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# The Prince and the Pauper: Fairness through Thick and Thin Veils of Ignorance

## Abstract

This paper uses a twin construct to test how the thickness of the veil of ignorance (VOI) affects the perception of fairness and redistributive choices. A fortune reversal is generally perceived to be fair behind a thick VOI, but deemed unfair behind a transparent VOI, particularly if one is currently in a stronger social position. A significant association exists between the perception of fairness and the certainty levels about social position. A 50-50 split is preferred with thicker VOI; whilst the status quo is favoured with thinner VOI. Regardless of the VOI's thickness, few opt for a winnertake-all redistribution.

JEL-Code: D630, D640, C990.

Keywords: veil of ignorance, fairness.

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# 1 Introduction

Suppose there is a pair of twins, A and B. They are the same in terms of physical and mental abilities. Due to some special circumstances, A and B are separated at birth. A (the “prince”) grows up in a rich neighborhood, goes to a good school, gets a well-paid job. B (the “pauper”), on the other hand, grows up in a poor neighborhood, drops out of school and struggles to make ends meet. Further, suppose that you will be born as A or B, but in the original position do not know whether you will end up as a prince or a pauper. How will this ignorance in this original position affect your distributional choice?

In this paper, we used this twin construct based on Twain (1881) to test the thickness of the “veil of ignorance” (VOI) which was introduced by John Rawls (1971) in *A Theory of Justice*. The thickness of the VOI plays an important role in this theory: Rawls postulated that behind a thick VOI, individuals in the original position making decisions on the distribution of resources (natural assets and abilities) will do so without knowing which future positions (class position or social status) in society they will be assigned. In his views, individuals who act behind the VOI will then prefer the distribution of resources which maximizes the well-being of the least endowed.

In this manner, Rawls’ approach differs from those of Harsanyi (1953, 1955). The latter is based on the idea of an “impartial observer” who is cognizant of the money values of the outcomes and can use probability to evaluate outcomes, despite being ignorant of his or her own position and the positions of the other members of society.

In essence, the key difference between Harsanyi’s approach and Rawls’ is the degree of ignorance behind the veil. In Rawls’ formulation (henceforth “

thick” veil), the original position is one which probabilities are neither known nor used. In contrast, Harsanyi’s formulation (henceforth “ thin” veil) involves the knowledge and use of probability.

In this paper, we test how the thickness of the VOI will affect the distributional choices made in the original position. Currently, as far as we know, there is no similar test.

As such, this paper contributes to the literature on empirical testing of the VOI, which include both incentivised experimental and non-incentivised non-experimental questionnaire studies.

Incentivised experimental studies of the VOI invariably involve the use of probabilities and probability-related concepts such as risk aversion. In this sense, they are testing the “thin” veil. For instance, in Johannesson and Gerdtham (1995), Beckman et al (2002), Johannesson-Stenman et al (2002), the subjects do not know the place they (or their hypothetical grandchildren) will occupy in a given society and on that basis of ignorance, choose between societies with different mean and distribution of income. These experiments assume that subjects are risk neutral. Schildberg-Horisch (2010) attempts to separate out the risk aversion and impartial social preferences in a VOI setting using three treatment designs. The first is a variation of the dictator game in which each subject decides how many units the dictator will transfer to the receiver before he is assigned the role of dictator or receiver *with equal probability*. There are a number of concerns with such experimental tests.

Firstly, incentives introduced in these experiments may bias the decisions of the players and thus violate the fairness inherent in Rawls’ conception of the original position and the VOI. Secondly, the participants in the experiments know

ex-ante the probability of being either the dictator or the receiver. Specifically, this probability is fixed at 0.5. This assumption of knowledge about probability again violates another requirement in Rawls' conception which assumes a "thick" VOI. Moreover, this raises the issue of how crucial the thickness of the VOI is to the outcomes being selected in the original position.

To address the first issue, the present paper is non-incentivised and this paper is thus aligned to the non-incentivised non-experimental questionnaire carried out by Amiel et al (2006), Bernasconi (2002) and Bosman and Schokkaert(2004). The questionnaires in these papers asked subjects to choose between lotteries representing different income distribution from the perspective of an impartial external observer making the choice from behind the VOI. In contrast to these papers, the questionnaire in this paper also addresses the second issue by probing how important the thickness of VOI is in determining the fairness of outcomes and the redistributive choices.

To this end, the present paper considers three degrees of "thickness" of the VOI: (1) "thick" VOI: the choice is made without resorting to probability, (2) "thin" VOI: probability plays a role in the choices made behind the VOI, and (3) "transparent" VOI: there is certitude in the original position in which case the observer is no longer an impartial observer.

The paper also introduces an original and innovative twin construct, mentioned at the beginning of the paper. The twin construct in this paper serves two purposes. Firstly, in assuming the identity of a twin, a player is abstracted from his or her own aims and interests and will be making the choice as rational and mutually disinterested parties from the vantage point of identical twins. Secondly, the twin construct allows a conception of equality in all aspects in a hypothetical original

position. Players know that they will be born as one of a twin separated at birth but do not know whether they will be born as a prince or pauper. Thus, by introducing the twin construct, an attempt is made to approximate Rawls' original conception of the VOI in the original position.

Using the twin construct, the paper tests how the degree of thickness of the veil of ignorance (VOI) affects the perception of fairness and redistribution choices in 7 independent groups. Our results are revealing. When the VOI is thick, a reversal of fortune is generally perceived to be fair. However, if the players are certain of their social position, any fortune reversal is deemed unfair, particularly if the players' status quo position is that of a prince. There appears to be a significant association between the perception of fairness and the type of certainty about social position across all 7 independent groups. When the VOI is thicker or when there an equal probability of being a prince or a pauper, redistribution in the form of a 50-50 split is favoured. Further, regardless of the VOI's thickness, few will opt for a winner-take-all redistribution.

The remainder of the paper is organized as follows. Section 2 discusses the VOI in the original position and section 3 describes the design and procedure for testing different degrees of thickness in the VOI. Section 4 discusses the results. The concluding remarks are presented in Section 5.

## **2 VOI and the Original Position**

In Rawls' formulation, the original position can be regarded as a "purely hypothetical situation characterized so as to lead to a certain conception of justice. Among the essential features of this situation is that no one knows his place in society, his

class position or social status, nor does any one know his fortune in the distribution of natural assets and abilities, his intelligence, strength and the like. I shall even assume that the parties do not know their conceptions of the good or their special psychological propensities.” (Rawls, 1971)

In this original position, the principles of justice are chosen behind a veil of ignorance, so as to ensure that “no one is advantaged or disadvantaged by the outcome of natural chance or of the contingency of social circumstances. Since all are similarly situated and no one is able to design principles to favour his particular condition, the principles of justice are the result of a fair agreement or bargain. For given the the circumstances of the original position, the symmetry of everyone’s relations to each other, this initial situation is fair between individuals as moral persons, that is, as rational beings with their own ends and capable, I shall assume, of a sense of justice. The original position is, one might say, the appropriate initial status quo, and thus, the fundamental agreements reached in it are fair.” (Rawls, 1971).

In short, the original position is a hypothetical perspective from which players must select from a menu of conception of justice which will best secure their fundamental interests as free and equal citizens.

A critical condition in Rawls’ formulation is the information available to players when making the choices in the original position. Rawls (1971) postulates a thick VOI, in which players will not have access to knowledge which can distort their judgments and result in unfair principles:

“Among the essential features of this situation is that no one knows his place in society, his class position or social status, nor does any one know his fortune in the distribution of natural assets and abili-

ties, his intelligence, strength and the like. I shall even assume that the parties do not know their conceptions of the good or their special psychological propensities. The principles of justice are chosen behind a veil of ignorance.

In contrast to Rawls contractarian theory, Harsanyi (1953, 1955) proposes a utilitarian approach based on the idea of an “impartial observer. This idea dates back to Adam Smith (1759) in his *Theory of Moral Sentiments*:

As we have no immediate experience of what other men feel, we can form no idea of the manner in which they are affected, but by conceiving what we ourselves should feel in the like situation ..... By the imagination we place ourselves in his (i.e. our brothers) situation, we conceive ourselves enduring all the same torments, we enter as it were into his body, and become in some measure the same person with him, and hence form some idea of his sensations, and even feel something which, though weaker in degree, is not altogether unlike them.

Essentially, the fundamental difference between the two approaches is the degree of ignorance behind the veil. In Rawls’ formulation (henceforth referred to as the “thick” veil), the original position is one which probabilities are neither known nor applied in making distributional choices, whereas Harsanyi’s formulation (henceforth referred to as the “thin” veil) involves both the knowledge and application of probability.

This then begs the question: how crucial is the degree of ignorance to the choices made in the original position? To the best of knowledge, there is no



existing test of the relationship between the thickness of the VOI and the original position. This paper, therefore, attempts to test this relationship through a questionnaire-based test, described in the next section.

### **3 Design**

In this section, we describe the design of a questionnaire-based test which makes use of an original and innovative twin construct based on the novel of Twain (1881). The main objective of this test is to test the relationship between the thickness of the VOI and the distributional choices made in the original position.

In the questionnaire-based test, the respondents are presented the following situation:

You are born either A or B. A and B are identical twins. They are the same in terms of physical and mental abilities. Due to some special circumstances, A and B are separated at birth. A grew up in a rich neighborhood, went to a good school, got a well-paid job. B, on the other hand, grew up in a poor neighborhood, dropped out of school and struggled to make ends meet. By accident, one day, they had the chance to exchange their position.

In this situation, it is evident that A is the prince and B is the pauper. The construct of a twin in the present study is different from twin studies such as those used to determine the additional earning potential of higher education through a comparison of twins who attend college and those who do not (see, for example, Ashenfelter and Krueger, 1992). Those twin studies interviewed actual twins as

respondents. In contrast, the respondents in the present study are asked to assume the identity of one half of a twin.

The twin construct used in this paper serves two purposes. Firstly, the respondent assumes the identity of someone other than himself or herself, so in effect, he or she is responding from the perspective of an “impartial” observer, in the sense that he or she is not partial to the outcome of choice based on his or her own perspective. Secondly, the impartiality carries over to comparison, since twins are identical in every aspect, except with respect to their social position.

There are three degrees of the VOI: thick, transparent and thin and transparent. The degree of VOI’s thickness may be summarised in the table 1.

Behind the thick VOI, the respondents do not know whether they are A or B and are asked whether the exchange is regarded as fair or unfair.

Behind the transparent VOI, the respondents are first asked whether they will perceive the exchange to be fair if they know for certain that they are A? Conversely, if they are certain that they are B, will they perceive the exchange to be fair?

Behind the thin VOI, the respondents are given three sets of separate probabilities of being A (the prince): 0.2, 0.5 and 0.8; and they are asked to decide the appropriate amount of transfer to B (the pauper). Next, it is revealed that A’s current wealth is \$1 million whereas B’s wealth is \$0. The respondents are then given the following menu of redistributive choices:

1. A: \$500,000, B: \$500,000
2. A: \$1 million, B: \$0
3. A: \$800,000, B: \$200,000

Table 1: VOI: Degree of Thickness

<b>Thickness of VOI</b>	<b><math>P(A)</math></b>
Thick	NA
Transparent	1
	0
Thin	0.2
	0.5
	0.8

4. A: \$200,000, B: \$800,000

and asked to choose one of these redistribution. In the first choice, the redistribution involves an equal share of the current wealth of A. The second choice is a status quo in which A gets to retain all current wealth and B gets nothing. For the third choice, A retains 80 percent of current wealth and redistributes 20 percent to B. Finally, for the last choice, A retains only 20 percent and transfers 80 percent of current wealth to B.

The questionnaire was administered to 7 groups of respondents with the sample sizes shown in table 2.

The respondents are mixed in terms of gender and nationality. However, on grounds of confidentiality, such details in different groups are not required in the questionnaire. It may be argued that such characteristics such as gender and nationality do not feature in Rawls' formulation of the original position and thus should not affect the results in any substantial way.

Table 2: Group and Sample Sizes

<b>Group</b>	<b>Number of Respondents</b>
1	28
2	21
3	23
4	29
5	30
6	28
7	37
<b>Total</b>	<b>195</b>

## 4 Results

This section discusses the results along two broad themes: perception of fairness and degree of redistribution.

### 4.1 Perception of Fairness

From table 3, it can be noted that when the probability is unknown behind the thick VOI, 60 percent of the respondents perceives the fortune reversal to be fair. However, with the certainty that the respondent is A behind the transparent VOI, 84 percent of the respondents regards such a change of fortune to be unfair. On the other hand, if the respondent is certain that he or she is B, 72 percent of the respondents considers the change to be fair and this is higher than behind the thick VOI. Hence, it would seem that certitude of social position can alter the

Table 3: Perception of Fairness

	$P(A)$		
	Unknown	1	0
Perceived to be Fair	0.60	0.16	0.72
Perceived to be Unfair	0.40	0.84	0.28

perception of fairness in the respondent. In particular, when the respondents know with certainty that they are in a stronger social position, they would regard any reversal of fortune to be unfair.

Do the results differ across groups? As is evident from table 4, this result seems to be fairly consistent across the groups.

Figure 1 exhibits the mosaic plot for the seven groups when the probability of whether they are the prince or the pauper is unknown. It is useful to observe that more than half in each group regards the fortune reversal to be fair. The standardized residuals allow us to determine in what ways the data depart from the hypothesis that the perception of fairness is independent of the groupings. As shown by Figure 1, all tiles are white, suggesting that the observed frequencies across groups are not significantly different from those found under independence of groups.

An interesting question emerges: in the case of certainty, is there a difference in the perception of fairness if the respondents know for certain that they are the prince (i.e.  $P(A) = 1$ ) and if they know for certain that they are the pauper (i.e.  $P(B) = 1$ )? This can be tested using the mosaic plot and the fourfold panel.

Figure 2 displays the mosaic plot for the seven groups when the respondents

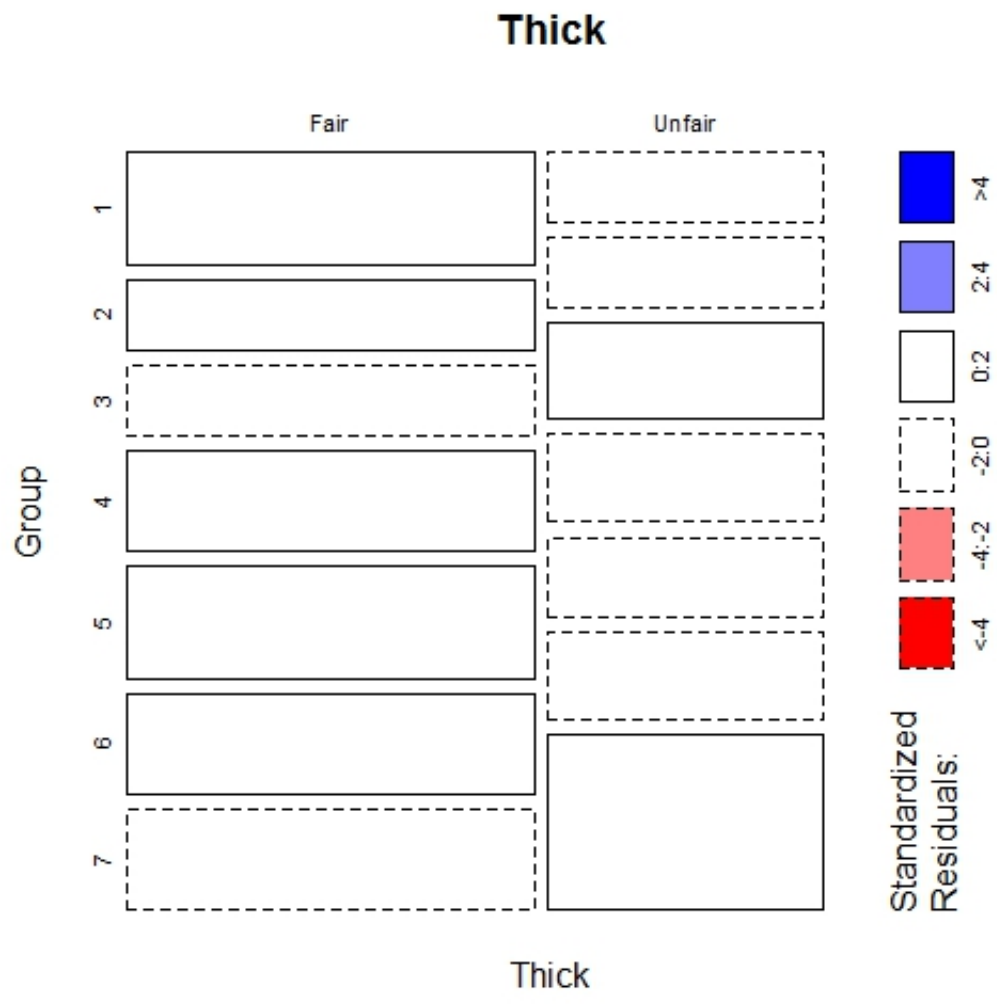


Figure 1: Mosaic Plot for 7 Groups:  $P(A)$  and  $P(B)$  unknown

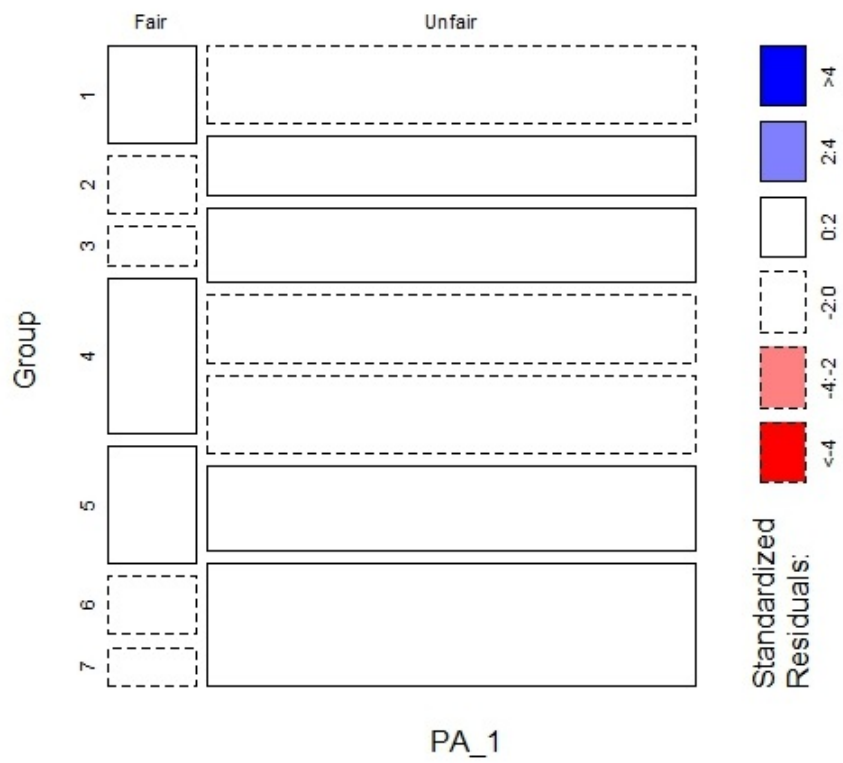


Figure 2: Mosaic Plot for 7 Groups:  $P(A) = 1$

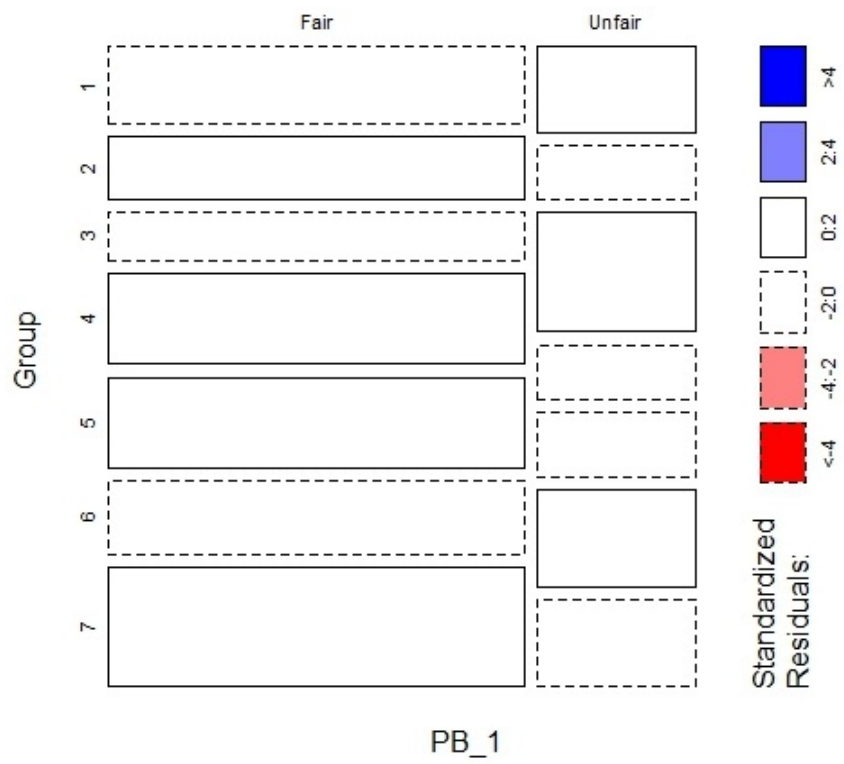


Figure 3: Mosaic Plot for 7 Groups:  $P(B) = 1$



Table 4: Percentage of respondents who regard that the exchange is fair

<b>Group</b>	<b>P(A)</b>		
	<b>Unknown</b>	<b>1</b>	<b>0</b>
<b>1</b>	0.74	0.21	0.71
<b>2</b>	0.57	0.19	0.71
<b>3</b>	0.54	0.09	0.5
<b>4</b>	0.66	0.29	0.79
<b>5</b>	0.67	0.20	0.80
<b>6</b>	0.61	0.11	0.68
<b>7</b>	0.46	0.05	0.78

know for certain that they are the prince while figure 3 the mosaic plot for the seven groups when they know for certain that they are the pauper before the fortune reversal occur. Comparing the two figures, a consistent observation is that the majority will perceive the fortune reversal as unfair if there is certainty of being the prince, whereas the majority will perceive the fortune reversal as fair if there is certainty of being the pauper. Both the preference to maintain the status quo (if you are currently a prince) and the wish to reverse the status quo (if you are pauper) present a stark contrast to the situation under the thick VOI, where more than half are generally supportive of the fortune reversal. Additionally, all tiles in Figure 2 and 3 are white, again implying that the observed frequencies across groups are not significantly different from those found under independence of groups.

The fourfold panel in Figure 4 allows a visual inspection of whether there is

Table 5: Distribution Choices

<b>Distributional Choices</b>	<b>Label</b>
A: \$500,000, B: \$500,000	<b>50-50 Split</b>
A: \$1 million, B: \$0	<b>Winner Takes All</b>
A: \$800,000, B: \$200,000	<b>More for the Prince</b>
A: \$200,000, B: \$800,000	<b>More for the Pauper</b>

any association between the perception of fairness and these two types of certainty ( $P(A) = 1$  versus  $P(B) = 1$ ) across all 7 groups. The fourfold panel is constructed such that the four quadrants will align vertically and horizontally when the odds ratio is 1. The 99% confidence intervals for adjacent quadrants will overlap if and only if the observed counts are consistent with the null hypothesis of the odds ratio being 1. In other words, the overlapping of quadrants indicates that there is no association between the perception of fairness and the types of certainty.

From Figure 4, the 99% confidence intervals do not overlap for all 7 groups, indicating a significant association between the perception of fairness and the types of certainty. This significant association is consistent across all 7 groups.

## 4.2 Degree of Redistribution

Next, we consider the degree of redistribution which is acceptable to respondents behind a thin veil of ignorance. The thinness of the VOI is differentiated, with three degrees:  $\mathbf{P(A) = 0.2, 0.5}$  and  $\mathbf{0.8}$ . The four distributional choices are re-labelled as shown in table 5 and the results are summarised in table 6.

From table 6, we observe that if the VOI is very thick ( $\mathbf{P(A) = 0.2}$ ), more than

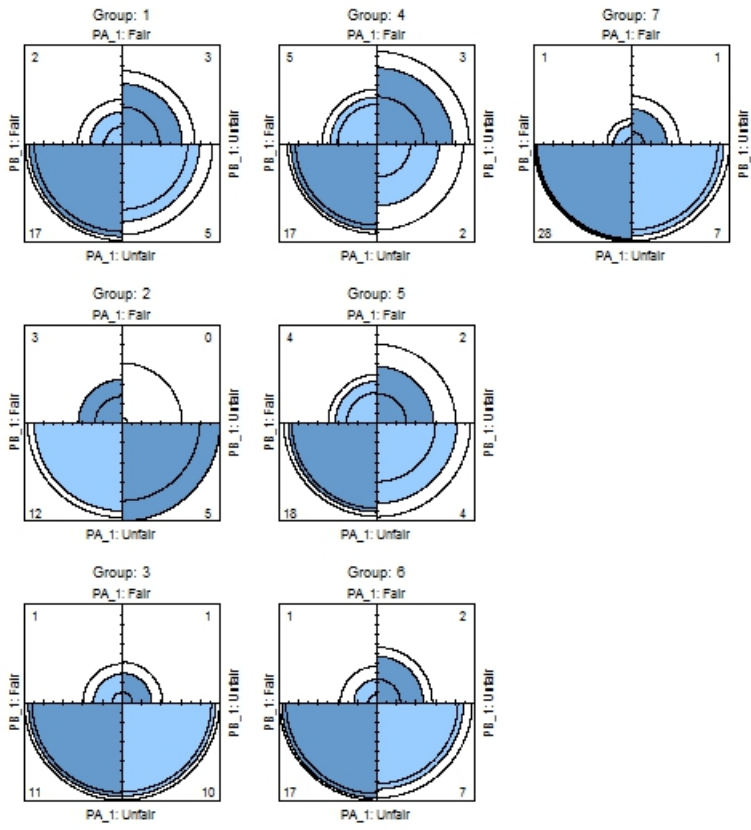


Figure 4: Fourfold Panel for 7 Groups:  $P(A) = 1$  versus  $P(B) = 1$

Table 6: Distributional Choices and VOI

	<b>P(A)</b>		
	<b>0.2</b>	<b>0.5</b>	<b>0.8</b>
<b>50-50 split</b>	0.65	0.34	0.24
<b>Winner Takes All</b>	0.03	0.04	0.06
<b>More for the Prince</b>	0.24	0.22	0.55
<b>More for the Pauper</b>	0.08	0.40	0.15

two-third of the respondents favour a 50-50 split. In contrast, when the VOI is very thin ( $\mathbf{P(A) = 0.8}$ ), about two-third of the respondents favour “More for the Prince”. When there is an equal probability of being a prince or pauper, the 50-50 split and “More for the Pauper” become more acceptable redistributive choices. It is also interesting to note that few of the respondents opt for a winner-takes-all solution, regardless of the thickness of the VOI.

These revealing results bring in mind a remark by Rawls (1971) why a thick veil of ignorance is preferred in a theory of justice: “if a man knew that he was wealthy, he might find it rational to advance the principle that various taxes for welfare measures be counted unjust; if he knew that he was poor, he would most likely propose the contrary principle.” From our results, we can see this tendency in the thin veil of ignorance.

## 5 Concluding Remarks

In Shakespeare’s *King John*, Philip the Bastard remarks:

Well, whiles I am a beggar, I will rail  
And say there is no sin but to be rich;  
And being rich, my virtue then shall be  
To say there is no vice but beggary.

*King John*, Act II, Scene I.

Philip is certainly right that the general evaluation of the world is skewed by the social positions and predicaments of the evaluator. Sen (2011) notes that Rawls (1971) emphasized that central to his conception of justice as fairness “must be a demand to avoid bias in our evaluations, taking note of the interests and concerns of others as well, and in particular the need to avoid being influenced by our respective vested interests, or by our personal priorities or eccentricities or prejudices. It can broadly be seen as a demand for impartiality.”

In this paper, we demonstrate that such a demand for impartiality, namely an unbiased assessment of the justice of existing social and political institutions and existing preferences and the conception of the good, can only be attained behind a thick VOI as originally suggested and emphasized in Rawls (1971). Specifically, we show that there is a tendency to choose redistribution options which are biased towards maintaining the unjust status quo behind a thin VOI. This is particularly true if one knows ex-ante with certainty that one is in a stronger social position. The type of certainty about one’s social position (whether you are born a prince or pauper) also matter since there is a statistically significant association between the perception of fairness and the type of certainty across all 7 independent groups of respondents. However, few opt for a winner-take-all redistribution regardless of how thick the VOI is.

Although we have established that a thick VOI is crucial to the “social contract” established in the original position, the results also provide some food for thought about whether such a contract can be time consistent once the VOI thins. Post-contract cooperation in sustaining the agreement may no longer be acceptable to parties. Rawls is attuned to this since he remarked in his *Political Liberalism* (Rawls, 1999):

... people are unreasonable in the same basic aspect when they plan to engage in cooperative schemes but are unwilling to honour, or even to propose, except as a necessary public pretense, any general principles or standards for specifying fair terms of cooperation. They are ready to violate such terms as suits their interest when circumstances allow.

This is probably why he stressed the need for “reasonable” behavior post contract, the trust and confidence which build up “as the success of the cooperative arrangements is sustained over a longer time” (Rawls, 1999).

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