The Fairness of Lotteries: A Broomean Account

Bachelor Thesis: Philosophy of a Scientific Discipline

Abstract

A difficult allocation problem arises when multiple people lay claim to a scarce and indivisible good. Different allocation mechanisms produce different outcomes in terms of the goodness and fairness. Most often, a trade-off exists between good and fair outcomes. Lotteries are often considered to be a fair allocation method. John Broome developed a theory of fairness that, he argues, explains better than any other theory why this is the case. For Broome, fairness requires the proportional satisfaction of claims. Lotteries provide a contribution in fairness that sometimes outweighs the loss in goodness. This thesis provides an introduction to lotteries, an overview of Broome's theory of fairness, and places this in the literature. Lastly, this thesis aims to defend Broome's theory of fairness from criticism by Hooker and Lazenby. Hooker criticises Broome for using a too limited notion of fairness and argues that on some occasions proportional satisfaction of claims is unfair. I argue that Hooker's criticisms are largely based on a misunderstanding of Broome's position. Lazenby criticises Broome's idea that the contribution in fairness that a lottery creates can outweigh the losses in goodness and that marginally weaker claims deserve satisfaction. I argue that his examples do not undermine Broome's theory of fairness.

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1. Introduction

Anne and Ben are on the waiting list for a kidney transplantation. Both have been on the waiting list for an exactly equal amount of time and they both are in dire need of a kidney transplantation. Without a donor kidney, they will die. Suddenly, a kidney was donated, and both Anne and Ben turned out to be suitable candidates for kidney transplantation. Imagine you are a surgeon who will perform the medical procedure. You have the final say in whom to select for transplantation. You are particularly concerned with fairness. How will you decide to whom to give the kidney? There are different ways in which you can make the decision.

You can simply pick either Anne or Ben without providing any reasons or pick Anne simply because you like her more than Ben. Alternatively, you may think that Anne is more deserving of a kidney because she lived a virtuous life whereas Ben did not. However, it seems unfair to deny Ben treatment on unforeseen criteria of a virtuous life. Nonetheless, if Anne's kidney failure is through no fault of her own whereas Ben's kidney failure is induced by an unhealthy lifestyle it seems fairer to treat Anne. Another aspect to take into account is how much each potential recipient benefits from having a kidney. For instance, how many life-years does one expect to gain from the kidney transplant. If Anne is expected to gain five life-years whilst Ben is expected to gain ten years, it might be fairer to favour Ben. However, it is less obvious that life expectancy is a fair metric when the difference becomes smaller. Would it still be fair to allocate the kidney to Ben when Anne would have a life expectancy of nine years? And what about the years one has already lived? When Ben is 35 years old while Anne is 60 years old it seems fair that Ben is given the opportunity to live longer. You may also consider the indirect effects of the treatment by looking at how Anne and Ben impact the lives of others. Anne is a pro-bono lawyer who has improved the lives of many poor people, but Ben is a single parent, who has a child that depends on him. Does fairness require that we measure the impact on the lives of others? How can you make a fair decision when you must choose between life and death?

John Broome has developed an ''elegant and powerful (Piller, 2017, p. 214)'' theory of fairness which posits that ''a lottery is [sometimes] the fairest way of distributing a good''. Broome argues that ''[his] theory explains better than any other theory [he knows] why this is so (1990, p. 87).'' Broome conceptualises the allocation problem in terms of claims. Fairness for Broome is about ''mediating the claims of different people (1994, p. 38).'' The core of Broome's theory is that fairness requires claims to be satisfied proportional to their strength. Broome, therefore, argues in favour of weighted lotteries, which can be used to satisfy claims of different strengths proportionally. Here, Broome distinguishes himself from most other philosophers in the field who argue that lotteries should only be used to choose between equally strong claimants.

Burgers (2016) distinguishes four different views in the literature that provide different accounts of what it is that makes a lottery fair: (i) the distributive view, (ii) the actual consent view, (iii) the preference view and (iv) the expressive view. The theories respectively hold that a lottery is fair because it (i) distributes equal chances amongst equally deserving participants, (ii) is consented to by all participants, (iii) is preferred by the strongest participant and, (iv) all participants believe that the lottery does not favour any of them ex-ante. All four views have a commonality that in some cases fairness requires lottery use. Henning (2015) takes a unique position in the literature by arguing that, whilst lotteries have many useful properties, fairness can never require its use.

This thesis aims to understand Broome's theory on the fairness of lotteries and to contextualise Broome's view. The remainder of this thesis is structured as follows. In chapter 2, I define what a lottery is and provide an overview of when they are used. In chapter 3, I give an

account of Broome's theory of fairness. In this chapter, I will revisit the Kidney Case with which this introduction opened. Following this, chapter 4 will discuss the different views in the literature mentioned above and compare them to Broome's theory of fairness. Chapter 5 will discuss an objection raised by Hooker and Lazenby. I aim to refute their most poignant objections that reach the core philosophy of Broome. Lastly, chapter 6, will summarise and conclude.

2. Lotteries

2.1. Examples of lottery use

Lottery use has a long history that stretches back to ancient times. The Bible provides many examples of ancient lottery use. In Leviticus 16:18 lots are cast to determine which goat will be sacrificed and which goat will be released. In Numbers 26:55-56 God commands the use of lotteries to allocate conquered land among the Israelites. In 1 Chronicles 26:13 lotteries are used to assign guard duties. Finally, with Jesus' crucifixion, Roman soldiers divide the garments but cast lots for the valuable tunic (John 19:22-23).

Lotteries played an important role in the first democracies. In ancient Athens (462-322 BCE), lotteries were used to select members of the legislative council, the court, and the magistrature. The lottery was used to decrease political inequality and to improve the participation of the citizens in governance. During the Late Middle Ages, there is a revival of lottery use in Italian city-states for the selection of people for positions of power. The cities of Venice (1268-1797) and Florence (1328-1530) are the best examples of this. The word ballot, with which we cast our votes, is derived from this practise (Van Reybrouck, 2013). Roman legions made use of lotteries to distribute punishment. The infamous practice of decimation was used to punish large groups of soldiers guilty of capital offences. In a decimation (which means 'removal of one tenth'), one out of every ten soldiers would be selected by lot to be executed.

Today, lottery use is a common occurrence in sports and games. In chess tournaments, a lottery is used to determine who plays with the white pieces and thus has the first-mover advantage. In board games, the order of play is often determined by the roll of a die. Before every football game, the referee tosses a coin to determine which team gets to choose on what side of the field they play. The 1968 UEFA European Championship semi-final between Italy and the Soviet Union was decided by a coin toss after the game ended in a draw. Italy won the toss and ultimately won the tournament.

Desirable universities or studies sometimes use lotteries for admission decisions. In the Netherlands, universities used lotteries to select medicine students. This selection procedure was in 2017 forbidden by law in favour of decentralized selection because of fairness concerns. Nonetheless, in a turn of events, from 2023 onwards, lotteries will be reintroduced in the selection procedure to improve the fairness of selection. Admission lotteries are weighted lotteries-students with higher grades in high school receive a higher chance.

During the beginning of the Covid-19 pandemic, ethicists and medical experts proposed lottery use to undertake triage and to allocate scarce medical resources in the face of impending shortages of ventilators and ICU care (Silva, 2020, Wang, 2021).

Van Reybrouck (2013) proposes to replace the current elective-representative democracy and select government officials by lot from the entire population. Iceland has randomly selected citizens for a Constitutional Assembly in 2010-2012 to create a proposal for a new constitution. Ireland followed the example in 2013, using randomly selected people to review its constitution.

The examples of lottery use listed above serve to show the long history of lottery use and its continued use today. For more examples of lottery use, I refer the reader to Stone (2011).

2.2. What is a lottery?

As we have seen, lotteries are frequently used. However, before we can discuss the fairness of lotteries it is important to first define lotteries more closely. Stone (2007, p. 279) defines lotteries as a ''process capable of generating several possible outcomes, [where] the specific outcome that will be generated [...] is unknown.'' This definition consists of three parts. Firstly, the lottery is a process. This means that a lottery is an activity: a series of steps or actions need to be taken to

hold a lottery. Secondly, a lottery must generate one of several possible outcomes. Participants in a lottery tie their faith prior to the lottery to one of the possible outcomes. In this way, lotteries can determine a winner. Thirdly, the process that generates outcomes must guarantee that the outcome of the lottery is unknown before the lottery is initiated. The participants thus have no ex-ante knowledge of the outcome of the lottery. This requires an element of randomness to the process which generates the different outcomes. Although randomness is important in lotteries, Stone does not include it in his definition. He thereby allows for a wider range of practices to be considered lotteries.

The difference between random and non-random lotteries becomes apparent when we look at the different ways lotteries can be performed. Classical ways of holding lotteries include a coin toss, rolling dice, drawing straws, or drawing stones from an urn. Nowadays, lotteries can also be performed digitally. All these instances can generate perfectly random outcomes. The literature on lotteries, however, interprets a wider range of processes to be a lottery. Wasserman (1996) uses the example of the draft for the Vietnam war based on birthday a lottery whilst Sher (1980) uses an example in which participants agree to have the person with the fewest Jewish ancestors win. Moreover, Wasserman (1996) argues that whoever has the largest pancreas or whose fingerprints most resembles those of the last suspect captured by the FBI can be lotteries. The examples by Wasserman and Sher describe a process capable of generating several outcomes, however, the outcomes do not result from pure randomness. Under a broad definition of lotteries, the examples of Sher and Wasserman can be considered lotteries, however, the examples are far removed from the common usage of the word lottery (Burgers, 2016). Nevertheless, for the purpose of this thesis, Stone's definition of lotteries suffices.

This thesis is concerned with allocative lotteries. Allocative lotteries are used to distribute goods or assign responsibilities (Stone, 2011, p. 13). A good should be interpreted in the broad economic sense, as any commodity or service that has value. Goods can either physical or non-physical. An example of a physical good is the kidney that we previously encountered in the introduction. In the examples of lottery use, we considered admission to the study of medicine which is a non-physical good. There, too, we saw examples of lottery use for the assignment of responsibilities such as guard and jury duties. For the purpose of this thesis, it will suffice to merely discuss the allocation of goods. The principles of fairness remain the same in the case of the assignment of duties. In the remainder of this thesis, I will use G as shorthand for the to be allocated good.

There are two other components to lotteries besides G. Firstly, there are the participants who have a chance of receiving G. Hence, all participants in a lottery are a candidate to receive G. I will, therefore, as is common within the literature, henceforth refer to participants in a lottery as candidates. Next to the candidates, there is the role which Eckhoff (1989) calls the distributor. The distributor is an individual or an organisation, such as a government, a court or a hospital that is responsible for the allocation of the good. The distributor typically organises the lottery, however, the role of distributor is not essential to lotteries. In some lotteries, the collective of candidates organise a lottery themselves.

The fundamental problem underlying any allocation question is that of scarcity. More people that want to receive a good than there are units of the good available. In some cases, fair outcomes can be achieved by dividing the good proportionally. When several people have a claim to a cash prize, the money can be split up amongst the claimants. However, some goods cannot be split without a significant loss of value. In the example of Jesus' crucifixion, we saw that the Roman soldiers split the garments but cast lots for the valuable tunic which would significantly lose its value when cut. Housing is another example of a good that would

significantly lose its value when it has to be shared, whereas the kidney from the introduction would lose all its value when it is cut in two. Lotteries are well-suited to allocate scarce and indivisible goods. However, the characteristics of scarcity and indivisibility by themselves are not sufficient to warrant lottery use. What other allocation mechanisms can be used instead?

The most common allocation mechanism of scarce goods is the market. In markets, those who are willing to pay the most for the good will receive the good. The willingness to pay for a good is an indicator of how much one will benefit from the good. Markets, thus, guarantee that goods end up in the hands of those who derive benefit from them. However, willingness to pay is largely determined by your ability to pay. Rich people thus may buy food on a market that a starving person cannot afford. Markets are undesirable for allocating necessities such as medical care, housing, or in the case of extreme scarcity, even for food, because they provide an advantage to the rich. Most people are willing to sacrifice all their possessions to save their lives. This implies that in a market for kidneys, the price of the good does not reflect one's willingness to pay but rather one's ability to pay.

An alternative allocation method could be to assign goods to those who benefit most from it. In medical triage decisions, expected health gains are a determinant to assign treatment. Those who are expected to gain most life-years in good health, measured in quality-adjusted life-years (QALYs), are sometimes favoured. For instance, a child might be prioritised for treatment relative to an elderly patient for they can benefit from the treatment longer. Few would object to favouring a child in this case. However, when QALY differences become increasingly smaller it becomes less clear whether this is a fair allocation method. When someone's expected QALY gain is only marginally bigger, say one day, than another candidate's expected gain, would it then be fair to favour the former person? A mere marginally stronger health gain does not seem to provide a fair basis for triage decisions. Lotteries provide an alternative allocation mechanism that can accommodate these fairness concerns.

2.3. Fair lotteries and practical lotteries

Lotteries have characteristics that make them ideally suited to be an allocation mechanism in some situations. Broome (1984, 1990) gives four practical reasons why random selection by lottery can be preferred to allocation through a deliberative process. Firstly, lotteries are a cost-effective way of selecting people. Lotteries are cheap and quick whilst a deliberative process to choose the best candidate can be both expensive and time-consuming. Secondly, lotteries lower the emotional cost involved with the deliberative process. Especially in cases of life or death, for instance, in assigning haemodialysis treatment, the emotional toll on the decision-makers can be very high. Additionally, the widespread application of judging one's worth through a deliberative process may be harmful to society in the long run. Thirdly, for rejected candidates, it may be easier to accept rejection by a lottery rather than one come about through a deliberative process in which one was not deemed good enough to receive the good. Lastly, random selection may reduce the risk of abuse of power by the distributor. Lotteries prevent the distributor from, consciously or subconsciously, favouring one candidate over another. However, Broome (1990, p. 89) argues that the practical benefits of lotteries over a deliberative decision are not what makes lotteries *fair*. The question of fairness is unrelated to the practicalities of the allocation method.

Lotteries can also serve as a tie-breaker between two equally strong options. For example, to decide at which restaurant to eat. However, Broome (p. 89) states, that one does not toss a coin ''to be fair to restaurants but simply to avoid the fate of Buridan's Ass." Thus, neither the practical benefits of lotteries nor their function as a tie-breaker are what make lotteries fair. However, Broome (p. 89) concludes that ''[a lottery] is sometimes a better means than others

because it is fairer." The difference can be seen in picking the starting player in a game. When there is a starter's advantage, such as playing the white pieces in chess, then a lottery would be a fair means of deciding. If there is no such advantage, then lotteries serve merely as tie-breakers. What, then, is it that makes lotteries fair?

3. Broome's theory on the fairness of lotteries

Broome's theory of fairness deals with ''mediating the claims of different people'' (1994, p. 38). How, then, can one mediate claims of different people fairly? According to Broome, fairness requires ''that claims should be satisfied in proportion to their strength (1990, p. 95)''. This requirement of fairness consists of two components. Firstly, there are *claims,* that have a certain strength. Secondly, these claims demand *proportional satisfaction* to its strength.

When there are two equally strong claims for a kidney and there are two kidneys available perfect fairness can be achieved when both claims are satisfied. Problems arise, however, when there are not sufficient kidneys to satisfy all claims. In that case, perfect fairness can only be achieved by withholding the kidney from both, because only then all claims are satisfied proportionally, as neither claim receives any satisfaction.

This chapter provides an overview of Broome's theory of fairness. The first discussion investigates the conflict between creating good outcomes and treating people fairly, which underlies the allocation question. The following sections explain what claims are and why they are key to Broome's theory. Section 3.4. discusses why lotteries only provide a second-best type of fairness. In the next section. we see how Broome deals with claims of unequal strength. Afterwards, we come back to the initial conflict between doing good and being fair and see how Broome helps us understand this conflict.

3.1. Doing the most good versus fairness

It is important to first take a step back and understand the problem underlying the allocation of G. Broome distinguishes two principles of concern: goodness and fairness. The goodness principle requires that we create good outcomes. Creating good outcomes is defined in a utilitarian fashion. Utilitarianism is the ethical doctrine that holds that we can judge the righteousness of our action based on the goodness or utility that it creates. Utilitarianism holds that we ought to maximise goodness, to achieve the ''greatest happiness for the greatest number (Bentham, 1776 [1988]).'' Utilitarianism thus requires allocating goods in such a way that it produces the most utility. It follows from that, that in this optimum, no further goodness can be created from redistributing a good from someone to another.

Let us revisit the Kidney Case to understand what maximizing goodness implies. Suppose Anne is expected to live ten more years in good health when given the kidney while Ben is expected to live five years in good health. The difference in life expectancies of Anne and Ben provides a strong argument to give the kidney to Anne. After all, more life-years are good and thus more 'goodness' is created when Anne is given the kidney. The utilitarian notion of utility maximisation is a good starting point in any allocation problem because it ensures that scarce resources are used effectively. The maximisation of goodness prevents 'wasteful' use of goods by people who do not derive the most benefit from them.

Although the appeal of a utilitarian goodness maximisation is strong it does not always adequately describe our moral intuitions. Even the strongest proponent of utilitarianism should admit that our moral intuitions are not always represented by a goodness maximisation. Utilitarianism notoriously fails to account for principles such as justice, fairness and equity. Besides creating good outcomes, we also care about the treatment of individuals. Is it fair to give the kidney to Anne rather than to Ben based on life expectancy? How could a utilitarian respond? There are two ways to address fairness concerns from a utilitarian perspective. Firstly, the utilitarian could bite the bullet and deny that we have a duty to treat individuals fairly and thus dismiss any concerns about fairness. Alternatively, she could argue that fairness is always determined by the total good. This means, that any deviation from the optimal situation is inherently unfair to the individuals who are made worse off. The second argument, unlike the

first argument, provides a utilitarian account of concerns of fairness. However, the implication of both arguments is the same: fairness is not a duty owed to individuals. Broome (1984, p. 44) disagrees with the utilitarian account of fairness. For Broome, fairness is strictly a relational matter. Fairness describes how an individual is treated relative to similar other people.

How do the goodness principle and fairness concerns relate to each other? Broome (1994) uses the Oregan Health Care Reform to illustrate their conflicting relationship. The state's objective was to reform the health care system to do as much good as possible with its budget. It thus set out to maximise the health outcomes it produced. Health outcomes were measured in quality-adjusted life-years (QALYs), a metric commonly used in health economics. It combines life expectancy gains with concerns about the quality of life. QALYs can thus distinguish between a treatment that leaves a patient in good health or one that leaves her disabled. This feature of the Oregan Health Care Reform sparked a nationwide controversy. This system inadvertently introduces discrimination against disabled people. Suppose the situation where a disabled person and an able-bodied person arrive at the hospital with similar injuries after a car crash. The health care system values the able-bodied person more than the disabled person because any life expectancy gains for the able-bodied person will be counted fully whereas the life expectancy gains of the disabled person are adjusted downwards for the quality of life. Broome concludes:

> If resources were limited, the state would do more good treating the able-bodied person than the disabled one. Nevertheless, despite this, it would still be unfair to deny treatment to the person with the disability. So this is a case where the aim of using resources to do the most good conflicts with the requirement of fairness (Broome, 1994, p. 37).

The principle of fairness is most often in conflict with doing the most good. This conflict arises because goodness operates on a societal level and ignores the individuality of persons whereas fairness is concerned with the relative treatment of individuals. Previously, in the Kidney Case, goodness required to give the kidney to Ben for he would live longer. Any deviation from maximised goodness necessarily results in a loss of total life-years gained and thus reduces total goodness. If fairness concerns lead us to hold a lottery which Anne wins, then this results in a loss of goodness. How do we solve this conflict between goodness and fairness?

3.2. Different types of reasons

Broome aims not to resolve this conflict between doing the most good and fairness, but '[tries] to contribute towards a theoretical understanding of it (Broome, 1994, p. 37).' To better understand the conflict, we need to understand the reasons that we have for allocating the good to someone. How do reasons work? Not all reasons are the same. Broome distinguishes two standard theories of how reasons work: a theory of teleology and one of side-constraints. Because neither theory can give a satisfactory account of fairness, he introduces claims as a third type of reason. How do these three types of reasons differ?

Telos is Greek for purpose or goal. Teleological reasons are reasons of benefit. They only consider what purpose a good can serve. Teleology holds that if someone benefits from G that is a reason for her to have G. When multiple candidates derive benefit from G, then the candidate who benefits the most from G has the strongest reason to have G. Thus, to determine who ought to receive G, one's reasons of benefit need to be accumulated in weighed against the reasons of others. Utilitarianism discussed above is a teleological doctrine. It is thus only concerned with optimizing the benefits derive from G and not with a fairness.

Nozick (1974) argues for a side-constraint based theory on the ground that teleology is

mistaken. Unlike teleological reasons, which first go through a process of accumulating and weighing, side-constraints directly determine what ought to be done. Side-constraints are often thought of as rights. Rights cannot be outweighed by any number of teleological reasons. When someone has a right to G, she ought to receive it regardless of how much others can benefit from G. Not abiding by side-constraints would violate one's rights. For instance, one has a right to own the goods they bought, to live in the house for the duration of their rental agreement, or to get the income of their labour. The goods, house, or income cannot simply be forfeited to someone else because they benefit more from it. Because side-constraints directly determine what ought to be done, they do not contribute to understanding the conflict between total utility and fairness.

Claims, Broome argues, do help us understand this conflict. Claims "duties *owed to the candidate herself*" (Broome 1990, p. 92). Because claims are owed to a particular individual, they cannot be overturned by an accumulation of teleological reasons. How, then, are claims different from side-constraints? Claims stop just shy of being rights: they do not directly determine the allocation of G.

3.3. Where claims come from and how they work

How are claims determined? Broome (1994, p. 38) acknowledges that "[he has] no general theory to offer of what sort of reasons are claims", however, "we can go a long way simply on the basis of intuition" in understanding what constitutes a claim. It is beyond the scope of Broome's theory of fairness to provide the groundwork for a theory of claims. Therefore, it remains unclear what constitutes a *legitimate* claim. However, Broome (1990, 1994) briefly explores two potential grounds that may give rise to claims: *merit* and *need*.

Merit-based claims come about because a person has a claim on the product of their own effort. A farmer has a claim on the crops she grows, a student has a claim on a grade and an employee has a claim to their income. Merit-based claims are commonly accepted. Need, on the other hand, provides a more controversial ground for a claim. Need-based claims are grounded in wellbeing. Here, someone ought to have something because it improves their wellbeing. The unemployed have a claim on social security, the sick have a claim to the provision of healthcare and children have a claim to education.

To conclude, Broome thus does not intend to set out a theory of claims. The notion of claims itself is thus not demarcated clearly and we have to rely on intuitions to evaluate the legitimacy of claims. It is only once claims are established, that Broome's theory of fairness helps us understand how we ought to deal with them.

How, then, does Broome propose that we deal with claims fairly? Broome (1990) illustrates how claims work with an example. A group of people is tasked to send one of them on an important but dangerous mission. All candidates prefer not to go on the mission themselves because there is a substantial risk of dying. One of the candidates is more capable than the others and she is more likely to successfully accomplish the mission. However, the capable candidate is at no less risk than the other candidates. All candidates are equally likely to die during the mission. Who should get the good of staying behind and who should be sent on the mission?

Teleology requires sending the capable candidate because she is most likely to complete the mission. Therefore, sending the most capable person would create the most goodness. However, this is unfair to the capable person. Simply because she is more talented than the others, does not mean she has the duty to sacrifice herself for the common good. Broome states: "[T]he other candidates' lack of talent gives them no *claim* to [the good of staying behind]. It may be right to leave them behind, but it is not owed to *them* to do so. Whatever claim they have to this good, the talented candidate has it also (1990, p. 92)." Suppose that the group

acknowledges everyone's equal claim on staying behind but nevertheless decides the send the capable person because of her ability to complete the mission. The capable candidate's claim has thus been weighed against teleological reasons and been found wanting. However, her claim has been overridden rather than satisfied. Broome believes that she has been treated unfairly: her claim is not dealt with proportionally to its strength.

3.4. The fairness requirement: proportional satisfaction of claims

Let us revisit the Kidney Case which with this thesis began to understand what proportional satisfaction of claims implies in this instance. Firstly, it needs to be established on what ground the candidates have a claim to the kidney. Suppose, Anne and Ben have a claim to life, then arguably, both claims are equally strong. Broomean fairness thus requires both claims to be satisfied equally. How can both claims be satisfied when the kidney cannot be split up? Equal satisfaction of claims can only be obtained when neither claim is satisfied. Hence, perfect fairness can only be achieved by withholding the kidney. Ought we, therefore, withhold the kidney? No, Broome argues, ''one of our aims must be to do as much good as possible, and it would surely be worth sacrificing some fairness to avoid the harm of allowing a person to die unnecessarily. So it would surely be right to save one of the candidates even though this will inevitably lead to some unfairness (1994, p. 38).'' Perfect fairness thus has to be given up in favour of doing good. How do we treat the candidates fairly when perfect fairness can no longer be achieved?

> In that case, the candidates' claims cannot all be equally satisfied, because some candidates will get the good and others will not. So some unfairness is inevitable. But a sort of partial equality in satisfaction can be achieved. Each person can be given a sort of surrogate satisfaction. By holding a lottery, each can be given an equal *chance* of getting the good. This is not perfect fairness, but it meets the requirement of fairness to some extent (1990, p. 98).

Lotteries thus provide a middle ground between achieving perfect fairness and doing good. Allocating an indivisible good among claimants necessarily introduces some unfairness unless the good is withheld completely. Entering claims in a lottery provides proportional satisfaction to some extent. Broome calls an equal chance ''a second-best type of equality'' which achieves ''a second-best type of fairness (1994, p. 39).''

3.5. Unequal claims

So far, we have considered cases in which candidates have equally strong claims. However, Broome's theory is unique in the way it deals with unequal claims. Broome distinguishes himself from other views in the literature by arguing that when dealing with unequal claims ''weaker claims must not simply be overridden by stronger ones (1990, p. 95).'' Broome argues that if one wants to produce an argument for the use of lotteries it cannot be based on equal claims only because ''[w]hen selecting people it will never in practice happen that all the considerations in favour of one candidate will exactly balance those in favour of another (Broome, 1984, p. 40).''

The question remains: why is it not fairer to allocate G to the strongest claimant? Favouring the strongest claimant creates the most outcome fairness while a lottery runs the risk of decreasing the outcome fairness. Broome (1984) makes his case by starting from equality in claims. Suppose a can of food must be distributed to either one of two equally needy people. In this case, it would be fair to hold a lottery. However, now imagine that one candidate is ''slightly, perhaps minutely, less needy. It would be implausible that it should be fair for him to have no chance at all (1984, p. 48).'' Broome concludes:

> An equal lottery is certainly unfair to the needier person because he is entitled to better treatment, not equal treatment. But to give the food directly to the needier person would be more unfair to the less needy because he is entitled to treatment only slightly less good than the needier person's (1984, p. 48).

We can now rank our choices in terms of the fairness they produce. Perfect fairness can be achieved in two ways: (i) by dividing the food proportionally which gives the strongest candidate slightly more food or (ii) by withholding the food from both candidates. If the food cannot be split, holding a weighted lottery with odds adjusted to the strength of each claim provides a second-best type of fairness. If one cannot hold a weighted lottery, holding an equiprobable lottery is fairer than having no lottery at all because an equiprobable lottery approximates the second-best type of fairness of a weighted lottery.

Let us have a final look at a Kidney Case in which the strength of the candidates' claims is determined by their expected QALY gain. Ben will gain ten QALYs while Anne will gain nine. Perfect fairness can only be achieved by withholding the kidney from both and a significant sacrifice of goodness. A second-best type of fairness can be achieved with a weighted lottery with odds of 9/19 and 10/19 for Anne and Ben respectively.

3.6. Understanding the conflict between doing good and fairness

Broome set out to contribute to a greater understanding of the conflict between doing the most good and fairness. The section above discussed Broome's perception of claims and the central role they play in understanding fairness. This section will relate the fairness requirements to doing good and thereby complete Broome's theoretical analysis of fairness.

Claims help us navigate through this conflict. Broome argues that ''claims give rise to two separate requirements: they should be *satisfied* and they should be satisfied *proportionally* (Broome, 1990, p. 96, emphasis added).'' Proportionality is required by fairness and has been discussed previously. The satisfaction requirement is concerned with doing the most good.

Why do claims require satisfaction? If claims are always satisfied, then they do in practice not differ from side-constraints. Claims require satisfaction because they are owed to a particular individual and individuals are separate. Individual experience cannot be aggregated nor is it interchangeable between people. Lazenby (2014, p. 333) gives the example of a person owing a debt to illustrate this point: ''When I weigh all relevant reasons or apply some fixed rule, I may determine that I should not repay the debt to a creditor. But, even if I am correct that I should not repay the debt (perhaps I need to feed my children or repay a different debt instead), it is clear that my having weighed all relevant reasons is not sufficient to satisfy my debt. The debt is owed to a particular person and there remains, even after my previous right action, a reason to repay her.''

The satisfaction requirement and the fairness requirement together determine how one ought to act. They turn the decision into a two-staged process. First, doing good requires that we satisfy claims. It is the satisfaction requirement that prevents us from achieving perfect fairness by withholding the good. Broome is generous in admitting claims: ''[I]f there is any reason, whether a claim or not, for a person to have a good, she should have it''(1990, p. 95). However, due to competing claims, it is inevitably impossible to satisfy all claims.

Because the satisfaction requirement itself cannot be satisfied we have to resort to a second-best alternative: maximizing satisfaction. Maximizing the satisfaction requirement requires a process of evaluating and weighing reasons of benefit. Maximisation requires that the strongest claims are satisfied even when they are only marginally stronger.

This is contrary to Broome's theory of fairness. Therefore, the satisfaction requirement itself must be weighed against the fairness requirement. Any reduction in satisfaction can only

be justified when it is outweighed by a sufficient gain in fairness.

The conflict between doing the most good and being fair can now be understood as a trade-off between the satisfaction requirement and the fairness requirement. The decision still relies on our subjection evaluation of the weights of both principles. Fairness, is not necessarily decisive: ''In some circumstances, no doubt, it will be very important to be fair, and in others, fairness may be outweighed by expediency (1990, p. 96).'' Broome acknowledges his theory of fairness is, ''not a general resolution of the conflict'' however it may ''[outline] some of the theoretical basis for a resolution (1994, p. 39).'' Understanding the theoretical groundwork may help us in making the ''complicated judgment (1990, p. 98)'' between fairness and doing the most good.

4. Mapping Broome's theory in the literature on lotteries

Broome argues that his theory on the fairness of lotteries explains better than any other theory he knows why lotteries are fair. Broome distinguishes himself in the literature by arguing that marginally weaker claims deserve some satisfaction. Other philosophers, however, provide different accounts of why lotteries are fair. In the introduction, I mentioned that Burgers (2016) distinguished four main views in the literature. In this chapter, I will summarise the four views and compare them to Broome's theory of fairness. Henning (2015) takes a completely different position in the literature and argues that fairness does not require lotteries. In the last section of this chapter, I will address his argument.

4.1. The distributive view

The distributive view holds that if G cannot be divided amongst equally strong claimants it can at least be divided probabilistically. Instead of dividing G, one can distribute chances to G. A chance to receive G can be considered an intangible good. Having a chance to receive G is better than having no chance to receive G. Therefore, all candidates rationally prefer receiving a chance to G. By distributing chances one can provide all candidates with something of value, thereby granting them some surrogate satisfaction of their claims. Defenders of the distributive view argue that lotteries are fair because they provide equally strong claimants with a good of equal value and thereby satisfy their claim.

The most important critique of the distributive view is that it is unclear how a chance to G can satisfy a claim to G. A chance is itself a distinct good. If this distinct good can satisfy claims to G, then other unrelated good must also be able to satisfy claims to G. Moreover, Henning (2015) argues that chances do not have intrinsic value. He illustrates his point using a thought experiment where you and another person face a life-threatening situation but only one of you can be rescued in time. Either a coin toss will be held to determine who to save, or the rescuer will save whoever's name was written on a piece of paper earlier that day without a lottery. You know that it is more than 50 percent likely that your name is on that paper. Which option do you choose? The defender of the distributive view must hesitate to answer because she does not know how much more likely it is that she will be saved in the latter case. If chances are intrinsically valuable, then for some marginally small additional probability, she must prefer to have a chance rather than the larger probability of being saved. The distributive view is guilty of double counting: first, there is the expected utility of G *and then there is a chance*. (Henning, p. 174). Lastly, on the distributive view, value is not equally distributed amongst candidates. All candidates will have a chance, but one candidate will also receive G.

4.2. The actual consent and preference view

Both the actual consent and the preference view approach fairness from a completely different angle than what we have seen so far. Both views hold that the fairness of the lottery is determined by the attitude of the participants towards the lottery.

The actual consent view is grounded in luck egalitarianism. Luck egalitarianism is a theory of distributive justice which holds that inequalities due to brute luck are unfair, while inequalities that result from calculated risk-taking are not. Consent to a lottery moves the lottery from the realm of undeserved bad luck to the realm of "deliberative and calculated gambles (Dworkin, 2000, p. 73)." An allocative lottery with the unanimous consent of the strongest claimants will result in an unequal distribution of G. This is fair because it is the result of a calculated risk on the part of all candidates.

The preference view is similar to, yet distinct from the actual consent view. It holds that the fairness of lotteries depends not on the consent of, but on the preferences of the candidates.

A lottery is fair when it is in accordance with the preferences of the strongest claimant regardless of their explicit consent.

A poignant objection to both the actual consent and the preference view is that they fail to respect what a claim is. Claims, Burgers (p. 219) argues, ''cannot simply be overridden by other considerations, and most certainly not by considerations that have no relevance to the allocative choice at all.'' The consent or preferences of claimants do not entitle them to dismiss claims. Candidates can consent to or prefer both fair and unfair practices. Their attitude towards the lottery seems irrelevant to its fairness.

4.3 The expressive view

The expressive view holds that lotteries are fair when all participants (strong version) or believe, or the distributor (weak version) believes, that it does not favour any candidate over others. This view, too, can be placed in the tradition of views that hold that fairness of a lottery is determined by the participant's attitude towards it. The fairness of the procedure thus does not rely on an equal distribution of probabilities but on the ambiguity of the probabilities. The lottery serves as a *black box* that obscures the probabilities of the candidates rather than equalises it. This ''express[es] an equal commitment to each claimant's receiving the scarce good (Wasserman, 1996, p. 31).'' The weaker contention holds that at least the lottery is not distorted by some unequal concern (Henning, 2015, p. 178). The lottery is fair because it enforces impartiality. It selects based on no reasons rather than on bad reasons. Therefore, it treats none of the candidates unfairly.

It is questionable to argue that the fairness of a lottery does not depend on the statistical probabilities but on the beliefs, people have about these probabilities. A lottery that favours some candidates over others can still be considered fair as long as people believe it does not. This implies that one can never falsely believe a lottery to be unfair. This is implausible. The 1970 U.S. military draft provides a classic example. The draft was determined by a birthday-based lottery procedure which was believed to be truly random. However, it later turned out that the lottery did favour some birthdays over others. Defendants of the expressive view must maintain that the draft procedure was fair because it was believed to be fair.

4.4. Broome's position in the literature

Where does Broome's view fit in? The actual consent, preference, and expressive view provide a clearly different reason for fairness than Broome's account. All views hold that the fairness of the lottery depends on how the lottery is perceived by its participants and only differ on whether consent, alignment with preferences are beliefs about impartiality is the determinant. However, from Broome, the candidates' attitude towards the lottery is irrelevant to the fairness of the procedure. Moreover, both the actual consent and preference view hold that lotteries can only be used to choose between equally strong candidates. Both views allow practices that fail to adequately respond to claims to be considered fair.

Broome's theory of fairness has been classified by Burgers (2016), Stone (2011) and Henning (2015) as a distributive view. However, Piller (2017) argues that they misunderstood that Broome provides an entirely different account of fairness, but that Broome's ambiguous choice of words is responsible for inviting such misunderstanding. Broome (1990, p. 97) concludes that lotteries can give each candidate a sort of 'surrogate satisfaction'. The term surrogate satisfaction led Stone and, Henning to believe that Broome thinks that distributing chances can provide a surrogate satisfaction of claims. They, therefore, wrongly, believe that criticising the distributive rebuts Broome's theory (Piller, p224).

Broome does not believe that lotteries are fair because they provide surrogate satisfaction

of claims. Perfect fairness can only be achieved by withholding the good. Instead, he argues that lotteries provide a second-best type of fairness which only satisfies the demand of fairness to some extent. Piller (p. 226) concludes that "Broome's theory has fallen off the map of positions on lotteries because commentators have misunderstood his view." Broome's theory is distinct from other views and deserving of its own place.

4.5. The lottery requirement

Broome argues that fairness *requires* that claims are satisfied proportional to their strength. Lotteries are in some cases the best instrument to satisfy this requirement. Therefore, we are sometimes, morally required to use lotteries. The four views mentioned above also hold that fairness requires the use of lotteries albeit for different reasons.

Henning (2015) challenges this consensus. He argues that although there are practical reasons to hold lotteries, one can never be morally required to hold one. Henning agrees with Broome that "[w]hen people have equal fairness claims to a good, fairness requires them to be treated equally (Henning, p. 54)." However, Henning argues that it has not sufficiently been established that a lottery is the *only* way to treat equal claims equally. When alternative options exist, then fairness cannot require lottery use. Perhaps, giving each candidate fair and equal consideration might satisfy the demands of fairness.

A procedure of considerations is prone to biases and may therefore not be fair and equal. However, Henning argues, the same biases will come up when we determine the strength of one's claim. We would first have to trust the distributor to make a fair and unbiased judgment of the strength of claims and then fear that her biases may make a procedure of fair considerations impossible. Henning's criticism is poignant. If we believe we can make take all relevant aspects in consideration when constructing claims, it seems unnecessary to stop at making claims. Why can we not go one step further and directly determine who to pick based on the very same fair and balanced considerations?

Broome's theory of fairness is better suited than any other theory of fairness to deal with this Henning's criticism because of the way it handles marginally stronger claims. If we cannot claim to be free of bias or error, it becomes even more important to grant weaker claims at least some satisfaction. I do not believe that this argument might convince Henning, but I hope it makes Broome's theory more plausible.

5. Critiques on Broome

Hooker (2005, p. 329) states that Broome's theory ''puts us in the right direction, even if it takes some missteps.'' His most important objection strikes at the core of Broome's theory. Hooker argues, that in cases where claims significantly differ in strength, they do not require proportional satisfaction. This has become known in the literature as the Hooker objection. The first section of this chapter will discuss the Hooker objection and claims that it does not accurately represent Broome's view.

Lazenby takes on Broome's position on the trade-off between distributional fairness from lotteries and outcome fairness. He argues that the contribution to fairness from entering claims into a lottery cannot outweigh what fairness can be achieved in outcome directly (p. 334). He proposes an alternative conception of fairness in which ''fairness in outcome is lexically prior to fairness provided by lotteries (p. 335).'' Therefore, lotteries can only ever be fair when claims are of equal strength. To support his argument, Lazenby provides an alternative intuition to the notion that marginally weaker claims deserve satisfaction. In Section 5.2. and 5.3. I will discuss and try to refute his arguments.

5.1. Hooker's objection to proportional satisfaction

Chloe and Dave both lay claim to a medicine. Chloe needs the medicine to save her finger while Dave needs the medicine to save his life. If an average life is about a thousand times more important than Dave's claim is about a thousand times stronger than Chloe's. Broomean fairness would thus require a weighted lottery with odds of respectively 1/1000 and 999/1000 for Chloe and Dave respectively. Hooker objects that ''[g]iven that [Dave's] claim is so much stronger than [Chloe's], how could it be right to take *any* risk that [Chloe] rather than [Dave] might end up with the good (Hooker, 2005, p. 349)?'' Hooker argues that when claims differ significantly in strength it would be fairer to let the stronger claim win rather than risk a lottery. This is since known in the literature as the Hooker objection. How would Broome respond? We do not have to guess because Broome already anticipated this concern. He argues:

> ''The result of a lottery will generally be that the good goes to candidates who do not have the strongest claims. This is less fair than the result of giving it directly to those who do. The likelihood of this less fair result will have to be weighed against the contribution of fairness of the lottery itself. But it is clear that, *if claims are close to equality*, holding a lottery will be fairer than not (1990, p. 99, emphasis added).''

Thus, Broome concludes, ''[a] lottery should be held [...] when claims are equal or roughly equal (1990, p. 99).'' When claims differ significantly in strength the contribution in fairness that a lottery would provide is outweighed by the risk that the weaker candidate receives the medicine. When the satisfaction requirement outweighs the fairness concerns still depends on a ''complicated judgment'' but in this case Broome and Hooker come to the same conclusion. Hooker is mistaken if he believes otherwise.

5.2. Baby Swapping

Lazenby takes on Broome's idea that the contribution in fairness of entering claims into a lottery should be weighed against fairness in outcome. He uses Barry's (1988) thought experiment to illustrate his point. Barry imagined a world in which a large baby swapping experiment takes place. Nurses would take all the new-borns away from the biological parents and randomly reassign them to other parents. Now imagine that this baby swapping experiment takes place in a that suffers from great inequality of opportunity and low social mobility, as is the case in a country with a rigid caste system. All new-borns have an equal claim to a chance of a good life. Therefore, all new-borns have an equal claim to end up in the highest caste. Does the baby swapping policy make this country fairer?

Lazenby argues that, on the Broomean account, the swapping of babies improves fairness because all babies have their claim satisfied proportional to their strength. However, intuitively, the baby swapping policy does not seem to make the country better in any way. Lazenby shares our discomfort. He asks us to choose between a society that suffers from high inequality in outcome where a huge baby swapping programme has taken place and a society with marginally less inequality in outcome but where no such programme has taken place. Lazenby judges the latter to be fairer and I agree. In this case, even a marginal increase in fairness certainly outweighs the fairness contribution that the lottery provides.

Does this undermine Broome's theory or is this example a special case? I argue it is the latter. In this particular case, the fairness contribution from reassigning babies to parents in different castes is negligible. After all, being born into a family can itself be considered a random lottery. Reshuffling babies after birth, therefore, contributes little to fairness. In fact, the fairness contribution is so small, that even a marginal increase inequality outweighs the additional fairness created by the lottery. The feeling of unfairness is not invoked by the treatment of the babies but by the injustice of the caste system itself. This in turn is caused by the unequal chances the caste system provides to its members. It is exactly this intuition that the lack of equal opportunity is unfair, which provides the rationale for the use of lotteries.

The thought experiment highlights another aspect of Broome's theory of fairness: what is it that candidates have a claim to? Do the babies have a claim to being born into a high caste or to a good life. In the latter case, a marginal decrease in the inequality of opportunity in this society leads to greater satisfaction of the satisfaction requirement. The satisfaction requirement itself must be weighed against the fairness requirement and, in this instance, the former outweighs the latter.

5.3. An alternative intuition for marginally stronger claims

Broome argued that fairness requires lottery use when there is only a marginal difference in the strength of claims. This is in line with our intuition. Suppose another version of the Kidney Case where Anne will only live one day longer than Bob, many people find it implausible that Anne therefore should be awarded the kidney. Lazenby, therefore, brings forth three arguments to defend his alternative conception against the problem of marginally stronger claims.

Firstly, the defender may argue that for some metrics, marginal differences do not provide any additional satisfaction. Life may not be measured in days, but only in months or hours. Therefore, claims are actually equal when the only difference in strength appeals to one additional day to live. However, Lazenby acknowledges, that this argument may only apply to some scenarios such as the Kidney Case. It does not provide sufficient support for the alternative conception.

Therefore, Lazenby proceeds to question if our intuition that roughly equal claims deserve proportional satisfaction translates into our everyday practices. He uses the example of

queueing to undermine our intuition that marginally weaker claims deserve satisfaction. He argues that we can conceptualise queues in terms of claims where people in the queue have a claim to the good or service provided at the end of the line. The strength of your claim is determined by your position in the queue. ''Even in cases where two people join at nearly the same moment it is generally accepted that it would be less fair to toss a coin to see who goes first rather than allow the person who is actually first to go first (Lazenby, p. 342).'' A mere marginal difference in time in joining the queue thus leads to a claim that is lexically posterior to the claim of the person joining the queue after you. Lazenby argues that ''the [queue] case gives us reason to doubt that in practice our standard ethical response to marginally stronger claims is a lottery (Lazenby, p. 343).''

However, he already opens the door to potential criticism stating that ''[p]erhaps queues are a special case (Lazenby, p. 342).'' I argue that it is indeed a special case and that the example of queues does not undermine our notion of the fair treatment of marginally stronger claims. Queues work differently and operate on other underlying principles of fairness. It is beyond the scope and intentions of this thesis to delve into the distinctions between the ethics of queues and lotteries. However, I will discuss why the intuitions of fairness that Lazenby describes in his queueing example do not directly translate to lottery use. Queues and lotteries are different allocation mechanisms with their unique characteristics. The underlying allocative principle of queues is first-come, first-serve, whereas lotteries operate on principles of equal treatment. Therefore, their use is appropriate in different situations. One would, indeed, be surprised if the local bakery employed a lottery to determine in which order to serve customers instead of queueing. Queues are often acceptable in occasions where the good is sufficient to satisfy all candidates, but claims cannot be satisfied simultaneously. Hence, there is no true scarcity of G but only a coordination problem in satisfying claims. In other cases, however, queues are not desirable. For instance, life-saving medical treatments such as the kidney transplantation, are not allocated on the basis of queues (although queues may play a role). For instance, everyone can have a ride on a rollercoaster, but not everyone can do it at the same time. Precisely in those cases where we consider queues to be unethical that we choose other options. Hence, the intuitions provided by the queue example do not carry over to cases where lotteries are used. Queues are meant to provide a rank order. It is the very purpose of the queue to exacerbate marginal differences in claims to provide this ranking. This is useful when what is at stake is mundane but is no longer appropriate when there is a lot at stake. It is exactly our initial concerns with fairness that deem queues not appropriate.

The last argument Lazenby puts forth in favour of the alternative conception regarding the problem of marginally stronger claims is to stress its conception of fairness. Both the alternative conception and the Broomean conception hold that withholding G from the candidates is the fairest thing to do but that this option is not available to us. Some unfairness is therefore inevitable. ''All [that the defender of the alternative conception] is committed to is that it is *marginally* fairer than either [satisfying the marginally weaker claim] or holding a lottery (Lazenby, 2014, p. 343). When claims are only marginally different, one faces a fine judgment, which are prone to error. Lazenby argues that the judgment of proponents of lotteries ''is distorted by the fact that a lottery is *almost* the fairest thing to do (Lazenby, 2014, p. 343).''

Lazenby makes an ethical judgment that opposes Broome's view. Lazenby does not further support this position. Broome argues that the fairness contribution from lottery use ought to be weighed against the losses in fairness in outcome. Lazenby simply denies that lotteries could provide a contribution of fairness that can outweigh the fairness losses in outcome that would result from having the marginally weaker claim win. In my view, Broome is right. Lottery use also prevents the risk of improperly formulated claims. Claims are very hard

to formulate and require fine judgment. We are thus not only prone to error when comparing marginal differences in rivalrous claims but also in the construction of the claim. If we wrongfully perceive the weaker claim to be marginally stronger then directly rewarding this claim is marginally *less* fair in outcome.

6. Conclusion

A difficult allocation problem occurs when there are more claimants of a good than there are available units of this good. Lotteries are for various reasons often considered a fair allocation mechanism. Broome developed a leading theory on the fairness of lotteries which explains better than any other theory why this is the case. This thesis set out to provide an overview of Broome's theory of fairness and place it in a broader context.

Broome's theory is grounded in the conflict between doing good and being fair. This problem underlies is at the core of the allocation problem. On a utilitarian account, doing the most good, requires favouring the strongest claimant. However, Broom considers this to be unfair to other claimants. Fairness requires that claims are satisfied proportional to their strength. Perfect fairness can, therefore, be achieved in two ways: (i) full satisfaction of all claims or (ii) no satisfaction of claims. The first option is impossible due to scarcity. The second option is to withhold the good from all claimants. This is undesirable because claims demand satisfaction. Lotteries give candidates a chance to the good proportional to the strength of their claim, thereby satisfying their claim to some extent. Lotteries thus provide a second-best type of fairness.

The fairness contribution lotteries provide ought to be weight against the loss in goodness that results from not satisfying the strongest claim. A lottery is preferred when its contribution in fairness outweighs the loss in goodness.

Where does Broome fit in the literature? The actual consent, the preference, and the expressive approach fairness from a radically different angle. They hold that the fairness of lotteries is based on the perspective of the participating candidates. Broome would reject these views because they do not adequately deal with claims. Broome has often been misunderstood as a proponent of the distributive view. The distributive view holds that lotteries can provide surrogate satisfaction of claims by providing equally strong claimants with equal chances. Broome does not believe that chances provide a surrogate satisfaction to claims but only that distributing chances satisfies the requirements of fairness to some extent.

Lastly, this thesis considered counterarguments to Broome's theory of fairness by Hooker and Lazenby. The arguments aimed to undermine three core aspects of the theory: (i) the proportional satisfaction requirement, (ii) the possibility for fairness contributions of lotteries to outweigh its losses in terms of outcome fairness, and (iii) the notion that marginally weaker claims deserve satisfaction. I argue that the three arguments that were put forth do either not accurately present Broome's view or are special case arguments.

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