Just lotteries

Social institutions employ different sorts of procedures for allocating benefits and burdens. In western, industrial societies these procedures fall into three somewhat crudely drawn categories. Two of these are common and carry with them familiar justifications from political philosophy. Adjudicatory mechanisms measure claims for benefits or for relief from burdens against standards of social value or entitlement. The justification of an adjudicatory mechanism flows more or less straightforwardly from the pedigree and substantive soundness of its allocational metric. Markets permit persons to trade towards benefits or away from burdens. The justification of a market mechanism is typically found in its ability to reveal and respect individual preferences and hence social value, and the extent to which it facilitates the autonomous choices of its participant traders.

The third category of allocative device is neither common nor easy to locate on the map of political philosophy. Lotteries are distinguished most prominently by the fact that they eschew rather than embrace identifiable elements of personal desert or social value; lotteries are driven by chance, not reason. Attempts to justify the apparent caprice of allocations by lot are further confounded by the fact that the rare occasions upon which social entities have been

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moved to employ lotteries typically have involved grave rather than trivial stakes. Lotteries thus appear in just the sort of cases — the allocation of (scarce) kidney dialysis machines and military conscription — where merit, utility and autonomy seem to figure with special force, making the blind choice of allocation by lot especially problematic.

In this essay we try to make some sense out of lotteries. Our concern is with social allocations that do not involve express agreements of the competing claimants to the pertinent social good. We will refer to instances of such social imposition of allocations by lot as “social lotteries”. There are two questions that any satisfactory account of these rather mysterious allocative devices must answer: first, when is it morally appropriate to allocate social benefits (including the benefit of being exempt from a social burden) by lot? And second, assuming that in a given instance an allocation by lot is morally appropriate, what are the essential procedural qualities of a lottery that enable it to fulfill its morally appointed role? We can provide a shorthand for these inquiries, asking in the first instance what makes a lottery just, and in the second, what makes a lottery fair.

Naturally, these two inquiries are interactive rather than hermetic. One cannot inquire into the justness of lotteries without knowing in some detail what counts as a fair lottery, and conversely, one cannot know the details of what counts as a fair lottery without knowing the requirements of the moral theory pursuant to which some form of allocation by lot is appropriate. As with all such problems, however, one is obliged to start somewhere. We have chosen to begin with the comparatively narrow, procedural question of what makes a lottery fair, and to build from there to the question of when it is just, to use a lottery mechanism at all. Thus, some aspects of our fairness discussion will necessarily be contingent on issues that will not be aired until we take up the question of what makes a lottery just.

We set these inquiries against the backdrop of a class of moral theories which roughly can be call rights-based. We put utilitarianism to one side, if only because the analysis of lotteries is unremarkable for the utilitarian. Normally a utilitarian will prefer allocative procedures that are positively linked to utility, like markets, or appropriately tuned adjudicatory mechanisms. Allocation by lot will commend itself to the utilitarian if and only if the costs of allocation by a more conventional mechanism exceed its utility-seeking
advantages, resulting in a lower social utility net of allocation costs than the expected yield of a lottery. This is likely to be the case only when definitive utility information for substantive allocative criteria is costly or impossible to obtain. Rights-based theories, in contrast, postulate the existence of rights or other robust forms of entitlement in many important allocative contexts. Such entitlements offer analytically more interesting prospects for the use of lotteries than does the imperative to maximize utility.

I. What makes a lottery fair?

A lottery allocates a benefit (sometimes called a “prize”) among a designated group of potential beneficiaries (“candidates” who comprise a “pool”) according to a stipulated procedure (the “payoff condition”). The payoff condition is stipulated by some person or persons with the authority to effectuate the allocation (the “allocating agency”).

When we think of allocating a benefit “by lot”, we have in mind payoff conditions on the order of those that turn on the toss of a fair coin, the roll of a fair die, or the drawing of a lot from a thoroughly mixed set. In the very idea of a “fair” coin or die there inheres the element that drives our naive view of what makes a lottery itself fair, equiprobability: when and only when a lottery’s payoff condition gives each member of the pool an objectively equal chance to receive the benefit do we think of the lottery as fair. But this preanalytic sense of what makes a lottery fair requires closer scrutiny on two levels. First, a close account of what kinds of payoff conditions are objectively equiprobable yields some startling results: under many common circumstances, for example, loaded dice, weighted coins and other mechanically “biased” mechanisms can provide a lottery with objective equiprobability. Second, despite our initial sense that equiprobability is both a necessary and sufficient condition of a fair lottery, there are substantial arguments for the less restrictive requirement of impersonality in its stead. Impersonality for these purposes is a negative quality; it denotes a refusal to prefer or disprefer members of the lottery pool because of their attributes or circumstances.

We address these questions in turn.
Consider first a simple and pure example of a satisfactory payoff condition: each candidate draws, after a thorough random mixing, one of six lots, each of which is inscribed with a number from 1 to 6; a fair six-sided die is then rolled and the prize is awarded to the candidate whose lot corresponds to the number on the upturned face of the die. There is no doubt that this payoff condition is equiprobable, and no doubt that this is a fair lottery, entirely appropriate to any circumstance where our moral theory permits or insists upon a distribution by lot among the six candidates.

Suppose, however, we change the lottery, and we use a “loaded” die which always favors one or more of its faces. The lottery remains fair, and moreover, its fairness can still be explained by observing that the possible outcomes are equiprobable. When a payoff condition employs more than one device that we traditionally think of as “random”, we do not require that every included device be equiprobable, but only that the payoff condition as a whole function equiprobably, and thus that each candidate have an equal chance of success overall. This is the principle of convolution, and it functions in our loaded die variation on the pure lottery as follows: however badly biased the die may be, the equiprobability of the initial fair draw of the numerically inscribed lots produces equiprobability overall in the candidates’ chances of getting the prize. To understand why this is so, suppose the worst version of our loaded die case, with a fair draw of lots followed by the roll of a die that always comes up the same, say with its “6” face upturned. Now suppose a second lottery in which we announce that the winning candidate will be the person who draws the lot marked “6”, then have a fair draw. In principle these are the same lottery, with the roll of the loaded die in the first instance functioning merely as a rather ornate and delayed way of saying that the winner is the person who draws the lot marked “6”.

There is nothing conceptually remarkable about the principle of convolution, but it explains why many lotteries with quirky or unknown elements subsumed within their payoff conditions are fair. In our loaded die case the payoff condition can be thought of in two stages: first, the linkage stage, in which an individual is associated with a particular outcome, and second, the bounty stage, in which the winning outcome is chosen. If either of these stages is subject to an objectively equiprobable choice mechanism, the
resulting lottery will be equiprobable, no matter how odd, complex, or biased the other stage may be. Thus, if we go back to our original draw-lots-then-roll-die example, and stipulate that the lots are drawn from a hat under circumstances where we are unsure that the draw from the hat is equiprobable but where we know the die to be fair, the lottery remains equiprobable.\textsuperscript{4}

The equiprobability requirement is more generous than it may appear in another respect as well. Let us distinguish three temporal points in the lottery process: (1) the invocation moment, when the allocating agency commits itself to an allocation among the candidates on the basis of a stipulated payoff condition; (2) the vesting moment, after which no intervening circumstance can change the outcome of the lottery; and (3) the equiprobability moment, which is the moment at which the payoff condition satisfies the requirement of equiprobability. The question is what if any temporal relationships among these three points are necessary. One such relationship is required by the very nature of the lottery process. The vesting moment must come after the equiprobability moment; if all the candidates have an equal chance of winning the lottery at time $t$, it must be the case that at $t$ the payoff condition has not yet vested. Our cases so far have embodied a second temporal relationship as well, which may seem to be required by equiprobability but in fact is not; namely, that the equiprobability moment come after the invocation moment.

This second relationship suggests itself because it seems wrong at first blush for an allocating agency which is required to use an equiprobable payoff condition to choose a contingency that has already vested, with the winners already chosen. Certainly, if the allocating agency knows the identity of the winners at the time it designates the payoff condition and invokes the lottery, the lottery can be neither equiprobable nor fair. But suppose that a payoff condition is objectively equiprobable at time $t$, that it vests at $t + 1$, and that at $t + 2$, without any knowledge of the outcome of the payoff condition, the allocating agency institutes a lottery which depends upon the payoff condition. Does anything prevent such a lottery from being treated as equiprobable and fair?

Consider two lotteries. In Lottery Alpha, faced with an allocation of one benefit among six candidates, we realize that remarkably enough we have a friend in a distant city who has a fair die on each face of which is inscribed a letter, and that the letters fortuitously correspond with the first letter in the first names of each of our
candidates. So we call our friend, who is scrupulously honest, and ask her to roll the die and tell us what the winning letter is. Clearly this is an equiprobable lottery, and clearly it is fair. In Lottery Beta we call our friend on a whim and ask her to roll the die, write down the result (without saying anything about it), place the paper in an envelope, seal it with her special seal, and mail it to us. Later our need to make a one-in-six allocation arises, and we announce our intention to base the allocation on the winning letter in the envelope which is already making its way to us. There is simply no plausible reason to regard Beta with any less favor than Alpha. Ignorance of the outcome of the Beta roll permits us to treat the earlier moment of equiprobability as if it persisted up to the moment that we open the envelope and read what is written on our friend’s terse missive. We can call this constructive persistence of equiprobability the principle of sustained fairness.

In combination, the principles of convolution and sustained fairness qualify many oddly constructed lotteries as equiprobable. Indeed, they are so potentially generous in their scope as to make it a matter of some challenge to avoid equiprobability. The improbable circumstance of a six-sided die with just the right letters on it on our Alpha and Beta lotteries, for example, was important to our story because an ordinary die would have required a linkage between the six candidates and the faces of the die, and many of the processes that would suggest themselves at the linkage would be equiprobable, and hence — per convolution — would enable the lottery as a whole to satisfy the equiprobability requirement.

**Impersonality as a competitor to equiprobability**

Equiprobability has very powerful sanitary characteristics. By suppressing all reasons for making an allocative choice, an equiprobable payoff condition necessarily supresses bad reasons. Imagine that we yet again confront a choice among six candidates, and realize that there happen to be six potential delegates of our allocative authority of whose proclivities we are quite certain, as follows:

1. Misogynous Max, who will choose candidate A because A is the only male candidate.
2. Monstrous Max, who will choose B because of her race.
3. Mercantile Max, who will choose C because she is professionally successful and hence “productive”.

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4. Medical Max, who will choose D because she is the youngest and healthiest of the pool.

5. Manipulable Max, who will choose E because he is sweet on her.

6. Matriarchal Max, who will choose F because she is his mother.

If we choose among the Maxes by the roll of a fair die or by some other equiprobable mechanism, the choice among the six candidates will be equiprobable, and the various "bad" reasons of the Maxes will be offset and neutralized. In effect, equiprobability absorbs bad (and good) allocative impulses, by reducing them to proxies for the candidates themselves. If the payoff condition is equiprobable overall, the outcome is in this sense sanitary.

But if this sanitary quality is all that is needed to make a lottery fair, then equiprobability is a sufficient but not a necessary condition of fairness. A less demanding condition, impersonality, can match the sanitary virtues of equiprobability. An impersonal choice is one that (a) ignores the attributes or circumstances of the candidates as reasons for choosing among them, and (b) does not depend upon attributes or circumstances of the candidates that plausibly could be expected to figure as reasons for choosing among them. When both of these conditions are met, the sanitary virtues of equiprobability are preserved.

A common class of impersonal payoff conditions consists of lotteries that are plainly based on chance, but which fail or may fail the requirements of equiprobability. Suppose, for example, that an allocating agency rolls a 365-sided die, and then allocates a prize among six candidates by awarding it to the candidate whose birthday is closest to but not later than the "date" (the nth day of the year) showing on the die's upturned face. If the allocating agency is ignorant of the birthdates of the candidates, this is an impersonal lottery. The birthdates of the candidates function as a mechanism for choosing, not a reason, since the agency is merely tagging the candidates; there is no thought that a particular candidate deserves to win because of her birthday, or that a better social outcome has been realized because a particular candidate's birthday was favored. And birthdates are "neutral" in the sense that they could not plausibly be expected to be reasons for choice. Nothing about this lottery, however, suggests that it will even approach equiprobability. Suppose the birthdates of the candidates A through F are in fact spaced sequentially throughout the year, and that candidate B was born on 30 April, candidate C on 1 May, and candidate D on 1 September.
Candidate B has 1 chance in 365 of winning the birthdate lottery, while candidate C has 123 chances in 365.

The birthdate lottery is suggestive of a quality that will often figure in the move from equiprobability to impersonality. Simple lotteries like our earlier dice examples are comparatively transparent, in the sense that it is possible to trace the workings of the payoff conditions and make reasonably accurate determinations of the probabilities that attach to various outcomes.10 Other lotteries, of which the birthday lottery is a rather mild instance, are comparatively opaque, in the sense that it is difficult or impossible to unravel or trace the workings of the payoff condition, and correspondingly difficult or impossible to assess the outcome probabilities. The opacity of these latter lotteries at once makes them appealing from the vantage of impersonality and unappealing from the vantage of equiprobability. If an allocating agency decides to make its award to the person whose fingerprints correspond most closely to the last suspect apprehended by the FBI, to the person with the thickest toenails, or the person with the largest pancreas — all in ignorance of any useful underlying facts — the resulting choice is impersonal but not necessarily equiprobable.11

The quality of impersonality is strikingly parallel to equiprobability in scope as well as sanitary effect. The principles of convolution and sustained fairness apply in full to impersonality. Thus when a lottery has both a linkage stage and a bounty stage, if either stage is determined by an impersonal mechanism the payoff condition will function impersonally overall. And by hypothesis a payoff condition that is impersonal at time \( t \) retains its fairness at \( t + 1 \) in the face of ignorance as to its outcome, since impersonality depends on ignorance rather than an objective state of the world like equiprobability. To understand how the principle of sustained fairness would operate in the context of impersonality, recall our earlier example of lotteries Alpha and Beta. In those lotteries the payoff condition was the roll of a fair die owned by a distant friend. In Alpha, after deciding to use her roll of the die as a payoff condition, we call her and ask her to roll it and report the result; in Beta she rolled the die and placed the unannounced result in the mail prior to our decision to use the outcome as the payoff condition. If we imagine that our friend has a loaded die, though we do not know which candidate the die favors, lottery Alpha satisfies our criterion of impersonality. Once more, however, our view of Beta should not
change. It too satisfies impersonality because our ignorance of the outcome allows us to invoke the principle of sustained fairness.\textsuperscript{12}

But equiprobability has a unique egalitarian virtue that impersonality can not supply. Equiprobable lotteries facilitate equal treatment \textit{ex ante}.\textsuperscript{13} Suppose we have a single good which is indivisible and two claimants of the good who each enjoy robust and equal moral entitlements to it. An equiprobable lottery has the unique capacity to divide a good probabilistically, making possible the allocation of a $1/2$ chance of receiving the good to each candidate.

In the end, therefore, the choice between equiprobability and impersonality may come down to the question of whether the operative moral theory demands or at least places a premium on distributions by lot that include the \textit{ex ante} egalitarian virtue of equiprobability. The burden of our discussion in section II is that some moral theories, under some circumstances, will make such a demand or will place such a premium. Under these analytical conditions, equiprobability is a necessary as well as a sufficient condition of a fair lottery.

\textit{Informal attributes of a fair lottery}

Thus far, we have been discussing the formal requirements of a fair lottery. These requirements would attach even if the actual details of a lottery mechanism were concealed in a "black box", and the lottery was being evaluated by dispassionate, rational observers, who knew only of its abstract features — such as equiprobability or impersonality. In the real world there are secondary, pragmatic concerns that demand the attention of a fair-minded allocating agency. We can think of these as informal requirements of a fair allocation by lot.

It is obviously important that a lottery look fair, especially to the candidates. It is also important that fair lottery protocols actually be carried out by the responsible officials, rather than subverted by carelessness or corruption. Equiprobability has distinct advantages over impersonality in addressing both of these pragmatic concerns. Equiprobable payoff mechanisms offer themselves up for validation and understanding,\textsuperscript{14} while impersonal mechanisms lend themselves more readily to suspicion and subversion. A die can be tested, and if fair and followed is self-vindicating. Impersonal conditions raise problems: if transparent, they are easily manipulated on behalf of
an intended outcome; if opaque, they are beyond comprehension and inspection, and can easily conceal events that violate the requirements of impersonality. Equiprobable payoff conditions have the additional advantage of being shrouded in an esthetic of equality that makes their acceptance as fair more likely.

A different sort of informal fairness-connected issue is presented by allocations which, as with the Mad Maxes lottery above, implicate rightfully deplored criteria like the race of the candidates. Although we can construct formally benign mechanisms that include the explicit use of racial identity, these mechanisms might serve to legitimate race as a criterion for other social choices where it could play a substantive role. They are also easily misunderstood or misconstrued, and very unlikely to be received dispassionately by losing candidates. We thus might well choose to preclude race and other deplorable criteria from payoff conditions, not because they inevitably make a specific lottery formally unfair, but because their use threatens both to corrupt other social institutions and to undermine confidence in the fairness of any lottery in which they appear.

II. What makes a lottery just?

With a working understanding of when lotteries are fair, we now ask when lotteries are just, when it is morally appropriate to employ a fair lottery as a means of allocating some benefit (including the benefit of being exempt from a burden). We can usefully start with a claim for social lotteries that, on its surface, seems straightforward: a social allocation by lot is just when (a) the good in question is to be allocated among a claimant pool composed of persons who enjoy equal moral entitlement to the good; and (b) there is not enough of the good to go around, to effectuate an allocation to each member of the claimant pool. The logic underlying this claim is obvious; scarcity prevents a full and equal allocation of the good among the claimant pool, and a fair lottery provides a means of effecting a limited allocation while respecting the equal entitlements of the claimants.

But equal entitlement and scarcity — in this context, at least — are concepts that bristle with complications, and the apparently simple case for social lotteries that depends upon these concepts suffers in full from their difficulties. We are thus obliged to take a
second and considerably closer look at each of these legs of the social lottery claim.

**Equal entitlements**

1. **The meaning of moral entitlement**

The moral circumstances of individuals are so extravagantly variegated that it may seem quite improbable that two or more persons would ever enjoy equal moral entitlements to a good. If this perception were correct, we would be forced to conclude either that social lotteries are of trivial, aberrant significance to a rights-based theorist, or that such a theorist would have to justify their use for allocations among unequally entitled persons (cf. Broome, 1984). But it is important to distinguish moral entitlement from moral worth and moral consequence. A person’s moral worth is a measure of her general moral stature, of her rank on the scale from sinner to saint. Moral consequence inheres not in persons but in choices among states of affairs: in any given state of affairs there will be circumstances that will be valued or disvalued from the vantage of the ruling moral theory, as well as those that will be value neutral. The moral consequence of the choice of state A over state B consists of those circumstances of either positive or negative moral value that distinguish the two states.

A person’s moral entitlement, in contrast, reflects the moral force of her claim to a particular good. The distribution of moral entitlement among rival claimants to a good can, under many circumstances and pursuant to plausible rights-based moral theories, be quite discrepant from the distribution of moral worth among the claimants and quite discrepant as well from the measures of moral consequence that would attach to possible allocations among the claimants. Robust moral entitlements — often called rights — typically derive their force not from a complex calculus of personal worth or a wide-ranging measure of moral consequence, but from rather stark and general features of the situations in which they arise. Hence the rights of Rose and Jasmine not to be killed by Violet can be equal, notwithstanding the fact that Rose has rather little to commend her to the world, while Jasmine has led a life of energetic virtue, has a handicapped husband who is heavily dependent on her, and is engaged in a research project of great social importance, along with colleagues who are emotionally and professionally invested in
her continued work with them. Equal moral entitlements are thus less rare than the moral complexity of the world may suggest.

2. The meanings of equal entitlement

The category of equal moral entitlements, without further refinement, is too broad and undifferentiated a base upon which to found the claim for social lotteries. Equal entitlements can arise in at least four quite different entitlement configurations. First, rival claimants to a good may have no moral entitlement to it at all, and be equally entitled only in the special sense that null equals null. This sort of radical non-entitlement might be true of strangers, among whom a billionaire is contemplating allocating her wealth. Second, rival claimants may have no direct entitlement to the good at all, but may be entitled to treatment as equals in the allocation process involving the good. Treatment as an equal does not demand equal treatment, but does demand that the interests of each claimant be fully and equally taken account of in the process of determining the appropriate allocation. Social allocations occur in environments that frequently may give rise to the rights of rival claimants to be treated as equals; the obligations of parents to children and of governors to the governed are classic instances of what many theorists would recognize as the obligation to treat persons as equals (see Dworkin, 1978). Third, rival claimants may not have independent entitlements to the contested good, but may be entitled to equal treatment with respect to the allocation of the good. The right to equal treatment goes beyond the right to treatment as an equal, which is its predicate: equal treatment is just that; if Rose is to be given the contested good, then for precisely that reason Jasmine is entitled to the same good (see Simons, 1985). The social allocation of lifesaving medical therapy may commend itself as a setting where the mortal stakes of the rival claimants give them rights to equal treatment. Fourth, rival claimants to a good may have independent, but equal, entitlements to it. The equally strong rights of Rose and Jasmine not to be killed by Violet are an instance of this form of equal entitlement. Under some circumstances independent and equal entitlements may be competitive; that is, they may in effect be rights to the same good, leaving their holders equally entitled to the good. As a shorthand, we will call such independent, equal and competitive entitlements “competing entitlements” (or “competing rights”). These four senses of what it means to be equally entitled cover a broad range of entitlement force. Competing entitlements are freestanding, and in
this sense absolute. Entitlements to equal treatment are conditioned on the treatment of others. Entitlements to treatment as equals are entitlements to process or rationale, not to an outcome at all. And null entitlements are reassuring only in the sense that one’s rival is no more entitled than one’s self.

Cases where members of the claimant pool are equally entitled to a good only in the sense of null entitlements are not particularly interesting for our purposes. Presumably they leave the allocating agency free to pursue any allocative mechanism, including a lottery, but they do not support an affirmative claim for lotteries on grounds of justness. Each of the other forms of equal entitlement can play a role in making some form of an affirmative claim, and will figure in our discussion of such claims. We emphasize the distinctions among them here because these distinctions play out in the analysis of justice-driven claims for social lotteries in important ways.

**Equal entitlement and the justness of social lotteries**

We can now begin to take up the claim that lotteries are just mechanisms for allocations of a good to an equally entitled claimant pool when there is not enough of the good available to satisfy the needs or desires of the entire pool. In so doing we are getting ahead of ourselves, of course, since we have yet to contend with the difficulties that attach themselves to the critical notion of scarcity. But important questions arising out of the claim for social lotteries as just connect with the notion of equal entitlement, so we beg the reader’s indulgence and set aside the problematic aspects of the notion of scarcity for the moment.  

1. **The exclusive claim for social lotteries**

Initially, we narrow the claim for social lotteries to include only instances of equal entitlement in the sense of rights to equal treatment or in the sense of competing rights to the good itself, and strengthen the claim to the proposition that lotteries are the only just means of effectuating an allocation under these circumstances. We will call this narrowed and enhanced claim the “exclusive claim” for social lotteries, since it sees social lotteries as the exclusively just means of allocation under the stipulated circumstances.

The exclusive claim for social lotteries depends upon the egalitarian aspect of fair allocations by lot. The claim is in its essence
simple: what a social lottery offers is an equal division of a good that is otherwise indivisible. A lottery constitutes a probabilistic division of the good \textit{ex ante}; instead of getting one unit of the good each member of the lottery pool gets a $G/P$ chance at one unit of the good, where $G$ is the number of units of the good available and $P$ is number of persons in the entitlement pool.\textsuperscript{17} On this account a social lottery is just because it permits an equal allocation of the good consistent with the equal entitlements of the claimant pool. It is exclusively just because the only other means of respecting those entitlements is to make no allocation at all, an option that suffers other justice-related liabilities.

Both of these last observations require some analysis. The proposition that making no allocation at all is the only non-lottery means of respecting robust and equal moral entitlements to a scarce good requires defense against the possibility that an adjudicatory allocation is as good or better a means of doing justice among such entitled claimants. This issue is entwined with understandings of the robust forms of equal moral entitlements, and so we take it up here. Likewise, the proposition that making no allocation at all is itself infirm demands defense. The possibility of doing justice by doing nothing is more closely connected with the problems of scarcity, and so we table it until we consider scarcity below.

The equal distribution rationale which underlies the exclusive claim for social lotteries has obvious implications for our discussion, in Section I, of equiprobability and impersonality as rival understandings of the sufficient conditions of a fair lottery. Equal distribution depends on the capacity of the social lottery to provide a form of equal treatment, and hence seems better served by a conception of fairness that demands equiprobability. But even a lottery that is fair only in the sense of being impersonal may be a strong "second-best" social option under the equal entitlement conditions that characterize the exclusive claim. The more fundamental question is whether a lottery which offers the most that a lottery can offer — equiprobability — is to be preferred or dispreferred over an appropriately tuned adjudicatory mechanism in cases of robust equal entitlements.

2. \textit{The challenge on behalf of adjudication: social value as a tie-breaker}

An adjudicatory allocation assumes that there is a metric of personal virtue or social value against which competing claimants are to
be measured in the adjudicatory process. Since the exclusive claim for social lotteries stipulates the existence of a pool of claimants who enjoy either rights to equal treatment with respect to the distribution of some scarce good, or competing rights with respect to the good itself, it may seem that there is no relevant matter left to adjudicate with regard to these claimants. But what of the role of adjudication as a tie-breaker? On this view the equal entitlements of the claimants in effect cancel each other out, and what is left may include elements of social value that may appropriately determine the allocation among the claimants.

If the tie-breaker view is correct, then the claim for social lotteries as the only just means of allocating a good among equally entitled claimants fails. There may remain justice-based reasons to be wary of adjudicatory mechanisms in cases of this sort — indeed we will consider them when we consider the non-exclusive claim for lotteries (below, pp. 501–2) — but they are not so definitive or pervasive as to justify the claim that the use of adjudicatory mechanisms to break entitlement ties is intrinsically unjust. In cases where the elements of tie-breaking social value loom large, and the risks of adjudicatory mechanisms are relatively small, adjudication will be a serious competitor with allocation by lot. The exclusive claim for allocations by lot thus depends on a rejection of the tie-breaker view.

This observation leads us to consider the tie-breaker argument more closely, and hence to the heart of a serious problem in moral theory. Consider the following story. Violet has lost control of her speeding car and is approaching an intersection where Rose and Jasmine stand, paralyzed with fear; her only options at this point are to hit and probably to kill either Rose or Jasmine. This is Rose of our earlier story, who has little to commend her, and Jasmine, upon whose shoulders a measurable share of the free world’s well-being seems to depend. If Violet hits Jasmine, she is also likely to hit and destroy a magnificent sculpture which has been erected on the sidewalk adjacent to where Jasmine is standing.\(^{18}\) Rose and Jasmine surely each have equal, independent rights not to be killed by Violet (these are good examples of what we have called competing rights). Is it nevertheless morally appropriate for Violet, who is aware of all this, to choose to hit Rose on the grounds that Jasmine’s death would entail a great loss of social value?

There are two possible responses, which we will call the dominant rights view and, as already introduced, the tie-breaker view. The dominant rights view insists that it is wrong to treat competing
moral claims as though they literally cancel each other out and leave the field of choice where it would be if there were no moral claims at all. In other words, it is a mistake to treat offsetting claims of robust entitlement as though they were null entitlements.

On this view neither Rose’s nor Jasmine’s equal right not to be killed can offer a reason for choosing one over the other, but their rights most certainly function as a reasons for not choosing between them on certain grounds; these moral claims of right are in competition, but they do not go away, and they entitle their holders not to be dispreferred on grounds inconsistent with their continuing rights. Rose and Jasmine each have a right not to be killed by Violet, and that right is plainly dominant over many other circumstances of social value, including any features of either’s life that do not qualify her right not to be killed and including the survival of the magnificent sculpture next to which Jasmine stands. The presence of the rival claimant with an equal right does not change this basic moral fact: each continues to have a right not to be killed, on account of the statue or any other element of social value over which her right in isolation would have enjoyed dominance. Under non-competitive circumstances the right not to be killed is not conditioned on some threshold of moral worthiness, and the right is not conceived of as having variable weight, depending on the victim’s moral worth or the moral consequence of the death of the victim. The right not to be killed is distinct from, and superior to, these other matters. This is a fortiori true of the statue, which could never compete with the recognition of — or otherwise qualify — the right not to be killed. The dominant rights view holds that it is wrong to let these subordinated claims of social value back into the picture at this later stage of analysis and effectively permit them in turn to subordinate the rights of Rose and Jasmine not to be killed.

The argument for the tie-breaker view responds that by recognizing and acting upon attributes of social value that distinguish between Rose and Jasmine we do not subordinate the rights of Rose and Jasmine to these attributes. Suppose, for example, that it was clear that if Violet were to steer towards Rose, Rose would be killed, while Jasmine would “only” be injured if she were the target, though sufficiently seriously to place in great jeopardy her value as both spouse to her handicapped husband and colleague to her fellow-researchers.19 Even if we were committed to the tie-breaker view of allocations to equally entitled claimants, we might well believe that Rose’s right not to be killed was stronger than Jasmine’s right
not to be badly injured. If we did, the loss of social value that
attended Jasmine’s injury and the destruction of the statue next to
which she is standing would make no difference; withal, we would
be committed to the view that Violet was morally obliged to steer
towards Jasmine. The rights of Rose and Jasmine not to be killed
thus have real meaning and force in our moral analysis generally.
But when we reach an impasse, and one of these rights must neces-
sarily be violated, the tie-breaker view argues that a good reason for
choosing which right is to be sacrificed is considerably better than no
reason. One right has to be spent; surely a return of social value
should be preferred to no return at all.

This last proposition returns us to the heart of the exclusive claim
for social lotteries. The exclusive claim ultimately rests on the per-
ception that a choice among equally entitled claimants to a scarce
good based on the outcome is *not* a choice made for no reason at all.
The reason for a choice by lot is that it is the only way of making some
allocation while respecting the equality of rights that characterizes
the entitlement pool. The lottery offers equality; it divides the scarce
good into probabilistically equal units. This emphasis on doing jus-
tice to the equality demands of the situation suggests that we should
further refine our analysis; thus far we have been treating as identi-
cal for these purposes the case of rights to equal treatment and that
of competing independent rights. On closer consideration, the case
for the dominant rights view may be considerably stronger with
regard to rights to equal treatment.

Consider how we would arrive at the view that Rose and Jasmine
were entitled to equal treatment with regard, say, to the allocation of
kidney dialysis machines. Imagine that we were public officials
charged with the awful task of deciding who among a claimant pool
of persons suffering from renal failure should be given access to the
scarce supply of kidney dialysis machines at our disposal. Among
the pool of claimants, we assume, are persons like Rose and Jasmine,
who arrange themselves at opposite ends of the social value
spectrum, as well as many who fall in between. Nevertheless, it
seems quite plausible that we would conclude that the mortal stakes
riding on the allocation of our machines made it morally wrong to
distinguish among the claimants on the basis of the value to society
of their continued life. To respect their personhood, to respect them
as persons — we might reason — is to value their survival, and it is
wrong to value the survival of one person any more or less than that
of another.

\footnote{20}
Having thus decided that Rose, Jasmine and the other members of the claimant pool are entitled to equal treatment, notwithstanding the consequential differences in social value signified by their lives, it would be bizarre to turn around and admit those same discrepancies in social value back into the picture as an allocative tie-breaker. We have just taken account of and discounted these matters out of moral necessity. Only by blinding ourselves to the moral reasons for concluding that Rose and Jasmine are entitled to equal treatment could we countenance a social value tie-breaker.\textsuperscript{21}

This analysis suggests a tidy resolution of the dominant-rights issue: treat rights as dominant in the case of rights to equal treatment, and use discrepancies in social value as a tie-breaker in the case of competing independent rights. But matters do not fall out quite that simply. Given that we are operating within the confines of a moral theory that recognizes rights to equal treatment, we are likely to discover that most if not all instances of competing independent rights carry with them, or at least imply, rights to equal treatment. It may be that it is appropriate as a matter of course to cede rights to equal treatment to persons who hold competing independent rights. But even failing such per se conversion of competing independent rights, we can expect that the special moral cachet underlying the independent rights in question will often be the decisive element in the analysis of a claim of right to equal treatment. Consider, for example, the competing independent rights of Rose and Jasmine not to be killed by Violet. In a moral scheme that recognized rights to equal treatment, we would expect that the impulse behind giving persons the right not to be killed would likewise inspire the conclusion that persons have rights to equal treatment with regard to not being killed by the same threat. The portability of moral reasons from the environment of independent rights to that of rights to equal treatment should be common in attractive moral theories.

In any event, decisions by social entities are likely to implicate rights to equal treatment with respect to the allocation of a good rather than competing rights to the good itself. Within the analytical domain of rights-based theories that generate rights to equal treatment of the sort we have posited with regard to the allocation of kidney dialysis machines, there will thus arise cases where equally entitled claimants pursue a good which exists in too scarce a supply to satisfy their claims, and as to the allocation of which the use of a social value tie-breaker will be morally inappropriate. Such cases
demand some mechanism for treating the rival claimants equally, and lotteries commend themselves as such mechanisms.

Not all rights-based theories will recognize rights to equal treatment in the generous form we have considered, however. Absent such rights, the dominant-rights/tie-breaker issue may be more open to divergent views. One’s view of the issue will then be critical to one’s view of the exclusive claim for social lotteries. Under the dominant-rights view, a social lottery may well be the only means of doing justice among equally entitled claimants to a good. Under the tie-breaker view, a lottery may be one way of doing justice among equally entitled claimants, but to use a lottery under these circumstances is to be indifferent to the social value that could be recovered by a adjudicatory mechanism, and the squandering of such social value requires some further justification.

3. The non-exclusive claim for the justness of social lotteries
The non-exclusive claim for social lotteries also assumes scarcity, but requires equal entitlements only in the more modest sense of entitlement to treatment as an equal. The claim is also more modest in its payoff, arguing only that concerns of justice may commend lotteries over social-value seeking allocative devices under certain circumstances.

The non-exclusive claim rests on two propositions. First, social value-seeking mechanisms — adjudication and markets — will in some settings create or exacerbate patterns of social injustice; the risk of such distributional injustice is a good reason for social allocators to avoid the use of social value-seeking mechanisms in these settings. And second, the obligation to treat persons as equals permits unequal allocations that are justified by gains in social value but sharply limits unequal allocations that are not so justified. Given these propositions, the structure of the non-exclusive claim for social lotteries to allocate some scarce goods is obvious. On the one hand, the adjudicatory or market pursuit of social value is compromised in some circumstances by concerns that injustice will be exacerbated by such mechanisms. On the other, the obligation to treat persons as equals sharply limits social options in default of gains in social value. Social lotteries offer a means of making allocations of scarce resources that satisfies the right to be treated as an equal but does not implicate the concerns that may justifiably attach to social value-seeking mechanisms.
But neither of these founding propositions of the non-exclusive case for social lotteries is self-evident, and we want to subject each to some scrutiny. We will treat here the entitlement-connected issue of what limits the right to be treated as an equal places on social allocations in default of social value-based justifications for unequal treatment. We will postpone the discussion of the injustice potential of adjudicatory and market allocations until the related question of scarcity is addressed below.

4. The views of the right to be treated as an equal
A fair lottery is sanitary both in the sense that it does not permit factors that constitute, correlate with, or symbolically affirm extant elements of social injustice to drive allocative outcomes, and in the sense that it is indifferent and hence neutral among the members of the lottery pool. These sanitary qualities have obvious egalitarian virtues. A lottery can offer still more in the service of equality; if it is equiprobable, it can effectuate probabilistically equal divisions of a good ex ante, as we have seen. The question is whether the non-exclusive claim for social lotteries, predicated as it is on the right to be treated as an equal, directs us to the more demanding condition of equiprobability or whether it is fully satisfied by impersonality. It is a question that exposes two understandings of the right to be treated as an equal.

The right to treatment as an equal promises that one’s interests — one’s welfare and entitlements — will signify fully and equally in the decision-making process of the relevant social entity. It is clear that this right is violated when social entities favor some persons over others for the wrong reasons. What is not clear is whether the right is violated when the social entity acts to favor one person over another for no reason at all. The right can be conceived as essentially negative, violated only when a social act is occasioned by unequal concern for the interests or entitlements of some members of the affected population. On this view, a social allocation that is genuinely arbitrary, that disfavors some persons in result but is in no sense personal to them, does no disservice to the right to treatment as an equal. The right can also be conceived in more affirmative terms, as insisting that persons be treated equally in the absence of legitimate reasons for differentiation. On this view, arbitrary and unequal allocations of social benefits are violative of the right to treatment as an equal. Equiprobability is a virtue under either view, since it can only be understood as improving the allocative picture.
from an egalitarian perspective. But on the first view, equiprobability merely adds a social value to the lottery process, special only in that it is a form of social value the pursuit of which does no violence to impersonality (indeed, as we have seen, on p. 491 above, equiprobability is a useful means of assuring honest impersonality). On the second view of the right to treatment as an equal, in contrast, equiprobability is necessary to a fair lottery.

**Scarcity**

1. *The extent of scarcity*

In most realistic problems of social allocation, such as those presented by conscription and renal failure, the scarcity of the benefit to be allocated arises not from nature or acts of God but because some social organ has decided not to produce the good in a greater quantity. Our prior discussion has thus assumed implicitly that the evaluation of these social allocations could be divided into two independent stages: (a) an evaluation of the justice of the decision determining the amount of resources to be devoted to a particular problem or group (the “production” stage); and (b) an evaluation of the mechanism used to allocate the predetermined resources among the equally entitled claimants (the “distribution” stage).

To a large extent this evaluative independence of the production and distribution stages seems justified. Obviously rights to treatment as equals or to equal treatment do not, by themselves, involve or imply entitlements to a particular level of production. Society, in these cases, has no moral obligation to satisfy completely the needs or desires of each and every claimant. Consequently, in these cases we may reasonably consider the justice of the choice determining the level of production separately from the justice of the mechanism of distribution of the scarce good.

Equal and independent rights to a good present a more complex picture. In some instances a social entity which, though able to, failed to produce and allocate sufficient goods to satisfy rights to the good itself would have acted unjustly. Such injustice arises, for example, if a wealthy society fails to produce enough food to meet the minimum nutritional needs of each of its members. In other instances, however, an independent entitlement may not give rise to a full claim of social satisfaction. Our independent entitlements not to be killed, for example, do not clearly give rise to claims against
society that it devote vast resources to the complete elimination of all risks and hazards or to our medical care in the event of accident. Whether or not justice permits society to provide insufficient amounts of a good for distribution to satisfy independent entitlements, separate evaluation of the production and distribution decisions remains justifiable. If the scarcity is socially permissible, then evaluation of the distribution seems to stand on independent grounds. If, in contrast, the scarcity is unjust, the fact of its injustice obviously does not excuse the pertinent social entity from the obligation to allocate what is available justly.

The independence of the evaluation of these two stages, however, is not complete. The reasons for devoting some definite amount of resources to those with renal failure may dictate that these resources be allocated in particular discrete bundles; these same reasons may also function to bar or at least prejudice the option of making no allocation at all. Production and distribution rest entwined in the analysis of indivisibility and of the virtue of some distribution over no distribution. Our discussions of these issues, therefore, suffer from greater incompleteness and hesitancy.

2. Indivisibility
The distribution problem does not arise from scarcity alone. If each of twenty-four equally entitled individuals lays claim to one of twelve chocolate bars, justice apparently requires that we break the bars in half and give an equal piece to each claimant. Though physically and functionally possible in almost every case, we choose to frame the problem not as one of fair division but as one of just distribution of scarce goods. While we might divide up kidney dialysis machines either by dismantling them and distributing their parts or by allocating each claimant a less than optimum time on the machine, we see the problem, whether we choose an adjudicatory, market, or chance mechanism, as one of distributing not dialysis time but life-saving dialysis time.

In some cases the indivisibility of the goods is inherited from the production stage of the decision problem. This influence of the production stage on the distribution one seems clearest in cases where claimants only have rights to treatment as equals. In conscription cases, for example, society must choose whether to conscript anyone at all, everyone, or only some. To make the decision it weighs various social values; when it decides that concerns of efficiency dictate less-than-universal conscription, it also determines
that a specific number of tours of duty of a well-defined duration and nature are required. Thus, indivisibility derives from the resolution of the production problem.

A similar influence of the production decision on the distribution problem may operate in cases of rights to equal treatment and of equal and independent rights to a good. When society chooses to allocate 100 dialysis machines (each costing $100,000) to all sufferers of renal failure, it chooses something different from the allocation to those sufferers of the ten million dollars necessary to build the 100 machines. Society also chose the form in which it wished to allocate its resources; that form requires that the allocation save lives.

At least two different reasons might explain this production-stage requirement that the distribution save lives. First, we might imagine that, prior to any individual learning whether they will suffer renal failure, everyone would prefer a substantial chance to gain therapeutically optimal access to a kidney machine to the certainty of a small piece of such a machine. As the discrepancy between the personal value of a divided share of a good and the good in its undivided form grows, and as the chance of securing the good in its undivided form if it were allocated by lot grows, so too should our confidence that the good in its present form would meet this ex ante test of indivisibility.

Second, as mortal stakes cases indicate, robust rights of the equal treatment or independent variety typically arise in part because the good in question has a peculiar moral value. Certainly that is true of the view that persons enjoy a right to equal treatment with regard to the distribution of kidney dialysis machines; the capacity of these machines to prolong and enhance life is important to this claim of right. If the further division of a good would undo the claim of equal entitlement to it, that seems a powerful and independent reason for treating the good in its present state as indivisible.29

Scarcity and the justice of social lotteries

1. Non-allocation as a competitor to the social lottery
As in the case of indivisibility, the reasons underlying the production decision dictate that some allocation rather than none occur. We may understand this point most clearly in the conscription cases. Suppose that the production choice reduces to one among three alternatives: (1) universal national service of one year; (2) two years
of service for half the population; and (3) no national service at all. In selecting among the alternatives, society will balance the constraints on liberty imposed by conscription, social assimilation benefits of universal service, defense or national service needs, and concerns of efficiency in meeting these needs. Social selection of option (2) entails preferring allocation (2) to no allocation at all.

A similar argument obtains in the case of entitlements to equal treatment or of equal and independent entitlements to a good of which society has chosen to provide an inadequate number. If society would prefer no allocation of kidney dialysis machines to one by lot (or by adjudicatory or market mechanism), it should not have allocated any resources to the production of kidney dialysis machines. Whatever reasons underlie the production decision must also explain the preference for some distribution over none.30

Before continuing, it may be worth noting that the justification for some allocation over none is not the Pareto superiority of some distribution over none at all. Again the conscription case illustrates this clearly. If we consider only the preferences of those subject to conscription (and assume that each person would prefer no service to some service), option (3) will be Pareto preferred to both options (1) and (2). Moreover, evaluated after a lottery to determine who serves, option (2) is Pareto non-comparable to option (1) as those conscripted are worse off and those not conscripted better off. Finally, if each individual is risk-averse, option (2) considered prior to the selection of conscripts is Pareto inferior to option (1). If society selects option (2) regardless, it must do so for reasons other than its Pareto superiority.

2. Adjudicatory mechanisms and the non-exclusive claim for lotteries
As we have seen, even when claimants to a good are, in one sense or another, equally entitled to it, possible allocations may still differ along other dimensions of social value. In our discussion of the exclusive claim for social lotteries we argued that the dominant rights view would require the use of a lottery when entitlements to equal treatment or when competing rights were involved (see pp. 497–501). Here we seek to identify those qualities that recommend allocations by lot in cases of entitlement to treatment as equals or in the stronger entitlement cases when one adheres to the tie-breaker view. We shall argue that the crucial, disqualifying condition rests on the use of these criteria being injustice-exacerbating.
Recall the sanitary justification for lotteries. That justification invoked lotteries when society feared either the use of illegitimate, non-neutral criteria to allocate the good or the corruption of the agency charged with the distribution. A lottery served to insulate the allocation against the injustices inherent in these fears. The use of illegitimate criteria of selection and the corruption of officials, however, does not exhaust the ways in which adjudicatory mechanisms may prove unjust. Apparently "neutral" criteria, indeed criteria of social value, can, under some circumstances, exacerbate pre-existing injustices, or create new ones, in society.

How can an adjudicatory allocation which promotes an acknowledged social value exacerbate pre-existing injustices? The possibility appears particularly unlikely when we adopt a social value like moral worthiness. Nonetheless many of our conceptions of social value, even moral worthiness, derive from extant social conditions. The individual perceived as most socially useful may be one from a particular (higher) class family, educated at certain schools which give easier access to positions of power, and engaged in a profession that excludes, perhaps without the conscious effort of any member, individuals from other economic and social milieus. The award of the prize to the most efficient or most worthy may therefore reward those who have already profited most from the social structure. The conscription system used in the United States during the 1960s may provide a stylized example of the problem of injustice-exacerbation through an adjudicatory system. A motivation to adopt conscription by lot was that the system of "adjudicated" exemptions resulted in an army composed disproportionately of the poor and the black, classes who already suffered disproportionate social burdens.31

Moreover, systematic use of specific social values as tie-breakers in situations of equal moral entitlement may have two other adverse consequences. First, it would link the outcome of large numbers of allocations. This correlation of outcomes among various distributions32 would further exacerbate any extant injustices. Second, the correlation among outcomes might have disincentive effects on individuals from seeking the prizes. If, beforehand, everyone knows that the winner of a prize will be the most efficient or the most worthy those without prospects of being so designated may withdraw their candidacy.33
3. Market mechanisms as competitors to the social lottery

Society often uses market mechanisms to solve problems of the allocation of scarce goods. As solutions to these problems, market mechanisms differ from both adjudicatory mechanisms and lotteries in at least one important respect particularly relevant here, given our decision to treat the distributive stage independently of the productive stage: markets generally solve simultaneously the production and the distribution problem. Since we consider here only cases in which the number of units available for distribution is predetermined socially and unaffected by the outcome of the market process, we ignore an important feature of markets that may often argue in their favor.

To understand the circumstances under which lotteries would be preferable to markets we must understand how markets function. Market allocations depend on two factors: (1) the distribution of preferences in the market and (2) the distribution of wealth in the market. Thus, in general, if all claimants for a good have identical preference relations, then those with most wealth will generally prevail in bidding for the scarce good. Conversely, if claimants have identical wealth, those with the most intense preferences for the scarce good will generally bid most for it. On this account we might regard market mechanisms as adjudicatory mechanisms in which the relevant criteria for allocation are identified as wealth and preference. This perspective yields three conclusions immediately.

First, for cases of entitlement to equal treatment or of competing rights, and if one adheres to the dominant rights view, markets would be unacceptable. If the dominant rights view requires the assignment of equal probabilities in this case rather than the use of tie-breakers in general, it must also prohibit the use of wealth and preference, whether determined by a market or adjudication, as a tie-breaker.

Second, if use of wealth or preference as an adjudicatory criterion were injustice-exacerbating, it will remain so when it operates through a market. This argument carries particular force with regard to wealth. Wealth, after all, is often unequally (and unjustly) distributed in our society, and allocating further social benefits on the basis of wealth serves to exacerbate these inequalities and injustices.

Third, where preferences do differ among persons, and where wealth is equally distributed among claimants, markets apparently
have some clear benefits over lotteries. A market insures that scarce goods go to those who value them most; a lottery assigns the goods on the basis of luck. If the goods may not be traded after the lottery, nothing assures that those who value them most will have ended up with them. Furthermore, we might, without affecting its efficiency properties, design the market mechanism so that those who lose the bidding are partially compensated for their loss out of the payments of the winners.

These conclusions suggest that lotteries will appear more desirable than markets when either claimants have shared preferences over the scarce goods (so that use of the lottery does not abandon the efficiency quality of the market) or claimants’ preferences are considered irrelevant to the allocation of the scarce good and when the distribution of wealth among claimants is unjust (so that use of the lottery protects against the injustice-exacerbating quality of market allocations). These two characteristics seem most plausible in cases in which the scarce good to be allocated is incommensurable with money and other material goods.

Suppose Iris has a debilitating disease that leaves her bedridden, in pain, unable to care for herself and unable to participate in any normal activities. Suppose further that taking a full dose of miracle drug X will restore sufferers from this disease to normal health and a $p$ per cent dose of the drug offers a chance $p$ of being restored to full health. In one sense, Iris’s preferences for fractional doses of X seem no different from her preferences for chocolate; she prefers larger fractional doses to smaller just as she prefers more chocolate to less. Yet fractional doses of X are different because X offers the prospect of altering Iris’s capacity to enjoy life. At any given level of wealth, Iris prefers to be healthy rather than debilitated; moreover, almost no payment, however large, would make her prefer being debilitated and wealthy to healthy. Thus if Iris were poor and Daisy, a second sufferer of the same disease, were rich, we would not think it appropriate to auction off the single available full dose of X. The auction, since it measures value in terms of dollars, will conclude that Daisy values X more than Iris, but we think that, because X is not commensurable with money, Iris values X as much as Daisy does. Under these circumstances a market mechanism would fail to treat Iris and Daisy equally, as well as tending to exacerbate the already existing inequalities.
Conclusion

Social lotteries, by design, are blind to all good reasons for making hard social choices. They thus pose a riddle, of the form “When is it ever reasonable to use an unreasonable mechanism for allocating scarce and valued social goods?” Most riddles are solved by changing levels of discourse, and this one is no exception. Lotteries make unreasoned allocations, but a social entity may have the best of reasons for making an unreasoned allocation, namely, the doing of justice among equally entitled claimants. Scarcity, equal entitlement, and equal treatment are crucial to the vocabulary of justification for social lotteries, and each of these ideas when pressed runs quickly to the complex and controversial. We have tried to embed our discussion of social lotteries in an analytical framework that respects the native complexity of the ethical environment. But a short form of our conclusions is possible. Lotteries are just when and because they offer the possibility of sanitary, neutral and equal allocations of social goods under circumstances where these egalitarian virtues are otherwise unavailable. The necessary condition of a fair lottery is either impersonality or equiprobability, depending on close distinctions among competing notions of equality.


1. Our tripartite classification of allocation mechanisms is neither mutually exhaustive nor mutually exclusive. Most obviously, we have ignored voting (or legislative) mechanisms as allocation devices. As we make clearer in Section I, we consider allocations of "scarce" goods among equally entitled individuals. These allocation problems might best be regarded as the second stage in a two-stage decision process. In the first stage society decides how many resources to devote to those who prove to be equally entitled; in the second stage it decides how to allocate the goods among those entitled. In many instances we invoke legislative mechanisms at this first stage. We also often use legislative mechanisms at the second stage to select among adjudicatory, market, and chance mechanisms to govern the second-stage allocation. Consequently voting mechanisms enter into the analysis in a different and often prior stage.

To understand why this classification scheme is not mutually exclusive, we must elaborate a bit on the nature of the different mechanisms. In an adjudicatory mechanism, the arbiter makes two judgements. The first determines the relevant choice criteria; the second identifies the candidate who, on these criteria, ranks highest. This second step is a factual or evidential one. Litigation, the paradigmatic example of an adjudicatory mechanism, deploys the evidence before a neutral arbiter who then makes a decision. Other evidential mechanisms, however, exist. We might consider a competition or a tournament as a device for identifying the person who best meets the criteria implicit in the tournament: those qualities necessary for success. If we believe that a benefit should be awarded to the swiftest runner, organizing a 100 meter dash may be a reasonable way to identify the most deserving individual. Similarly, if we believe a given prize should go to the person who most desires it, then an auction market may be a reasonable way to determine who desires the good most. Thus, on this account, a market is one "sub"-mechanism for determining who best meets some predetermined choice criteria.

After the identification of the appropriate choice criteria, but before the inquiry into the relative ranking of the candidates, the distribution of the prize among the candidates is uncertain. In this sense every adjudicatory mechanism looks, in part, like a lottery. We explore this point below in our discussion of impersonality and "opaque" lotteries.

Finally, on this account, we may interpret legislative mechanisms as adjudicative. When the adjudicatory criterion identifies some other attribute or value as relevant, voting may serve to aggregate judgements as to who possesses the identified value. On these issues, see Kornhauser and Sager (1986).

2. A utilitarian might adopt a lottery to break ties among possible allocations with equal utility outcomes, or to avoid allocative disutilities like envy, disappointment or the perception of injustice.

A committed and energetic rule utilitarian, of course, could rebuild a "rights-based" theory of political morality by moving it to a foundation of utilitarianism. To be sure, this would restore interest to question of the justness of lotteries. But such a utilitarian should be quite content with the analysis that follows, which assumes some more or less familiar form of "rights-based" theory, and thus attempts to consider the justness of lotteries in a moral environment that is quite congenial to the mediating rules/rights to which she is committed.

Typically, rights-based theories will leave a substantial domain for social decision-
making that is unconstrained by sharp limitations of rights. Within this domain, concerns of social utility will prevail, and within this domain social decision-makers following a rights-based protocol might employ social lotteries for utilitarian reasons.

3. Suppose the die rolls a 2 with probability 1/2 and a 5 with probability 1/2. Candidate i has a 1/6 chance of drawing number 2 and a 1/2 chance of winning if she does draw number 2; she has the same chances with regard to drawing number 5 and winning with it. Her overall chance of success is therefore

\[(1/6) \times [1/2 + 1/2] = 1/6.\]

A similar calculation applies for any distribution \(P_i\) as in note 6.

4. Let \(P_i\) denote the probability that candidate A will draw the lot numbered \(i\). Then A’s chances of success in the lottery are given by summing over \(i\) the probability of his drawing \(i\) times the probability of \(i\) being the winning outcome, or

\[1/6[p^1 + p^2 + p^3 + p^4 + p^5 + p^6] = 1/6\]

since the sum of the \(p_i\) must equal 1, regardless of the distribution.

5. Mercantile and Medical Max may not look all that bad under some moral theories and for some allocations. But what appeal they have is in the direction of permissible adjudicatory standards. These Maxes would be acting on criteria that would not be morally appropriate in the equal entitlement cases which we posit as permitting or demanding allocation by lot. See pp. 495–502.

6. Equiprobability leaves a trace of a bad reason for allocative choice behind, in that the members of society will know that in some sense that bad reason was part of the allocations machinery. Some bad reasons, like race, may come freighted with unacceptable symbolism under these circumstances. See our discussion of informal fairness on pp. 491–2.

7. Our definition of impersonality may not itself be necessary for the fairness of a lottery. Other weaker conditions have been suggested as necessary criteria. For example, in an interesting article, George Sher (1980) offers a definition of a fair lottery that rests on the independence of the payoff condition from the desires (or preferences) of the candidates and the allocating agency. Our definition implies Sher’s in our exclusion of the use of the candidate’s attributes or circumstances as reasons for choice, any reason being necessarily linked to some desire of the chooser. Sher’s definition, on the other hand, does not consider as relevant the qualities of the candidates used to choose. He thus offers a conception of impersonality that relies on the absence of desire of relevant persons while our conception is more extensive.

Both Sher’s conception of impersonality and ours regard certain “natural” lotteries as unfair. For example, a choice between Rose and Jasmine based on which of them is more likely to benefit humanity might be regarded as a “natural” lottery if we regard their likely benefits to humanity as somehow beyond their control or the control of the allocating agency. Sher’s definition views this lottery as unfair because the choice of benefit to humanity as a criterion reflects the preference of the allocating agency; it fails our criterion because it uses an attribute or circumstance of the candidate as a reason for choice. In our later discussion, we treat mechanisms of this type as adjudicatory mechanisms. See pp. 506–7.

We share the intuitions that on occasion regard such mechanisms as fair lotteries but we would hope to explicate these intuitions in terms of our definition of impersonality and our inquiry into equiprobability. For some hints to our thinking on this matter see note 12.
8. Equiprobability, of course, satisfies these conditions, and hence is inclusive of impersonality.

9. Equi probable chances for each of the six candidates would require that each successive birthday be spaced 60.83333 days after the previous birthday. Given a 365-sided die this is impossible. Even if we knew that each person were born in a leap year so that equal spacing were possible, such spacing is highly unlikely.

10. Throughout this discussion, our reference to "objective" probability is a reference to either (1) frequentist views resting on observed physical properties of the world; or (2) logical notions that rest on a formal theory of rational inference. In either case, the requirement of equi probability commits one to more than a requirement of impersonality. Impersonality demands that the payoff condition be independent of the attributes and circumstances of the candidates; this requirement differs from equi probability because it admits non-equi probable mechanisms, in particular ones for which the probabilities are indeterminate. As we discuss in the immediately following note, this indeterminacy cannot be resolved by reference to the principle of insufficient reason.

11. Opaque lotteries are intuitively attractive, and it is tempting to reconcile their attractiveness with notions of equal treatment by appealing to the principle of insufficient reason. The principle of insufficient reason holds that in the face of ignorance of a probability distribution, one is to assume equi probability; more formally, when the actual or frequency probability distribution over \( n \) mutually exclusive and exhaustive outcomes is unknown, as a logical or conceptual matter one must adopt the density \( 1/n \) for each outcome. If we accept the principle and apply it to opaque lotteries, we will treat them as not merely impersonal but equi probable as well (see Keynes, 1921).

But the principle of insufficient reason is simply not a useful surrogate for objective equi probability in any case where we believe that equi probability matters. Suppose that we hold the birthdate lottery, and then realize that, given the actual distribution of birthdates among the candidates, the lottery was grossly inequi probable. If we believe that equi probability is a necessary condition of fairness, we surely could not believe that the birthday lottery was in fact fair. Opaque lotteries must find their justification in the virtues of impersonality, not equi probability.

12. We suspect that the intuition that natural lotteries that use some social or personal attribute or circumstance as a payoff condition relies in a complex way on the principle of sustained fairness. In the Rose and Jasmine hypothetical of note 7, for example, an apparent retreat behind the veil of ignorance at which time the genetic endowments and social positions of Rose and Jasmine were unknown underlies our sense of fairness of this "natural" lottery. The allocation of Rose and Jasmine to their individual characters and social standing then appears to be the result of an impersonal (in our sense) mechanism. We further suspect that this impersonality is necessary but not sufficient for the judgement of the fairness of the natural lottery. We hope to treat these and other issues in another essay devoted to natural lotteries.

13. Ex ante refers to matters as they stand before the event; ex post to matters as they lie after. For our purposes ex ante will usually refer to things before or at the moment that the lottery in question is instituted, while ex post will usually refer to things after the allocation dictated by the lottery's outcome has been effectuated.

14. At least if we are considering straightforward equi probable payoff conditions. The exotic lottery devices qualified as equi probable by the principles of convolution
and sustained fairness will not typically commend themselves on appearance of fairness grounds.

15. We return to this possibility in our discussion of the use of kidney dialysis machines, below at pp. 499–500.

16. We confront scarcity below at pp. 503–9.

17. The exclusive claim's stipulation that the good in question is too scarce to permit a full allocation to the entitlement pool presupposes that the good in some relevant sense is quantitatively — as opposed to probabilistically — indivisible. The concept of indivisibility is one of the problematic aspects of claims that depend on the scarcity of a good, since most goods can be divided in some quantitative way, if only by breaking them up and distributing the pieces. We consider indivisibility on p. 504.

18. We were introduced to tie-breaker cases of this general sort and to the problem they embody by Frances Kamm. Her thoughts are reflected in her paper, "Choice between People: 'Common Sense' Morality and Doctors" (1987).

19. This example and the point it supports were suggested to us by Ronald Dworkin.

20. It is important for our purposes to observe the difference between having a right to treatment as equals and having a right to equal treatment. But as this skeleton of an equal treatment argument shows, equal treatment may follow from treatment as equals under certain analytical circumstances.

21. A critic might respond that we have constructed the right to equal treatment shared by Rose and Jasmine in an implausible fashion. Such rights, it might be argued, are plausible only if fashioned on an abstract, all-other-things-considered-to-be-equal basis. On this account, once we move from behind the veil of abstraction and confront Rose and Jasmine as they are, all other things are decidedly not equal. But such a rendition of the right to equal treatment makes it a mere restatement of the right to treatment as an equal. It may be that an attractive, rights-based theory could fail to recognize rights to equal treatment, except in this redundant, per se sense of the right to treatment as an equal. If so, the exclusive case for social lotteries has to be understood as specific to that class of rights-based theories that do recognize rights to equal treatment under some circumstances.

A more modest response from the critic would be that a plausible construction of the right to equal treatment with regard to life-saving therapy would make scarcity an exception to the right. But it is hard to imagine an appealing moral theory which would find in the precious relationship of a person to her life a right to equal treatment, yet permitted that right to dissolve when exposed to scarcity. This is especially true if — as is likely to be the case in many moral schema — society is morally free to create an undersupply of goods as to which there exist rights to equal treatment. See p. 503.

22. Even without rights to equal treatment, there remain strong claims on behalf of the dominant-rights view. The proposition that it is wrong to allow the presence of an equally entitled rights holder to be the occasion for subordinating a robust claim of right to elements of social value over which the right in question is plainly superordinate can attach to competing independent rights without regard to a right to equal treatment.

23. Other analytical consequences may also ride on the dominant-rights/tie-breaker issue. If we are committed to the dominant-rights view, the question of whether "the numbers count" (see Turek, 1977) in life-and-death cases may become more difficult. If Violet's choice is between hitting and killing Rose or hitting and killing
Jasmine and her husband, the idea that all three would-be victims have continuing equal and independent rights is complicated. On what grounds if any could Violet choose the death of one over the death of two? Is she required in effect to have a lottery? What would the appropriate lottery look like? Would it require the equivalent of a two-sided or a three-sided die? (see Kamm, 1985). In contrast, the tie-breaker view simply points to the social value virtues of sparing two lives rather than one.

24. The arguments for the non-exclusive claim are at least as strong where there are equal entitlements in the more robust sense of entitlements to equal treatment or competing entitlements. If the exclusive claim has failed to persuade the reader, the non-exclusive claim thus gives social lotteries a second chance.

25. Such an event seems unlikely. Even in times of famine, starvation most often occurs not because production of food is insufficient but because the distribution of the produce is inadequate (see Sen, 1981).

26. The entitlement remains more than an entitlement to equal treatment or to treatment as an equal, however, in two senses. First, it only yields, in the production stage, to strong claims of social value or of other competing rights. Second, the entitlement, while it may or may not have force against society, may have force against particular individuals.

27. Only in the cataclysm-prone lands of moral philosophy does one confront literal, mechanical indivisibility such as when a fatal plague strikes two islands, with only one boat available and only enough time to get the serum to one island soon enough to save its inhabitants. Death is vital to these stories; it provides indivisibility by eliminating the disappointed claimants from the picture, a fact which helps to explain an otherwise remarkably morbid tendency in the storytelling exercises of modern philosophy. Death's scythe has done more for moral philosophy than Occam's Razor.

28. Bernard Williams has suggested in "The Idea of Equality" (1973) that prestige is mechanically indivisible. But prestige frequently depends on social organization and cultural mores which are, to some extent at least, socially determined.

29. At least up to the point where the time allotted would be so short as to prevent any use of the machine at all. This minimal time would be determined by the time necessary to prepare dialysis therapy.

30. Our discussion below of commensurability is connected to both these ideals of ex ante consent and moral entitlement. When a good in its present state is incommensurable with the same good if further divided, in the sense that the capacity of a person to enjoy life is enhanced by the good in its undivided state but not otherwise, there is particularly good cause to think that, ex ante, everyone would choose to commit society to distribute the whole good. Similarly, if division of the good renders it incommensurable with full distribution there is good reason to believe that division runs contrary to the entitlement claimed.

31. Thus, the social preference of some allocation over none presents an immediate problem in the distribution phase only in the exotic cases of moral philosophy where society has a distribution problem thrust on it without having made a production decision.

The opposite problem, however, may arise. Society, in the production decision, might elect to allocate no resources to a particular problem, such as renal failure. When someone suffers renal failure, however, society may find it difficult to adhere to its decision.

32. The introduction of the lottery, however, may not have altered much the social
distribution of the burden, since various exemptions remained and these were still disproportionately open to the white and middle-class.

32. The outcomes may not be identical because the pool of candidates might vary slightly from allocation to allocation.

It is possible of course that repeated use of a lottery will generate injustice because someone will prove to be lucky and win disproportionately often.

33. Conversely, of course, it gives individuals added incentive to be the most efficient or the most morally worthy.

34. We sometimes use markets only to solve distribution problems. In the United States the Environmental Protection Agency, for example, has determined levels of admissible pollution in some areas and then permitted potential sources of pollution to trade for these rights to pollute.

35. If we justify markets not on their efficiency properties but on their autonomy aspects, the analysis becomes more complex and less certain. For some competing entitlements, under the dominant-rights view, we might value autonomy sufficiently to allow that value precedence. In the face of inequalities of wealth, however, the threats of injustice exacerbating distributions might conflict with the autonomy-based justification of markets.

References


