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### Expected Utility Theory and the Priority View

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#### Abstract

This article attempts a reconciliation between expected utility theory and prioritarianism. I argue that this reconciliation depends on the recognition of three asymmetries: we should not weight well-being across persons in the same way we weight well-being across states of nature; the distinction between prospects and outcomes is morally relevant; the expectational measure of utility is relevant for choices under risk or uncertainty but not necessarily for moral choices. I conclude by emphasizing that prioritarianism may also be given an essentially comparative interpretation, and by discussing cases where we have to weight benefits both across states of nature and across persons.

**Mots clés :** prioritarianism, expected utility theory, Otsuka, Parfit, egalitarianism

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## Expected Utility Theory and the Priority View

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In his recent article “Prioritarianism and the Measure of Utility”,<sup>1</sup> Michael Otsuka claims that the priority view defended by Derek Parfit<sup>2</sup> “cannot accommodate one of the most fruitful and powerful constructs of decision and rational choice theory: expected utility theory”.<sup>3</sup> Otsuka’s argument relies on the fact that prioritarianism is often presented as “a ‘distinctive view’ that provides a genuine and attractive alternative to views that are essentially comparative in nature”.<sup>4</sup> Indeed, according to Parfit,<sup>5</sup> the priority view is only concerned with the *absolute* level of people’s well-being. As a consequence, the moral weight attached to one’s well-being in overall well-being is solely a function of one’s absolute level of well-being. It follows that the priority view may contradict the criterion of expected utility maximization in some decision problems with risk or uncertainty involving only one person.

My main objective here is to suggest a way to reconcile the priority view with expected utility theory. As I recognize, this involves a departure from Parfit’s version of the priority view (henceforth, “Parfit PV”). However, several economists and philosophers have entertained other versions of the priority view that seem to comply with the axioms of expected utility theory. I shall argue that the plausibility of these versions entails to recognize some or all of the following three points not explicitly discussed by Otsuka: we should not weight well-being across persons in the same way we weight well-being across states of nature; the distinction between prospects and outcomes is morally relevant; the expectational measure of utility is relevant for choices under risk or uncertainty but not necessarily for moral choices. I conclude by emphasizing that prioritarianism may also be given an essentially comparative interpretation, and by discussing cases where we have to weight benefits both across states of nature and across persons.

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A preliminary version of this article has benefited from the comments of Matthew Adler. Any error is of course of my full responsibility.

<sup>1</sup> Michael Otsuka, ‘Prioritarianism and the Measure of Utility’, *Journal of Political Philosophy*, 23 (2013), 1–22.

<sup>2</sup> Derek Parfit, ‘Another Defence of the Priority View’, *Utilitas*, 24 (2012), 399–440.

<sup>3</sup> Otsuka, p. 15.

<sup>4</sup> Michael Otsuka and Alex Voorhoeve, ‘Why It Matters That Some Are Worse Off Than Others: An Argument against the Priority View’, *Philosophy & Public Affairs*, 37 (2009), 171–99, p. 190.

<sup>5</sup> Derek Parfit, ‘Equality or Priority?’, *The Lindley Lecture* (Lawrence, Kansas: University of Kansas, 1991).

## I.

First, I shall consider the two-cases example on the basis of which Otsuka argues against the soundness of Parfit PV. For the sake of clarity but also because it is fully coherent with the assumption that the axioms of expected utility theory are relevant, I shall assume that we have a fully comparable cardinal measure of well-being that is unique up to a (common) positive ratio transformation.<sup>6</sup> Accordingly, I make use of cardinal utility numbers in the cases discussed below. I relax this assumption later in the penultimate section. First, consider the following two-persons decision problem:<sup>7</sup>

*Case 1: Two-persons decision problem*

You are the parent of thirteen-year-old twins who differ in only one respect: one of them (D, for “disabled”) has recently developed a severe mobility-impairing disability, while the other (H, for “healthy”) is in a perfect health condition. As a parent who is only interested in the well-being of her children, you have to move with your family for professional reasons and you are considering installing downtown in a urban environment (alternative U) or in a semi-rural suburb (alternative R). If you choose the first option (U), your healthy child, who loves nature and sport, will be frustrated but your other child will have access to medical facilities that will make his life slightly better. If you choose the second option (R), your healthy child will enjoy a very good life by our standard while your disabled child will get no treatment. Suppose that no uncertainty remains regarding the quality of the various possible lives before you have to make a choice. The well-being of both children in the two alternatives is described in the following table:

**Table 1**

		<b>Alternatives</b>	
		<b>U</b>	<b>R</b>
<b>Persons</b>	<b>H</b>	6	9
	<b>D</b>	3	1

Each entry in the table corresponds to what is called an “outcome”, *i.e.* a complete description of all the relevant features of a possible world under a representation where no uncertainty remains. It follows from the numbers in the matrix that the healthy child’s marginal benefit of

<sup>6</sup> A utility function  $u$  is unique up to a positive ratio transformation if, for any two alternatives  $x$  and  $y$  and any function  $v = ru$  with  $r > 0$ ,  $u(x) \geq u(y)$  if and only if  $v(x) \geq v(y)$ . In case we have two or more individuals with utility functions  $u_1, u_2, \dots$ , the positive ratio transformation is common if  $v_1 = ru_1, v_2 = ru_2, \dots$ . Such restrictions make a statement like “the utility of Ann in state  $x$  is three times the utility of Bob in state  $y$ ” meaningful. Therefore, they provide the information about interpersonally comparable utility differences and ratios that are needed in all variants of prioritarianism but also to utilitarianism.

<sup>7</sup> Otsuka, p. 2.

going to the suburb is slightly greater than the disabled child’s marginal benefit of going downtown. Hence, a utilitarian choosing impartially would decide to move to the suburb. Quite the contrary, prioritarrians like Parfit would argue that there is a strong reason to move downtown and, providing that the moral weight given to the well-being of the worse-off is sufficient, would choose to do so. As Otsuka insists, the reason for this choice differs from the reason that an egalitarian would invoke: going downtown is better because it makes the worse-off significantly better, not because it makes the situation of the two children more equal. At least according to Parfit PV, the improvement of the absolute level of the worse-off is the relevant reason to move downtown. Now, consider the second case.

*Case 2: One-person decision problem*

You are the parent of a thirteen-year-old child whom you know thanks to a medical diagnosis has a 50 percent chance of developing a severe disability and a 50 percent chance of remaining healthy. I denote these two states  $s(D)$  and  $s(H)$  respectively. As in the preceding case, as a parent only interested in the well-being of her child, you must choose between moving downtown in a urban environment (alternative U) or in a semi-rural suburb (R). Assume that the benefits of the child in each state and each alternative are isomorphic with the preceding case. We thus obtain the following table:

**Table 2**

		Alternatives	
		U	R
States	$s(H)$	6	9
	$s(D)$	3	1

Table 2 is identical to table 1, except for the fact that the rows refer to *states of nature* instead of persons. A state of nature is a complete description of a possible *before* a decision has been made. In other words, a state determines an outcome for each possible choice.<sup>8</sup> Otsuka makes two claims and infers from them that the priority view has implausible implications. First, he claims that a prioritarian would make the same choice than in Case 1, given the isomorphism of the two decision problems; in both, the prioritarian would choose to move downtown given that he gives a stronger moral weight to the benefits of the worse-off, in this case the child in state  $s(D)$ . Second, he claims (and argues for) that in cases along this one, “you are permitted simply to maximize [the child’s] expected utility, rather than instead giving any extra prioritarian weight to benefiting him, should he turn out badly off”.<sup>9</sup> On this basis, he

<sup>8</sup> Formally, a state of nature maps an alternative onto an outcome, *i.e.*  $s: A \rightarrow X$  with  $s$  a state of nature,  $A$  the set of alternatives and  $X$  the set of outcomes.

<sup>9</sup> Otsuka, p. 5.

concludes that the priority view, with its sole emphasis on the absolute level of well-being, does not provide the relevant explanation for preferring moving to downtown in the two-persons case contrary to essentially comparative views of fairness.

## II.

In what follows, I shall not try to summarize Otsuka's full argument for the above claims. My aim is to show that a prioritarian may agree with him that it is permissible to use the expected utility maximization criterion in the one-person case without being inconsistent. I do not presume however that the priority view is correct or better than competing views of fairness and distributive justice. My argument essentially relies on Otsuka's use of expected utility theory to defend the expected utility maximization criterion. Basically, my key point that the plausibility of the prioritarian view depends on the recognition of three distinctions or asymmetries: the asymmetry between the fact of weighing benefits across persons and the fact of weighing benefits across states of nature; the asymmetry in the moral treatment of outcomes and prospects; the distinction between choices under risk and uncertainty and moral choices for the relevance of the expectational measure of well-being. All of these asymmetries and distinctions seem sensible at first sight.

As a first step, it must be acknowledged that economists and philosophers routinely defend versions of prioritarianism that call for the use of the expected utility maximization criterion in one sense or another. In particular, there are at least two variants of the priority view that will permit or make mandatory for the decision maker to make two different choices in cases 1 and 2 above. Admittedly, these versions differ from Parfit PV which is the target of Otsuka's article and other related writings.<sup>10</sup> Nevertheless, their increasing popularity calls for their consideration. The first version of prioritarianism I shall briefly discuss is the so-called "ex ante prioritarianism".<sup>11</sup> Ex ante prioritarianism considers that the moral weights of benefits in terms of utility or well-being must be applied to *expected* utility or well-being. In other words, the absolute level of well-being that is relevant for the prioritarian moral weighing is the level of well-being related to *prospects* rather than to outcomes. A prospect (or an *act*) maps a state of nature onto an alternative; a prospect thus corresponds to a probability distribution of outcomes given some probability measure  $\pi(\cdot)$  over the set  $S$  of states of nature. Formally, if  $(x, s(j))$  is the outcome that results from prospect  $x$  given state of nature  $s(j)$ , then prospect  $x = [(x, s(1)), \pi(s(1)); (x, s(2)), \pi(s(2)); \dots]$  for a finite or infinite number of states. Ex ante prioritarianism builds on the assumption that individual well-being is expectational, *i.e.* the well-being ascribed to a prospect corresponds to the probability-weighted sum of well-being ascribed to each outcome. Therefore, if  $u_i(x)$  is a utility measure of person's  $i$  well-being with prospect  $x$ , then  $u_i(x) = \sum_j \pi(j) u_i(x, j)$ , assuming that the set of

<sup>10</sup> Otsuka and Voorhoeve. See also Michael Otsuka, 'Prioritarianism and the Separateness of Persons', *Utilitas*, 24 (2012), 365–80.

<sup>11</sup> See for instance, Matthew Adler, *Well-Being and Fair Distribution: Beyond Cost-Benefit Analysis* (New York: Oxford University Press, 2011), p. 496-518; David McCarthy, 'Utilitarianism and Prioritarianism I', *Economics and Philosophy*, 22 (2006), 335–63.

states of the world is finite. Now, for a population of  $n$  persons, *ex ante* prioritarianism weights the expectation of well-being of each person  $i = 1, \dots, n$  according to some strictly increasing and concave function  $v(\cdot)$ . The concavity of  $v(\cdot)$  obviously implies that the weight of any benefit for a given person is marginally decreasing. *Ex ante* prioritarianism then consists in choosing the alternative that maximize the priority-weighted function  $\sum_i v(u_i(\cdot)) = \sum_i v(\sum_j \pi(j) u_i(\cdot, j))$ .

*Ex ante* prioritarianism assumes that individual well-being is expectational. It follows that it makes mandatory in Case 2 to move to the suburb. However, in Case 1, it recommends to move downtown provided that the concavity of  $v(\cdot)$  is sufficient. Thus, it is not targeted by Otsuka's critique that the priority view fails to acknowledge the permissibility of maximizing expected utility in the one-person decision problem. This version of the priority view has some problems however. First, Otsuka and Voorhoeve note that "it fails to show appropriate concern for all those who, simply due to brute bad luck, will end up worse off than others".<sup>12</sup> This must be right, since *ex ante* prioritarianism, as a moral doctrine, is only concerned with expected level of well-being ascribed to prospect. The situation of a person *after* the resolution of uncertainty is irrelevant from the moral point of view. In principle, there is a way to shortcut this problem by assuming that being worse-off because of bad luck is intrinsically bad and as a result diminishes even more the value of the bad outcome. I will not pursue this road here since there is a second, more pressing problem with *ex ante* prioritarianism: the fact that it violates several axioms of expected utility theory, in particular the sure-thing (or independence) principle<sup>13</sup> and the axiom of stochastic dominance.<sup>14</sup> Whether or not this is sufficient to disqualify this version of prioritarianism depends on one's views about the relevance of these axioms for moral decision problems. The violation of stochastic dominance in particular appears to be problematic.<sup>15</sup>

Another version of prioritarianism escapes these problems. John Broome<sup>16</sup> and Matthew Adler<sup>17</sup> call it respectively the "additively separable version of communal egalitarianism" and "Expected Utility prioritarianism". This version is endorsed and developed in particular by Adler and Wlodek Rabinowicz.<sup>18</sup> I will henceforth call it *ex post* prioritarianism to make a contrast with the preceding version. As this label suggests, this version of prioritarianism applies the moral weighting to outcomes rather than to prospects. At first sight, *ex post* prioritarianism looks like Parfit PV and thus seems to fall victim to Otsuka's critique. Indeed, in spite of the fact that he assumes that the individual goodness of prospects is expectational, Rabinowicz claims that prioritarianism "leads to a striking divergence between prudence and

<sup>12</sup> Otsuka and Voorhoeve, p. 197.

<sup>13</sup> Peter A. Diamond, 'Cardinal Welfare, Individualistic Ethics, and Interpersonal Comparison of Utility: Comment', *Journal of Political Economy*, 75 (1967).

<sup>14</sup> Adler, p. 507-510.

<sup>15</sup> In a nutshell, stochastic dominance implies that if a prospect leads to a better outcome than another prospect for each state of nature with a strictly positive probability, then the former must be preferred to the latter. There have been arguments for the rejection the sure-thing principle as a relevant normative axiom, but few to my knowledge regarding stochastic dominance.

<sup>16</sup> John Broome, *Weighing Goods: Equality, Uncertainty and Time* (Wiley, 1991).

<sup>17</sup> Adler.

<sup>18</sup> Wlodek Rabinowicz, 'Prioritarianism for Prospects', *Utilitas*, 14 (2002), 2–21.

the prioritarian morality in one-person cases”.<sup>19</sup> However, the very nature of *ex post* prioritarianism does not force us into this conclusion and as I will argue below, there are strong reasons for someone endorsing this version of prioritarianism to treat the one-person and the two-person cases differently.

On my reading, most proponents of *ex post* prioritarianism endorse the following twofold weighing procedure for a given prospect. First, for each state of nature and the corresponding outcome, the prioritarian aggregate individual well-being by applying a moral weight that can be formalized by a strictly increasing and concave utility function  $v(\cdot)$ . Then, once overall well-being has been determined for each potential outcome, the prioritarian uses the expected utility formula on the basis of a probability measure  $\pi(\cdot)$ . More formally, the morally weighted overall well-being of an outcome  $(x, s(j))$  is  $\sum_i v(u_i(x, s(j)))$  for  $i = 1, \dots, n$ ; the overall well-being of a prospect  $x$  is  $\sum_j \pi(j) \sum_i v(u_i(x, s(j)))$ . *Ex post* prioritarianism satisfies all the requirements of expected utility theory, but leads in some cases to a violation of the *ex ante* Pareto principles.<sup>20</sup> For instance, even if the expected values of two prospects are the same for all members of the population, *ex post* prioritarianism may ascribe a higher level of overall well-being to one of the prospect because well-being is more equally distributed in each state of nature. This point is secondary however here and furthermore there are arguments against the relevance of *ex ante* Pareto principles.

The most relevant issue here is whether or not a proponent of *ex post* prioritarianism has to treat the one-person and the two-person cases symmetrically as Rabinowicz suggests. In the rest of the paper, I develop several arguments against this idea, all of them directly or indirectly related to the assumption (made by Otsuka) that expected utility theory provides a measure of well-being.

### III.

A striking feature of both *ex ante* and *ex post* prioritarianism is that the use of the prioritarian moral weight through the function  $v(\cdot)$  occurs when we *weight across persons*, *i.e.* when we determine overall well-being of a prospect or an outcome on the basis of individual well-beings and their distribution for this prospect or outcome. This suggests that there is something morally relevant regarding the weighing across persons that does not appear for the weighing across states of nature. This distinction is essential to analyze Case 1 and Case 2, since the weighing across persons only occurs in the former.

There are significant analogies and differences between states of nature and persons. In economics, John Harsanyi relied on their formal similarities to defend a decision-theoretic-based version of utilitarianism through two theorems.<sup>21</sup> Harsanyi’s first theorem – the

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<sup>19</sup> Rabinowicz, p. 16.

<sup>20</sup> See Adler, p. 503-4.

<sup>21</sup> John C. Harsanyi, ‘Cardinal Welfare, Individualistic Ethics, and Interpersonal Comparisons of Utility’, *Journal of Political Economy*, 63 (1955), 309–21. John C. Harsanyi, ‘Cardinal Utility in Welfare Economics and

“aggregation theorem” – establishes that provided that the persons’ preferences satisfy the axioms of expected utility theory and that some spectator has preferences which satisfy the very same axioms and also the Pareto indifference condition, then the spectator’s preferences can be represented as the weighted sum of the persons’ utilities. Moreover, provided that interpersonal comparisons of utility are available, then the weights in the utilitarian social welfare function can be all set equal. This result thus seems to establish a logical relationship between expected utility theory and utilitarianism, or so Harsanyi argued. Harsanyi’s second theorem – the “impartial observer theorem” – pushes the analogy between states and persons further. Here, Harsanyi considers the hypothetical choice between a menu of social situations that an impartial observer placed behind a veil of ignorance would make. The observer not only ignores his actual position in the society (as well as his income level, his health state, ...) but also his actual preferences. Formally, the impartial observer must make a choice among risky prospects or even “extended” risky prospects where both personal identity and social position are unknown. On this basis, Harsanyi argued that the impartial observer would choose the social situation that maximizes his expected utility. The latter represents extended preferences defined over the Cartesian product of the sets of social positions and personal identities.

Both Harsanyi’s theorems build on the analogy between states of nature and persons to derive utilitarian conclusions. The aggregation theorem makes use of the cross-separability of the spectator’s preference ordering.<sup>22</sup> Since the spectator’s preferences satisfy the axioms of expected utility theory, they conform to a condition known as the sure-thing principle or independence axiom.<sup>23</sup> The independence axiom entails that the preference ordering is strongly and thus additively separable across states of nature. Moreover, Pareto indifference (*i.e.* if everyone is indifferent between two alternatives  $x$  and  $y$ , then the spectator must be indifferent between  $x$  and  $y$ ) entails weak separability between persons. A separability theorem due to W.M. Gorman<sup>24</sup> then establishes that this cross-cutting separability across two dimensions (states and people) implies additive separability, *i.e.* the spectator’s preferences can be represented as the sum of utilities ascribed to *each person in each state of nature*. The use of the analogy between states and persons in the impartial observer theorem is even more straightforward. Harsanyi simply constructed a decision problem such that the impartial observer has to frame personal identities in the same way than states of nature in traditional decision problems. Assuming that the indifference principle must hold in such a situation of uncertainty then obviously leads to average utilitarianism.

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in the Theory of Risk-Taking’, *Journal of Political Economy*, 61 (1953). John C. Harsanyi, *Rational Behaviour and Bargaining Equilibrium in Games and Social Situations* (CUP Archive, 1977).

<sup>22</sup> See Broome, p. 60-81.

<sup>23</sup> The independence axiom may be stated as follows: for any alternatives  $x$ ,  $y$ ,  $z$ , if one prefers (respectively, is indifferent between)  $x$  to  $y$ , then he must prefer (be indifferent between) two risky prospects that offer respectively  $x$  with some probability  $p$  and  $z$  with probability  $1-p$ , and  $y$  with the same probability  $p$  and  $z$  with probability  $1-p$ . Basically, this axiom entails that each pair of prospects can be compared on a state-by-state basis, *i.e.* that the value of the outcome in each state of nature is independent of the value of other outcomes in other states of nature.

<sup>24</sup> W. M. Gorman, ‘The Structure of Utility Functions’, *The Review of Economic Studies*, 35 (1968), 367–90.

The role played by expected utility theory differs between both theorems. In the aggregation theorem, it provides a justification for *representing* the spectator's preferences as additive across persons. In the impartial observer theorem, it offers primarily a decision criterion for the impartial observer. In both cases however, utilitarian conclusions follow from the combination of expected utility theory with the assumption that the individual well-being is cardinally measured by risk-attitudes and the hypothetical isomorphism between states of nature and persons. Now, return to Case 1 and Case 2 above and the way a moral decision maker should treat them. Obviously, a utilitarian would make the same choice in both decision problems, *i.e.* would choose to move to the suburb in a semi-rural environment. Suppose we agree with Otsuka and others that moral intuitions rightly command to maximize the child's expected utility in Case 2 but to consider that the disabled child's well-being morally outweigh the healthy child's one in Case 1. This implies that at least one of the elements of the utilitarian formulae above (expected utility theory, cardinal measure of well-being based on risk-attitudes and isomorphism between states and persons) must be given up. In line with most of the literature on prioritarianism and egalitarianism, Otsuka assumes cardinality and full comparability of levels and differences for well-being. Moreover, at least in the one-person decision problem, he explicitly notes that this cardinal measure is derived "from [the child's] axiom-conforming self-interested preferences over risky prospects".<sup>25</sup> Finally, he also explicitly claims that von Neumann-Morgenstern's utility functions provide a normatively compelling measure of utility and well-being and more generally that the axioms of expected utility theory have a normative force for rational decision-making. Unless for a counterargument (which I fail to see how it could hold), these axioms are also relevant for *moral* decision making. This is precisely Otsuka's point against Parfit PV: it cannot accommodate these axioms.<sup>26</sup> However, as Harsanyi's theorems discussed above establish, the only way to avoid utilitarianism while accepting all these assumptions is to argue for the dis-analogy between states and persons.

My point is that if one wants to avoid utilitarianism and thus is recognizing the dis-analogy between states and persons, then he should accept to treat the two kinds of weighing (across states and across persons) in different ways. This cannot be contrary to prioritarianism because otherwise the latter would be indistinguishable from utilitarianism.<sup>27</sup> Indeed, if one assumes that expected utility is normatively compelling and provides a fully comparable cardinal measure of well-being, then the recognition of a fully distinctive priority view (besides utilitarianism and various forms of egalitarianism) entails to recognize that it is possible for a prioritarian to weight individual well-being differently across states and persons. Note that this also implies that contrary to Parfit PV, some versions at least of prioritarianism can be essentially comparative. I will return on this latter point in the last section.

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<sup>25</sup> Otsuka, 'Prioritarianism and the Measure of Utility', p. 12.

<sup>26</sup> Otsuka, 'Prioritarianism and the Measure of Utility', p. 16.

<sup>27</sup> This is precisely the argument against the priority view developed in Broome, p. 217.

## IV.

In the case of *ex ante* prioritarianism, the asymmetric treatment of states and persons materializes through the undesirable violation of the independence principle. One may follow the economist Peter Diamond and claim that he is “willing to accept the sure-thing principle for individual choice but not for social choice, since it seems reasonable for the individual to be concerned solely with final states [outcomes] while society is also interested in the process of choice”.<sup>28</sup> As Otsuka notes,<sup>29</sup> there are indeed arguments against the normative plausibility of the independence principle and there is an alternative version of expected utility theory (rank-dependent expected utility) that departs from this axiom. However, this does not protect *ex ante* prioritarianism against other problems surveyed above, particularly the violation of stochastic dominance.

*Ex post* prioritarianism deals with the asymmetry between states and persons in a quite different way by allowing a violation of the *ex ante* Pareto principles. Contrary to the independence axiom, the *ex ante* Pareto principles are not constitutive of expected utility theory. It follows that their violation is unproblematic as such in the context of the present discussion. Once again, strong arguments exist for permitting such a violation, in particular if probabilities ascribed to states of nature are subjective. In fact, it can be shown that the application of the *ex ante* Pareto principles with subjective (and potentially heterogeneous) probabilities is incompatible with the representation of collective well-being through a cardinal measure.<sup>30</sup> Moreover, it could be argued that what matters morally is not what *could* happen or *could have* happened but rather what has *actually* happened. Since two states of nature are mutually exclusive, we know for sure that only one of them will realize. This knowledge might be considered to be sufficient to apply our moral thinking (including the Pareto conditions) to outcomes and not to prospects.

This point reveals that prioritarianism depends on another asymmetry, this time between prospects and outcomes. Though intuitive, this asymmetry is less appealing here because the distinction between prospects and outcomes in expected utility theory is representation-dependent. It implies that the prioritarian “cannot adhere to the view, so popular among decision theorists, that uncertainty really is present ‘all the way down’ and can always be discerned, in any outcome, if we only use sufficiently strong magnifying glass”.<sup>31</sup> Therefore, outcomes cannot be treated as “small worlds” in the sense proposed by Leonard Savage.<sup>32</sup> A small world is a situation where no uncertainty remains *given some peculiar representation or frame*. However, because several representations are possible, a small world is nothing but a theoretical construct. Hence, for the asymmetry between outcomes and prospects to have any analytical and moral relevance, it is necessary to define outcomes as “grand worlds”, *i.e.* comprehensive and objective descriptions of situations where no uncertainty remains.

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<sup>28</sup> Diamond, p. 766.

<sup>29</sup> Otsuka, ‘Prioritarianism and the Measure of Utility’, p. 14-5.

<sup>30</sup> Philippe Mongin, ‘Consistent Bayesian Aggregation’, *Journal of Economic Theory*, 66 (1995), 313–51. See also Broome, p. 152.

<sup>31</sup> Rabinowicz, p. 18.

<sup>32</sup> Leonard J. Savage, *The Foundation of Statistics* (Courier Dover Publications, 1954).

Undoubtedly, many decision theorists will resist this conceptual treatment of outcomes. I see two reasons however to accept the separation between outcomes and prospects from a moral perspective. A first reason is suggested by Rabinowicz<sup>33</sup> and depends on the relationship between preferences and well-being. Suppose that preference-satisfaction is constitutive of well-being, an assumption hugely popular among welfare economists. One obvious possibility is to consider that preferences are intentional attitudes and as such, closely depend on some representations of the external world. In this case, the above distinction between prospects and outcomes is almost unsustainable because preferences will vary across representations. The same would thus be true for well-being. However, the assumption that well-being is nothing but preference-satisfaction is far from being unobjectionable; actually, Otsuka rejects it in “Prioritarianism and the Measure of Utility”.<sup>34</sup> Now, a plausible alternative is to consider that well-being is only loosely related to preferences and depends on features of the world that are representation-independent. Objective list theories in ethics provide this latter kind of conception of well-being. In this case, the recognition of outcomes as uncertainty-free grand worlds could be associated to the presence or absence of these features.<sup>35</sup>

The second reason is more foundational and is related to the fact that the whole conceptual apparatus of expected utility theory is representation-dependent, not only the prospects/outcomes distinction. Indeed, the characterization of a decision problem depends on the definition of, *inter alia*, a state space, an outcome space, a probability measure and a preference ordering. None of these elements are representation-free. A disturbing consequence is that almost any choice behavior under risk and uncertainty can be rationalized through an appropriate redefinition of the elements constitutive of the decision problem.<sup>36</sup> Therefore, expected utility theory does a poor job as a *normative* theory of decision making without some auxiliary hypothesis about the permissibility of various alternative representations of what is considered to be a unique decision problem. That means that implicit assumptions about the relevant characterization of what count as outcomes and prospects or about the correct definition of the state space are actually required to giving to expected utility theory any normative value. Arguably, this conclusion extends to the realm of moral decision making: using expected utility theory to determine what is morally permissible, mandatory or prohibited obviously entails to make assumptions about what is considered as the relevant representation of the decision problem. The distinction between outcomes and prospects follows from such an assumption.

Returning to Case 1 and Case 2 above, only the latter features prospects while the former is only concerned with outcomes. My argument in this section has been directed at showing that a prioritarianism should have no problem to distinguish both and to treat them in asymmetric ways. *Ex post* (but not *ex ante*) prioritarianism recognize this asymmetry. Whether or not we

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<sup>33</sup> Rabinowicz, p. 19.

<sup>34</sup> Otsuka, ‘Prioritarianism and the Measure of Utility’, p. 5, fn. 17.

<sup>35</sup> This does not entail a complete rejection of the preference-satisfaction account of well-being. For instance, laundered preferences approaches which define well-being in terms of the satisfaction of the preferences a fully informed and cognitively unbiased individual would have in a deliberative setting are also compatible with the interpretation I suggest in the text.

<sup>36</sup> See Broome, p. 95-110. See also Larry S. Temkin, *Rethinking the Good: Moral Ideals and the Nature of Practical Reasoning* (Oxford University Press, 2012), p. 457-465.

*must* strictly separate outcomes and prospects on the basis of two different moral treatments is another question. As it should be clear from this discussion, the answer is almost surely positive if one wants to avoid utilitarianism or the violation of consistency axioms.

## V.

A third issue is related to the measure of well-being through expected utility theory. Contrary to the two previous points, this problem is at the core of Osaka's critique of the priority view. It also underlies the argument developed in Osaka and Voorhoeve's article.<sup>37</sup> Otsuka's argument that Parfit PV cannot accommodate expected utility theory depends on the assumption that von Neumann-Morgenstern utility functions provide a cardinal and fully comparable measure of well-being. Under this assumption, the claim that a rational person will (or should) maximize his expected utility is indeed nearly tautological. Until now, I have assumed that this assumption is justified. This section investigates whether this is really the case and what happens if we abandon it.

The nature and meaning of the utility measure derived through the use of expected utility theory are controversial and have been the subject of several misunderstandings. The whole literature making use of expected utility theory to study issues of distributive justice relies tacitly or explicitly on the assumption that the latter provides a meaningful and fully comparable *cardinal* measure of well-being. This was the case of Harsanyi when he interpreted his theorems as providing a vindication of utilitarianism. This is also the case of Otsuka in "Prioritarianism and the Measure of Utility". Arguably, this is required since utilitarianism as well as all forms of prioritarianism need to make sense of (interpersonal) comparisons of utility differences. Only a cardinal and fully comparable measure of well-being makes utility differences meaningful; indeed, the ratio of utility differences is invariant across the set of all permissible utility functions if the latter is restricted to positive affine transformations.<sup>38</sup>

Two issues are at stake here: what does utility measure and represent in expected utility theory? Is this measure unique up to a point that makes sense of utility differences? As I will make clear, these issues are both related to the point made above regarding the difference between the fact of weighing across persons and the fact of weighing across states. Formally, all variants of expected utility theory provide a theorem about the *representation* of one's preferences over risky prospects. Therefore, the cardinal properties of the expectational utility function  $u(\cdot)$  are derived from one's risk attitudes. This can be simply illustrated in the following way: consider three alternative  $x$ ,  $y$  and  $z$  and assume that person  $i$  has preferences over them that form an ordering; more precisely,  $i$  strictly prefers  $x$  over  $y$  and  $y$  over  $z$  (and thus  $x$  over  $z$ ). Then, we can ascribe a cardinal utility number to each alternative through two steps: first, we arbitrarily assign a utility number to the most preferred and the less preferred

<sup>37</sup> Otsuka and Voorhoeve, "Why It Matters That Some Are Worse Off Than Others".

<sup>38</sup> A utility function  $u(\cdot)$  is unique up to a positive affine transformation if  $u(x) \geq u(y)$  implies  $v(x) \geq v(y)$  for any  $v = au + b$  with  $a > 0$ .

alternatives, e.g.  $u_i(x) = 1$  and  $u_i(z) = 0$ . Second, to assign a utility number to  $y$ , we ask person  $i$  for which value  $p \in [0, 1]$  she would be indifferent between the sure prospect  $[y]$  and the risky prospect  $[x, p; z, 1-p]$ , which gives  $u_i(y) = p$ . Therefore, the derivation of cardinal utility numbers is exclusively based on one kind of information, *i.e.* one's risk attitudes. To assume that these numbers also provide a relevant measure of well-being is a big step. This step may be possible under a "laundered preferences" approach where well-being is assumed to correspond to the satisfaction one's fully informed and cognitively unbiased preferences over risky prospects formed in a deliberative context.

This is indeed on this basis that Otsuka argues that it must be morally permitted to maximize the child's expected utility in the one-person decision problem: since the utility numbers representing the child's well-being are derived on the basis of the weighing of the risks regarding his health condition, there is no reason to put any extra moral weight on the state where he would be badly off. In fact, "that would be double-counting".<sup>39</sup> However, even assuming that expected utility theory provides a meaningful way to cardinally measure well-being in the one-person decision problem, it is not at all clear that expected utility theory is also morally relevant as a measuring device in the two-persons decision problem. Case 1 and Case 2 above feature exactly the same utility numbers and I shall assume that the latter have been derived through the procedure of the preceding paragraph in both cases. However, one may legitimately wonder if risk-attitudes are morally as relevant to weight across persons (Case 1) as they are assumed to weight across states of nature (Case 2). This point has been a major contention since the pioneering work of von Neumann and Morgenstern on expected utility theory. For instance, Leonard Savage and Milton Friedman argued long ago that "it is entirely unnecessary to identify the quantity that individuals are to be interpreted as maximizing with a quantity that should be given special importance in public policy... Any identification of 'welfare' attained by individuals with 'utility' as defined by the special theory of choice described above [*i.e.* expected utility theory] is itself an ethical precept, to be justified on ethical grounds, not a scientific proposition".<sup>40</sup> A few years later, responding to Friedman and Savage, Harsanyi claimed that "there is a plausible interpretation of the concept of social welfare – or, more precisely, of value judgments concerning social welfare – which brings the cardinal utility concept of welfare economics very close to the cardinal utility concept used in the theory of choices involving risk".<sup>41</sup>

I do not intend to provide a definite answer on this issue. At first sight, there is no reason why risk-attitudes should be morally relevant in interpersonal cases where the fair distribution of well-being across the members of a population is to be determined. I would rather argue for the contrary, since as far as utility (well-being) is a function of income, individuals who are risk-prone (or less risk-averse) in income must be advantaged both in a utilitarian and a prioritarian framework. Still, one may follow Broome<sup>42</sup> and argue that we do not have an

<sup>39</sup> Otsuka, 'Prioritarianism and the Measure of Utility', p. 20. Compare with the argument in John C. Harsanyi, 'Nonlinear Social Welfare Functions', *Theory and Decision*, 6 (1975), 311–32.

<sup>40</sup> Milton Friedman and L. J. Savage, 'The Expected-Utility Hypothesis and the Measurability of Utility', *Journal of Political Economy*, 60 (1952), 463–74, p. 473.

<sup>41</sup> Harsanyi, 'Cardinal Utility in Welfare Economics and in the Theory of Risk-Taking', p. 434.

<sup>42</sup> Broome, *Weighing Goods*.

independent quantitative notion of goodness or well-being and that ultimately we have to measure well-being in the very same way we measure utility. As Friedman and Savage note, this depends on an “ethical precept” which has to be “ethically grounded”. This precept however is essential for otherwise the use of expected utility theory for the comparison between Case 1 and Case 2 is meaningless.

Whatever one’s position on the above issue, there is another problem related to the measurement of well-being that casts doubt on the use of expected utility theory in moral matters. This problem has been recently discussed by John Weymark<sup>43</sup> and considerably weakens the claim that expected utility theory provides a cardinal measure of well-being. The main idea is basically the following: all variants of the expected utility theorem feature two parts, a representation part and a uniqueness part. The former states that a preference ordering over prospect *can be represented* by an expectational (*i.e.* linear in probabilities) utility function that one maximizes; the latter states that this expectational utility function is unique up to a positive affine transformation. However, the expected utility theorem does not say that it is *mandatory* to represent a preference ordering over prospects by an expectational utility function unique up to a positive affine transformation. Any positive monotone transformation is also permissible, in which case the expectational property will be lost. This point is of great importance since ratios of utility differences will not generally be constant across all transformations. In other words, utility differences *are not* meaningful and the utility measure is *ordinal* rather than cardinal.

Since the expected utility theorem does not guarantee cardinality by itself, the latter must be justified in some another way. The salience or naturalness of the expectational property has been used as an argument to justify the restriction of the representation of preferences to expectational utility functions.<sup>44</sup> But though this argument may have some force in the case of choices that depend on risk-attitudes, it seems rather weak in the case of the measure of well-being, particularly when no risk or uncertainty is involved. This is precisely what distinguishes Case 1 and Case 2, since only the latter is concerned with risky prospects. If my argument in this section is valid, then the very comparison between Case 1 and Case 2 as a basis for a moral argument is misguided, in spite of their formal isomorphism.<sup>45</sup>

## VI.

My main point has been to argue that the reconciliation between the priority view with expected utility theory implies to recognize three distinctions or asymmetries: the asymmetry between the fact of weighing across persons and the fact of weighing across states of nature,

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<sup>43</sup> John A. Weymark, ‘Measurement Theory and the Foundations of Utilitarianism’, *Social Choice and Welfare*, 25 (2005), 527–55.

<sup>44</sup> See Mathias Risse, ‘Harsanyi’s “Utilitarian Theorem” and Utilitarianism’, *Noûs*, 36 (2002), 550–77.

<sup>45</sup> A possible alternative is to start directly with utility as a primitive concept. In this case, we do not assume that utility represents preferences over risky prospects but rather that it is a measurable quantity in its own right that has the expectational property. It seems to be Otsuka and Voorhoeve’s approach in “Why It Matters That Some Are Worse Off Than Others”, p. 173 footnote 5. Of course, in absence of an independent way to measure utility and thus well-being, this assumption is somewhat arbitrary.

the asymmetry between the moral treatment of prospects and outcomes and the asymmetry between choices involving risk or uncertainty and moral choices and the corresponding measure of well-being. These asymmetries are all relevant against the claim that the priority view is unable to deal adequately with Case 1 and Case 2 if one assumes that well-being is measured through expected utility theory. Indeed, even if one recognizes only one of the three asymmetries, one must then admit that it is coherent to be a prioritarian and to treat Case 1 and Case 2 in different ways in spite of their formal isomorphism. In particular, the recognition of the first two asymmetries (or of one of them) seems to entail what I have called *ex post* prioritarianism.

This argument may lead to one last objection regarding the status of prioritarianism as a “distinctive view”, *i.e.* relatively to essentially comparative views according to which the concerns for the worse-off follow from the fact that they are *less* well-off *than* others. In particular, the recognition of the asymmetry between the fact of weighing across persons and the fact of weighing across states of nature and the corresponding view that it is permissible to maximize the child’s expected utility theory in Case 2 may be considered as contrary to the “essence” of the priority view, *i.e.* that moral weights are only a function of *absolute* levels of well-being. This is the objection made by Otsuka and Voorhoeve who write that this argument “is not open to our critic, since he will thereby built sensitivity to relational considerations into what it is to be a moral choice that triggers application of the Priority View. The Priority View will have become comparative in nature... [it] would thereby lose its claim to be a ‘distinctive view’ that provides a genuine and attractive alternative to views that are essentially comparative in nature”.<sup>46</sup>

We have to acknowledge that the argument put forth in this article is indeed not opened to Parfit PV. However, a version of the prioritarian view that is compatible with expected utility theory (which is not the case of Parfit PV, as Otsuka shows) *has to* weight benefits differently across states and across persons. Otherwise, as I have shown in section III, the symmetric treatment of states and persons combined with the assumption that expected utility theory offers a cardinal and fully comparable measure of well-being logically entail utilitarianism. If one accepts that benefits should be weighted differently across states and across persons, then there is absolutely no reason to deny the possibility for a prioritarian to treat differently Case 1 and Case 2. It is not clear whether a non-utilitarian (in particular, an egalitarian of some sort) can argue that both kinds of weighing should be treated symmetrically. This is due to the fact that egalitarian views have rarely been developed in the case of choices under risk and uncertainty. But given the comparative nature of egalitarian views, this is highly unlikely. A possible counterargument is that Rabinowicz’s version of *ex post* prioritarianism accepts the notion that well-being is expectational while it recommends to give priority to the worse-off in Case 2. I would suggest however that this version relies on a hardly plausible view regarding the divergence between prudence and (prioritarian) morality in a one-person decision problem. If well-being really is expectational, the person herself should have taken into account everything that is relevant for her well-being, which could include the priority that should eventually be given to benefits in the worst-case scenario.

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<sup>46</sup> Otsuka and Voorhoeve, p. 190.

As a last point, I shall note that a defense of (*ex post*) prioritarianism along a comparative view of fairness has been recently offered by Matthew Adler.<sup>47</sup> More precisely, Adler relies on what he calls the “Claim-Across-Outcome Conception of the Fair Ranking of Outcomes” which he attributes in particular to Thomas Nagel. Obviously, this view relies on at least one of the asymmetries I have highlighted namely the asymmetry between outcomes and prospects. It draws “a tight connection between the valence of an individual’s well-being and the valence of her claim”,<sup>48</sup> where a claim applies across outcomes and corresponds to the fact that one is better in some outcome  $x$  than in another outcome  $y$ . I suggest that Adler’s comparative view of fairness also indirectly recognizes the asymmetry between the facts of weighing across states and across persons since in a one-person decision problem there cannot be competing claims. It follows that provided that well-being is expectational (as assumed by Adler), the treatments of Case 1 and Case 2 cannot be identical. Thus, the priority view remains distinctive even though it is essentially comparative: its distinctiveness lies in the fact that contrary to egalitarian views, competing claims are not assessed directly on the basis of the distribution of well-being in the population; rather, they depend directly on each person’s well-being. But the valence of claims differs from the valence of well-being only because the level of well-being is not the same *across persons*.

## VII.

A remaining issue is how *ex post* prioritarianism compares with essentially comparative views in cases where benefits have to be weighted *both* across states of nature and across persons. Thus, let me conclude this article by considering the following two variants of Case 1 and Case 2:

### *Case 3 – Variant A: Two-person decision problem with uncertainty and identical situations*

Consider the case where your twins can both develop a severe mobility-impairing disability. As above, you must choose between installing downtown in a urban environment or in a semi-rural suburb. We assume that the development of the disability in both children is perfectly and positively correlated, *i.e.* either both develop the disability or neither. The consequence is that whatever the state of nature, we know with certainty that the twins will be in identical situations. As before, we also assume that both states are equiprobable. Thus, we obtain the following table:

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<sup>47</sup> Adler, p. 329-37.

<sup>48</sup> Adler, p. 331.

**Table 3**

	Alternative U		Alternative R		
	States		States		
	$s(HH)$	$s(DD)$	$s(HH)$	$s(DD)$	
Persons	Twin 1	6	3	9	1
	Twin 2	6	3	9	1

Since the children's health states are perfectly correlated, we may ignore the states where one is disabled and the other healthy. Obviously, a comparative judgment regarding the moral value of alternatives U and R implies to weight across both the dimensions of states and persons. Now, we might ask the following two questions: how should we intuitively evaluate both alternatives? Which alternative will be preferred by an *ex post* prioritarian? Consider the latter question first. A quick look at the table is sufficient to see that we have simply duplicated Table 2 of Case 2. A key difference however is that now the moral evaluation also depends on the fact of weighing across persons and not only across states. Therefore, provided that the concavity of the function  $v(\cdot)$  is sufficient, the prioritarian will plausibly consider permissible to choose alternative U.<sup>49</sup> The difference with Case 2 lies in the fact that we are in a multi-person setting, which may justify to use the moral weight  $v$  to evaluate outcomes. However, because both children are identically situated in all outcomes, a serious argument can be made for choosing the alternative that maximizes the twins' expected utility. Notably, all plausible versions of egalitarianism will take both alternatives to be equivalent in terms of equality. Whatever happens, we know with certainty that both children will be equally well-off. In this case, the same logic applies than in Case 2 and there is no obvious reason to give priority to the children's well-being in the worst outcomes.

The violation of the *ex ante* Pareto principles in the case of identically-situated persons is one of the most disturbing features of *ex post* prioritarianism, at least if we assume that well-being is expectational. Indeed, in this case, *ex post* prioritarianism seems to recommend to choose *against* people's interests in spite of the fact that there is no conflict between these interests. This seems also to go against the "Claim-Across-Outcome" conception of fairness since by definition in such a case all persons have exactly equivalent claims. However, Marc Fleurbaey's concept of "expected equally distributed equivalent" (EED) criterion offers a way to reconcile *ex post* prioritarianism with this intuition.<sup>50</sup> An EED criterion "behaves like an *ex ante* criterion in the absence of *ex post* inequalities and like an *ex post* criterion in the

<sup>49</sup> More precisely, an *ex post* prioritarian will consider permissible to choose U if and only if  $v(6) + v(3) \geq v(9) + v(1)$ .

<sup>50</sup> Marc Fleurbaey, 'Assessing Risky Social Situations', *Journal of Political Economy*, 118 (2010), 649–80. See also the discussion of "representative utility functions" in Charles Blackorby, Walter Bossert and David J. Donaldson, *Population Issues in Social Choice Theory, Welfare Economics, and Ethics* (Cambridge University Press, 2005). Adler, *Well-Being and Fair Distribution*, discusses and illustrates Fleurbaey's approach, pp. 518–24.

presence of risk on the final distribution”.<sup>51</sup> The basic principle is the following: for any vector of utility numbers, apply some increasing transformation to the function  $v(\cdot)$  such as to obtain a utility level which, if attributed to all the members of the population, gives a vector of equal utility numbers that is morally as good as the original vector.<sup>52</sup> The most obvious application of the EEDE criterion consists in using the  $v^{-1}((1/n)\sum_i v(u_i))$  formula, with  $n$  the number of persons in the population,  $v(\cdot)$  the usual concave utility function and  $u_i$  some utility number cardinally representing person  $i$ 's well-being. Since  $v^{-1}(\cdot)$  is the inverse function of  $v(\cdot)$ , we obtain  $v^{-1}((1/n)\sum_i v(u_i)) = u_i$  for all  $i$  in any outcome where well-being is equally distributed between the members of the population. It follows that in all decision problems where all people are identically situated in all outcomes that may occur with a strictly positive probability, Fleurbaey's EEDE criterion leads to the same moral judgment than the expected utility maximizing criterion.

Fleurbaey's approach thus makes *ex post* prioritarianism compatible with egalitarian intuitions (and utilitarianism) in decision problems with uncertainty and identical situations. Of course, the use of this particular functional transformations might seem to be somewhat arbitrary since  $v(\cdot)$  is unique up to any positive monotonic transformation. However, this use may be precisely justified by the fact that it makes prioritarianism more plausible in the case discussed above.

We need also to consider another variant of Case 3:

*Case 3 – Variant B: Two-person decision problem with uncertainty and opposite situations*

This variant is the same than the preceding one, except for the fact that the twins' health states are now perfectly negatively correlated, *i.e.* the only possible states of nature are those where one is healthy the other is disabled. This corresponds to the following table:

**Table 4**

		Alternative U		Alternative R	
		States		States	
Persons		$s(\text{HD})$	$s(\text{DH})$	$s(\text{HD})$	$s(\text{DH})$
		Twin 1	6	3	9
	Twin 2	3	6	1	9

<sup>51</sup> Fleurbaey, p. 658.

<sup>52</sup> Graphically, for a population with two persons, the newly generated vector lies on the same indifference curve than the original vector in a two-dimensional graph representing the moral ordering of all vectors of utility numbers. By definition, the new vector also lies on the line that pass through the origin of the graph and which corresponds to the ray of equality where all utilities are equal.

Here, we know with certainty that either of the children will be worse-off than the other one. It can be checked that all variants of *ex post* prioritarianism will rank alternative U higher than alternative R if  $v(\cdot)$  is sufficiently concave – even with Fleurbaey’s criterion. This is a standard occurrence where *ex post* prioritarianism violates the *ex ante* Pareto principles. The issue is whether non-utilitarians can argue for the use of the expected utility maximization criterion and rank R higher than U in this case. To provide a precise answer to this question would necessitate to specify different versions of essentially comparative moral views. It seems uncontroversial that any strict egalitarian can plausibly prefer alternative U over alternative R, given that the level of inequality is higher in the former with certainty. Therefore, in this case, *ex post* prioritarianism seems not to contradict strict egalitarian views. In any case, the “Claim-Across-Outcome” view of fairness rationalizes the prioritarian and egalitarian preference for U over R: since we know for sure that persons will have symmetric competing claims in the two possible states of nature, the valence of those claims must be the same in both states. Formally, this variant of Case 3 is nothing but a duplication of Case 1: we know for sure that Case 1 will occur, the only uncertainty being the identity of the disabled child. It follows that if we consider that the claim of the disabled child override the healthy child’s one (which both prioritarians and egalitarians may accept), there are strong reasons to extend the same reasoning here.<sup>53</sup>

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<sup>53</sup> There are two further, more complex variants of Case 3 that are worth considering. In a first variant, we can assume that the children’s health states are uncorrelated. Then, there would be four equiprobable states of nature. *Ex post* prioritarians would rank alternative U above alternative R (provided that  $v(\cdot)$  is sufficiently concave) and I would argue that this is also the case according to most egalitarian views. It seems to me that the Claim-Across-Outcome view of fairness rationalizes this preference. A second interesting variant is a  $n$ -person case (with  $n > 2$ ) where everyone is in an identical situation except for one person. The more  $n$  is larger, the more the expected utility criterion seems plausible for the same reasons that those discussed in the variant A of Case 3. However, if  $v(\cdot)$  is sufficiently concave, *ex post* prioritarianism may recommend to choose contrary than the expected utility maximization criterion. However, in this case, what is debatable is the peculiar form of the function  $v(\cdot)$  rather the priority view per se.