# DISCUSSION PAPER

MR. FAIRMIND IS POST-WELFARIST:
OPINIONS ON DISTRIBUTIVE JUSTICE

by

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# MR. FAIRMIND IS POST-WELFARIST:
## OPINIONS ON DISTRIBUTIVE JUSTICE

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## Abstract

I survey the results of empirical research, showing that the opinions about distributive justice of the population at large are in sharp conflict with the assumptions of traditional welfare economics. I focus on the results concerning welfarism and concerning the Pigou-Dalton transfer criterion. At the same time, I show that recent developments in social choice theory are much more in line with the empirical results. This suggests that a better understanding of the complementarity between empirical and theoretical work might lead to a richer debate and to a greater awareness of the possible biases in the economic approach.

# 1 Introduction

Traditionally there have been two streams in the vast literature on distributive justice. On the one hand, there is the philosophical and economic literature, which tries to find the best interpretation of justice through rational discussion and the construction of formal models. On the other hand, there is a large body of (mainly sociological and psychological) empirical research on how people think about justice and how they behave in actual distributional situations. These two streams of literature have been almost completely disconnected. Economists and philosophers emphasize that "we cannot expect to settle ethical issues in a satisfactory manner by having a 'vote' among uninformed individuals. Rather, the arguments that are used for and against the principle in question have to be examined carefully. (...) Essential ingredients of a debate over normative issues are critical reflection and thorough assessment of the arguments being used" (Bossert [1998], p. 283). At the other side, the research program of most empirical social scientists starts from the idea that "past research has convincingly shown that the notion of justice seems to mean different things to different people and in different circumstances. Justice is like a greased pig, it yells loudly but is hard to catch. In any event, the perennial search for the true meaning of justice has not been particularly fruitful, and it is likely that there is no true or essential justice beyond its socially constructed meanings" (Törnblom [1992], p. 177-178).

Although the gap between these two bodies of literature remains huge, some economists and philosophers have tried to bridge it. In the first place the interest in experimental economics has been growing rapidly and it has been discovered that distributive justice considerations cannot simply be discarded for the explanation of behaviour. The ultimatum bargaining game is a case in point (see, e.g. Güth [1995]), but many other examples can be given. In the second place, Elster [1992] started a line of research in which information is collected on how distributional problems are solved in the real world and how these real world solutions relate to theoretical concepts. And in the third place economic journals have published the results of questionnaire studies aimed at investigating whether the opinions of economic agents about justice are in line with the assumptions and axioms used in the economic models.

While the first two lines of research focus on actual behaviour, the third line concentrates on opinions. It is therefore closer in spirit to the ethical and social choice literature. In this paper I will concentrate on this third approach.

In section 2 I sketch a broad picture of the main empirical findings of the other social sciences and contrast these with the current practice in applied welfare economics. However, this current practice is not really representative for the recent developments in the social choice literature. I will argue that these recent developments are much more in line with the empirical work. In section 3 I discuss the influential paper by Yaari and Bar-Hillel [1984] and show how it started a line of empirical research which runs parallel to the theoretical developments in the post-welfarist social choice literature. In section 4 I indicate how the work of Amiel and Cowell [1992] may act as the starting point for an analogous development in the theory of inequality measurement. I will then return in section 5 to the basic questions concerning the usefulness of this empirical work.

This paper does not contain any original empirical work. At the same time, it is not a real survey because there is no attempt at completeness. I have preferred to concentrate on a few studies and discuss their methodology and relevancy in some depth. While it is true that I consider the Yaari-Bar-Hillel [1984] and Amiel-Cowell [1992] papers as the most important and influential ones, the remainder of my discussion is biased towards my own work. Moreover, I have chosen to focus on the more theoretical discussion about distributive justice within the social choice literature. I therefore do not discuss another important line of empirical research, which started with the paper by Kahneman, Knetsch and Thaler [1986] and is more directed towards concrete decisions in a market environment.

## 2 Welfare economics vs the commonsense conception of justice

Let me first sketch a broad, primitive and somewhat provocative picture of two approaches to distributive justice. The first is the current practice in welfare economics or public economics: this is basically applied ethics as interpreted by mainstream economics. Since developments in political philosophy or in social choice have only an influence on public economics after a rather long delay, this current practice is not

representative for the current social choice literature. The second approach is what Elster [1992] has described as "the commonsense conception of justice of unprofessional philosophers". It refers to the feelings of the general public concerning distributive justice. Empirical research by social scientists has made it possible to build up a rough idea about these general feelings.

Take any handbook of welfare economics or public economics. Let us hope that it reflects the insights about the limitations of the second welfare theorem and therefore introduces distributional considerations in an explicit way. It is almost certain that consequentialism is accepted without much justification. Moreover (and hopefully with somewhat more justification) social preferences are represented by a social welfare function $W(U_1, \ldots, U_N)$, increasing in the individual utility levels to satisfy the Pareto-criterion. These same utility functions are considered to be the representation of the preferences guiding individual behaviour. As for the form of $W(.)$, it is fair to say that the applied literature is still largely dominated by utilitarianism (or weighted utilitarianism), although there is a chance that leximin is mentioned as a special case.

Most often (surely when there is a chapter on inequality measurement) the Pigou-Dalton-axiom is presented and defended, stating that a redistribution of income from a rich to a poor person is welfare increasing. Adapting the formulation of Amiel and Cowell [1992], this principle is formulated as follows: "For an income vector $y$, two individuals $i$ and $j$ and a scalar $\delta$, if $y_i > y_j$ and $y_i - \delta > y_j + \delta$, then $y$ is more unequal (and yields a lower level of social welfare) than the vector $(y_1, \ldots, y_i - \delta, \ldots, y_j + \delta, \ldots, y_N)$". Other axioms are added to arrive at a formal measure of inequality, but this so-called transfer axiom undoubtedly captures the most basic intuition of welfare economists. To conclude: economists use a universalistic and formalized framework, rooted in welfarism, but capturing some notion of inequality aversion.

Let us now turn to the opinions of the general public. Of course, it is difficult to generalize because empirical evidence shows the existence of significant interindividual and intercultural differences (Törnblom [1992], Arts and van der Veen [1992]). But we can still try to draw some general lines. In his nice survey article, Miller [1992] has discussed in a nuanced way the main findings of empirical research in the social sciences in the light of some broader philosophical ideas. But for my purposes a more

primitive sketch will suffice. I restrict myself to three, rather robust findings with respect to the opinions of Mr. Fairmind, an agent who is representative of the general public.

(a) Mr. Fairmind has a pluralistic conception of justice. Depending on the concrete circumstances of the distributional problem, he will emphasize desert (or "equity" in the psychological jargon), need or simple equality. There is some evidence that the choice of the distributive criterion depends on the closeness of the social relations in the relevant group. Productive effort will then be the dominant criterion if economic production is the main goal of the social interaction; equality will dominate if the goal is the fostering of enjoyable social relations; in very close relations that aim at the personal development of the individual persons, the need principle will play an important role. One may wonder whether in the latter case we can still talk about "justice" and whether there are no other values at play like altruism or fraternity. Yet it is beyond doubt that most people do not work with a universal concept of justice, but adjust their opinions to the concrete context of the problem.

(b) In judgments about the broader (macro)social situation the desert criterion plays a crucial role. Most people accept that higher contributions must be rewarded. There is a large consensus (at least in Western societies) that effort should be remunerated, but the relative weight given to other components of desert may differ: some will emphasize job characteristics (like responsibility or physically exerting circumstances), others will also include personal characteristics (like natural abilities). It is not certain, however, that we really recover here an opinion about distributive justice. It is very well possible that Mr. Fairmind is aware of the incentive problem and reasons (without knowing) in a second-best world. There is quite some evidence that he really cares about efficiency and wants to maximize production (however defined), but most research is not sufficiently focused to be able to distinguish clearly justice and incentive considerations.

(c) This does not mean that Mr. Fairmind is happy about the income inequality in our society. Although he accepts income differences resulting from different contributions, he generally feels that actual income differences are too large. He is very much in favour of introducing a minimum floor, below which no one should fall, and is

sensitive to the problem of social deprivation (more so in Europe than in the United States). However, he wants to check whether the needy are really needy and is not eager to guarantee an unconditional grant to those able-bodied persons who simply choose not to work.

This sketch of the public opinion admittedly is very rough, but I am sure that it will still be recognizable to many readers. It is clear that there is more than a small gap between these opinions and the simple universalist and welfarist foundations of welfare economics. There is a yawning chasm. Is this a problem? It surely is if welfare economists want their analysis to have real influence on the decisions taken in a political democracy. Is there some hope that actual developments in social choice will help to bridge the gap? Or is Mr. Fairmind simply wrong and should he be convinced of the truth which is hidden in the current economic practice? These latter questions bring us right into the heart of the debate on the relationship between empirical research and theoretical thinking about distributive justice. I will return to that debate in section 5.

As I emphasized already before, the social choice approach to distributive justice differs from the current practice in public economics. Most of the empirical work published in economic journals also departs from the research summarized before in that it tries to link the questionnaire items more directly to the formal modelling structure of the social choice literature. There does exist therefore at least a possibility of sensible communication between this theoretical and this empirical work. In fact, it will turn out that there is a reasonable convergence between the two. Let me illustrate this first in section 3 for the post-welfarist developments within the social choice literature and then comment in section 4 on the measurement of inequality.

## 3 Mr. Fairmind is post-welfarist

The first really influential empirical article, co-authored by an economist and published in an economic journal, was the paper by Yaari and Bar-Hillel [1984] in the very first issue of *Social Choice and Welfare.* This paper did not contain any reference to the large empirical literature sketched in the previous section but started instead from

economic and philosophical modelling ideas. Other empirical work has followed this lead. I will first discuss the limitations of welfarism and then turn to some recently proposed alternatives.

## [a] Against welfarism

To illustrate the methodology followed by Yaari and Bar-Hillel [1984], I will concentrate on one specific example from their paper, which is the most relevant in my context. A group of undergraduate students was confronted with the following question:

> "A shipment containing 12 grapefruit and 12 avocados is to be distributed between Jones and Smith. The following information is given, and is known also to the two recipients:
> -Doctors have determined that Jones' metabolism is such that his body derives 100 milligrammes of vitamin F from each grapefruit consumed, while it derives no vitamin F whatsoever from avocado.
> -Doctors have also determined that Smith's metabolism is such that his body derives 50 milligrammes of vitamin F from each grapefruit consumed and also from each avocado consumed.
> -Both persons, Jones and Smith, are interested in the consumption of grapefruit and/or avocados only insofar as such consumption provides vitamin F- and the more the better. All the other traits of the two fruits (such as taste, calorie content, etc.) are of no consequence to them.
> -No trades can be made after the division takes place.
> How should the fruits be divided between Jones and Smith, if the division is to be just?"

They could choose between a number of given distributions which are based on theoretical models or could (if they so desired) add their own solution. Another group of students got the following variant of the problem:

> "A shipment containing 12 grapefruit and 12 avocados is to be distributed between Jones and Smith. The following information is given, and is known also to the recipients:
> -Jones like grapefruit very much, and is willing to buy any number of them, provided that the price does not exceed $1.00 per pound. He detests avocados, so he never buys them.
> -Smith likes grapefruit and avocados equally well, and is willing to buy both grapefruit and avocado in any a number, provided that the price does not exceed $0.50 per pound.
> -Jones and Smith are in the same income-tax bracket.
> -No trades can be made after the division takes place.
> How should the fruits be divided between Jones and Smith, if the division is to be just?"

Since the students in the different groups are selected in a random way, differences in response patterns can only follow from differences in the formulation of the variants. In the former variant, Jones and Smith differ in their metabolism and therefore need different amounts of the fruits to produce vitamin F. In the latter variant there is no

reference at all to needs: it is implicitly assumed that the differences in willingness to pay (for two individuals at the same income level) reflect merely differences in subjective tastes.

The results for the two variants are summarized in Table 1. The distributions have been chosen in such a way that they correspond to well-known solution concepts. The division (J:8-0, S:4-12) where the first number corresponds to the number of grapefruit and the second to the number of avocados would be advocated by the maximin criterion- but also by bargaining from zero according to the Kalai-Smorodinsky model. Utilitarianism (but also competitive equilibrium from equal split and bargaining from zero according to the Nash-model) would lead to the division (J:12-0, S:0-12). The results show that the first (maximin) solution dominates in the needs-case and that the second (utilitarian) solution is more popular in the tastes-case.

*Table 1. Needs versus tastes*
*(Yaari and Bar-Hillel [1984])*

|  | NEEDS (N=163) | TASTES (N=122) |
|---|---|---|
| J:6-6, S:6-6 | 8% | 9% |
| J:6-0, S:6-12 | 0% | 4% |
| J:8-0, S:4-12 | 82% | 28% |
| J:9-0, S:3-12 | 8% | 24% |
| J:12-0, S:0-12 | 2% | 35% |

One could use this kind of results to evaluate the acceptability of the different solution concepts, but this is not the most interesting or robust conclusion which can be drawn from table 1. Much more important is the simple fact that the distribution of the responses in the two columns is completely different. This is not at all surprising in the light of previous empirical research: it simply shows that Israeli students react like the majority of the population in Western societies. But the strength of the

Yaari-Bar-Hillel-paper lies in its formalization. Indeed, the case has been constructed in such a way that the two variants are formally identical. What has to be distributed is the same (12 grapefruit and 12 avocados), and the individual "utility functions" of Jones and Smith also are the same in both cases with (in an obvious notation)

$$v_J = 100gr$$

$$v_S = 50gr + 50av$$

Of course, the content of the utility functions is different. While in the former case the functions $v_J$ and $v_S$ give information about the needs of Jones and Smith, in the latter case they carry information about their tastes. For an unreconstructed welfarist, however, these differences in information should be irrelevant, since the only thing that matters is the level of welfare and not the exact source or interpretation of that welfare. Given the formal structure of the problem, a welfarist respondent therefore should pick the same division in both cases. Israeli students clearly did not behave in a welfarist fashion: it did matter a lot to them whether the problem was described in terms of needs or in terms of tastes.

Not only was the formal structure of the questions familiar to economists. Moreover, the paper came exactly at the right moment, because its publication coincided with a growing tendency in the social choice literature to depart from simple (universalistic) welfarism and to turn to more specific and context-dependent theories of distributive justice. Later empirical work by Gaertner [1992, 1994], also based on a careful formalization, has confirmed that it is nearly impossible to rationalize respondents' behaviour in terms of utilitarian ethics. All this raises the obvious question: do the more recent developments in social choice theory succeed in bridging part of the gap between the theory and Mr. Fairmind's opinions? I will look at some relevant results in the following section, leaving aside the question whether bridging that gap would be a good thing. To that question I return in section 5.

## [b] Context-dependent approaches and equality of opportunity

In Schokkaert and Overlaet [1989] the limitations of welfarism are taken for granted. They did not attempt to check the popularity of a universalistic ethical theory, but

immediately turned to some specific models. One of these models was the surplus sharing problem, as analysed in Moulin [1987] (see also Moulin [1988]). This pure distribution problem is formulated by Moulin [1987] as follows: "A fixed, finite number of agents enter a joint venture, generating a monetary return. Utility is fully transferable by monetary side payments. Knowing the individual opportunity costs and the total returns and assuming there is a surplus, how should we divide it?" This problem has two interesting aspects from the viewpoint of the relationship between empirical and theoretical work. In the first place, it is set within a production context for which uninformed respondents usually have the strongest intuitions. In the second place, Moulin [1987] has shown that the equal and proportional sharing rules are the only solutions satisfying a set of reasonable axioms. These are also the two most popular solutions in the empirical work. This is really one of the places where economic and psychological models of distributive justice can meet each other.

Schokkaert and Overlaet [1989] worked within the quasi-experimental setting used also by Yaari and Bar-Hillel [1984]. Different groups of Belgian undergraduate students were confronted with one of the four variants (aP, bP, aL, bL) of the following question:

> *"John and Peter are glassblowers and set up a business together.*
> *(a) John works five days a week and Peter only four.*
> *(b) John is artistically more gifted than Peter and could therefore earn elsewhere a higher income.*
> *Their work is complementary and they both are absolutely indispensable. John has a net income of 500 000 BEF a year and Peter earns 400 000 BEF.*
> *(P) After a year they have got a sales revenue of 990 000 BEF, so that they after deduction of their wages have realized a profit of 90 000 BEF. What would you consider to be a just division of this profit?*
> *(L) After a year they have got a sales revenue of 810 000 BEF, so that they after deduction of their wages, have incurred a los of 90 000 BEF. What would you consider to be a just division of this loss?"*

The results are summarized in Table 2. Look first at the results for the surplus-variants aP and bP. It is obvious that proportional and equal sharing are indeed the focal solutions of that problem, attracting 97.5% of the respondents in the first and 87.8% in the second case. Again, this is not really surprising in the light of previous empirical research. It is important, however, that Moulin's theoretical work yields a tight formal structure and a nice theoretical interpretation for these "empirical" solutions. Equal sharing is the natural solution when we view the model as a cooperative game, where

intermediate coalitions generate no surplus but the grand coalition does. Since cooperation of all agents is necessary to generate the surplus, they all have an equal right to it. Proportional sharing follows when we interpret the model as a pricing problem and assume that the surplus depends on the opportunity costs of the different agents. The question still remains under what conditions one interpretation is to be preferred over the other. The results in Table 2 (in line with previous empirical work) suggest that this may depend on the causes of the productivity differences. If there is a clear quantitative indication of differences in effort, respondents choose the opportunity cost interpretation. However, if differences in productivity follow from differences in natural talent, the case for using the proportional solution is much less obvious. In fact, in that case there is almost a 50%/50% split among the respondents.

*Table 2.  Surplus sharing and the division of a loss*
*(Schokkaert and Overlaet [1989])*

SURPLUS

| | EFFORT (aP) | TALENT (bP) |
|---|---|---|
| John>50000 | 2.5% | 12.2% |
| John 50000 (proportional) | 82.5% | 36.6% |
| John 45000 (equal) | 15.0% | 51.2% |
| John<Peter | 0.0% | 0.0% |

LOSS

| | EFFORT (aL) | TALENT (bL) |
|---|---|---|
| John>50000 | 0.0% | 4.8% |
| John 50000 (proportional) | 41.0% | 51.2% |
| John 45000 (equal) | 48.7% | 36.6% |
| John<Peter | 10.3% | 7.2% |

Let us now turn to the results for the variants aL and bL, where the cooperative venture incurs a loss. This problem of division of a loss is formally similar to the surplus sharing model. However, the respondents do not react in a symmetric way. This effect is especially striking in variant aL: while 82.5% of the respondents choose a proportional division in the surplus-variant, only 41.0% does so for a loss. This means that about 60% of the respondents prefer a division rule where the final income dis-

tribution is no longer proportional to the number of days worked by the agents. This asymmetry between gains and losses is a general finding in empirical work (Törnblom [1992]). It was also found by Kahneman et al. [1986] in their analysis of the perceptions of entitlements in the market. Again: Belgian students react like the majority of the population in Western societies. Apparently the intuitions of respondents do not satisfy the usual consistency (or path-independency) axioms which are often imposed in formal work as a requirement of rationality.

What are the implications of this finding? One can reduce it to a kind of framing effect and claim that it is due to the noncommittal setting of a questionnaire study and therefore will disappear in the real world. But this is perhaps too easy as an escape route. There is also another interpretation. The problem of loss division is not a one-step problem. As it is formulated, the agents first get an income and only after a year they realize that there is a loss. In a certain sense one can say that they have "acquired a claim" to this original income. It is possible that in the mind of the respondents these claims are equally valued for both agents and that therefore an "equal" sacrifice in the case of a loss is justified. Even if one would see this as a framing effect, it is difficult to deny that it does play a role in real world division problems. The choice of a reference point is not a slight detail: it probably is an essential element for a complete formulation of the problem of distributive justice in the real world.

The shift towards more specific and context-dependent theorizing has not prevented the appearance of new more general lines of thought within the social choice literature. One of the most promising developments has been the introduction of responsibility and the (re)discovery of the notion of equality of opportunity. An overview of this literature is given by Fleurbaey [1998]. In this approach a distinction is made between two sets of individual characteristics: those for which individuals can be held responsible, and those for which they are not responsible. If differences in the former lead to differences in economic status, there is no problem from the point of view of justice. However, if differences in economic status follow from differences in the latter category of characteristics, compensation is necessary. This approach raises two

groups of questions. First, how to determine for which characteristics individuals are responsible and for which they are not? And second, given that we have solved this problem, how then to formalize the notion of equality of opportunity?

The first question brings us back to the whole debate about the reasons for (in)equality. One can try to answer it in abstract terms. Yet it is interesting to remember that this is also one of the main research topics in the empirical literature. The starting point of theories of equality of opportunity is perfectly in line with the opinions of Mr. Fairmind and we know more or less his ideas about this classification. Remember the differences between the results for the case of effort and the case of talent in the surplus sharing problem. Some theorists (Roemer [1993]) have even suggested that empirical research might be crucial in the process of classifying variables for which individuals have to bear responsibility. Indeed, this classification may be different in different societies, because it will be influenced by the dominant physiological, psychological or social theories of man. Of course, to be really interesting from this point of view, the empirical work should not be restricted to student samples. Some results with representative (non-student) samples are shown in Schokkaert and Lagrou [1983] and Schokkaert and Capéau [1991] and they are broadly consistent with the picture from section 2. According to the respondents, individual efforts have to be remunerated. However, there is no consensus about the classification of natural abilities. In that sense, the community of ordinary people resembles very much the community of philosophers. There seems to be ample room for interaction between empirical and theoretical work here.

The second set of questions arizes after the decision on the classification of variables has been taken. What does it exactly mean to "compensate persons for the variables for which they are not responsible" while at the same time "allowing for differences in economic status following from factors for which they are responsible"? An interesting approach to these questions has been proposed by Fleurbaey (summarized in Fleurbaey [1998]). A quasi-linear version of the problem is analysed in Bossert and Fleurbaey [1996] in the context of income (re)distribution. The basic intuitions of the equal opportunities-approach are summarized with two axioms. These can be formulated loosely in verbal terms as follows:

**EIER** (equal income for equal responsibility-characteristics): two agents with identical responsibility-characteristics should end up with identical post-tax incomes. Indeed, they only differ in characteristics for which they are not responsible, and these differences should not be reflected in their final economic status.

**ETES** (equal transfer for equal compensation-characteristics): two agents with identical values for the characteristics for which compensation is justified should pay the same tax or receive the same transfer. Indeed, in this way differences in pre-tax incomes which follow from responsibility characteristics are kept intact throughout the taxation process.

These two axioms apparently formalize in a plausible way the basic insights of the equal opportunities-approach. Let us therefore turn to the results of an empirical study which investigated the degree to which they are accepted by a sample of students. Schokkaert and Devooght (1998) formulated the following question for 206 Belgian undergraduates:

> *"Ann, Anna, Barbara and Babette are employed in a similar job. The total labour income is 350 for Barbara, 200 for Babette, 300 for Ann and 150 for Anna. The individual labour income is composed as follows. Barbara and Babette receive a basic income of 200 each for their labour. Due to their lower productivity Ann and Anna receive a lower basic income of 150 per person. These differences in productivity result from differences in innate intelligence: Barbara and Babette are more intelligent than Ann and Anna. The situation is complicated by the fact that Barbara and Ann are hard workers and therefore have a higher productivity. This extra productivity is remunerated with an extra income of 150 each. Babette and Anna are lazy and do not have this extra productivity. They do not receive an extra income. The government wants to redistribute the income of these four people. The knowledge that there will be a redistribution does not change the behaviour of the individuals. What would you consider to be a just redistribution?"*

As in Yaari and Bar-Hillel [1984] the respondents received a table with different possible distributions. Some of these corresponded to popular views among uninformed respondents: proportionality, egalitarianism or moderate income progressivity. Some other distributions satisfied either EIER or ETES or both. Note that the case is constructed on the basis of the following formalization:

$$f(a) = 150 + 50a^C + 150a^R$$

where $f(a)$ is pre-tax income, $a^C$ is the compensation-variable "innate intelligence" and $a^R$ is the responsibility-variable "effort". There is one possible solution satisfying both

EIER and ETES. This is the solution where the (equally intelligent) Barbara and Babette pay a tax of 25 (to end up with a post-tax income of 325 and 175 respectively, reflecting the difference in effort), while the less intelligent Ann and Anna receive a transfer of 25 (yielding post-tax incomes of 325 and 175 respectively). The hard-working Barbara and Ann then get the same after-tax income 325, the lazy Babette and Anna receive 175. This is not an easy solution and it is definitely very different from the popular proportional or egalitarian solutions. Next to this (theoretically ideal) solution there are of course many other options where one of the two axioms is satisfied but not the other.

Schokkaert and Devooght (1998) also constructed a similar case within a different context: compensation for health expenditures. The case ran as follows:

> *"Chris, John, Tim and Tom suffer from similar effects of lung cancer. The total cost for a succesful cure is 350 for Chris, 200 for John, 300 for Tim and 150 for Tom. The total costs are composed as follows. To help Tim and Tom the cost for the basic cure is 150 each. To help Chris and John the cost for the basic treatment is 200 each, due to their lower natural resistance against cancer. Chris and John have a genetic defect and therefore need additional treatment. This is not necessary for Tim and Tom. There is also a second reason for the difference in costs. Tim and Chris have chosen a very expensive doctor, which costs them each 150 extra. Tom and John have not chosen such an expensive doctor. We suppose that all treatments are effective. The government has to divide 500 for the treatments among these patients and wants to spend this amount completely. What would you consider to be a just division of this amount of money?"*

The formal structure is completely similar. In this case $f(a)$ stands for the medical expenditures, the responsibility-variable $a^R$ is the choice of doctor, the compensation-variable $a^C$ is the natural resistance against cancer. Again, there is a solution satisfying both axioms EIER and ETES but this solution is not straightforward for an unsophisticated respondent.

The results for the two cases are summarized in Table 3. We only look at the degree of acceptance of the axioms. More detailed information can be found in Schokkaert and Devooght [1998]. Look first at the results for the health case. More than half of the respondents pick the complicated solution satisfying ETES and EIER. This suggests that the equal opportunities-framework is more succesful than other formalizations in capturing the basic intuitions of uninformed respondents. Note that only 20% of the sample chose a distribution which did not satisfy any of the two axioms.

*Table 3.  Acceptance of Fleurbaey's axioms*
*(Schokkaert and Devooght [1998])*

HEALTH

|  | ETES | Not ETES |
|---|---|---|
| EIER | 56.3% | 8.3% |
| Not EIER | 15.6% | 19.8% |

INCOME

|  | ETES | Not ETES |
|---|---|---|
| EIER | 14.6% | 1.0% |
| Not EIER | 10.3% | 74.1% |

However, the results for the income distribution case are strikingly different.  Only a minority chooses the Fleurbaey-solution.  One can think of at least three possible explanations and they all point to interesting lines of research.  The most obvious one relates to the classification issue.  We defined EIER and ETES as if "intelligence" were a compensation-variable and "effort" a responsibility-variable.  But we know already from section 2 that there is definitely no consensus about the former statement and this will have its bearing on the responses.  The second possible explanation also follows from what we know about Mr. Fairmind: he is concerned about incentive considerations.  Yet the Bossert-Fleurbaey [1986] framework is first-best and neglects this issue completely.  The third explanation is more of a framing effect.  It is possible that respondents answer the question with real-world taxation schemes in their mind. Progressive income taxation schemes are defined with respect to income levels and do not take into account differences in effort or in natural abilities.  Note that all these explanations can help to understand the difference between the income- and the health-case.  In the latter case, the classification in responsibility- and compensation-variables is less debatable, incentive considerations play only a marginal role and there is no real-world tax analogue.

Much more should be done to explore further the relationship between theories of equal opportunities and the moral intuitions of uninformed respondents.  Yet there is room for a dialogue between the two approaches.  While the simple welfarist approaches are so far removed from Mr. Fairmind's feelings that fruitful communi-

cation is impossible, this is definitely not true for these recent post-welfarist developments. This is also illustrated in a somewhat surprising way by a recent paper of Konow [1996]. This author formulates what he calls a "positive" theory of fairness, based principally on the results of a set of questionnaire studies both with students and with non-students. While he does not refer in any way to the social choice literature, his approach crucially hinges on what he has baptized the "accountability principle", formulated as follows: "The entitlement varies in direct proportion to the value of the participant's relevant discretionary variables, ignoring other variables, but does not hold a participant accountable for differences in the values of exogenous variables". These latter variables are interpreted as being beyond the control of the participants. Or: how an "uninformed" economist reinvents some basic principles of the recent social choice literature on the basis of his empirical findings with "uninformed" respondents.

## 4 Mr. Fairmind cares about inequality, but in a complex way

A concrete topic for the evaluation of distributive justice is the measurement of income inequality. Economists have attacked this problem in a formalized way and proposed a whole battery of axioms to characterize various specific measures. It is not always obvious how one should choose between these axioms (and hence measures) and therefore stochastic dominance results have been particularly useful in this field. Until recently the literature focused on the case of homogeneous households differing only in their income level. So doing one avoids the difficult problems described in the previous section. However, as soon as one starts analysing the heterogeneous case, one immediately gets confronted with these same questions (see, e.g., Shorrocks [1995]). In this section we will only comment on the homogeneous case.

In a series of papers Amiel and Cowell have investigated whether the theoretical axioms proposed in the economic literature are accepted by student samples in different European countries and in the United States. I will concentrate on the results in their most influential paper and in its direct extension (Amiel and Cowell [1992],

[1994a]).  A general overview of later work is given in Amiel and Cowell [1998].  Other authors have followed their track and basically have confirmed most of their findings (Ballano and Ruiz-Castillo [1993], Harrison and Seidl [1994]).

As described in section 2, the Pigou-Dalton transfer principle plays a crucial role in this literature.  I will therefore first focus on the results with respect to that axiom. Amiel and Cowell constructed a questionnaire in which they first ask respondents to rank vectors of numbers, representing income levels, and in a second stage confront the respondents with a verbal formulation of the axiom.  The verbal questions come after the numerical ones and respondents can, if they desire, change their ranking of the income vectors after having been exposed to the axioms in plain English.  This opportunity was taken by only a few students.  In Amiel and Cowell [1992] the numerical question with respect to the transfer principle runs as follows:

> *"...you are asked to compare two distributions of income.  Please state which of them you consider to be the more unequally distributed by circling A or B.  If you consider that both of the distributions have the same inequality then circle both A and B.*
> *(...)*
> *A= (1, 4, 7, 10, 13)          B= (1, 5, 6, 10, 13)"*

It is obvious that acceptance of the principle implies that distribution B is more equal than distribution A.  In fact, distribution B strictly Lorenz-dominates distribution A. For the verbal question, they choose the following formulation:

> *"Suppose we transfer income from a person who has more income to a person who has less, without changing anyone else's income.  After the transfer the person who formerly had more still has more.*
> *(a) Income inequality in this society has fallen.*
> *(b) The relative position of others has also changed as a consequence of this transfer. Therefore we cannot say, a priori, how inequality has changed.*
> *(c) Neither of the above."*

In a later paper Amiel and Cowell [1994a] explored the relationship between the specification of the social welfare function and the evaluation of inequality.  As they emphasize (in line with the results in the previous section), it is possible that people do not view income inequality in "welfarist" terms.  In that case direct questions about measurement of inequality will not necessarily lead to the same response pattern as questions referring to a social welfare function. The numerical question for the welfare evaluation goes as follows:

> *"In Alfaland two economic programmes are proposed. It is known that both programmes will have the same effect on the population except on their incomes and all the people are identical in every respect other than income. (...) there are given two alternative lists of incomes A and B (in Alfaland local currency) which result from these two programmes respectively. Please state which programme you consider would make the community of Alfaland better off by circling A or B. If you consider that each of the programmes is just as good as the other then circle A and B.*
> *(...)*
> *A= (1, 4, 7, 10, 13)　　　B= (1, 5, 6, 10, 13)"*

Here also, they have a verbal question:

> *"Suppose there are two economic programmes A and B which have only the following difference: the income of person i in programme A is x units higher than his income in programme B while the income of person j in programme A is x units lower than his income in programme B. In both programmes the income of person i is higher than the income of person j. The incomes of all other people are unaffected by the choice of programme A or programme B.*
> *(a) Programme A would make the community better off.*
> *(b) Programme B would make the community better off.*
> *(c) The relative position of other people is also different by A and B. Therefore we cannot say which programme would make the community better off.*
> *(d) None of the above."*

The results for these different questions are summarized in table 4. The results on inequality measurement are based on the answers of 941 students from different universities: North Texas, Southern Methodist University, London School of Economics, Bonn, Karlsruhe, Koblenz, Ruppin Institute and Hebrew University. The answers for the social welfare functions are from 620 students from Bonn, Koblenz, Stockholm, London School of Economics and Tel Aviv. The popularity of the transfer principle turns out to be remarkably low, given the extremely simple question: only one third of the respondents thinks that distribution B is more equal than distribution A! It is interesting to look at a special case. One subgroup (81 students from Hebrew University) had been taught about the Lorenz-curve before they took the questionnaire: 89% of this subgroup supported the transfer principle in its verbal statement. But even in this group only 40% stated that distribution B was the more equal one when they had to rank the vectors. Either these students were not so good after all, or their intuitions against the Pigou-Dalton principle are rather strong indeed.

What to conclude from these results? The Pigou-Dalton criterion is so important in the economic tradition that economists understandably are reluctant to give it up. It is indeed almost tautological to state that in a two-person society a transfer from a

*Table 4. Acceptance of the transfer principle*
*(Amiel and Cowell [1992, 1994a])*

|  | INEQUALITY | WELFARE |
|---|---|---|
| NUMERICAL | 35% | 47% |
| VERBAL | 59% | 33% |

rich to a poor person decreases inequality. However, things change in a society with more than two persons. If one takes the (defensible) position that the degree of inequality is (co)determined by the distances between the different income positions, it is no longer obvious that the income vector (1, 5, 6, 10, 13) is more equal than (1, 4, 7, 10, 13). For instance: the distance between the lowest and the second lowest income is larger in the former than in the latter case. In fact, Amiel and Cowell [1998] remind us that Pigou himself had doubts about the application of the principle in this broader context. They quote him as stating in "Wealth and Welfare" [1912]: "...if these members are only two in number, it is easily shown that any transfer from the richer to the poorer of the two...must increase the aggregate sum of satisfaction. In a community consisting of more than two members, the meaning of rendering the distribution of the dividend less unequal is ambiguous". It was Dalton who extended the application of the principle to a population of arbitrary size.

The upshot of this discussion is clear. Although there may be good a priori reasons to accept the Pigou-Dalton criterion in its strong form, this goes further than Pigou's original intuition. It also goes further than the intuitions of large groups of respondents. It might therefore be fruitful to try to devise a refined interpretation of the original insight. As Amiel and Cowell [1998] suggest it may make sense to recast the measurement of inequality in terms of income differences, rather than basing it on a comparison of individual income levels. Here lies an interesting avenue for further theoretical research.

The need for refinement, rather than rejection, also follows from the investigation of another crucial principle: that of monotonicity. In the social welfare questionnaire, the respondents were asked to evaluate the social welfare level obtained by two economic programmes yielding the following income distributions in Alfaland:

I:   *A= (5, 5, 5, 5)*          *B= (5, 5, 5, 10)*
II:  *A= (4, 8, 9)*            *B= (4, 8, 20)*
III: *A= (5, 5, 5, 5)*          *B= (5, 5, 5, 30)*

In each of these cases income distribution B dominates income distribution A. The usual (primitive) application of the Pareto principle would therefore result in a preference for B. The principle was also formulated in verbal terms as follows:

> *"Suppose there are two economic programmes A and B which have only one difference: there is one person whose income under programme B is higher than under programme A. For every other person his income under programme B equals his income under programme A.*
> *(a) Programme B would make the community better off because no one is worse off and someone is better off.*
> *(b) The relative position of others is also different as between A and B; therefore we cannot say, a priori, which programme is better off.*
> *(c) Neither of the above."*

Table 5 summarizes the results with the student samples. These results are remarkable: the most basic efficiency principle seems to be rejected by about 50% of the respondents!

*Table 5.  Acceptance of monotonicity*
*(Amiel and Cowell [1994a])*

| NUMERICAL: | |
| --- | --- |
| I | 64% |
| II | 59% |
| III | 54% |
| VERBAL | 55% |

Is this the end of Pareto?  Of course not, as Amiel and Cowell [1994b] themselves argue.  These results only point out the need to distinguish more carefully between different concepts.  Monotonicity implies that social welfare is increasing in any

income. The Pareto principle means that social welfare is increasing in any utility level. The two only coincide if individual utility functions have own income as their only argument and are strictly increasing in that income. If there are externalities in the income distribution then monotonicity is neither necessary nor sufficient for the Pareto principle. But these externalities can be expected. In fact, it can be argued that they are the basic justification for the whole analysis. What would be the point of trying to measure income inequality if the income distribution did not matter to the individual members of society? What comes under attack through the results in table 5 therefore is <u>not</u> the Pareto principle as a dominance criterion in the space of utilities, but rather the primitive interpretation which is sometimes given to the utility functions in applied work. Note that the interpretation in terms of externalities is perfectly consistent with the increasing rate of rejection of monotonicity when we go from variant I to variant III.

## 5 Why empirical research?

Let me now return to the basic question of the interrelationship between empirical research on opinions and normative economics. I definitely think that there is room for two-way communication here and I am convinced that philosophical and economic insights may be useful (or even necessary) to overcome the "feeling of intellectual disorganization" which characterizes at least part of the psychological work (Deutsch [1983]). But in this section I will only present some general arguments on the usefulness of empirical work for normative thinking. A more complete discussion can be found in Bell and Schokkaert [1992], Miller [1994] and Swift [1993].

A first argument is obvious. The ultimate aim of normative economics is to be put in practice. The opinions or preferences of the citizens will determine the social context within which this has to be achieved. The social support for a particular policy proposal is therefore crucial to its feasibility. Empirical research gives information on the acceptance of notions of justice by different social groups. Economists working within the traditional welfare economic approach based on a utilitarian social welfare function (or, worse even, reasoning in a first-best setting and neglecting distributional matters) should not be surprised that they often have difficulties to convey some of

their policy proposals. Mr. Fairmind has strong feelings about the relationship between inequality and efficiency or about the remuneration of effort. It is possible that he is wrong from an ethical perspective. But in that case, economists have to convince him if they want to implement their "correct" conception of justice. And for those who want to convince him, a better insight into the structure of his uninformed opinions may be extremely useful.

I would even argue (but I know that this is debatable) that it is an essential element of a theory of justice in a democratic society that it <u>can</u> be explained to the citizens. Justice is about the basic institutions of society and Mr. Fairmind should have its say about these basic institutions. To have a democratic debate about the content of justice is in itself an essential component of justice. Of course, this does not imply automatically that empirical research on uninformed opinions is needed- but such research may help to structure the debate and to make theoretical thinkers aware of the specific features of their own approach. It may therefore improve communication and contribute to the spread of new ideas.

This brings us already close to a more difficult question. Can theoretical thinkers and philosophers learn something substantial from the empirical results? The answer is necessarily positive, as soon as empirical elements are made a constitutive part of the definition of justice itself. Remember Roemer's cultural relativism concerning the exact definition of the factors for which individuals are to be held responsible. But what about the justification of that basic definition? I fully agree with Bossert [1998] that "the essential ingredients of a debate over normative issues are critical reflection and thorough assessment of the arguments being used" and that a simple vote over different options will not do. Yet this begs the real question: is it not possible that the empirical work suggests some useful arguments, enriching the theoretical debate?

Miller [1994] follows in this respect an ambitious line of argumentation in which there is a strong complementarity between empirical and theoretical work. He argues against a Platonic conception of justice where true knowledge can be attained by special methods of reasoning accessible only to the trained theorist (a philosopher in his case), and in favour of a so-called Aristotelian approach where the task of the philosopher is one of "identifying and clarifying what people ordinarily mean when

they invoke justice".  This is very much related to Rawls's idea of a "reflective equilibrium", which is also the main inspiration for Yaari and Bar-Hillel [1984] in their justification of the empirical work.  Of course, the purpose of the philosophical exercise is not to formulate a simple summary of the majority position in society: it is to confront theoretical ideas with a priori intuitions to arrive at a consistent position.  Empirical research may then become an important element in the process of weighing different considerations to arrive at a reasonable judgment: "Looking at what other people believe about justice, and in particular trying to understand when people disagree and what the grounds of their disagreement are, are integral to the process of deciding which of my own beliefs deserve to be taken as 'the fixed points of my considered judgment'" (Miller [1994]).  Empirical results are a valuable (and perhaps even necessary) input in the theoretical debate, not to be applied in a kind of voting scheme, but because they may help the theorist to understand better the origin (and hence the strengths and limitations) of different justice conceptions.  At the very least they may help the theorist to avoid some dangerous traps.  Let me go somewhat deeper into this latter point, because it can also be valuable for people who are not convinced at all by Miller's Aristotelian conception.

The first trap for the normative economist (or philosopher) lies in a lack of awareness about the influence of his own social background.  Consider a modal social choice theorist.  This modal choice theorist is male, with a university degree, with an income well above average but at the same time well below the top, probably rather individualistic and intellectually ambitious.  He is definitely not representative for the population at large.  We know from the empirical research that there are large interindividual differences in opinions about justice and that these can be related (albeit in an imperfect way) to the social position of respondents.  The atypical profile of the social choice theorist will then be reflected in his opinions.  These opinions may still be the "correct" ones, but a greater awareness of social influences (also on his own frame of thinking) could certainly help him to be more cautious in formulating a theory of justice, which is to be generalized for the society at large.  Note moreover that this modal social choice theorist is strongly influenced by the Greek heritage in the Western culture.  In general he is not very eager to be confronted with intercultural differences, but again: he is better aware of them.

Unless intellectuals in one way or another escape from the psychological regularities which characterize the behaviour of all other citizens, they run the danger of falling into a second trap. When discussing the acceptability of axioms or the applicability of specific models, theorists often refer to typical cases. They like to tell revealing stories about shipwrecked people in a lifeboat or about sons dividing the bequest of their father. As we know that the intuitions of Mr. Fairmind will depend on the concrete social relations within the group, the same is probably to some extent true for the theorist. Whether this context-dependency is a real component of justice or a mere framing effect to be corrected for, the theorist is better aware of this kind of influences.

The third trap is perhaps the most dangerous one. Social choice theorists are part of a scientific community where model-building skills are highly rewarded and where the ability to formulate a problem in mathematical terms helps very much in being taken seriously. While this is in general a good thing, it has the disadvantage that the availability of techniques partly determines the research agenda. Empirical research may then be helpful to open the roll-down shutters of what otherwise could become a closed house. The previous sections give two good examples. It is difficult to explain the popularity within economics of simple welfarism if one does not take into account its practical advantages for the analysis of public policy. Think about the optimal taxation literature. And an analogous point can be made with respect to the Pigou-Dalton criterion. This principle has become so strongly embedded in the economic tradition, partly because it can be translated easily in mathematical terms. But even Pigou himself had doubts about its generality and there are good (a priori) reasons for these doubts. Amiel and Cowell's results may then act as an eye-opener, or: as an antidote for the blinding effect of popular formal models and available techniques. Of course this does not at all mean that the empirical results would suggest that theories of justice and of inequality measurement should be formulated in a less mathematical way. The bias resides not in the desire of formalization as such, but in the uncritical acceptance of the limitations of well-known techniques.

## 6 Conclusion

The ideas about distributive justice of the population in our Western democracies are in strong conflict with the simple welfarist objective functions used by welfare economists. Mr. Fairmind follows a context-dependent approach with strong emphasis on a notion of desert and with special concern for the poor. This is a relevant finding if economists want their policy prescriptions to be put in practice. At the same time the gap is so large that there is hardly any communication possible between empirical research on the one hand and traditional welfare economics on the other hand.

However, recently we have witnessed a number of important developments in the social choice literature. Welfarism has been reinterpreted in a more sophisticated way, to the point that it is put bluntly that, if welfarism can be salvaged philosophically, traditional welfare economics cannot (Mongin and d'Aspremont [1996]). Game theorists have developed context-dependent approaches to distributive justice. The idea of equal opportunities has been worked out in a very promising direction. A rapidly growing literature explores different axiomatic structures for inequality measurement, focusing also on the case of heterogeneous households. While there is a wide variety of such new social choice approaches, in general they all depart from traditional welfare economics. Yet at the same time they have come much closer to the ideas of Mr. Fairmind.

This offers new possibilities for more and better communication between empirical and theoretical work on distributive justice. Empirical research can never be a substitute for critical reflection. The opinions of uninformed respondents are often incoherent and incomplete. However, the empirical results may enrich the theoretical debate by bringing in new arguments. In some cases they can give a more concrete content to an abstract philosophical framework: the determination of variables for which persons are to be held responsible in the equal opportunities approach is an obvious example. Finally, they can also help in making theorists more aware of the danger of partiality, following from the cultural and social bias, the contextual bias and the formalistic bias. The most important empirical contributions (on welfarism by Yaari and Bar-Hillel [1984] and on inequality measurement by Amiel and Cowell

[1992]) have played exactly this role of eye-opener. Other research has confirmed that the recent post-welfarist developments are more in line with the intuitions of uninformed respondents. For those who prefer an Aristotelian approach to distributive justice, this is a definite improvement.

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