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Equal Chances versus Equal Outcomes: When Are Lotteries Fair and Justified?

Michael Otsuka, Philosophy, Rutgers University, US, michael.otsuka@rutgers.edu

According to one potent challenge to the value and fairness of distribution by lot, the lottery chance of receiving a good is lacking in value or otherwise insignificant or irrelevant in comparison with actually receiving the good. To meet this challenge, I show in Section I that the far greater significance of receiving all of an undivided good needn't undermine the case for equal lottery chances of the whole good, as compared with an outcome involving equally divided portions of this good. I argue in Section II that it mislocates the value of lottery chances to assume that they must contribute, in themselves, to a person's well-being. Rather their significance primarily resides in their expected instrumental value in delivering goods of independent value. In Section III, I provide an account of when distribution by lot is perfectly fair in spite of the inevitability of an unequal outcome among equal claimants.

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Equal Chances versus Equal Outcomes: When Are Lotteries Fair and Justified?

Michael Otsuka
Philosophy, Rutgers University, US

The case for distribution by lottery is often illustrated with scenarios involving a life-saving good which cannot effectively be provided to everyone whose life is in peril. Suppose, for example, that a lifesaving drug that the government provides is in short supply. There is enough to cure only one of a number of young adults who are afflicted by a fatal disease which will soon kill them all in the absence of treatment. At least so long as we assume that their circumstances are equal, it strikes many as intuitive that those charged with the allocation of this resource ought to hold a lottery that provides each with the highest possible equal chance of being saved. But why? Here is a plausible answer. Anyone who needs this drug has a legitimate claim to it. Since these young adults are in equal need of this drug, and since the government should treat them as equals, it follows that each has an equal claim to this resource.[1] This drug cannot do any good for more than one person. All would be equally well off if it went to nobody. But this is true only insofar as all would be equally badly off because equally dead. One can, however, distribute something of greater value to each than the certainty of an imminent death: namely a chance of living. For each person, the higher this chance, the greater its value. Hence it appears that one should satisfy their equal claims by giving each the highest equal chance of living. This would strike many as a fair and reasonable means of treating people as equals.[2]

The distribution of lottery tickets conferring equal chances for a good constitutes the distribution of things upon which it would be rational for each person to place positive and equal value. By this I mean that it would be rational for each to place equally high positive value on each of the tickets. I do not also mean that it would be rational for each person to value a ticket as highly as any other person values it, when such value is measured in terms of interpersonally comparable expected utility. Given their differing preferences, capacities, and resource endowments, the expected utility of any given lottery ticket might be higher for one person than it is for another person.

[1] Throughout this article, equal claims will be presumed unless I indicate otherwise.

[2] In broad terms, these claims are along the lines of John Broome's (1991) influential account of the fairness of lotteries. As shall become clear in my discussion below, however, my own approach departs in significant respects from Broome's account.

Nevertheless, we will have an equal distribution across persons in the following respect: for any given person, the value that it is rational to place on one's lottery ticket is equal to that of any other ticket insofar as one has no rational grounds, prior to the revelation of the winning number, to swap one's ticket with anyone else's ticket. In other words, Dworkin's 'envy test' would be satisfied.[3]

In a potent line of challenge to such a case for the distribution by lot, some have argued that the chance of receiving the good at issue is lacking in value or otherwise insignificant or irrelevant in comparison with actually receiving a good of this type. The following passage from Caspar Hare provides a prime example of such a challenge, in which he suggests that chances are irrelevant since their contribution to a person's well-being pales in significance in comparison with the actual receipt of the good of living that is distributed by lot:

> Why isn't *living* the relevant good here, not *chances of living*? If I die then I am not significantly better off for having had a high chance of living. If I live then I am not significantly worse off for having had a low chance of living.[4]

In the first two sections of this article, I answer the above, and related, challenges to the relevance and significance of chances. As I argue in Section I, the far greater significance of receiving all of an undivided good needn't undermine the case for equal lottery chances of the whole good, as compared with an outcome involving equally divided portions of this good. I argue in Section II that it mislocates the value of lottery chances to assume that they must contribute, in themselves, to a person's well-being. Rather their significance primarily resides in their expected instrumental value in delivering goods of independent value. In Section III, I provide an account of when distribution by lot is perfectly fair in spite of the inevitability of an unequal outcome among equal claimants.

I. WINNER TAKES ALL ECLIPSES EQUAL PORTIONS AS WELL AS EQUAL CHANCES

Where a fully divisible good has always decreasing marginal utility among people who are equally well off and equally able to convert resources into welfare, its division into

[3] See Dworkin 1981, pp. 285–87.

[4] Hare 2012, p. 385. These sceptical remarks regarding the distributive fairness of lottery chances are incidental to the main claims of Hare's article. Nevertheless, the passage nicely captures a number of different challenges to the value and fairness of lottery chances which I shall consider below.

equal portions will give rise to more welfare in the aggregate than giving the whole good to one person. That fact would provide utilitarian reason, above and beyond the fairness of an equal distribution among those with equally strong claims, to divide such a good into equal portions rather than giving all an equal chance of receiving the whole good.[5] At the other extreme, there are cases in which a division of the good itself renders it worthless: e.g., the division of a heart among those who need a lifesaving transplant of an entire heart to survive. The same can be said of a Solomonic division of a baby in two to settle a custody dispute. A division of time-shares of the baby rather than the baby itself into equal parts would provide a superior resolution of such a dispute. In the case of the lifesaving drug with which this article opened, there is, however, no division into either equal spatial or temporal portions which renders the drug other than worthless. The best we can do is provide equal chances of the entire drug. Here we are driven to the proposal to distribute this good by lot.

In some cases, even if a good can be divided into equal spatial or temporal portions that retain significant use value, there remains a case for distributing chances of the undivided good rather than dividing the good into portions. Consider the following two examples which will figure prominently in the remainder of this article:

> **Life extension:** Unless they receive a life-extending good, 100 people now aged 20 will all die at the age of 81 after having previously enjoyed excellent health. Suppose that each person could either have (i) a 1 in 100 chance of 100 more months—which is 8.3 more years—in excellent health, to just past the age of 89, or (ii) a certainty of a 1/100th portion of 100 months, which would yield a life extension of one more month in excellent health: from 81 years to 81 years plus a month. Here each might rationally prefer a 1/100th chance of 8.3 more years to the certainty of an extra month. This in spite of the fact that an extra month of life is of significant positive value.
>
> **Money:** Suppose that each of 500 Americans of somewhat above average income and wealth could either have (i) a 1 in 500 chance of $50,000 or (ii) a certainty of $100, which is a 1/500th portion of $50,000. Everyone might rationally prefer the former lottery option. This need not be because they regard an extra $100 as worthless. They might all regard such a relatively modest sum as worthwhile rather than wholly trivial. Let us stipulate that they would spend this money to purchase something

[5] This is true so long as one does not assume that the marginal utility of the *chance* of such a good decreases and does so at a rate which is greater than the decrease in the marginal utility of the good itself. Stefánsson and Bradley (2015) have argued that chances of goods have decreasing marginal utility. By contrast, I shall assume the more orthodox view that the marginal utility of chances of goods is constant: i.e., there is 'linearity in the probabilities'.

> useful or enjoyable. Let us also stipulate that their preference for a lottery is not on account of any desperate need for $50,000. It's not the case, for example, that they need to raise this amount for a lifesaving operation. Rather, let us suppose that it would be useful for a down payment on a house even though their current rental arrangement is perfectly adequate, or for a nice home improvement, even though their house is not in any disrepair.[6]

These examples illustrate that an equal portion of a good might be worth less to each person than an equal chance of receiving the whole good even when that equal portion is of significant, or at least non-trivial, value.

One can draw on this observation to provide an initial response to Hare's suggestion that what we value is living rather than a lottery chance of living. Recall that, in the course of defending this view, Hare maintains that 'If I live then I am not significantly worse off for having had a low chance of living.' I grant that, when one's lottery chance of living is relatively low, the value of that chance will pale into insignificance in comparison with the benefit of living that is bestowed on the winner of the lottery. The winner of the aforementioned life extension lottery, for example, would value the extra 100 months of life he receives far more highly than the mere 1 in 100 lottery chance of receiving these hundred more months. One cannot, however, infer from this that what we value is living rather than chances of living. This is because similar claims of relative insignificance can be made regarding the certainty, rather than a chance, of living for a greater rather than a lesser number of months. A 1 in 100 chance of living 100 more months pales in significance in comparison with actually living 100 more months; but so does living only one extra month in comparison with living 100 more months. Moreover, as the above example involving life extension illustrates, it might be rational for everyone to prefer the 1 in 100 chance of living 100 more months to the certainty of one more month. Hence one cannot infer, from the fact that one greatly prefers the whole prize of many more years of life, that what one values is living rather than the chance of living.

Further insights can, however, be unearthed from the passage from Hare that I quoted in the introduction to this article, which might be thought to support the claim that living and the tangible goods of life, rather than a chance of those goods, is what we should care about. I shall respond to these further challenges to the significance of lottery chances in the next section.

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[6] For both of these cases, it is to be assumed that these divisions into small portions would be one-off rather than a part of a sequence of distributions that a person receives. See Scanlon (1998, pp. 236–38) on the significance of such sequences, which involve aggregation within a life rather than across persons.

II. THE INSTRUMENTAL VALUE OF LOTTERY CHANCES

A. The Ephemerality Challenge

The distribution of a lottery chance to receive a tangible good has been condemned as a pale substitute for actually getting the good on grounds that the value of such a chance is ephemeral. Once the winnings of a lottery are distributed, the value of the lottery chance appears to evaporate. The exchange value of a lottery ticket (e.g., its resale value) also evaporates after the point at which winnings are distributed. Of course, goods distributed by lot might also be ephemeral. One's lottery winning might consist of a dessert served at a restaurant, or the pleasures of an orgy which are soon forgotten on account of the quantity of drugs supplied for consumption in tandem. The goods under consideration in the two cases I introduced earlier—8.3 extra years of life or $50,000 for a down payment on a new house or an improvement of one's existing house—are not, however, ephemeral.

Here is a suggestion which draws on these observations. Perhaps it is the ephemeral nature of the value of lottery chances, in comparison with the persisting value of these goods, which explains why these chances seem insignificant in comparison with and eclipsed by the value of the goods that the lottery distributes. In other words, perhaps such transience of lottery chances provides the underlying rationale for the following remarks of Hare's on behalf of the significance of living rather than chances of living: 'If I die then I am not significantly better off for having had a high chance of living. If I live then I am not significantly worse off for having had a low chance of living.'

In a challenge that draws attention to the transience of the good of a lottery, David Wasserman poses a dilemma for believers in the value of lottery chances. He begins by noting that typically 'the value conferred by the probabilistic shares in a lottery is shared only briefly before passing to a single claimant'. He then asks whether the value of a lottery chance 'increases the longer it is held by the recipient'. Both a positive and a negative answer to this question appear to 'have perverse implications for the fairness of the lottery'. A positive answer is regarded as perverse because it would then appear that the lottery's value increases the longer one waits before revealing the winner. But 'we normally seek to resolve disputes over goods as soon as possible, or whenever it is convenient: we find no independent value in delay'. A negative answer is regarded as perverse because it would seem to imply that we provide greater value by running many lotteries in quick succession: e.g., by conducting a lottery with multiple draws consisting of 'as many semi-final stages as possible, since those stages would confer additional, valuable odds on some claimants'.[7]

[7] Wasserman 1996, p. 44.

Before responding to Wasserman's specific challenges, I shall offer the following reply which applies more generally to any objection of transience to the case for distributing goods by lot. I believe that the ephemerality of the value of a lottery is explained by the fact that this value typically consists entirely of its instrumental utility in delivering a tangible good of independent value.[8] Once this instrument has been deployed and has delivered the good, its value is exhausted. It is useful to consider the analogy of a delivery service which conveys an item of independent value (e.g., a pizza). This service is of value insofar as it is instrumental to the delivering of this item. It lacks any value above and beyond that and this value is exhausted once the item has been delivered. In neither the case of a lottery nor a delivery service, however, does the fact that the value of this service is ephemeral because purely instrumental to the delivery of the good imply that this value is insignificant. Such instrumental value remains significant, since the delivery of goods is valuable.

Having traced the significance of lotteries to their instrumental value in delivering tangible goods, we're now in a position to answer Wasserman's specific challenges. Waiting before declaring the winner, or conducting multiple semi-final stages rather than resolving things with a single draw, does nothing to increase or more fairly distribute the instrumental value of the lottery in delivering the good. This is why such practices come across as pointless rather than as adding value. Analogously, it does not follow from the fact that a delivery service is valuable that the longer the delivery takes, the greater its value. Here the opposite is true: the value is greater the less time it takes. Similarly, it does not increase or more fairly distribute the value of such a service for the good to be delivered by a sequence of different carriers. Hence a recognition of the significance of the instrumental value of lotteries provides an answer to these challenges of Wasserman's.

The instrumental value of lottery chances also explains why, in Hare's words, 'If I die then I am not significantly better off for having had a high chance of living. If I live then I am not significantly worse off for having had a low chance of living.' If I die, then it turns out that my lottery chance of living was merely of high expected instrumental value in delivering the good to me, yet its actual instrumental value turns out to be zero. Since I value a lottery chance only as a means of delivering this good to

[8] This claim is consistent with concern for the fairness of the distribution of either expected or actual instrumental value. When assessed solely in terms of effectiveness in ensuring that a good is delivered to someone, an allocator's directly giving this good to his favourite claimant would have as much instrumental value as distribution by lottery. But, unlike a lottery, such direct giving would unfairly treat equal claimants unequally by providing them with unequally high prospects of delivery.

me, I will have no reason to persist in valuing it once the lottery has failed to deliver the good, even though it was rational to place high value on this high chance prospectively. Similarly, if I live, then it turns out that my lottery chance was merely of low expected instrumental value, yet its actual instrumental value turns out to be very high.

B. Let Them Eat Chances

Wasserman's aforementioned challenge is drawn from an article whose memorable title 'Let them eat chances' is itself an expression of scepticism regarding the value of a lottery as a good that is distributed. Similar scepticism is also manifest in Tim Henning's observations that 'giving someone a chance to receive, say, a kidney, is not to give them a kidney "to some degree." Nor is it a way to give them some part of a kidney (whatever good that might do).'[9] An appreciation of the instrumental value of lotteries also provides an answer to such scepticism. Although the chance of receiving a kidney that a lottery confers does not in itself achieve either of these things that Henning lists, it remains of expected instrumental value in delivering the entire kidney. Similarly, although a lottery chance is not itself edible, it remains of expected instrumental value in delivering a tangible good which can itself be enjoyed.

A recognition of the instrumental value of lotteries also provides an answer to Henning's claim that the 'only relevance' of lottery chances is 'as weights in calculating expected value, weights that change to zero or one once the outcome is known'.[10] Lottery chances involve such weights that change to zero or one once the outcome is known. But if that were their only relevance, then one would not be able to distinguish such chances from the epistemic chances between zero and one of our possession of a good that are simply induced by the lowering of a veil which renders us ignorant of the fact regarding whether we already possess this good. Unlike a change in expected value which arises simply from coming to know a fact of which one was previously ignorant because a veil that had obscured that fact has been lifted, a lottery is of instrumental value as a causal means of actually delivering an outcome involving receipt of a good of tangible value. The value of a lottery chance consists of its expected instrumental value in delivering such a good. This value is above and beyond a calculation of expected value that merely reflects the degree of our ignorance of an outcome.

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[9] Henning 2015, p. 171.

[10] Henning 2015, p. 177.

C. The Epicurean Challenge

A recognition of its expected instrumental value provides an answer to some further grounds for scepticism regarding the significance of a lottery chance. These grounds can be gleaned from the passage from Hare to which I again return: 'If I die then I am not significantly better off for having had a high chance of living. If I live then I am not significantly worse off for having had a low chance of living.' Hare's denial that one is made significantly 'better off' or 'worse off' by chances might be interpreted as a denial that chances of goods such as life, rather than a longer life itself, make any significant contribution to one's *well-being*.

Among those who endorse a preference-satisfaction account of well-being, it might be regarded as straightforward to establish that having a lottery chance advances one's well-being. One can simply point to the rational self-interested preferences people have for such chances. It will, however, be more of a challenge to explain the contribution of chances to well-being if one rejects a preference-satisfaction account in favour of an experiential account of well-being. There is, moreover, a venerable school of philosophical thought tracing as far back as Epicurus, according to which there is no such thing as an unexperienced increase or decrease in one's well-being. Coming into possession of a chance of a good might, of course, make a positive contribution to one's well-being so understood. It might, for example, give rise to pleasant hopes and expectations of future gain. It need not, however, make such a contribution. One might have no idea that one has been given a lottery ticket that confers a chance of a jackpot. Here, it might be claimed, the lottery ticket is not valuable as such, as its mere possession makes no difference to the experienced quality of one's life.

One can reply to this doubt as follows. We can grant, if only for the sake of argument, that there cannot be an unexperienced increase in one's well-being while also insisting that chances are of prudential value, so long as they are chances of experiencing an increase in one's well-being. Even if having such a chance does not, in and of itself, make a contribution to one's well-being, coming into possession of a chance of a good is nevertheless in one's interest on account of its expected instrumental value in delivering goods involving experience. For parallel reasons, a trustee acts in your interest if he enrols you in a low cost, because highly subsidised, health insurance policy even if you are unaware of this and you end up never needing to make use of this policy.[11] It would also be contrary to your interests for your employer to drop you

[11] We must assume that the trustee does not know that you will never need to make use of the policy. If the trustee were an omniscient guardian angel who knows that you will never need

from your company's health insurance plan even if you do not learn that you have been dropped and therefore do not suffer any anxiety and even if it does not wrong you in the sense of doing something they are obliged not to do. The unpleasantness of the anxiety you would feel if you discovered that you were dropped does not exhaust the setback to your interests of being dropped.[12] For this anxiety is a rational response to the fact that your interests have been set back by the loss of security to which the withdrawal of the insurance policy gives rise. The security one loses is protection against the experienced ills of untreated illness or disability on the one hand or financial bankruptcy on the other hand. Similarly, even if the conferral of lottery chances does not, as such, increase anyone's well-being, they should be distributed equally to those with equal claims. This is because they promote the interests of these equal claimants equally by conferring equal advantages to each, as constituted by their equal expected instrumental value in delivering experienced increases in well-being.[13]

D. The Instrumental Value of Money

In drawing this section to a close, I shall respond to a contention of Broome's that the fact that chances are of merely instrumental value rather than directly contributing to one's well-being undermines the case for an equal division of chances:

> We value expected utility, but only because promoting it is a way (on average) of promoting utility. Now, we may have reasons to favour an equal distribution of a good worth having for its own sake, such as utility. But there is no reason to think these reasons will carry over to something intrinsically valueless, such as expected utility.[14]

It is true that the chance of a good which a lottery confers is of merely instrumental value in securing something with tangible use value. The same, however, is true of

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this, she would not act in your interests by purchasing this policy on your behalf. Whether someone acts in someone else's interests is relative to the information he possesses.

[12] Compare Thomas Nagel (1979) on how the harm of being betrayed is not exhausted by, and pre-dates the unpleasant feelings one experiences upon later learning of, the betrayal.

[13] Judith Jarvis Thomson (1990, pp. 170–74) employs the term 'advantage' to refer to the prudential value of chances. In tennis, this term is employed to indicate an increase in one's odds of winning, because one is one point away from winning whereas one's opponent is three points away, as opposed to 'deuce', in which each is two points away.

[14] Broome 1984, p. 627.

money. Money has no use value.[15] Rather, it has only exchange value. This exchange value is ultimately grounded in its instrumental value in securing something of use value, via exchange. The fact that money does not itself have any use value does not, however, defeat the case for dividing it equally. In the literature on distributive justice, the case for an equal distribution of money, either in the form of income or of wealth, is not defeated by the fact that it is of merely instrumental value. Similarly, the fact that a lottery's value is merely instrumental does not defeat the case for an equal distribution of the expected instrumental value of lottery chances.

III. WHEN ARE LOTTERIES PERFECTLY FAIR?

In this section, I shall provide an account of some conditions which are necessary and sufficient to ensure that a distribution by lot perfectly realizes the value of fairness. These conditions part company with Broome's influential account of perfect fairness.

When one is indifferent between a given chance p ($0 < p < 1$) of an entire good and the certainty of a specified portion of that good, the latter is the *certainty equivalent* of the former. Let us stipulate that, in the case of a particular good, everyone is indifferent between a $1/n$ chance of the entire good and a $1/n$ portion of that good for certain. Here the $1/n$ portion of the good is everyone's certainty equivalent of a $1/n$ chance of the good. Suppose that a distribution of equal portions $1/n$ of this good would perfectly achieve fairness among equal claimants, as Broome claims it would. Why wouldn't a lottery with $1/n$ chances for all also perfectly achieve fairness, given that each values this chance the same as the certain outcome which Broome maintains would perfectly realize fairness?

Here are grounds to challenge the claim that such gambles involving lottery chances, which are valued the same as equal portions, perfectly realize fairness: the equal portion and the equal chance are equivalent merely *ex ante*; yet we know in advance that the outcome of the lottery will involve inequality. Suppose that there are two gambles of the same expected prudential value for each, involving equal-sized risks to each, but in one of which the risks are perfectly correlated and the other in which they're inversely correlated.[16] Even though these two gambles are *ex ante* equivalent in their expected prudential value, the former remains more fair than the latter, since it guarantees an

[15] Leaving aside the use that bank notes might have in facilitating the snorting of coke or coins in providing a paper weight.

[16] An example of perfectly correlated risks is one in which everyone wins if a coin lands heads and everyone loses if it lands tails. If, by contrast, half win if the coin lands head and the other half if it lands tails, then the risks to these two halves of the population are inversely correlated.

equal outcome, whereas the latter guarantees an unequal outcome, and the two gambles do not differ in any other morally relevant respect.[17] For similar reasons, equal portions might be more fair than an *ex ante* equivalent gamble whose outcome is guaranteed to be unequal.

The mere fact that an outcome will give rise to inequality does not, however, provide sufficient grounds to condemn it as unfair. That is one of the main lessons of luck egalitarianism. If the unequal outcome arises through no choice or fault of anyone, then it is unfair. But an unequal outcome might be perfectly fair if it arises through the choices of individuals. If the ant and the grasshopper are morally responsible agents whose different choices regarding work, leisure, and consumption provide the full explanation of the ant's abundance and the grasshopper's destitution, it follows that this inequality of outcome is fair. More to the point of our current discussion, we can also illustrate the luck egalitarian fairness of unequal outcomes with cases involving risk. The inequalities arising from gambles might be fair instances of what Dworkin has labelled 'option luck', which is roughly luck to which one has exposed oneself as the result of one's voluntary choices, in contrast to 'brute luck', which is unchosen and unavoidable.[18]

Let us consider cases in which an unequal outcome is the result of the choice of each to gamble. Suppose, in variants of the above two lottery examples involving life extension and money, that each individual has the option of choosing for herself whether to receive a 1/*n* portion of the good for certain or else a 1/*n* chance of the entire good of 8.3 years of extra life in the one case or $50,000 in the other case.[19] Suppose, moreover, that each person regards a lottery as more valuable to equal portions. If each rationally chooses the lottery option, these are cases in which the resulting inequalities of outcome would constitute perfectly fair instances of option luck. It is crucial, here, that the lottery chances that different people are provided involve equal odds. The mere fact that each would prefer the lottery chance they're offered to an equal portion would be insufficient to render unequal lottery chances perfectly fair. Such a lottery

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[17] See Otsuka and Voorhoeve (2018, pp. 77–82).

[18] Dworkin (1981, p. 293) defines 'option luck' as 'a matter of … whether someone gains or loses through accepting an isolated risk he or she should have anticipated and might have declined'. Brute luck, by contrast, is 'a matter of how risks fall out that are not in that sense … gambles'.

[19] We can imagine, in the monetary case, that one can take either $100 or a 1 in 500 chance that one's name will be chosen at random from among the 500 names, in which case one receives $50,000. If the name of someone who has opted to take $100 for certain is drawn, nobody receives $50,000. In this case, either more or less than $50,000 might end up being distributed at the end of the day. Similar remarks apply to the case involving life extension: people might end up receiving either more or less than 8.3 more years in the aggregate.

would remain unfair because it fails to pass the envy test to which I referred in the introduction to this article, thereby failing to provide equally valuable chances to all with equally strong claims.

Now suppose that it is not possible to provide equal portions for some and equal lottery chances for others. Rather, the good must either be divided into equal portions for all or equal lottery chances for all. If, as before, everyone prefers the lottery, and they express this preference, then the good ought to be distributed by lot rather than divided into equal portions. The resulting inequalities of outcome would remain perfectly fair instances of option luck. We should reach the same conclusion even if nobody has the opportunity to express their preference for a lottery or an equal portion, yet we know that they each prefers the lottery: the good ought to be distributed by lot rather than divided into equal portions. The resulting inequalities would constitute perfectly fair option luck on the grounds, among others, that we know that each would have chosen such a lottery involving equal chances if provided with the opportunity.

Now suppose that a division of the good into equal 1/*n* portions is not possible. We cannot divide the 8.3 extra life years into such equal portions of one month for each of the 100 people. These years must all go to a single person if they go to anyone. Similarly, we cannot divide the $50,000 into such equal portions of $100 for each of the 500 people. The money must all go to a single person. But let us suppose that the preferences of the individuals are as we have been assuming above. In this case, the following counterfactual is true: even if it were possible to divide the good into such equal portions, everyone would still prefer a lottery involving equal chances. Even if the lottery is imposed for lack of an actual alternative involving equal portions, it might remain perfectly fair on grounds, among others, that it satisfies the envy test and everyone would have agreed to it, rather than to equal portions, had there been a choice between these two options. Here we have hypothetical choice, but not from under an imposed veil which deprives everyone of knowledge of their circumstances and their conceptions of the good and the preferences that arise from it. In this case, and the previous ones, involving hypothetical choice, it's the fact that this option is preferred, rather than any appeal to consent, which is of normative significance.[20] I would maintain that a lottery involving equal 1/*n* chances needn't be regarded here as

[20] Hypothetical choice among those who are equally situated might not always be sufficient to justify what all would choose. It might fail, for example, to justify forced organ donation lotteries, even if these are in each person's *ex ante* self-interest. But the cases under discussion don't involve incursions upon one's body, where such boundary crossings involve rights infringements. Nor are they even cases of harm that don't involve boundary crossings. Rather they're cases of how to allocate benefits.

a second best in the dimension of fairness to an impossible equal division of the good into valuable 1/*n* portions. Rather, such a lottery would perfectly realize fairness.

This claim marks a departure from Broome's account of the fairness of lotteries. On his view, a lottery which distributes a scarce, indivisible good among people with equal claims is inevitably unfair at least to some degree, 'because some candidates will get the good and others will not'. On account of this fact, Broome maintains that the distribution of none of this good to anyone is the only feasible course of action that will 'perfectly achieve' fairness. Broome also maintains that one needs to balance and trade off the 'demands of fairness' against the competing 'demands of overall satisfaction'. He writes that 'In some circumstances, no doubt, it will be very important to be fair, and in others fairness may be outweighed by expediency.'[21] In the latter case, on Broome's account, an indivisible good should be allocated to a single person by lot rather than to nobody, in sacrifice of perfect fairness to the satisfaction of claims.

If, however, a hypothetical (because unfeasible) distribution of the indivisible good into equal 1/*n* portions constitutes a benchmark which is dispreferred by all to a lottery which presents each with highest equal odds, why isn't the lottery perfectly fair? In order to account for the perfect fairness of such a lottery, I need to draw attention to something special about the two cases under discussion involving life extension and money: namely, the benchmark of a *sufficiently good, risk-free* point of reference involving equal outcomes with which to compare the gamble of a lottery.

To illustrate what such a benchmark involves, I shall first point to a case in which it is clearly absent. Recall the case of a single indivisible lifesaving drug with which I opened this article, in which each of a number $n>1$ of young adults will die soon unless they receive this drug. Here there is no sufficiently good, risk free benchmark involving equal outcomes which is such that people would find it rational to choose a lottery for a single drug over it. The only actually available risk-free alternative involving equal outcomes is one in which all are certain to die because untreated. This alternative is risk-free even though not harm-free, since risk involves a non-trivial $0<p<1$ chance of harm. Here the harm is certain. This is clearly not a sufficiently good risk-free alternative. Moreover, a hypothetical risk-free equal benchmark involving the certainty equivalent of a lottery chance of the lifesaving drug of 1/*n* would not be sufficiently good either, as it would involve a significantly degraded certainty of life: for example, the certainty of life for a small number of further years, which falls well short of the number of years one could expect if fully cured of this disease. In such cases where one is compelled to gamble by virtue of the lack of a sufficiently good, risk-free alternative, the rationality of such a gamble does not fully transform unfair brute bad luck into fair option luck.

[21] Broome 1991, pp. 95–97.

By contrast, the risk-free benchmarks in the two lottery examples I introduced in Section I are sufficiently good in absolute terms. One more month of life for certain beyond one's 81st birthday is the certainty of 'fair innings'. Similarly, one isn't forced, by necessity, to opt for a gamble for a chance of a $50,000 gain in preference to the certainty of an extra $100. In both cases, choosing the lottery does not involve resignation to unfairness on account of the unsatisfactory nature of an alternative involving equal portions. Here, giving everyone an equal chance of the entire good isn't a second best, when it comes to fairness, as compared with giving everyone an equal portion of that good if only it could be divided into goods of sufficiently high positive value. Rather, one's choice of a lottery over a sufficiently good benchmark involving a division into equal portions constitutes an unproblematic case of option luck.

As an illustration to motivate this view, I once described a case in which each of two individuals has the same choice between an option whose outcome is certain and a high-risk option: (i) planting crops on a plateau, which is sure to yield a harvest of food which will allow him to live at a modest level comfortably above subsistence, or (ii) planting crops in the hills, which is 50% likely to yield just enough for bare, Spartan subsistence and 50% likely to yield a rich abundance of food which will allow him to feast in splendid luxury. If planting in the hills yields abundance, the person who chose the plateau has no grounds for complaint of unfairness that he's poorer than the person who chose the hills, since he freely chose not to pay the cost (of exposure to the same risk in this case) which was a necessary condition of abundance. If the hills yield nothing more than bare subsistence, the person who chose them has no grounds for complaint of unfairness that he is poorer than the person who chose the plateau, since he had the same sufficiently good alternative whose outcome was certain; nevertheless, he found it worth his while to expose himself to this risk for the prospect of great gain. Similar things can be said about a case in which both individuals choose to gamble by planting in the hills and the one person's crops yield an abundant harvest and the other's bare subsistence: the inequality is fair, since they each had the same sufficiently good alternative whose outcome was certain; nevertheless, they each chose an option which carried with it the same known risk of loss.[22]

In the article from which this example is drawn, I claimed that a sufficiently good, risk-free alternative in absolute terms was a necessary, but not a sufficient, condition of the fairness of such a choice to gamble.[23] I maintained that it was not a sufficient condition on the following grounds. It would be unreasonable to opt for such a risk-

[22] This paragraph reproduces parts of a paragraph from Otsuka 2004, pp. 153–54.

[23] See Otsuka 2004, pp. 153–56, esp. p. 153.

free alternative in favour of a gamble in cases where the downside risk of a gamble is no worse than the alternative involving certainty, or it is slightly worse, but the expected value of the lottery far exceeds the option involving certainty. Whereas I still think it would be reasonable to reject this alternative in favour of such gambles, I am now inclined to endorse the view that such a sufficiently good alternative is not merely necessary, but also sufficient to ground the full fairness of such a gamble. I now favour this view for the following reason. When the risk-free benchmark is sufficiently good in absolute terms, one is not compelled, by the undesirability of the risk-free benchmark, to take the gamble. Rather than being repelled by the intrinsic badness of the risk-free benchmark, one is merely attracted to a gamble which departs from this benchmark by the lure of its greater expected value. One might think that the fact that the latter gamble is 'too good to pass up' renders it coerced, and for that reason unfair. But this would be a mistake. In any sense of 'coercion' which is inconsistent with fairness, 'too-good-to-pass-up' gambles are not coercive.

For reasons I have offered in my above discussion of a varying sequence of cases, I would also now extend my account of the perfect fairness of lotteries to hypothetical as well as actual choice: i.e., to cases in which a lottery involving equal chances would have been chosen over an alternative involving equal portions which are sufficiently good in absolute terms. Such lotteries are perfectly fair even in the absence of actual choice, where such hypothetical choice reflects people's actual preferences for lottery chances of a good. Perhaps the value of *equality* is realized to a greater degree when there is a division of a tangible good into equal portions rather than the equal chance of an unequal outcome that a lottery confers. Nevertheless, the equiprobable lottery is a *perfectly fair* procedure of allocation just in case it provides a distribution of equal chances to equal claimants which all rationally prefer to a division into equal portions that each constitute a sufficiently good risk-free alternative to that lottery.

I shall conclude with some observations regarding the light my account sheds on a memorable hypothetical case of James Fishkin's involving a random reassignment of newborns to different parents at birth so that each has the same chance of being raised by wealthy parents as any other. Fishkin maintains that 'equal life chances, in a quite precise sense, would result from the arrangement', since '[a]ny newborn's chance of reaching any highly valued position would be precisely equal to that of any other newborn infant'.[24] Few, however, would maintain that such a birth lottery would render the outcomes fair no matter how great these inequalities. As Brian Barry has observed:

[24] Fishkin 1983, p. 57.

> But surely there is something very weird about a notion of [fair] equal opportunity such that a system of unequal opportunity (e.g., massive differences in life chances depending on one's parentage) could be magically transformed into one of [fair] equal opportunity simply by switching babies in their cradles and leaving everything else the same. Suppose that this has in fact been carried out secretly over many years in some country marked by great inequalities of opportunity in the ordinary sense (a rigid caste system if you like).[25]

My account can explain why such a birth lottery would fail to render things perfectly fair. The hypothetical benchmark of a risk-free alternative involving equal outcomes would need to involve a fairly dire state of affairs for it to be rational to reject it in favour of a gamble involving an equal chance of being born into different places in a rigid caste system or other highly unequal arrangements. Hence, such a lottery would not be chosen against the benchmark of a sufficiently good risk-free alternative. For this reason, the choice would be less than completely free. Rather it would, to some extent, be forced by necessity. Insofar as the choice to engage in a lottery was forced, the complaint of unfairness of the inequality of its outcome is not completely silenced by the fact that the lottery was chosen. It is not completely silenced even when this lottery involved equal odds among equal claimants. If, by contrast, entry into such a lottery were fully free, by virtue of the fact that it was chosen against the benchmark of a sufficiently good risk-free alternative, that fact would eliminate any complaint of unfairness regarding the inequality of the outcome. The fact that this lottery was freely chosen against a background of equal opportunity, rather than forced by necessity, renders it perfectly fair.

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[25] Barry 1988, p. 32. Barry's point is about the Rawlsian notion of fair equality of opportunity.

COMPETING INTERESTS

The author declares that he has no competing interests.

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