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Non-Probabilistic Decision Strategies behind the Veil

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ABSTRACT. Interest in giving priority to the worst off by the use of a maximin decision strategy enjoys a recent resurgence in the literature on distributive justice. This paper examines the theoretical presuppositions underlying the main objections brought by the supporters of maximin to John Harsanyi's utilitarian position. It is argued that, behind a Rawlsian veil of ignorance, the use of non-probabilistic strategies associated with cautious decision makers is not bound to fare better in benefitting risk aversion.

1. Introduction

In his writings on justice, John Rawls notably introduced an initial testing procedure he dubbed 'the original position'. It describes a hypothetical situation in which several rational, self-interested agents are placed behind a so called ´veil of ignorance´ and asked to make a definitive decision on what type of society they would live in (Rawls 1999, 13-14). Rawls argues that the rational agents in the original position would choose according to a maximin decision strategy; that is, they would choose to maximize the worst possible payoff. He backs this by arguing that the situation itself drives the agents to act as risk-averse decision makers,[2] as this is no regular every-day decision, but one which will affect all of their future life and

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[2] Rawls argues that, although the agents behind the veil do not have a psychological disposition to risk-aversion, it is rational for them to choose *as if* they were risk averse under the highly exceptional circumstances of the original position.

all their future decisions.

Notably, *contra* Rawls, John Harsanyi argues that, while some degree of risk-aversion within the original position is rationally sustainable by the uniqueness of the situation and the weight of the decision, Rawlsian agents are characterized by an extreme, highly irrational risk-aversion in choosing the maximin strategy (1975: 598). That is because, while the moral flaw of the utility principle was that it allowed for the sacrifice of a minority, in aiming for the increased good of the majority, the maximin strategy allows for an even more abominable situation in which a large majority would be sacrificed for the interests of a small minority. Thus, Harsanyi argues that the rational thing to do behind the veil is to assign equal probabilities to all possible outcomes and maximize expected utility.

Still, on a first approximation, the question seems to amount to deciding between risking to be overburdened to the benefit of a small minority of less naturally endowed – in a maximin society - or risking to be among the worst off in a utilitarian society. The latter, of course, might imply finding oneself way below a decent level of welfare. This has led to a wide spread support for the maximin strategy in recent literature[3]. Roughly put, two objections have been brought to Harsanyi´s account: 1) since in Rawls´s original position we have no reason for choosing one probability assignment over another, there are no grounds for the equi-probability assumption; 2) while this does not lead us directly to the maximin rule, the particular decision at hand mandates its use due to the agents´ risk aversion.

The purpose of this paper is a further examination of the theoretical presuppositions lying at the heart of the above objections to Harsanyi´s position. That is, I purport to investigate 1) to which extent non-probabilistic strategies fare better than expected utility maximization in keeping with the risk aversion Rawls has thrown upon the agents behind the veil and 2) whether Harsanyi´s equi-probability assumption is an unavoidable theoretical cost associated with the use of the utility principle in Rawls´s setting.

[3] E.g. Angner (2002), Chon´e and Laroque (2005), Maniquet and Sprumont (2004), McClennen (2010), Resnick (1987) Shrader-Frechette (1991), Tungodden (2000).

To this effect, I will first briefly revisit what has become known in the literature as the Rawls vs. Harsanyi dispute. Further on, I will use several variations on Harsanyi´s objections in order to argue that using a maximin strategy behind the veil may expose the agents to more serious risks than the ones involved in maximizing expected utility (2). Section #3 will deal with the arguments brought against Harsanyi´s equi-probability assumption. I will then consider an alternative escape route for the defender of the use of non-probabilistic strategies, that is, choosing to focus on lost opportunities rather than on maximizing the worst possible payoff, and show how it fails (4). In the last section I will conclude.

2. The Choice

Rawls´s veil of ignorance presupposes that agents, though in possession of general information about politics, economics and psychology, and about the scarcity of resources and the necessary primary goods, are completely ignorant regarding their particular position in society, personal talents, religion and cultural background (Rawls 1999, 11). So what Rawls purports to do is provide us with a model of deciding what society to live in which is bound to be fair for each and every one of its members, as the decision regarding its structure is made by people who, for all they know, could find themselves in any position in society.

Rawls argues that the original position would discourage agents from choosing to maximize expected utility. As long as the utility principle allows for the sacrifice of innocent scapegoats for the greater good of the greater number, agents could not risk being among such scapegoats. Also, they are ignorant regarding the number of least-advantaged positions in the society they will end up in. So, for all they know, their probability of being among the worst off might well be very high. As such, according to Rawls, the special circumstances associated with the original position demand a cautious, maximin decision, observing the greatest advantage of the worst off.

It has become common in the literature discussing the decision strategy behind the veil of ignorance to assume that Rawls's principles for 'justice as fairness', in particular his well known 'difference principle' – asking for social and economic inequalities to be arranged so that they are to the greatest benefit of the least advantaged - rest on the employment of the maximin behind the veil.[4] Crucially, though, in several places, Rawls makes it clear that "the difference principle... and the maximin rule for decision under uncertainty are two very distinct things" and that "in arguing for the difference principle...there is no appeal to the maximin rule" (Rawls 2001, 43, note 3).[5]

For this reason, this paper will stay neutral on these matters, that is, on whether the view discussed here is properly attributable to Rawls or not. The view is fairly well spread in the literature[6] and, arguably, deserves discussion in its own right, independently of whether it turns out to be relevant to Rawls's conception of justice or not. This view – call it the maximin view - amounts to the following to claims:

The Maximin-Risk Aversion Link: Maximin is the right decision strategy behind the veil of ignorance, given the inherent risk aversion of the dm's.

The Maximin – Justice Link: The employment of maximin behind the veil justifies giving the worse off the best possible position in society.

The choice problem the decision makers (henceforth dm´s) are supposedly presented with affords, at a first approximation, an illustration along the following lines: let S1 stand for the state in which our dm ends up among the less fortunate,

[4] See, e.g., Harsanyi (1975), Resnick (1987), Binmore (1994), Agner (2002).
[5] Many thanks to an anonymous referee for pointing this out to me and for very helpful clarifications on the matter. For discussion, see, for instance, Joshua Cohen (1989), Brian Barry (1989, 179) and Rawls himself (2001, 43). Furthermore, the difference principle only comes second in Rawls's priority order, after a principle regulating equal liberties. As such, discussing Rawls's entire conception of justice as resting on his taste in decision strategies is, to say the least, apt to give rise to controversy.
[6] See footnote 2.

and S2 for the happy outcome of her being in the well-off group. Our dm is thus, according to Rawls, presented with a choice between a society governed by his Difference Principle (A1) and an average-utilitiarian society (A2):

Decision Table 1. Maximin vs. Expected Utility: The Scapegoat

	S1	S2
A1	40	60
A2	0	120

Given that our dm´s entire life, and maybe that of her children and her children´s children too, hinges on this choice, A1 does seem like the clever path to pursue – at least on this illustration. After all, no one in their right mind, I take it, would risk ending up among the poor in A2 – and having to struggle for survival - just for the sake of better average utility. Also, while A1 does seem to preserve enough egalitarian flavour for it to be deemed fair to the poor, it seems to also reward hard work and excellence – at least to some degree.

In his famous critique of Rawls, though, John Harsanyi argues that, while some degree of risk-aversion within the original position is rationally sustainable by the uniqueness of the situation and the weight of the decision, Rawlsian agents are characterized by an extreme, highly irrational risk-aversion in choosing the maximin strategy (1975, 598).

In support of his account, Harsanyi offers the following case: suppose you lived in New York and you received two job offers. The first would be a poorly paid local job, and the second would be an excellently paid one in Chicago. Of course, if you were to choose the Chicago one, you would have to travel by plane to get there. Maximin would, in this case, oblige you to choose the local job, since its worst case scenario (living on a lower income) is much better than the one involved in taking the Chicago job (dying in an airplane crash). Obviously, choosing according to a maximin strategy in this situation sounds highly irrational. As Harsanyi puts it,

maximin would also prescribe hilarious approaches to everyday life: "you could not ever cross a street (after all, you might be hit by a car); you could never drive over a bridge (after all, it might collapse); you could never get married (after all, it might end in a disaster), etc. If anybody really acted this way he would soon end up in a mental institution."(1975, 598)

However, there is a problem with this line of argumentation. When one chooses to take the Chicago job, it seems that one considers the known low probability of a plane crash, similar to the probability of being run over by a car when crossing the street, and having a bridge collapse under you while driving. In Rawls's original position, on the other hand, the probability of ending up amongst the worst off is not known, so the rational decision is not as obvious. For all our dm knows, the society in question might just as well have either a 90% or a 10% poverty rate. If, say, one suspected a 80% chance to die in a plane crash while going to Chicago, choosing the job in New York would presumably not seem like such a bad idea anymore.

Still, the idea behind Harsanyi´s story stands: guiding one´s life according to maximin, even in situations of complete ignorance, might sound highly irrational for many every day cases. Consider my choice to use a blue pen instead of my usual black one, just for the sake of changing something in my everyday routine. I have no idea what the probabilities involved in my being not satisfied with my choice are; that is, given that I have just randomly picked a pen from my jar, it might very well be an old one, which, in the worst case scenario, would stop working right in the middle of my work, and I would have to go pick another one. This would never happen with my usual black one, I know it, I have just bought it last week. Maximin, in this case, would forbid my changing my routine. If the dissatisfaction involved in having to change my pen in the middle of my work is at least slightly higher than the one produced by my continuing to write with my usual pen, I should never risk it; so no new pens for me from now on. And no new dishes, new haircuts or new friends, inasmuch as the old ones are just fine.

Of course, given how little hinges on my decision in these cases, the maximin

recommendation sounds a bit extreme.

Still, this is not the case behind the Rawlsian veil of ignorance. The importance of our dm´s choice there is undisputable, as are the bad consequences she might face if she decides to take the risk. Table 1 seems to illustrate precisely how the maximin choice does a better job in decisions under ignorance when the stakes are high. Even if in low-stakes situations one might consider risking it for the sake of the chance of getting those 120 utility units featured in A2, the obvious choice in life or death situations like the one behind the veil is A1.

Harsanyi, however, argues that describing the situation like in Table 1 is far from covering the possible outcomes of the choice in the original position.

Harsanyi invites us to imagine that our dm ends up in a blessed society where the worst off are in a harsh minority. He argues that, while the moral flaw of the utility principle was that it allowed for the sacrifice of a minority, in aiming for the increased good of the majority, the maximin choice allows for an even more abominable situation: namely, for the sacrifice of a large majority for the interest of a small minority, no matter what the circumstances, even under the most extreme conditions, and even if the interests of the worst-off minority would only be affected in a very minor way. Harsanyi's case goes as follows:

> […] let us assume that society would consist of a large number of individuals, of whom one would be [intellectually challenged]. Suppose that some extremely expensive treatment were to become available, which could very slightly improve the [latter's] condition, [say, a treatment which would enable her/him to tie her/his own shoe-laces], but at such high costs that this treatment could be financed only if some of the most brilliant individuals were deprived of all higher education. The difference principle would require that the [intellectually challenged] individual should all the same receive this very expensive treatment at any event—no matter how many people would have to be denied a higher education, and no matter how strongly they would desire to obtain one (and no matter how great the satisfaction they would derive from it) (Harsanyi 1975, 599).

Thus, Harsanyi argues that the rational strategy to endorse in the original position would be the principle of insufficient reason (PIR), and not a maximin strategy.

According to PIR, in situations characterized by radical uncertainty, the rational path to pursue is to assign equal subjective probabilities to all possible outcomes. Further on, Harsanyi argues, agents will choose to maximize expected utility (Harsanyi 1975, 601).

3. Objections to Harsanyi

Still, the question seems, by now, to amount to deciding between risking to be harshly taxed for the benefit of a small minority of less naturally endowed – in a maximin society - or risking to be among the worst off in a utilitarian society. The latter, of course, might imply finding oneself way below a decent level of welfare.

This has led to a wide spread support for a maximin choice. It is argued[7] that 1) since in Rawls´s original position we have no reason for choosing one probability assignment over another, there are no grounds for the equiprobable assignment implicit in the principle of insufficient reason; 2) while this does not lead us directly to the maximin rule, the particular decision at hand mandates its use. Here is Michael Resnick on the latter: "First, the consequences of making a bad choice are extremely serious. One could end up being the only serf in a society of nobles. Second, we do not need great amounts of wealth or power to lead happy lives. Realizing this, rational individuals will hardly regret missing a chance to be rich or powerful" (1987, 43).

I will treat both the above objections in turn, starting with the latter.

3.1 What Does the Maximiner Risk?

Notice Resnick´s focus on the downsides of acting on utilitarian considerations; the assumption here is that the choice with which our dm is presented is, in fact, between

[7]E.g., Resnick (1987), Angner (2002), Levi (1985)

risking to be a "serf in a society of nobles", on one hand, and risking to lose some amount of wealth, on the other[8]. Presumably, what defenders of maximin have in mind is a choice between ending up in Denmark – and dealing with the corresponding high tax levels - and risking to be dying of hunger in Hong Kong. As such, the maximin strategy does sound intuitively right.

However, consider the following variation on Harsanyi´s objections. Let us assign one utility unit to a life which is barely worth living, two units to someone living a similar life, but getting an apple a week for dinner, and 100 to a great life on a luxury island. Given the complete ignorance imposed by Rawls, our dm might be faced with, for instance, the following outcomes (with states S1 to S10 designating the level of welfare associated with ending up in different groups):[9]

Decision Table 2. Maximin vs. Expected Utility: Barely Worth Living

	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
A1[10]	1	2	1	1	1	1	1	1	1	1
A2	0	100	100	100	100	100	100	100	100	100

It seems that the choice between a maximin society and an average utilitarian society need not be one between Denmark and Hong Kong. I take it that most of us share the thought that A2 is the intuitively right choice here. After all, there is a pretty high chance one might end up with a nice level of welfare. The maximin strategy, though, picks out A1, for its one-utility-unit-advantage attached to the worst case scenario.

Since egalitarians might still be resistant to this intuition, though, let us move

[8] Kristin Shrader-Frechette (1991: 107) argues in a similar vein that "many rational people do not wish to gamble, especially if their lives are at stake.[…] For example, why should one choose to avoid an airplane delay (a benefit) at the risk or cost of facing a 10 % probability that an essential mechanism on the plane will break down? A perfectly rational response, in such a situation, might be that one does not gamble with one's life except to obtain a comparably great benefit."

[9] On Rawls's view, of course, or dm cannot know that he is facing the probabilities described in the tables below. However, this objection does not affect the point made by this paper. That is because the dm can know that these are probabilities he *might* be facing, which is all this argument needs in order to go through.

[10] Here and below I keep with Rawls´s motivational inequalities, even though they hardly make much difference to my illustrations.

below the neutrality level; that is, let us bring lives of great suffering into the equation. After all, the Rawlsian dm´s have no clue regarding the total amount of primary goods they are about to share; for all they know, they might end up in quite a horrible situation in this respect. Compare, then:

Decision Table 3. Maximin vs. Expected Utility: The Torture Case

	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
A1	-10	-8	-10	-10	-10	-10	-10	-10	-10	-10
A2	-11	100	100	100	100	100	100	100	100	100

Here, even for the strictest egalitarian out there, A1, the maximin choice, cannot sound intuitively right. Choosing to bring so much suffering into the world can hardly make the world a better place. If our dm´s risk aversion recommends the maximin option here – that is, acting on A1, just for the sake of not risking one extra unit of suffering – Harsanyi´s irrationality charges do begin to sound appropriate.

As such, contrary to the prevailing position in the literature, maximin no longer seems bound to benefit our dm´s risk aversion. It looks as if, while the risk of being a serf in Harsanyi´s society of nobles is, of course, not negligible, exchanging it for a high chance to a life of great suffering does not sound intuitively right either.

3.2 The Equiprobability Assumption

Let us then turn to the more theoretical concerns presented in the literature, questioning the rationality behind Harsanyi´s equiprobability assumption. Assigning sharp subjective probabilities in situations of complete ignorance has been widely criticized as unwarranted. This has led to the popularity of 'imprecise' models of decision making. Thus, it is argued, the rational thing to do in conditions of radical uncertainty is not to assign sharp probabilities to the possible outcomes, but rather to assign un-sharp, interval valued probabilities. Here is Isaac Levi:

> It is sometimes rational to make no determinate probability judgment and, indeed, to make maximally indeterminate judgments....[doing so] may derive from a very clear and cool judgment that on the basis of the available evidence, making a numerically determinate judgment would be unwarranted and arbitrary *(*1985, 396).

That is to say that, under the Rawlsian veil of ignorance, rational agents should refrain from assigning probabilities symmetrically, and rather endorse interval valued probabilities of the form P(S) = [10%, 80%], where S is the possible outcome regarding an agent's eventual position in society.

Given this, Erik Angner (2002) argues that if we accept Levi's theory of decision, we can reject Harsanyi's charge that maximin reasoning in the original position must be irrational: "According to Levi's theory, there are conditions under which it is rationally permissible to have indeterminate probabilities […], and to let choice be guided by some form of the maximin criterion rather than by expected utility maximization.[...][T]hose conditions [...] in fact obtain in the original position as Rawls describes it"(2002, 2).

Following Levi, under extreme uncertainty with regard to both probabilities and utilities, the dm first calculates which alternatives are E-admissible. An act A is E-admissible if and only if there is a probability function in the agent's credal set such that, according to it, for any alternative act B, the expected utility of A is at least as great as that of B.

In case there is more than one E-admissible alternative, the agent may rely on some secondary criterion. For instance, he may choose some E-admissible alternative that maximizes security, using a maximin strategy (Levi 1997, 194). The agent is not, however, *required* to rely on security considerations to break ties.

Returning to Rawls's original position, suppose again that agents are presented with a choice between a society governed by Harsanyi's utilitiarian account and one where redistribution mostly benefits the worst off. The agents' extreme ignorance would, according to Levi, make them first consider which of the two alternative outcomes is E-admissible. Given this characterization of the decision

problem, it is a simple matter to find probabilities and utilities such that adopting Rawls's principles is optimal; similarly, it is straightforward to find probabilities and utilities such that adopting Harsanyi's principles is optimal. Thus, both alternatives turn out E-admissible (Angner 2002, 15).

Hence, according to Levi, a choice may be made on the basis of maximin considerations (and, if so, choosing the society benefitting the worst off is uniquely admissible). Thus, Levi's account does help in refuting Harsanyi's characterization of the use of maximin as highly irrational.

Still, using maximin as a second criterion is not rationally required, but dependent on the agents' own "value judgment" (Levi 1980,162). This, of course, seems to leave the decision problem under the veil open, as Rawls's claim is certainly stronger; according to Rawls, maximin is the only rational strategy to endorse in the original position.

If we trust Levi´s claim that, if the dm is interested in maximizing security, he should go with a maximin strategy, we might conclude with Angner that the conditions described by Levi do obtain in Rawls´s original position. Still, we have seen in the previous section that security need not necessarily be associated with a maximin strategy. Recall that, in Table 3, our dm would have risked quite an impressive amount of suffering from using such strategy. While choosing a utilitarian society does come with its associated risks too, maximin seems more the strategy of the pessimist, than of the risk-averse. This decision maker focuses exclusively on the worst case scenario, without taking into consideration any other possible outcome. This, however, as already illustrated, might expose the dm to a pretty high chance to living a horrible life. Thus, using maximin fails to meet Levi´s security condition.

There is, however, one line of defence still left open to the supporters of maximin; let us take another look at Tables 2 and 3 above; what goes wrong for the maximiner in these cases seems to rest upon the one unit difference of utility in S1. Thus, what triggers the counter-intuitive results is precisely the fact that, although in a harsh minority, the worst off in Harsanyi´s society seem to fare a bit worse than

those in the maximin society. Given this, one might argue that the unfairness of the worst off situation should be kept to a minimum, no matter the number of members in the worst off group, and no matter their minoritarian status. After all, a society in which one of its members is subjected to excruciating torture every day does not seem to become more just in virtue of adding more happy members to it. To the contrary, what might do the trick is any improvement, however small, to the poor man´s situation. Similarly, our risk-averse dm, when considering her options, might prefer renouncing whatever chance of ending up among the rich in Harsanyi´s society, for the slightest improvement on her horrible situation if she ends up being in the worst off group.

Howerver, while the fact that our intuitions go with Harsanyi in Tables 2 and 3 does rest upon the high probability of enjoying a good life featured by the utilitarian option, the slight improvement on the worst off situation in S1 is not necessary for the argument to go through. That is to say that maximin can get the wrong result even in a situation where the level of welfare for the worst off remained constant in both acts. Consider:

Decision Table 4. Maximin vs. Expected Utility: Equal Minimum

	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
A1	100	0	0	0	0	0	0	0	0	0
A2	0	99	99	99	99	99	99	99	99	99

When there are two or more acts whose minimums are maximal, maximin counts them as equally good. We thus have to resort to lexical maximin to break ties. This tells us to first eliminate all the rows except the tied ones and then compare the next lowest entries, until the tie is broken or the table is exhausted.

In the case above the intuitively correct act is A2. Maximin recommends A1. The worst possible outcome for both A1 and A2 is 0. So for a tie-breaker we consider the second-worst possible outcome, which is 99 in A2 and 100 in A1. So we maximize and choose A1.

As such, returning to the case of the torturer, not only does maximin not succeed in relieving the poor guy from some of his pain. Against all claims to security, maximin allows for most of the members of society to be subjected to torture, inasmuch as at least one person enjoys a better life than Harsanyi´s well off group.

Recall the charge against average utilitarianism we started with. Rawls dismisses utilitarian considerations from his choice room by arguing that, as long as the utility principle allows for the sacrifice of innocent scapegoats for the greater good of the greater number, agents could not risk being among such scapegoats. Still, in the case above, maximin allows for the sacrifice of the greater number of innocent scapegoats for the greater good of a very small minority. As such, for our risk-averse dm, the advantage seems to eventually lie with Harsanyi.

Furthermore, even though our intuitions in Table 3 seem to accord with Harsanyi´s due to the high probability involved in ending up in the well-off group, this presupposition is not necessary for dismissing maximin either. Consider our dm´s being faced with a choice between the following outcomes:

Decision Table 5. Maximin vs. Expected Utility: No High Probability Assumption.

	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
A1	-10	-9	-10	-10	-10	-10	-10	-10	-10	-10
A2	-11	-10	-10	-10	-10	-10	100	100	100	100

In the above chart, the choice is between two societies featuring quite an impressive amount of suffering. Also, the probability involved in ending up with 100 utility units on A2 is quite low (that is, below Harsanyi´s ½ assumption). However, acting on A2 might still secure some chances for our dm to avoid suffering, if she is lucky enough and S7 to S10 obtain. If she goes with A1, the maximin option, though, all she can expect is slight variations on her level of pain.

Thus, even if we drop Harsanyi´s equi-probability assumption, maximin still

does not fare better in according with our dm´s risk aversion. Even if we grant that assigning any probabilities whatsoever behind the veil is unjustified, any act which gives our dm the slightest chance of not being subject to a miserable life seems worth taking.

4. The Minimax Regret Option

I have argued that maximin is more the strategy of the pessimist, than of the risk-averse. This decision maker acts as if the worst that can happen will happen, and chooses the best worst case scenario. Examples such as the ones above, where the decision maker rejected a high chance at a decent life to avoid a potential loss of little significance, suggest that using maximin contradicts the very risk aversion Rawls has thrown upon his agents. As such, it might be more relevant for Rawlsian agents to focus on missed opportunities rather than on the worst possible outcomes.

In Table 2, for instance, the dm misses a chance to gain 99 extra utility units if he chooses A1 and S3 to S10 obtain, while by choosing A2 he only misses an opportunity to gain one extra utility unit if S1 obtains. The strategy usually associated with cautious, risk-averse agents, securing all possible outcomes, is minimax regret (MR). This is an approach to decision making under uncertainty in which the opportunity cost (regret) associated with each possible course of action is measured, and the decision-maker selects the activity that minimizes the maximum regret, or loss. Regret for an act-state pair is measured as the difference between the best possible payoff for that state and the payoff corresponding to that specific act.

Minimax regret captures aversion to lost opportunities. Thus, agents' choice under the veil would not only imply maximizing the worst possible pay-off, but would rather recommend minimizing the maximum opportunity loss on all possible outcomes. For each act, we calculate the amount of missed opportunity in each of the states; that is, how much the outcome for that act in that state falls short of the best possible outcome for that act in that state. MR requires to find the maximum amount

of regret for each act, then choose the act with the smallest maximum amount of regret.

The maximum regret for A1 in Table 2, for instance, is 99 (if S3 to S10 obtain) and that for A2 is only 1 (if S1 obtains). Hence, this strategy nicely predicts A2 as the best option here.

Also, notice that MR is a non-probabilistic strategy; as such, it shares with maximin the advantage of not having to presume any assignment of probabilities whatsoever behind the veil, which fits better with the radical ignorance featured in Rawls's setting.

Furthermore, for a large number of cases, MR nicely accords with our intuitions by avoiding giving the extreme predictions of both maximin and average utilitarianism. Consider:

Decision Table 6. Minimax Regret on Top

	S1	S2	S3	S4	S5	S6
A1	3	4	3	3	3	3
A2	-7	50	50	50	50	50
A3	2	45	45	45	45	45

Let us take the level of sufficiency – say, having a decent shelter and reasonable access to primary goods - to be around 10 utility units. The maximin act in the above situation is A1, for its best worst case payoff of 3 utility units. Notice that, again, our dm thus fails to consider her high chances of earning the 50 or, respectively, the 40 utility units involved in A2 and A3. As such, using maximin exposes her to a sure life barely worth living, way below the sufficiency level. A2, the average utilitarian option, on the other hand, looks risky enough too; given that, if S1 obtains, our dm will be faced with a life of suffering, she might not want to take her chances.

Given the corresponding regret chart, the minimax regret act – and, I take it, the intuitively right act here – is A3:

Regret Table 6

	S1	S2	S3	S4	S5	S6
A1	0	46	47	47	47	47
A2	10	0	0	0	0	0
A3	1	5	5	5	5	5

The minimax regret rule demands that we should pick the act whose maximum regret is minimal. The maximum opportunity loss for A1, corresponding to states S3 to S6, is 47; if she decides to act on A2 and S1 obtains, our dm gets 10 regret units. While in the case of A3, the maximum loss is 5, for S2 to S6. Thus, the minimum maximum regret is involved in acting on A3. This fits nicely with our intuitions too; surely, just for the sake of the one-unit difference between A3 and A1 for S1, we would not have our dm choose to live in a society where everybody is way below sufficiency level. Also, given the high stakes of the situation, our dm would not risk acting on A2, no matter the high chances of her being fairly rich.

A3 has the advantage of involving small losses on both the best and the worst case scenario. If S1 obtains, our dm's level of welfare will only be slightly lower than on the A1 option, while if S3 obtains, our dm will be only slightly less rich than on A2. As such, on this illustration, our risk-averse dm seems to secure all possible outcomes.

4.1Problems for Minimax Regret

In what follows, I will argue that, in spite of its initial appeal, the use of minimax regret is not a sound escape route for the defender of the non-probabilistic approach to Rawls´s original position either. That is, I will purport to show that the use of MR is neither theoretically more justified nor involving fewer risks for the Rawlsian agents than maximizing expected utility.

As nicely as it might seem to handle a vast number of cases, MR does come with associated costs too.

First, notably, MR violates the axiom of Independence of Irrelevant Alternatives (IIA). IIA specifies that preference between two given actions should not be influenced by the availability of other actions. However, given that regret for a state-act pair is calculated by reference to the payoffs of all the available acts for that state, adding new acts to the equation modifies the MR evaluation. As such, minimax regret modifies the value attached to one outcome or another with the regrets associated with having lost some opportunity or another. Recall, however, Resnick: "[…] we do not need great amounts of wealth or power to lead happy lives. Realizing this, rational individuals will hardly regret missing a chance to be rich or powerful" (1987, 43).

Even if we put theoretical concerns aside, on a closer analysis, minimax regret can be shown to fail in what keeping with our dm's risk aversion is concerned. Thus, eventually, the question boils down to deciding which strategy comes with less serious risks attached and with fewer theoretical costs. In this regard, although giving nice predictions in a series of cases, on closer analysis, MR shares in some of the most serious weaknesses of both average utilitarianism and maximin.

Consider again:

Decision Table 1. Maximin vs. Expected Utility: The Scapegoat

	S1	S2
A1	40	60
A2	0	120

Regret Table 1

	S1	S2
A1	0	60
A2	40	0

Recall that the intuitive appeal of maximin was due to its avoiding outcomes similar to the A2-S1 pair. If our dm's entire life depends on her choice in Table 1, maximizing expected utility at the risk of ending up with 0 utility units does not sound like the most fortunate decision to make. Notice, however, that minimax regret goes with Harsanyi – and against our intuitions – on this one; the maximum regret associated with A1 (60 on S2) is higher than the one associated with A2 (40 on s1), so MR picks out A2, the average utilitarian option.

Of course, this difficulty, by itself, does not yet dismiss MR from the candidate strategies for Rawls's scenario. After all, we have already ruled out maximin, for involving more serious risks for our dm than average utilitarianism. Thus, given that we are left with a choice between MR and Harsanyi's principle of insufficient reason, minimax regret maintains its advantage of being a non-probabilistic strategy, in a setup characterized by extreme ignorance.

Let me refer you back to Table 4, however:

Decision Table 4. Maximin vs. Expected Utility: Equal Minimum

	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
A1	100	0	0	0	0	0	0	0	0	0
A2	0	99	99	99	99	99	99	99	99	99

Regret Table 4

	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
A1	0	99	99	99	99	99	99	99	99	99
A2	100	0	0	0	0	0	0	0	0	0

Here, the minimax regret act is A1. Thus, MR gives the same counterintuitive prediction as maximin this time around.

Furthermore, if we look at both cases together, the result is far from flattering

our dm's risk aversion. Recall that the problem involved in Harsanyi's decision strategy was that it allowed for the sacrifice of innocent scapegoats for the greater good of the greater number. We have seen that, as bad as this sounds, this is certainly preferable to the risks involved in using maximin; this strategy was shown to allow for the sacrifice of the greater number for the greater good of a very small minority. In the light of the above illustrations, though, minimax regret seems to allow for the most abominable situation: in using this decision strategy, our dm risks on both fronts, and is not securing any outcome. She leaves open the possibility of being "a serf in a society of nobles", while, at the same time, risking to end up with a life barely worth living for the sake of the higher good of a small minority.

5. Conclusion

I have questioned here the theoretical presuppositions lying at the heart of the objections brought to Harsanyi´s utilitarian reply to Rawls.

I have argued that, in Rawls´s scenario, the use of non-probabilistic strategies usually associated with cautious decision makers is not doing a better job than expected utility maximization in accommodating the agents´ risk aversion. Furthermore, I have shown that even if we drop Harsanyi´s equiprobability assumption, maximin and minimax regret still do not fare better in keeping with our dm´s risk aversion, and thus fail to constitute viable alternatives to the utilitarian strategy.

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