



Three Versions of Impartiality: An Experimental Investigation

Kaisa Herne

Department of Political Science, University of Turku, Finland
(eMail: kaisa.herne@utu.fi)

Tarja Mård

Department of Political Science, University of Turku, Finland
(eMail: tarja.mard@minimaraton.fi)

Abstract An impartial choice position removes conflicts of interest between the negotiating parties and, thereby, may help parties to reach an agreement. However, different ways to create impartiality do not necessarily lead to same outcomes. We test three versions of impartiality in a decision making experiment. Experimental groups are asked to choose from four alternative income distributions. The results of the experiment show that the max-min distribution is the most popular choice in the no veil of ignorance and spectator groups, whereas a compromise between maximization of group income and maximizing the floor income is most popular in the veil of ignorance groups. Subjects' argumentation was also different in the three treatments. Interestingly, arguments related to justice and equality were not as common in the veil of ignorance treatment as in the no veil of ignorance and spectator treatments.

Keywords impartiality, income distribution, experiment, veil of ignorance, spectator

1. Introduction

The question of how to distribute income has been in the core of political philosophy for ages. It is also discussed every day in the media and among the people – often related to the wage negotiations. One of the most famous theories on the matter is John Rawls's (1971) theory of justice. A central conception in Rawls's theory is impartiality – just outcomes are selected in an impartial choice situation. Moreover, according to Rawls, a veil of ignorance is

the adequate way to achieve impartiality. If people do not know their own positions in the society they will take an impartial position when assessing different principles of justice. In addition to Rawls, David Hume (1888), Adam Smith (1897) and Thomas Scanlon (1982) consider impartiality as central to the selection of principles of morality. For Hume and Smith, impartiality is achieved via an impartial spectator, whereas for Scanlon it is achieved in an original position with some specific characteristic – but notably, not a veil of ignorance. John Harsanyi (1953, 1955, 1975) proposes a similar choice position to Rawls but he talks about uncertainty rather than ignorance.

The purpose of this paper is to investigate whether three different methods to create an impartial situation lead to different choices in a decision making experiment. The experiment involves a simple allocation task among three individuals. It is also asked whether the three versions of impartiality generate different types of argumentation, or in the case of the spectator, different types of justifications for one's choice. It should be pointed out that it is not our purpose to test the above mentioned scholars' entire theories. Rather, the focus is on three applications of impartiality inspired by their theories of justice. Furthermore, we do not try to simulate Rawls's or Scanlon's original positions. Here, the interest is in the potential effects of the way impartiality is created and therefore, we aim at altering only this variable between the experimental treatments.

There are a number of experiments that have tested the effects of the veil of ignorance on subjects' choices and an earlier experiment where the veil of ignorance and no veil of ignorance treatments were compared (see below). However, we are not aware of previous experiments with a comparison of the three versions of impartiality although they are often compared in the theoretical literature (e.g. Rawls 1971, Sen 2002). In a large majority of those experiments that have focused on the effects of the veil of ignorance the Rawlsian distribution has not been selected very often. This result has often been seen to undermine Rawls's theory. We provide an alternative interpretation of this result in the discussion.

In this paper, the focus is on testing three theoretical versions of impartiality. However, we would like to remark that impartiality is also relevant to various real-world conflicts. To take one example, distributing inherited goods can be difficult if impartiality is not achieved.¹ Testing different ways to create an impartial choice situation can give guidance to the management of different types of distribution conflicts in the real world.

The paper is organized as follows. In the next section, the theoretical background of the experiment is discussed and in section three, earlier experi-

¹ In Finland, numerous legal proceedings are taken over the distribution of inherited property despite the fact that there is legal regulation and death persons' wills to guide the distribution.

mental evidence reviewed. In the fourth section, the experimental design and procedures are described. In the fifth section, experimental results are represented and in the final section, the results are discussed.

2. Theoretical background

Impartiality is commonly used to give a justification for different principles of morality. An impartial justification asks people to imagine what principles of morality they would select if put in an impartial position where they cannot promote their own interests. Instead, they are assumed to promote the general interest which, in turn, is considered to support justice. Impartiality is therefore seen as means to remove or reduce conflicts of interest between the negotiating parties. It is apparent that this argument requires a set of assumptions about individuals. For example, the claim that an individual would promote general interest if s/he is unable to promote her/his own interest implies an assumption of a certain type of personality, i.e. the individual is not supposed to promote somebody else's disutility or unhappiness. Likewise, a certain type of individual rationality is required. It should, however, be pointed out that individuals are not expected to be impartial independent of the decision making situation. Instead, an impartial position is supposed to enhance impartial thinking.

While the general idea of impartiality is common to all scholars, its more specific formulations vary. In particular, different descriptions of an impartial choice position can be found in the literature as well as different descriptions of outcomes that occur in a certain type of an impartial position, i.e. scholars do not agree whether an impartial position leads to just outcomes and they do not agree on the principles of justice that would be selected in an impartial choice situation.

Our experimental treatments have been inspired by three versions of impartiality. Let us first consider an impartial spectator as defined by David Hume and Adam Smith. An impartial spectator is a decision maker who does not have own interest in the subject matter when making a decision on behalf of others. For example, referees in football games do not represent the nationality of either team. According to Rawls (1971), Hume and Smith define an impartial spectator to be ideally rational and impartial as well as to have all relevant knowledge of the circumstances. S/he is capable of imaging her/himself in the position of each member of the society as well as being responsive and sympathetic to each member's desires and satisfactions. This is the core of the idea of impartiality – being able to put oneself in the position of everybody else and making a choice that takes equally account of everybody's needs – that can also be seen in the other versions of impartial reasoning discussed below. While the core idea of impartiality in these ver-

sions is about the same, the specific methods to achieve impartial reasoning vary.

Let us next see how Rawls describes an impartial choice situation. Rawls (1971) discusses the idea of an impartial spectator but he does not see it as the right way to construct a compelling argument on behalf of the principles of justice he advocates. He argues that the contractarian argument in his theory is more ambitious because it provides a deductive basis for the principles of justice. Rawls's argument in *Theory of Justice* rests on a hypothetical original position where parties to a contract agree on the basic principles of justice behind a veil of ignorance. While Rawls's principles of justice concern the organization of a just society in general, in this paper the attention is restricted to the just distribution of income.

According to Rawls, the veil of ignorance makes individuals take an impartial position when assessing different options because they do not know their own positions in the society. Self-interested individuals will unanimously choose a principle of income distribution that maximizes the income of the lowest income group when deciding behind a veil of ignorance. This conclusion is based on the assumption of risk-averse max-min choosers.² The main alternatives to the max-min distribution that Rawls considers are an efficient distribution and two types of mixed distributions. The latter aim at efficiency but they also set certain constraints either on the range of the income levels or on the floor income.

Like Rawls, Harsanyi (1953, 1955, 1975) proposes a position with limited information as a method to achieve unbiased decisions. In this experiment, the choice situation is likely to be closer to the Harsanyian veil where decisions are made under uncertainty rather than under Rawlsian ignorance (about the differences in Rawls and Harsanyi see Harsanyi (1975)). Like Harsanyi, Buchanan and Tullock (1962) argue that uncertainty about the consequences of different rules on a particular individual entails that the individual cannot promote her/his own interests, or the interests of a particular section, class or group that s/he belongs to, when deciding on institutional rules.

Let us next look at Scanlon's (1982) theory which presents a slightly different view of impartiality. In a Scanlonian original position, the parties are aware of their positions in the society and know those characteristics that distinguish them from others, i.e. there is not a veil of ignorance or uncertainty. A Scanlonian original position consists of negotiating parties that have full knowledge of their personal characteristics as well as of the economic and social circumstances, equal bargaining power and a *desire to reach agreement*

²Rawls considers individuals in the original position to decide under conditions of ignorance, not risk or uncertainty. The term risk-avoiding is therefore a bit misleading.

that no one could reasonably reject.

At first sight, Rawls's and Scanlon's original positions seem quite different. However, if taken as descriptions of an impartial position, their conceptions are actually rather similar. Both arguments are based on the idea of an individual required to place her/himself in other people's positions. In a Rawlsian original position, each party is required to consider her/himself as being anybody and in a Scanlonian original position each party should be able to justify her/his proposal so that none of the contracting parties can reasonably reject the proposal. To judge whether someone's rejection is reasonable requires a shared understanding of what counts as reasonable which, in turn, requires a capability to see the consequences of a certain proposal from the point of anybody (see e.g. Charvet (1994)). Scanlon's argument thereby requires that the contracting parties are capable of identical reasoning about what counts as a reasonable rejection. Moreover, following Sen's (2002) terminology, both Rawls and Scanlon represent forms of *closed* impartiality where a certain group of people decide on the rules of justice applied to that group. Impartial judgement is expected from the members of the group. An impartial spectator, in turn, represents *open* impartiality where impartial judgement is expected from someone outside the group. However, it should be pointed out that Rawls and Scanlon see their original positions to create circumstances where individuals *have to* make impartial judgements. This does not mean that the same individuals would be impartial in other types of circumstances. Likewise, in our experimental setting, we try to create circumstances where subjects have to think impartially, as in the case of our veil of ignorance and no veil of ignorance treatments (see below), or at least do not gain anything from being impartial, as in the case of our spectator treatment. For example, spectators are unable to favour a particular member of the group.

Rawls's argument is based on the assumption of self-interested actors, whereas in a Scanlonian original position, parties can be self-interested, altruists or something between because the requirement of arguments that no one can reasonably reject guarantees that purely selfish arguments cannot prevail in the discussion. Arguments that rely solely on someone's self-interests, or on the interests of a certain group, are not reasonable and, therefore, can be rejected. Instead, arguments that are based on impartial reasoning cannot be rejected and, accordingly, will be influential. In the case of income distribution, this means that parties can not argue on behalf of a certain distribution solely on the basis that it yields her/him the highest income. This kind of argument would be rejected by others and would not enhance agreement. In a Scanlonian original position, the *civilizing force of hypocrisy* related to public discussion or deliberation (Elster (1998)) might also explain why parties try to hide their selfish interests and give impartial justifications for their arguments.

It should be remarked that all the versions of impartiality discussed here share in common the formulation of the argument – they all claim that certain principles of morality would be selected if certain conditions of impartiality prevailed. In all of these arguments, an impartial position provides a justification for a certain normative argument – not a description of a historical or an actual situation of conflict. It can thereby be asked whether it is appropriate to run empirical tests of impartiality in the first place. Of course, the true test of a normative argument is whether it is normatively compelling. However, in our view, it is important to test whether empirical claims included in normative argumentation are correct.

In this paper, we compare three ways to create an impartial position inspired by the arguments described above. We ask how experimental subjects' choose alternative income distributions in these positions. The first version of impartiality is based on Rawls and creates impartiality by concealing subjects' knowledge of their own positions in the experimental income distribution. We call this is the VI treatment according to the veil of ignorance because it is used in other comparable experiments, although a veil of uncertainty might be more justified, as stated above. The second version of impartiality is based on Scanlon and creates impartiality by the combined effect of equal bargaining power and desire to reach a unanimous decision. In this version, each subject knows her/his own position in the experimental income distribution. This treatment is called the NVI treatment referring to a choice situation without a veil of ignorance. The third version of impartiality is based on Hume and Smith and it rests on the view of impartiality achieved by having an outsider without personal stakes in the conflict to decide on behalf of others. We call this the SPEC treatment.

3. Existing evidence

Let us now review a set of earlier experiments that have used a rather similar design as the one used here. Subjects' choices behind a veil of ignorance have been investigated in a number of laboratory experiments (Frohlich, Oppenheimer and Eavey (1987a); Frohlich, Oppenheimer and Eavey (1987b); Frohlich and Oppenheimer (1990); Lissowski, Tyszka, Okrasa (1991); Bond and Park (1991); Frohlich and Oppenheimer (1992); Jackson and Hill (1995); Cruz-Doña and Martina (2000); Oleson (2001)). The main result of these experiments is that the most often chosen principle is not the Rawlsian principle of distributive justice. Instead, a mixed principle, that maximizes the income of the average member of the group subject to a constraint that the lowest income does not fall below a certain level, has been the most popular alternative in the earlier experiments.

Beck (1994), Johansson-Stenman, Carlsson and Daruvala (2002) and

Carlsson, Gupta and Johansson-Stenman (2003) use a slightly different experimental design and do not find evidence on behalf of extreme risk-aversion implied by the Rawlsian max-min rule. In Beck's (1994) experiment, subjects chose over lotteries determining their own payoffs as well as over lotteries determining payoffs to everyone in the group. In Johansson-Stenman, Carlsson and Daruvala's (2002) experiment, subjects made repeated choices between two societies, as well as between absolute and relative incomes. Carlsson, Gupta and Johansson-Stenman (2003) use a similar design. Beck uses a 'veil of ignorance' where the probabilities of income distributions are known to subjects, whereas in the last two probabilities are not known. In a loosely related study, Gaertner, Jungeilges and Neck (2001) test the max-min principle with survey data. They conclude that students do not put themselves under a veil of ignorance but that their judgements are biased by personal interests. Beckman, Formby, Smith and Zheng (2002) test the effect of the Harsanyi veil on envy, malice and Pareto efficiency. They observe greater support for Pareto gains under the Harsanyi veil than without it. Amiel and Cowell (1992) study impartial observers' choices by survey data and observe a substantial proportion of respondents opposing Pareto improvements.

Herne and Suojanen (2004) show that the Rawlsian max-min distribution is actually selected more often without a veil of ignorance. The motivation for Herne and Suojanen's experiment was the comparison of the veil of ignorance treatment to the no veil of ignorance treatment, whereas this experiment was designed to compare different versions of impartiality. The main differences between this and Herne and Suojanen's experiment are the use of three member groups instead of five member groups, the use of the quiz to determine income classes instead of a random device and the spectator treatment. The first alteration is made mainly for economical reasons, whereas the last two are of substantial interest. Let us first have a look at the group size. While group dynamics can be somewhat different in three member groups we do not expect the small reduction in group size to incur substantial changes in subjects' behavior. It should be remarked that altering the number of members in the groups does not affect the equilibrium prediction of the games.³ Our results give support to this expectation (see below).

There are a number of theories of justice which claim that income distributions should be related to individual input. In particular, it is argued that if a person is responsible for her/his ability to contribute s/he deserves higher position in the income distribution, whereas inability that is not under one's control should not justify a lower position in the income distribution. Frohlich and Oppenheimer (1990) observed most support for the floor con-

³ Both in the VI and in the NVI treatments all unanimous choices are equilibria.

straint distribution in their experimental treatment with production where subjects were asked to correct spelling mistakes and their allocation to income classes was based on this task. However, there is no evidence of the relationship between effort and income distribution in a corresponding choice situation but without a veil of ignorance. To study this question we introduced a quiz measuring general knowledge to determine subjects' positions in their group's income distribution.

Finally, the spectator treatment is introduced in this experiment to see how an impartial outsider would distribute income in the experimental setting. In the experiment, the spectator cannot promote the interests of particular group members, e.g. a female spectator is unable to distribute more money to female group members. In other words, the spectator is unable to make partial distribution decisions. This does not mean that spectators are necessarily motivated by impartiality in their choices. To find out if this is the case, we also asked the main motivations for their choices in a post-experimental questionnaire. It should be pointed out that in this experiment, the spectator is in a different position from *dictators* in a large number of experiments focusing on the dictator game (for a review see Camerer (2003); see also Frohlich and Oppenheimer (1996)). In this experiment, spectators are making choices that have no influence on their personal payoff from the experiment. In this sense, their position is different from dictators' choice positions. Konow (2000) compared standard dictators to what he calls *benevolent dictators* to study differences between allocation choices where self-interested considerations are present and where they are not to find out what subjects see as fair shares when their own stakes are not involved. He found that what is beneficial to one-self is often considered a fair share when self-interested considerations are relevant. When they are absent, as in the case of benevolent dictators, this is naturally not the case. Traub, Seidl, Schmidt and Levati (2005) studied behavioural switches by a within subjects design between a self-concern and *impartial umpire* modes. In the impartial umpire mode subjects' own payoffs were not influenced by their choices. They observed that in their ignorance scenario subjects became, on average, less inequality averse as umpires, whereas in their risk scenario subjects became more inequality averse as impartial umpires.

4. Experimental design and procedures

The experiment was conducted at the University of Turku in the spring semester 2004. A total amount of 188 subjects from a range of disciplines

Table 1 — Experimental Groups

	Treatment			Total
	VI	NVI	SPEC	
Groups	20	20	17	57
Individuals	60	60	68	188
Group size	3	3	4	

took part in the experiment.⁴ The age of the participants varied from 19 to 60, median being 24. A majority of 67 percent of subjects was female. The experiment was based on voluntary action and a monetary reward was given to the subjects for their participation. There was not a show-up fee but the design of the experiment guaranteed each participant at least six euros. The average net reward was twenty euros and each session lasted about one hour. The participants were recruited by public advertisement on the campus, in the internet and in the student organizations' e-mail lists.

In the experiment, individual subjects were randomly allocated into three experimental treatments and into groups of three or four people. There were 57 groups in total, twenty in the VI and in the NVI treatments and seventeen in the SPEC treatment (see Table 1). All treatments were about distributing money among three group members. In all treatments, subjects were asked to choose between four alternative income distributions that allocated money to three income classes. Subjects were allocated to these income classes according to their success in a quiz measuring general knowledge and each subjects' earnings from the experiment depended on her/his experimental income class. Ten different set of questions were used randomly in the groups to avoid those coming to later sessions learning the quiz questions from those who had already taken part in the experiment. If the result in the quiz was even, income classes were determined by a random device among those that had the even result.

The choice set in each treatment consisted of four different alternatives: an efficient distribution (E) that maximizes the average (and total) income, a Rawlsian or max-min distribution (R) that maximizes the floor income, a mixed distribution that maximizes the average income subject to a range constraint (RC) and a mixed distribution that maximizes the average income subject to a floor constraint (FC). The same selection of distributions has

⁴Frequencies of different majors were rather small, largest being 11 (political science). This makes it impossible to test the relevance of majoring in economics, for example (there were three students of economics).

been used in other related experiments following Frohlich, Oppenheimer and Eavey's (1987a, 1987b) original design. In the instructions no reference was made to the principles of justice behind the alternative income distributions and subjects were not given verbal characterizations of the alternatives. The choice task was thereby framed as a selection of four different ways to distribute money among the group members.

Each participant was allocated randomly into one out of the three treatments. In addition, each group within a treatment was randomly allocated into one out of three different choice sets. Each of the choice sets consisted of alternatives E, R, RC and FC but the exact monetary values of alternatives varied between the choice sets (see Table 2). The order of the alternative income distributions in the choice booklet was varied across the groups too (three different orders were used).

4.1 *VI treatment*

Each session of the experiment started with reading instructions and a practise round. The subjects were told that the amount of money they would earn in the experiment depends on their own income class in the experiment and on the income distribution selected in their group. They were also told that if each group member chose the same income distribution that distribution would be applied to the group. If there was a non-unanimous choice each member of the group would be given six euros. This gave subjects a strong incentive to reach unanimity because the earnings in all income classes were higher than six euros. Every player had thereby veto power over the group choice. Individual choices were not made public, whereas the choice of the group was announced to the group. This meant that anonymity of individual choices would be preserved in the case of a non-unanimous group choice.

After instructions and the practise round, each group was given time for discussion. They were first given five minutes and in case they wanted to continue, they were given more time up to fifteen minutes. In order to determine subjects' willingness to continue the discussion the moderator asked those subjects who wanted to end the discussion to raise their hands.⁵ The moderator was in the room during the discussion, but did not intervene in the discussion unless somebody suggested a redistribution of earnings after the experiment.⁶ The subjects made their choices individually after the group discussion and no discussion was allowed at the decision making phase. Subjects did not know their own income classes or the method of income class allocation at the time of discussion and choice. The quiz was conducted after

⁵The moderator was a post-graduate student. She remained the same throughout all groups and had no position of authority over the subjects.

⁶Subjects were told that redistribution was not allowed.

Table 3 — Phases in the experiment

	VI	Treatment NVI	SPEC
1.	Instructions	Instructions	Instructions
2.	Practice round	Practice round	Practice round
3.	Group discussion	Quiz	Spectator's choice
4.	Individual choice	Group discussion	Quiz
5.	Quiz	Individual choice	—

discussion and choice. Finally, the subjects filled in a questionnaire.

4.2 *NVI treatment*

The procedure in the NVI treatment was the same as in the VI treatment except that in the NVI treatment, the quiz was conducted before discussion and choice. Subjects thereby knew their own income classes and the method of allocation to income classes at the time of choosing.

4.3 *SPEC treatment*

In the SPEC treatment, a randomly chosen spectator made the choice for the group without knowing the income classes of her/his group members. The spectator was chosen by a random device from the group of four at the beginning of the experiment. The spectator knew her/his own award, which was twenty euros, at the time of making her/his choice. The quiz was conducted after the spectator's choice. There were no monetary incentives expect for the flat reward of 20 euros for the spectators.⁷ The reward was chosen to match up with the expected average reward of other participants. The spectator made her/his choice anonymously and individually.⁸ The spectator's choice was announced to the group. Table 3 summarizes the procedures in each treatment.

All sessions were run in a spacious room and subjects were situated well apart from each other, besides the discussion phase. Before leaving the ex-

⁷Monetary incentives would be difficult to introduce without affecting spectators' motivations. For example, letting other group members' to vote on the spectator's reward would make spectators choose something that they think would please the majority in the group.

⁸A special care was taken to guarantee that the spectator remained anonymous.

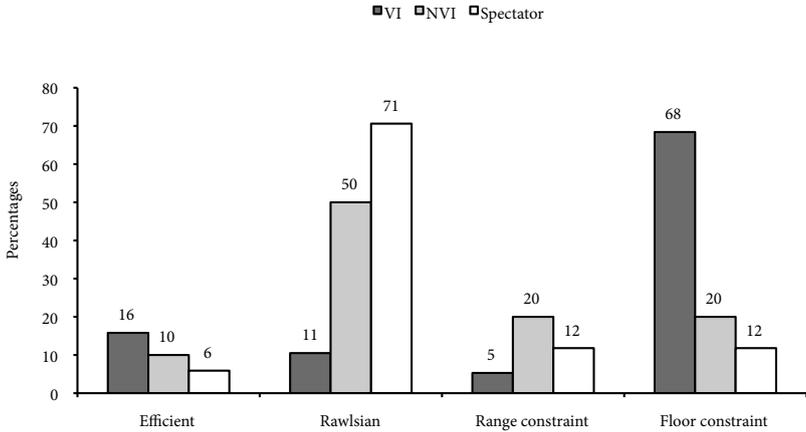


Fig. 1 — Group choices in the VI, NVI and SPECT treatments

periment individual earnings were announced privately to each participant and they were given a certificate for their participation and earnings in the experiment. Payments were paid to participants’ bank accounts in due time. See Appendix for an English translation of the instructions.

5. Results

As expected, all but one group (in the VI treatment) were unanimous. Figure 1 represents the group choices in the three treatments. The figure shows that the most popular distribution in the VI treatment was the floor constraint distribution, whereas in the NVI and SPECT treatments the most popular distribution was the Rawlsian distribution. There was a statistically significant difference between the group choices in the three treatments ($\chi^2 = 20.73$, $p = 0.002$). This means that we can reject the null hypothesis of the same distribution of choices in each treatment. In the VI and NVI treatments, all unanimous choices are equilibria because deviating from unanimity would yield everybody only six euros – less than the lowest income in any model. In the VI treatment, the efficient distribution is the likely equilibrium because it yields every player the highest expected income. In the NVI treatment, each equilibrium should be selected with equal probability of 0.25. However, equilibrium predictions do not get support from the data.

The alteration of the choice set or the order of alternative distributions

within the choice set did not have an effect on group choices ($\chi^2 = 6.95$, $p = 0.325$ for the choice set and $\chi^2 = 5.19$, $p = 0.519$ for the order effect). This indicates that the specific monetary values of the alternatives cannot explain subjects' choices. We also tested various background variables but could not find any statistically significant relationships other than the treatment effect. For example, age or gender did not have a statistically significant effect on subjects' choices. Furthermore, having friends in one's group was not related to group choices.⁹ In effect, 94 per cent of the subjects knew no one in her/his group beforehand.

Let us next have a closer look at the impact of the three treatments. Figure 1 shows that the veil of ignorance does not lead to the selection of the Rawlsian distribution very often. Namely, the Rawlsian distribution was chosen in only eleven percent of the groups in the VI treatment, whereas the floor constraint distribution was chosen in 68 percent of the VI groups. This result is in line with the evidence from a number of previous experiments where the floor constraint distribution has been the most common choice behind a veil of ignorance. In the NVI treatment, in turn, the Rawlsian distribution was the most popular choice with a 50 percent share of group choices, whereas the floor and range constraint distributions were chosen in twenty percent of the groups and the efficient distribution in ten percent of the groups. In the SPEC treatment the Rawlsian distribution was even more popular than in the NVI treatment with a 71 percent share of choices and the shares of other alternatives rather small. This is the major finding of this experiment. It indicates that spectators' choices are in line with subjects' choices in the NVI treatment, whereas the VI treatment gives rise to clearly different choices. Whether this division is also reflected in subjects' argumentation is discussed below.

Let us now see if the results could be explained by something else than the variation in the method of creating impartiality. In the NVI treatment, one possibility would be that the majority of subjects in each group put pressure on the others to guarantee a favourable choice for themselves. However, choosing a distribution where the majority of subjects gains most cannot explain subjects' choices in the NVI treatment. The choice sets were designed to vary what the majority of subjects in each group prefer. If the 'majority explanation' was correct it would indicate different choices in the different choice sets which was not the case in the experiment. As mentioned above, a slight alteration of the monetary values in the four alternative income distributions did not produce statistically significant differences in subjects' choices. Furthermore, the same holds for the VI and SPEC treatments where a slightly

⁹The large proportion of female subjects, almost 70 %, might explain why the data shows no gender effect.

different reasoning on majorities could also be possible.¹⁰ An interesting question is whether spectators used their own reward, twenty euros, as a reference point and selected a distribution that on average yields other group members the same amount. However, this was not the case. For example, in the first choice set the range constraint distribution yields on average twenty euros to other group members but none of the spectators chose it. On the other hand, spectators could also be motivated by not choosing a distribution that yields them less than other participants are getting on average. Future experiments could be designed with treatments that vary spectators' rewards to be either equal, below or above the Rawlsian distribution. Likewise, varying the stage when spectators' learn about their own reward would be interesting to test in further research.

The quiz did not have a remarkable effect on subjects' choices in this experiment. This conclusion is based on a comparison of the result of this experiment to those of Herne and Suojanen (2004) where the design was the same as in the VI and NVI treatments here – with the exception of five member groups and a random assignment to income classes. In the VI treatment, the share of the floor constraint distribution in this experiment is comparable to its share in Herne and Suojanen, where it was chosen by 62 percent of the groups. Likewise, the Rawlsian, the efficient and range constraint distributions have similar shares of choices in the VI treatment here as they have in Herne and Suojanen. Comparing the NVI treatments in the two experiments reveals that in Herne and Suojanen, the proportion of Rawlsian choices is somewhat bigger, 60 percent, and the proportion of efficient choices somewhat smaller, five percent. However, the difference is not large and it therefore seems that further experiments are needed to see whether a different type of task subjects have to accomplish would give rise to the selection of a more unequal distribution in the NVI treatment.

Let us next see how subjects answered to the questionnaire they filled in at the end of the experiment. In the questionnaire, all subjects participating in the VI and NVI treatments were asked to rank different argument types according to their frequency in their group's discussions.¹¹ They were given five alternatives: justice, equality of income distribution, maximization of group income and a compromise between maximization and equality of income as well as an open alternative. In the SPEC treatment, these alternatives were the same as in the VI and NVI treatments, but each spectator was asked to rank the alternatives in terms of their importance as justifications for her/his choice. Subjects' answers to this question reveal that there was a statistically significant difference between the proportional share of

¹⁰The moderator did not report any type of group or individual pressure in the groups.

¹¹The approximate length of discussions was 6 minutes. There was not a statistically significant difference between the VI and NVI treatments in terms of the discussion length.

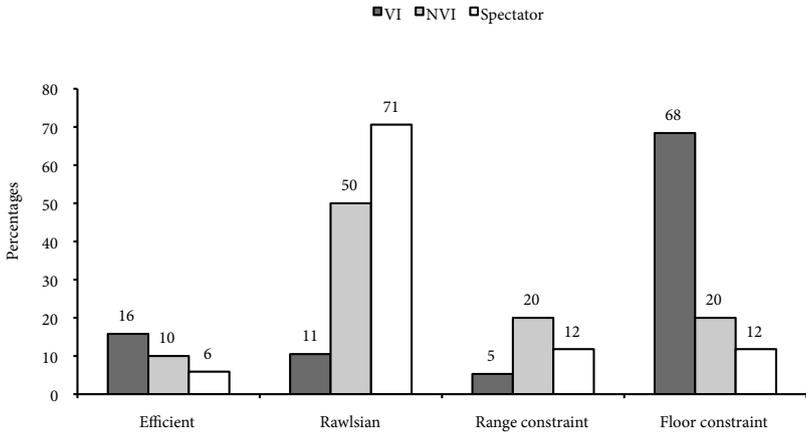


Fig. 2 — Most often used argument types in the VI and NVI treatments and justifications in the SPEC treatment

different argument types/justifications in the three treatments ($\chi^2 = 26.23$, $p = 0.001$). Figure 2 represents the proportions of most often used types of arguments/justifications in the three treatments.

Let us first compare the VI and NVI treatments. In the VI groups, arguments emphasizing a compromise were named as the most often used argument by 43 percent of subjects. The result is in line with subjects' choices because the floor constraint distribution – the most common choice in the VI treatment – can be seen as a compromise between maximization and equality. Subjects' answers were clearly different in the NVI treatment. Justice and equality of income were named as the most often used arguments by 24 and 27 percent of subjects. This indicates that group discussions in the NVI treatment were dominated by arguments related to justice and equality. A bit surprising is that 25 percent of individual subjects in the NVI treatment named the maximization of the group income as the most often used argument type, because the efficient distribution that actually maximizes group income was selected by only ten percent of the NVI groups. However, the reason for this is the fact that almost all subjects in those NVI groups that selected the efficient distribution also named maximization as the most common argument type in their group, whereas in many other cases different group members named different types of arguments. In the SPEC treatment, equality of income distribution was named as the most important justification for one's choice by almost half (47 percent) of the spectators, which is in line with the

popularity of the Rawlsian distribution in the spectators' choices.

The above suggests that there is a relationship between subjects' choices in the experiment and the argument types that were used in group discussions. In effect, there was a statistically significant relationship between the argument (justification) type and group (spectators') choice ($\chi^2 = 75.50$ and $p < 0.001$). Table 4 represents a multinomial logistic regression results with the selection of the E, R, RC or FC as the outcome (R is the reference category) and the most often used argument (justification) as the predictor. It is seen from the Table that compared with selecting the Rawlsian distribution the selection of the efficient distribution is more likely when maximization was the most frequent/relevant argument/justification. Likewise, compared with selecting the Rawlsian distribution the selection of the floor constraint distribution is more likely when compromise was the most frequent/relevant argument/justification. These are the only predictors that are statistically significant. In the case of the floor constraint distribution, maximization just fails to be statistically significant ($p = 0.05$). The results of the logistic regression give further support for the conclusion that maximization was an important criterion for the selection of the efficient distribution and compromise for the selection of the floor constraint distribution when compared to the selection of the Rawlsian distribution.

6. Discussion

The main result of this experiment is that subjects' choices in the NVI and SPEC treatments are rather similar, whereas the VI treatment yields clearly different choices. It should be remarked that Sen's distinction between open and closed impartiality is not in line with this evidence. What do the results of the experiment then indicate? Why did subjects make different choices in the three treatments? Let us consider the VI treatment first. The popularity of the floor constraint distribution is of no surprise because, as mentioned above, it has also been the dominant choice in a number of previous experiments – that has been conducted in many different countries and with many different variations of the basic experimental design. It should be pointed out, however, that this result does not indicate that subjects would consider the floor constraint distribution to be a just distribution. According to Rawls, self-interested parties choose the max-min distribution behind the veil of ignorance. Behind the veil, the parties do not know their own positions and they therefore place themselves in the position of each member of the society to find an income distribution that is best for each position. Since they are risk-averse, the income of the lowest income group has the largest impact on their decisions. If they were risk-neutral, for example, they could choose a different distribution. This suggests that what is relevant for the choice be-

Table 4 — Multinomial logistic regression with choice of E, R, RC or FC as the outcome and most often used argument/most important justification as the predictor

		B (SE)	Lower	95% CI for Exp(B) Exp(B)	Upper
Efficient					
	Justice				
	Equality	-1.75 (1.51)	0.01	0.17	3.38
	Maximization	2.85* (1.29)	1.39	17.33	216.60
	Compromise	0.00 (1.58)	0.05	1.0	22.18
Range constraint					
	Justice	-1.18 (1.15)	0.03	0.31	2.94
	Equality	-1.34 (1.06)	0.03	0.21	2.09
	Maximization	0.69 (1.19)	0.19	0.56	20.61
	Compromise	1.25 (1.07)	0.43	0.24	28.45
Floor constraint					
	Justice	0.21 (0.98)	0.18	1.23	8.33
	Equality	-1.06 (1.02)	0.05	0.35	2.58
	Maximization	2.08 (1.08)	0.96	8.0	66.45
	Compromise	2.60* (1.02)	1.83	13.50	99.35

Note The reference is Rawlsian distribution. $R^2 = 0.43$ (Cox and Snell), 0.47 (Nagelkerke), 0.22 (McFadden). Model $\chi^2 = 74.76$, $p < 0.001$. * $p < 0.05$.

hind a veil of ignorance is risk-attitudes and self-interest, not considerations of justice.

In this experiment, there is not much evidence that considerations of justice would be very important to subjects in the VI treatment. If we consider those arguments that subjects reported to have been used most often in the group discussions, it appears that arguments related to justice were not as frequent as they were in the NVI and SPEC treatments. Instead, arguments related to maximization and a compromise between maximization and equality were reported to have arisen frequently in the discussion. If we think of subjects' situation behind the veil of ignorance this seems rather natural. Subjects' allocation to income classes has not yet taken place and they are likely to think that each one of them has an equal chance to be allocated to each income class. Therefore, what is important is to maximize one's chances to get as much as possible under uncertainty. Furthermore, since conditions of uncertainty rather than ignorance prevail and the stakes are not as high as in a genuine original position, the most popular choice is not the Rawlsian distribution but the floor constraint distribution. For this reason, we do not consider the experimental evidence contracting Rawls's theory although the Rawlsian distribution is not selected very often behind the experimental veil of ignorance.

In the NVI treatment, the choice situation is different from the VI treatment because the allocation to income classes has already happened. In this situation, considerations of what is just are more relevant and this is also reflected in subjects' argumentation in the group discussions. Arguments related to justice and, in particular, equality are more common in the NVI treatment than they are in the VI treatment. We suppose that the most egalitarian distribution is considered just when there are no good reasons to select an unequal distribution. It seems likely that for most subjects the quiz in this experiment was not considered a good reason for an unequal distribution.

What about the spectators then? Why did a clear majority of the spectators consider the most egalitarian distribution to be the best choice? It seems that for the spectators, equality was an important criterion for their choices. This is reflected in their justifications for their choices reported in the questionnaire. This suggests that the spectators did not find good reasons to other than the most egalitarian distribution. It can be argued that the spectators' choices also correspond to what we might intuitively consider to be the just allocation in this experimental setting – supposing the quiz is not seen as a relevant base for an unequal distribution. It should be remembered, however, that the Rawlsian distribution in this experiment did not allocate the same amount of money to every income class. It therefore allows some response to one's success in the quiz. This result demonstrates that when self-interest and risk-attitudes have no relevance – as in the case of spectators – equality

is considered the most relevant criterion for choice. It should be pointed out, however, that this would not necessarily be the case if subjects felt that there is a relevant criterion for inequality.

One of the differences between the treatments that might have influenced the results was the knowledge of the quiz as the income allocation method. Namely, in the experiment those in the VI treatment were the only ones who did not know how they would be allocated to the income classes. In the NVI and SPEC treatments, the method of allocation was general knowledge. Could it be the case that choices and argumentation in the VI treatment were different from the other treatments because the allocation method was unknown to the subjects? This does not seem likely. Choices and argumentation in the VI and NVI treatments are rather similar to those in Herne and Suojanen (2004) where a random allocation was used and where the method of allocation was known in both treatments. This suggests that the quiz did not have a remarkable influence on subjects' choices. However, further experiments are needed to verify the matter, in particular with different types of allocation methods.

Appendix

These instructions were the same for all groups unless otherwise stated in the square brackets at the end of the paragraph.

A Instructions

This is a decision making experiment. Focus on the choice task and reflect carefully on your choice. *Read the instructions carefully!*

We start with a practice round where there are no payoffs. The next phase is the experiment where your payoff is determined. After that, you are asked to fill in a questionnaire that does not affect your payoff.

Be silent during the experiment unless you are asked to do otherwise. If you have any questions do not hesitate to raise your hand. You will be guided personally.

B Decision making

In this experiment, one member of the group will make a choice on behalf of the whole group. The decision maker will be selected randomly. Each one of you will raise a ticket from a mug. The mug has three empty tickets and one ticked marked with D. Each one of you will have an equal chance of being selected as the decision maker. The one who raises the D-ticket is the decision maker in this group. *Other group members will not know who is the*

	Income Distribution			
	A	B	C	D
Income Class				
1	37	22	31	34
2	18	20	19	17
3	3	13	7	8
Average	19.3	18.3	19.0	19.7
The income of the lowest class	3	13	7	8
The difference between the highest and the lowest income class	34	9	24	26

decision maker. [SPEC]

C Alternatives

There are four alternative income distributions labelled A, B, C and D. You should choose *one* of these distributions. [VI & NVI]

The decision maker will select from a set of four alternative income distributions labelled A, B, C and D. The decision maker should choose *one* of these distributions. [SPEC]

In the example below, columns represent alternative income distributions and rows income classes.

For example, if you belong to the first income class and A is the distribution model you will be paid 37 euros. If you belong to the third income class and C is the distribution model you will be paid 7 euros, etc.

The amounts of money in the table can be seen as hourly net wages.

The last three rows in the table indicate the average income, the lowest income and the difference between the highest and the lowest income in each income distribution.

Your payoff from the experiment will be determined by your own income class in the experiment and by the income distribution model applied to your group.

D Determination of the income class

There are three members in your group. There will be one and only one member of your group in each income class. [VI & NVI]

While making your choice you do not know to which income class you belong to. The income classes will be determined by a task you have to accomplish after the choice. The better you accomplish the task the higher your income class. The task will be described after your choice. You do not have to tell your income class to other group members if you do not want to. [VI]

Yours and other group members' income classes are determined on the basis of success in a 15-question quiz measuring general knowledge. The member with most correct answers will belong to the first income class, the member with the next highest number of correct answers will belong to the second income class, etc. If two or more of your group members have an equal number of correct answers they will be allocated randomly to income classes. You have five minutes to accomplish the quiz. [NVI]

The quiz will be accomplished before the discussion and choice phases. When making your choice you will know your own income class. You do not have to tell your income class to other group members if you do not want to. [NVI]

E Determination of the income class

The incomes of the decision maker and of other three group members will be determined in a different way. [SPEC]

The decision maker

You will be given 20 euros and you will not belong to any income class in the experiment. There will be one and only one member of your group in each income class. [SPEC]

Other group members

Yours and other group members' (except the decision makers') income classes are determined on the basis of success in a 15-question quiz measuring general knowledge. The member with most correct answers will belong to the first income class, the member with the next highest number of correct answers will belong to the second income class, etc. If two or more of your group members have an equal number of correct answers they will be allocated randomly to income classes. You have five minutes to accomplish the quiz. [SPEC]

You do not have to tell your income class to other group members if you do not want to. [SPEC]

F *Determination of the income distribution*

The same income distribution will be applied to your group. It will be determined by the following procedure:

Each group member will first familiarize with the choice task. After that you have an opportunity to discuss. The discussion is free but you are not allowed to talk about the redistribution of money after the experiment (the moderator will stop the discussion in that case). The moderator is not making notes of the discussion and you can not ask questions about the alternatives at this stage of the experiment. [VI & NVI]

After five minutes, the moderator will ask if you want to continue the discussion. If one or more of the members want to continue the discussion it will be continued. However, the maximum time for discussion is 15 minutes. [VI & NVI]

After the discussion, each member of the group will make her/his choice independently. At this stage, discussion is no more allowed. [VI & NVI]

If all group members select the same income distribution that distribution will be applied to the group. The moderator will tell you the group choice. [VI & NVI]

If one of the group members makes a different choice each one of you will be paid six euros. Individual choices will remain anonymous. [VI & NVI]

G *Determination of the income distribution*

The decision maker will select the income distribution applied to the group. [SPEC]

H *Payoffs*

The table shows net payoffs. You will therefore be paid exactly the sum of money that the table indicates depending on your own income class and the income distribution selected by your group.

Your payoff will be announced privately and you will be given a written certificate for your participation and payoff. The payoff will be paid to your bank account.

Your personal and other data will remain confidential and your name will not be published in the reports of this experiment.

It is in the nature of this experiment that the subjects do not know anything about the choice task before entering the experiment. We therefore ask you not

to talk about the choice and other experimental tasks before May 14, 2004.

After reading the instructions you can move on to the practice round.

I *The experiment*

In this phase your payoff will be determined. The alternative income distributions are presented in the table below. Get to know the table first independently. Afterwards your group has a possibility for discussion. After the discussion everyone will make their choice independently. [VI & NVI treatments]

In this phase the payoff of other group members will be determined. The alternative income distributions are presented in the table below. Get to know the table and make your choice carefully. Remember that your choice will determine other group members' payoffs. [SPEC]

Your payoff is 20 euros independent of you choice. [SPEC]

If you have time you can answer the quiz but *it does not affect your payoff.* [SPEC]

Your income class will we determined after you and other members of the group have made their choices. [VI]

Your income class will be determined before the discussion and choice phases. As told in the instructions, your income class will be determined according to your success in a 15 question quiz. [NVI]

You have now some time to study the table independently. The moderator will let you know when the discussion may start. [VI]

You have now some time to study the table independently. The moderator will let you know when you may start to answer to the quiz. [NVI]

Please circle the letter corresponding to your choice.

A B C D

* * *

When you have made your choice, fold the paper and raise your hand. The moderator will collect your paper.

The instructions consering the quiz were given to the VI groups in the beginning of the quiz booklet. They were the same as for the NVI groups. The spectator was given the quiz and s/he could fill it if s/he wanted to but it was emphasized that it does not affect her/his payoff. The other group members in the spectator group were also given the choice booklet but without any opportunity to make a choice. This procedure was followed in order to give all group members the same papers in every phase of the experiment to avoid other group members to guess who is the spectator.

	Income Distribution			
	A	B	C	D
Income Class				
1	38	22	32	37
2	22	18	20	16
3	7	13	8	10
Average	22.3	17.7	20.0	21.0
The income of the lowest class	7	13	8	10
The difference between the highest and the lowest income class	31	9	24	27

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