out of the cooperative venture of collective production (and division of labour), from its advantages, and, hence, from its liabilities. People who choose not to contribute to this joint venture while they could may not be entitled to a *reciprocal* share of the product. These fugitives from production are not, as Rawls (1982) puts it, "fully cooperating members of the society engaged in social cooperation over a complete lifetime for mutual advantage," and hence are not party in the sharing of benefits.

These last two points mean that what is at stake concerns actual advantages that people actually derive from their productive capacities and society's demand for them, rather than these capacities and demand per se – hence as potential earnings.

The cases in which the chosen ℓ_i is lower than k are particular cases: partial or full unemployment, the few eccentric productive people who drop out of cooperative social production, victims of particular handicaps, part-time jobs which are often second wages in families, etc. These particular cases deserve particular criteria and treatments. They are, therefore, out of the scope of overall distributive justice in macrojustice. However, some can also be more or less brought back into the general case, as with involuntary unemployment (Appendix C), the case of people with capacities without market value (w_i=0), or the notional equal sharing of the labour of a household among its adults. The case of the tiny fraction of people – if any – who could earn high wages for a moderate effort but decide to live "on welfare" if they can is not a concern for macrojustice for three sets of reasons: the noted ethical reasons and opinions; this is a particular situation (out of the definition of macrojustice); and its rarity (not an issue for overall justice). These work evaders are the object of classical other proposals and discussions.[23]

[23] These are, for example, people who can earn 10 times the average income for some standard labour but would prefer to stop working and live on –for instance – 1/5 to 1/3 of average income. For the very few able people who choose to work very little, there are three classical proposals. (1) They should earn their sandwich, "he who does not work does not eat" (Saint Paul), the solution endorsed by Rawls. (2) They should have a "right to laziness" (Paul Laffargue) and perhaps receive a basic income (utilitarianism may support this position, which is eloquently defended by van Parijs (1995)). (3) We

Finally, for all these related reasons, distributive macrojustice is only concerned with normal full-time labour and $\ell_i > k$ (the cases of unemployment will be added).

Therefore, for macrojustice,

$$y_i = w_i \ell_i + k \cdot (\overline{w} - w_i) = w_i \cdot (\ell_i - k) + k\overline{w} > k\overline{w} . \qquad (19)$$

That is, there is a *minimum income* of $k\overline{w}$.[24]

As noted, the case $k=0$ is full self-ownership. A case of $k=2.5$ days a week for a nation would correspond to a very high redistribution (there can, in addition, be various policies of more specific microjustice).

4.2 Incentive compatibility and information

If w_i denotes the highest wage rate individual i can obtain, this individual can also generally earn various rates $w'_i < w_i$ in not using her best (most highly paid) skills at work.[25] She may make such a choice if she thinks that the fiscal authority bases her taxes and subsidies on this actual and observed w'_i, in order to diminish the tax or transform it into a subsidy if $w_i > \overline{w}$, or to augment the subsidy if $w_i < \overline{w}$ (hence she would benefit whatever $\overline{w}$ if $k>0$, and

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may try to persuade them that they should make other people somewhat benefit from the talents endowed to them by nature, providence or their parents in working a little (at a high wage rate). If their productive capacities are due to subsidized public education which they accepted, they might be asked to refund this cost to the rest of society. If they had to pay for their possible advantage in earning capacity, they would pay $-t_i = k \cdot (w_i - \overline{w})$, for which they should work $k \cdot [1 - \overline{w}/w_i)] < k$; however, if they still choose $\ell_i < k$, we will see that they may have an interest in hiding their skills and their value w_i (yet, diplomas, previous jobs, etc. often make some estimate possible and E. Ooghe and E. Schokkaert (2008) have shown that, at any rate, the resulting waste would be very small). Finally, sheer coercion might be restricted to the limited (and possibly highly remunerated) draft of exceptional talents indispensable to society or other people's life. Note that freedom of choice should a priori refer to the full domain of possible choice in the space of income and leisure rather than to a subset of it only – such as the case $\ell_i = 0$ put forward by solution (2). Moreover, there are other distributive units than nations; for instance, transfers are intense in a family, but they are gifts rather than taxes (each likes the others' enjoyment and consumption).

[24] One consequence is that, in a society, since $\overline{w}$ is given, choosing a minimum income and choosing a level of equalization labour k amounts to the same – given that the structural properties that lead to ELIE happen to be largely wanted (social liberty, Pareto efficiency, nonwelfarist macrojustice). The frequent rough consensus about a minimum income implies the same convergence of views about coefficient k. This relation is more valid the more the minimum income refers to a norm of income (and consumption and lifestyle) rather than to the alleviation of physical suffering (which may elicit relief provided by microjustice policies). Section 5 refers to other determinations of coefficient k.

[25] See Dasgupta and Hammond (1980).

therefore she need not know $\overline{w}$ to behave this way). The individual may think that the government would take the observed w'_i as base either because it deems the actual wage rate to be the appropriate basis for the reasons presented in the previous section (not taxing or subsidizing unused capacities of value $(w_i - w'_i)$), or because it mistakes it for the value of capacities w_i, or for any mixture of these reasons.

Individual i thus chooses both labour ℓ_i and skills that earn $w'_i \leq w_i$, that maximize some increasing ordinal utility function

$$u^i[1-\ell_i, (\ell_i - k)w'_i + k\overline{w}'], \qquad (20)$$

where $\overline{w}' = (1/n)\Sigma w'_j$.[26] Variables ℓ_i and w'_i are independent. The derivative $\partial u^i / \partial w'_i$ has the sign of $\ell_i - k + k/n$ if individual i takes the w'_j for $j \neq i$ as given (no collusion), but whatever they are. Therefore, individual i chooses $w'_i = w_i$ if $\ell_i > k \cdot [1-(1/n)]$. This is the case for macrojustice in which $\ell_i > k$ (see the previous section). Hence, *the individuals choose to work with their best skills and thus to "reveal" their capacities and to exhibit their economic value*. The government can understand this (it does not need to know individuals' utilities, but only that individuals prefer higher disposable incomes for given labour). Hence, it does not need to raise questions about basing its taxes and subsidies on the actual values of capacities w_i or on the observed wage rates w'_i since using the latter as base makes them be the w_i. And the individuals can in the end know this conclusion.[27]

5. Information, degree of redistribution, public finance

The income tax is based on individuals' wage rates in one country (France), in the form of an exemption of overtime labour from the income tax, over a limited official labour duration.[28]

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[26] Choosing a more remunerated but more painful or disagreeable activity, or the contrary, is considered as working more or less, and a corresponding full analysis has to consider, in a framework of multidimensional labour (see Appendix B), the relevant dimension(s) that affect both the productivity and the painfulness or intrinsic attractiveness of labour.

[27] If the government used the w_i if it could know them, with $t_i = k \cdot (\overline{w} - w_i)$, and each individual i could choose her skills used and $w'_i \leq w_i$, her income would be $\ell_i w'_i + k \cdot (\overline{w} - w_i)$, and she would also choose $w'_i = w_i$ if she chooses to work at all ($\ell_i > 0$) and therefore when $\ell_i > k$.

[28] 35 hours a week or 1607 hours a year or, for executives and others whose daily hours of work are unclear, 218 days per year. Similarly, for part-time labour, the tax exemption concerns the so-called "complementary hours." This tax reform was adopted from a presentation of the result of the present study. There was also previously a tax that demanded each person to pay the proceeds of the same labour time (for subsidizing dependent people).

This is, therefore, possible. Note that 9/10 of labour is wage labour, as in all developed countries. Cheating is very limited because falsifying the programs of pay sheets is too complicated and could not be done without the tax administration being aware of it or informed about it (very small firms may be the only exception). By contrast, when full earned income was taxed, not declaring overtime labour was easy and amounted to about half this labour. This former evasion is now lawful and helps taxation. For the intensity and formation dimensions of labour, productivity premia and premia for previous formation – when they exist – are also exempted. All wage labour has a pay sheet, an official legal document for which false report is punished. A pay sheet presents all the needed information: wage rate, total pay, labour duration, overtime work and pay, type of work which often implies formation and intensity, sometimes previous formation, premia, etc. As a general rule, the tax administration uses its usual procedures for information: declarations from employer and employee, checking and cross checking, with random deeper inspections and important penalties in case of fraud. For all labours, wage rates can be estimated directly or from earnings and labour duration. The relative easiness or difficulty to obtain information about these three variables depends on the activity. Earnings are not better known on average (in all countries where they are the base of the tax, about 30% evade the tax).[29] Labour duration is well-defined, observable and contractual in many jobs, but, of course, not in all. Direct observation or estimate of wage rates provides the base without the need of knowing earnings and labour duration. Estimates often use type of occupation, qualification, educational level, sales and profits, and other information.[30] Note that, contrary to what is made of his writings, Jim Mirrlees (1971) is in fact quite perceptive concerning information: "[We] could... introduce a tax schedule that depends upon time worked as well as upon labour-income: with such a schedule, one can obtain the full optimum... We also have other means of estimating a man's skill-level." Remark also, finally, that welfarist optimum taxation raises informational difficulties of a higher order of magnitude when demanding information about individuals' different tastes and utility functions, the cardinality of the latter, comparisons of their variations or levels across individuals, and their aggregation.

The equal-liberty optimum distribution is fully determined when coefficient *k* is. This equalization labour is the fraction of the rent of productive capacities that is collectively

[29] See for instance Slemrod (2002) for the US.
[30] In the theoretical literature, the incentive effects of ELIE are analyzed by Ooghe (2008), Fleurbaey and Maniquet (2008), Trannoy and Simula (2008), and various contributions in the volumes edited by Gamel and Lubrano (2008) and Fleurbaey, Salles, and Weymark (2008).

owned (with equal sharing for lack of a reason for another distribution). It measures a degree of community of resources, redistribution, equalization and solidarity. Its absence, k=0, is classical liberalism. The ELIE structure of the distribution results from structural properties practically unanimously supported (social liberty, Pareto efficiency, the irrelevance of welfare for macrojustice). Moreover, in a given society, there generally is an approximate consensus about what a minimum decent disposable income is. Since ELIE implies the minimum income $k\overline{w}$ and the average productivity $\overline{w}$ is given, this is a general opinion about the level k. More generally, in most peaceful societies the overall level of income redistribution is more or less accepted or approved of, or most opinions in this respect vary in a relatively limited range, although this level changes in time. These opinions are influenced by the social and political discussions, dialogues and debates. The revelation of people's social-ethical opinions is often hampered by their self-interest, but there are a number of ways to deal with this problem (note that opinions about the level of k of people who have an average wage rate $w_i = \overline{w}$ provide a sample of the social-ethical views unaffected by self-interest since, for them, t_i=0 whatever k). Various methods are available to determine the level of coefficient k "desired by the society;" they are the object of Part 4 of the volume Kolm 2004 and, hence, will not be repeated here. This degree of equalization depends on the society in question, notably on the extent to which it constitutes a community.

ELIE concerns only the distribution branch or function of the public sector. If the distribution is optimum, the other public expenditures should be financed by the method that is neutral in this respect, benefit taxation. Benefits should at any rate be estimated when appraising the need for this expenditure. However, this is sometimes more or less difficult, and classical public finance also proposes two other principles of financing, equal sacrifice and according to capacity. If the former is not equally in income (and since macrojustice is non-welfarist), it is equal sacrifice in labour (effort). Moreover, for earned income, according to capacity is according to capacity to earn. Then, these two principles amount to the same: each individual i pays cw_i, where c is both the equal labour and the coefficient of proportionality to capacity w_i. The total amount is $c\Sigma w_i = nc\overline{w}$. This is how ELIE finances the universal basic income $k\overline{w}$. Different principles can be used for different expenditures.

6. Comparison with the other economic and ethical theories

Finally, the obtained equal-liberty optimum distribution can be situated in social thought and compared with other economic and social ethical ideas. This equal liberty is an equality of opportunity with two characteristics: it is an equality of opportunity which is not an identity of opportunities (which, with different individual earning capacities, would violate both Pareto efficiency and social liberty); and it applies to the overall distribution in macrojustice. The "classical liberalism" of, for instance, Friedrich Hayek and Milton Friedman is full self-ownership, that is, ELIE with k=0, but they justify it by social liberty whereas both can be separated (Robert Nozick (1974) probably emphasizes more directly self-ownership). The freedom emphasized by James Buchanan and the school of Public Choice is not moral but is the opposition of self-interested forces; moreover, these scholars rightly emphasize that policies actually result from people's preferences, but they probably underestimate people's desires for justice and fairness. Michael Walzer (1983) rightly remarks that justice is considered as equality in separated "spheres," but one "sphere," that of overall distribution in macrojustice, is much more important than others in volume (especially since a number of services can be more or less integrated in the market system). Ronald Dworkin (1981), after E. Pazner and David Schmeidler (1978), and Hal Varian (1976), considers a simple ELIE structure with k=1, but rejects it because of the large labour it demands from the very productive people (the "slavery of the talented"); however, this level of k, as the case k=0 with a reverse effect, cannot be equality of liberty because the domains of choice of income and leisure are related by inclusion. ELIE is a case of the often proposed universal basic income, with a specific solution for the problem of its financing. We have proposed that the obtained equal-liberty distribution represent what the philosopher John Rawls intends to mean (after amendments, by himself or otherwise, of weaknesses of his initial presentation). At any rate, his starting point in the objection to the relevance of welfarism for macrojustice seems largely endorsed by society at large (see Appendix A). If, as Kenneth Arrow (1963) proposes "The fundamental function of any theory of social welfare is to supply criteria for income distribution," the ELIE tax-subsidy scheme constitutes a solution to this general problem too; the issue is that if "social choice" is derived from "individual values" (Arrow's title) and these values are not welfarist *for this problem*, this social choice is not either. Finally, the important literature about axiomatic measures and comparisons of liberty should be introduced here, but this would require new technical developments.[31] The most important difference with the

[31] The reasons for ELIE presented here constitute de facto a set of axioms. Moreover, the set of axioms provided by Maniquet (1998) leads to allocations that are practically those chosen by the individuals in an ELIE tax-subsidy regime.

approach retained here is that this approach considers a specific actual social problem, although an important one, macrojustice, and hence it can rest on the concepts and facts provided by society for this issue, such as social liberty (negative freedom, basic rights), types of rights (rights to act and rent-rights), the various types of resources and their relative importance, and people's opinions about the distribution (spheres of justice, non-welfarism for macrojustice, degree of redistribution, various conceptions of fairness, etc.); a consequence is that the result can be directly applied, and, indeed, its various aspects have more or less been introduced (minimum or basic income, tax exemption of overtime labour, uniform rate, etc.).

Appendix A. Tests of welfarism for macrojustice

A normative study can be applied only if people who actually influence its implementation sufficiently adhere to its normative criterion (they can be voters, people at large, politicians, tax officials, etc.). A model of optimum income taxation is probably proposed for application. Therefore, if it is based on welfare, it rests on the hypothesis that welfarism is an accepted principle for macrojustice. Scientific methodology leads one to ask: does any test falsify this hypothesis, or not? Here are a few tests among many possible ones.

1. The European Union test

If, as it is said, the people of Northern Europe are better at producing and those of Southern Europe more skilful at enjoying consumption, should the European Union set up a vast program of intra-European North-South income transfers? Should it tax the industrious Swedes for subsidizing the Napolitans who make a feast from a meal? This would be the injunction of utilitarianism. Or perhaps, on the contrary, should this tax subsidize the Portuguese reputedly afflicted by a kind of mild sadness, in order to soothe their *saudade*? This would be required by a maximin in utility. However, everybody should help the victims of uninsured occurrences causing insufferable pain; but these are cases of specific microjustice aiming at the relief of suffering.

2. The earned income and legitimate ownership test

"I take the 10 euros you just earned because I like them more than you do." Is this a good reason? Or perhaps, on the contrary, "I take your earnings because you like your remaining euros more than I like mine." Is this a better reason? Am I entitled to (or should I) take your money because it pleases me more than it pleases you? Or perhaps, on the contrary, because you enjoy your money left more than I am able to enjoy my own? These two opposite consequences of comparing our tastes for income are respectively utilitarianism and maximin in utility, the two polar cases of welfarism. If, however, your 10 euros enable me to buy the drug that saves my life, most people will excuse the theft; but this is a case of specific microjustice for the alleviation of suffering.

3. The taste, preference or desire tests

Should you finance somebody's beverage because her special taste for cheap beer permits her drinking to produce utility at low cost (as utilitarianism requires)? Or because she only likes expensive wine (as egalitarian maximin or another welfarist principle may demand)? Nevertheless, you should probably give water to your thirsty neighbour, to relieve her pain cheaply. Rawls (1982) points out yet another aspect, for "social justice": "Desires and wants, however intense, are not by themselves reasons in matters of justice. The fact that we have a compelling desire does not argue for its satisfaction any more than the strength of a conviction argues for its truth."

4. The income tax test

Should you pay a higher income tax than someone else because you like the euros taken away less than she does or, on the contrary, because you like the remaining euros more than she does – as utilitarianism and maximin in utility tend to require, respectively? Are, in fact, these considerations relevant for this issue? To begin with, do these comparisons of enjoyment make sense, are they possible? At any rate, should you pay more or less because you have a cheerful character, or because the other has a cheerful character (which may lead one to enjoy a euro more or to regret its absence less – opposite effects again)?

In fact, has the Internal Revenue Service ever thought about sending questionnaires to inquire about these relative propensities or capacities to enjoy? Or does it think that this would be irrelevant and, perhaps, abusively intrusive; that these psychological characteristics

are private matters and not the concern of overall and general public policy and the income tax; that, for this question, people are accountable for their own tastes, entitled to their beneficial effects and having to endure non-pathologically less favourable ones; and that such normal differences in tastes could not give rise to compensating claims on others' incomes or liabilities towards them?[32]

5. The implementability test

The welfarist theory of the optimum income tax is about a very important topic.[33] It is very well known (and justly admired) by economists who want their work to be useful and seek application. Some eminent contributors to it have even had major economic responsibilities at world and national levels. Why, then, is this remarkable theory still waiting for the beginning of an application after nearly four decades? Can it be applied, at least in a democracy? To begin with, would officials and voters endorse its welfarist ethic? Or in fact do they discard it – for this application – when it is explained to them?

6. The distributive opinion test

The opinions about overall distribution that exist in society have two polar positions; policies apply some mixture of them or compromise between them, and individuals also often endorse more or less some mixture. One polar position is income egalitarianism. It sees equality in incomes as the ideal. Since individuals have different utility functions, this cannot result from any kind of welfarism. The other polar position holds that earned income should belong to the earner ("classical liberalism"). It is not welfarist either. Hence, welfarism seems absent from actual moral positions about the overall distribution in macrojustice.

7. The Rawls (and many other scholars) test

John Rawls is the most famous of contemporary philosophers. His basic work, *A Theory of Justice*, is an indictment of welfarism for macrojustice (his "social justice" – he once uses the

[32] Any more than, for instance, physical beauty.
[33] Mirrlees (1971, 1986), and the ensuing literature.

term "macro" and says "not micro").[34] He says he presents his own theory because a critique is fully convincing only if an alternative is proposed. Some economists hide this fact in calling "Rawlsian" a maximin in utility. But Rawls' maximin (his "difference principle") is in "primary goods," not in utility. This most basic point is unambiguous: "To interpret the difference principle as the principle of maximin utility (the principle to maximize the well-being of the least advantaged person) is a serious misunderstanding from a philosophical standpoint" (1982).[35] Hence, his remarks that "Justice as fairness rejects the idea of comparing and maximizing satisfaction" and "The question of attaining the greatest net balance of satisfaction never arises in justice; this maximum is not used at all" (1971), intend to point out a commonsense and moral inappropriateness of welfarism. Therefore, Rawls naturally acknowledges: "A principle of equal liberty." "A just social system defines the scope within which individuals must develop their aims, and it provides a framework of *rights and opportunities* and the *means* of satisfaction within and by the use of which these ends may be equitably pursued" (id.).[36]

8. The Mirrlees (1971) test

In this article, which is considered the basis of the theory of welfarist income taxation and follows by almost all the subsequent literature, Mirrlees states "Differences in tastes... raise rather different kinds of problems," and uses this argument for attributing the same utility function to all individuals. However, an individual's satisfaction, happiness, utility, or welfare depends on her consumption and her tastes. Individuals do not have the same utility functions. Hence, this unique utility function describes neither individuals' welfares nor their actual choices as assumed by the theory (except, possibly, for one individual). In particular, the outcome is not Pareto efficient. This is not actually welfarism. We do not know, moreover,

[34] His view on this point is shared by a large number of scholars in the various disciplines (among others Dworkin, 1981, but also "classical liberals"). Yet the rest of their conception, as that of Rawls, raises problems.

[35] The leximin in interpersonally comparable utility is the eudemonistic "practical justice" in Kolm 1971, discussed by Rawls, but not proposed for any specified application.

[36] Beyond these general conclusions, however, most of Rawls' more specific proposals are logically problematic for specific reasons. (1) His maximin in "primary goods" (the "difference principle") omits that the bases of transfers and taxation can be much less elastic (hence waste inducing) than they presently are – the issues of defining an index of these goods and of relating this to Pareto efficiency, are much more secondary matters. (2) The theory of the "original position" and of the "veil of ignorance," both in Rawls's version and in Harsanyi's (which gives a kind of utilitarianism or, at least, separable welfarism), are problematic because a selfish individual choice in uncertainty does not have the same structure (and objects) as a choice of justice (see Kolm 1996, pp. 191-194, and 2004, pp. 358-360). (3) The classical theory of equal and maximal real basic liberties does not hold (see note 4).

what this function is. Hence, the consequence to draw from Mirrlees's statement is probably to debate utility functions altogether: this is Rawls's solution. If we add the second of Mirrlees's moral statement, "The great desirability of... offsetting the unmerited favours that some of us receive from our genes and family advantages," there results that Mirrlees's (1971) ethical view is exactly that of Rawls. Nevertheless, Mirrlees (1986) chose the other solution and considered different utility functions, thus raising the corresponding informational problem and, more deeply, opposing common views for this application.

9. The constitution test

The basic principle of our societies, the transgression of which is unlawful and punished, is given by our constitutions and founding declarations. It consists of liberty and rights rather than welfare. Happiness is essential but private. "Men are free and equal in rights." They should be secured the liberty and means to "pursue happiness" as they see fit, rather than some level of happiness.[37] Property rights are basic, and the legitimacy of someone's property of something is provided not by some beneficial consequence but by the condition of its acquisition, notably free actions and exchanges.

Appendix B. Multidimensional labour, nonlinear production

Labour has a priori various dimensions, such as duration, individual effort and costs in previous education and training, intensity (strength, concentration), speed, etc. Moreover, the output may not be a linear function of labour. Let ℓ_i denote a multidimensional labour of individual i, and $p_i(\ell_i)$ the corresponding earnings.[38] All the reasonings, results and meanings presented for the simple case can be repeated for this general case practically identically. The equalization labour k is now multidimensional. The tax-subsidy is

$$t_i = \overline{p}\,(k) - p_i(k) \qquad (21)$$

where $\overline{p}\,(\ell) = (1/n)\Sigma p_i(\ell)$, and individual i's disposable income is

$$y_i = p_i(\ell_i) - p_i(k) + \overline{p}\,(k). \qquad (22)$$

[37] The 1789 Declaration of Rights and the American Declaration of Independence.
[38] For macrojustice, the effects of other persons' labour on an individual's earnings pass through the prices.

This multidimensional case can often practically be reduced to a one-dimensional case with labour duration adjusted for the other characteristics of labour. Indeed, labour can generally be considered as a flow, and as steady in some given period (which can be taken as short as one wants). Then, if ℓ'_i denotes the duration of labour ℓ_i and ℓ''_i the set of its other parameters, function p_i can be written as $p_i(\ell_i)= \ell'_i\, q_i(\ell''_i)$. If individuals' particular productivities are of the classical "output augmenting" type $q_i(\ell''_i)=a_i f(\ell''_i)$, then $p_i(\ell_i)=w_i L_i$ where $L_i= \ell'_i\ f(\ell''_i)$ is individual i's "labour duration augmented for the other characteristics of labour", and $w_i=a_i$ is the corresponding competitive wage rate.[39]

In the expression of earnings from labour ℓ_i, $p_i(\ell_i)$, labour ℓ_i represents items chosen by individual i, and the function $p_i(\ )$ the other items, that is, individual i's productivity and the labour market. Formation, education and training (as health care) increase later productivity. They depend on the persons' given capacities for learning. They also involve acts of the individual and possibly various costs for her (time, effort, direct costs, foregone earnings, etc.). However, the bulk of the formation and education received in the first period of life is provided by the family, or determined by it through choice, support, information, and induced motivation. Globally, at a macro level and apart from exceptions, individuals' level of education is essentially a sociological phenomenon. Hence, for macrojustice and as a first approximation, its effects on earnings have to be incorporated in the productivity $p_i(\ )$ or the wage rate w_i under consideration. By contrast, training and formation undertaken later a priori constitute a dimension of labour.[40] Note that the effects of different $p_i(\ )$ or w_i are equalized only for labour k and not for the rest of labour. This effect of the family should also be considered with the issue of bequest – its cost can be seen as a part of it.[41] Family-induced education could be sensitive to future taxation, but this is much attenuated by the fact that taxes decades later are very uncertain and by the non-pecuniary values of education as providing larger occupational opportunities and freedom of choice, jobs that are less painful

[39] The educational input can also be taken into account by "spreading" the formation time on later labour (that uses its benefits) (see details in Kolm 2004, Chapter 8).
[40] A refinement of the analysis can find ways of taking account of some individually chosen effort at the end of the educational period.
[41] There is even a ground for compensating sociological differences more than those due to intrinsic individual capacities which belong to the person's self, but this issue is not pursued in this simple presentation.

and more interesting and gratifying, the status of educational level and occupations, culture, and the pursuit of family traditions.

Appendix C. Unemployment

Situations of unemployment raise particular specific issues, but, given their importance, they should be related to the general results for macrojustice. If w_i=0, individual i's labour is neither supplied for income nor demanded, and the formula $t_i=k\cdot(\overline{w}-w_i)$ gives $y_i=t_i=k\overline{w}$, the minimum or basic income. If w_i is low, t_i and y_i are close to $k\overline{w}$, whatever ℓ_i. These people's actual labour level makes little financial difference.[42] Hence, the general principle can be applied to these cases (apart from the other policies of formation, education, taking care of handicaps, etc.).[43]

In involuntary unemployment, the individual faces a constraint $\ell_i \leq \ell_i^o$. It can be partial or total (duration zero). It can be for duration or for other dimensions (for instance as underqualification for formation). Reasons for discarding cases $\ell_i<k$ from macrojustice may not hold any longer for this case: these people do not voluntarily abstain from participation in social production, and their number may not be small. Of course, good macroeconomic policy in the first place, unemployment insurance, and specific policies about the labour market and formation are in order. However, the obtained distributive policy can have three important positive effects on employment. By basing taxes and subsidies on items less elastic than actual labour, it generally induces higher labour. The other two effects concern involuntary unemployment in the strict sense. First, the income support to people with low wage rates provided by the obtained scheme can supersede, to everybody's benefit, a number of wage rigidities of public or private nature which are important causes of unemployment (minimum wages, collusions, etc.).[44] Second, the general results for macrojustice can also apply to the case of involuntary unemployment, by using the logical device of considering someone who cannot work more as someone who cannot earn more by working more (and works to earn). What the market presents to the individual is then described solely in terms of the

[42] For other levels of w_i, the case of individuals who choose to work very little ($\ell_i<k$) is treated as indicated in Section 4.1.
[43] Low w_i at a given time only is normally the object of an insurance (health, unemployment – see also below –, etc.).
[44] Computations of the effects are provided in Kolm 2004, Chapter 7.

remuneration of each labour (yet, for partial unemployment it cannot be a linear function of labour).

Considering one-dimensional labour for simplicity in presentation, the outcome is that someone involuntarily unemployed at $\ell_i^o \leq k$ (in particular totally unemployed) has income $\tilde{p}(k)$ which derives from the average $\bar{p}(k) = (1/n)\Sigma p_i(k)$ by replacing the $p_i(k)$ of such individuals by $p_i(\ell_i^o)$ (0 for full unemployment).

This results from the application of the noted device by replacing the function $p_i(\ell_i)$ by its truncation at ℓ_i^o [45]: $P_i(\ell_i)=p_i(\ell_i)$ if $\ell_i \leq \ell_i^o$ and $P_i(\ell_i)=p_i(\ell_i^o)$ if $\ell_i \geq \ell_i^o$, with $p_i(0)=0$ for full unemployment. Then, applying the ELIE scheme to functions P_i gives $t_i = \bar{P}(k) - P_i(k)$ and $y_i = P_i(\ell_i) + t_i = P_i(\ell_i) - P_i(k) + \bar{P}(k)$. If $\ell_i = \ell_i^o$ and $\ell_i^o \leq k$, $P_i(k)=p_i(\ell_i^o)=P_i(\ell_i^o)=P_i(\ell_i)$, and therefore $y_i = \bar{P}(k) = \tilde{p}(k)$. This is in particular the case for full unemployment, $\ell_i^o = 0$. Moreover, if, when $\ell_i^o > 0$, person *i* chooses to work less than ℓ_i^o, her income is reduced by the corresponding loss in output.

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[45] A particular case can be $p_i(\ell_i)=w_i \ell_i$.

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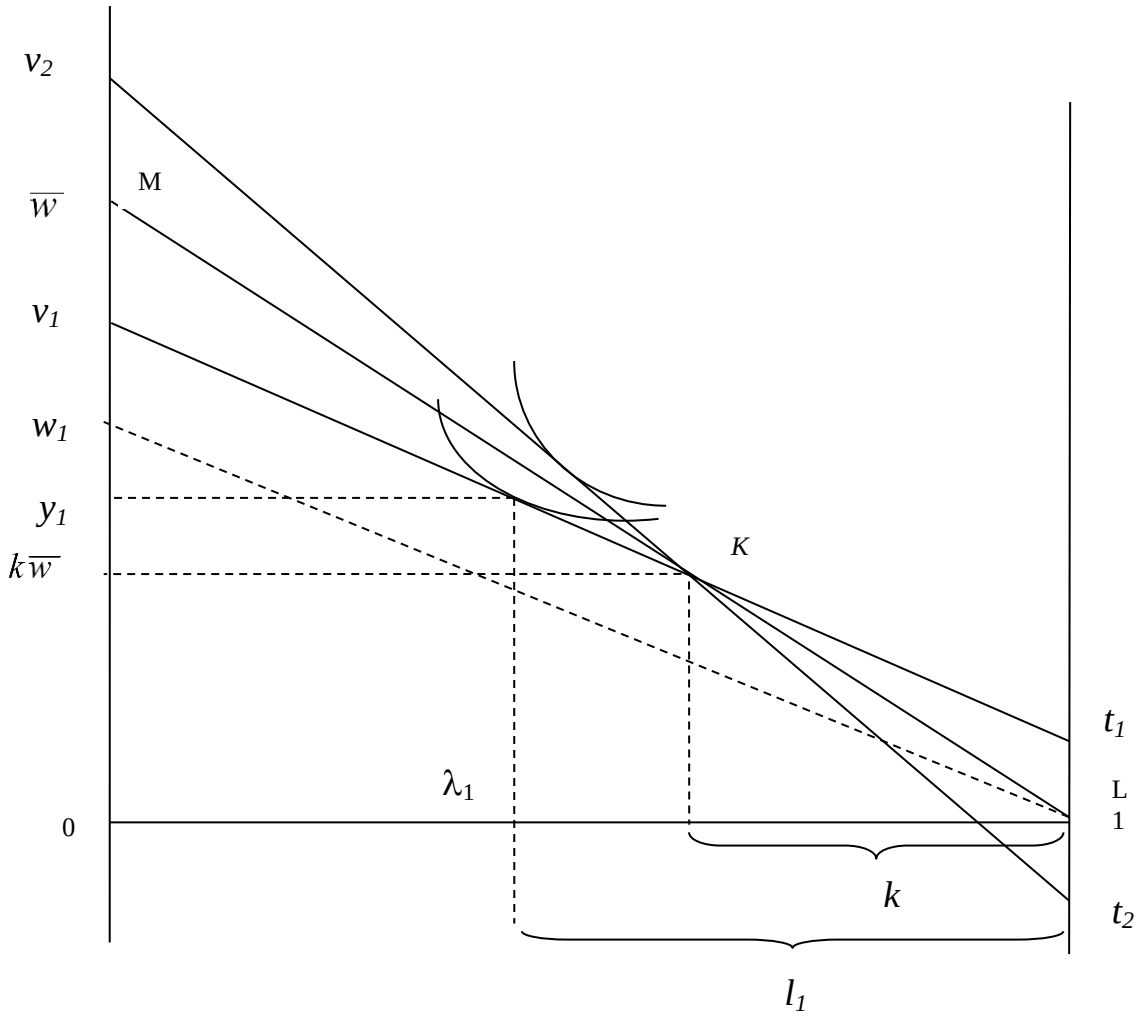

Figure 1

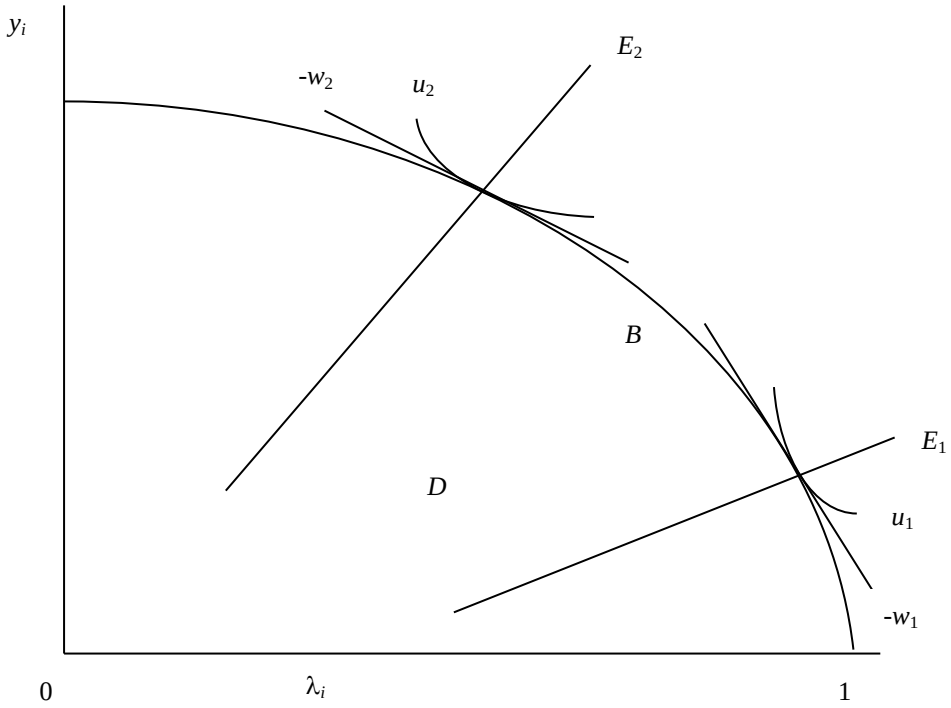

Figure 2