Dividing the Indivisible: Apportionment and Philosophical Theories of Fairness

Those in charge of allocating a limited amount of an available good often face a problem: how do they ensure that they treat everyone fairly? Answering this question raises many complicated issues even if the good in question is quite easily divisible, such as a piece of cake or fruit, or a large enough amount of money. Yet, there are also goods that are not divisible, such as a kidney transplant.

Perhaps the best known account of fairness that applies to such problems is that of John Broome (1990). His contribution has started a lively philosophical debate about how to be fair. For divisible goods, he recommends to satisfy individual claims in proportion to their strength. For indivisible goods, he recommends using lotteries, with equal or unequal weights, depending on whether claims have equal strengths or not. Broome's account of fairness has been criticized in a variety of ways,[1] yet it is especially Broome's use of *(unequally) weighted lotteries* that has been found wanting.[2]

[1] Tomlin (2012) and Kirkpatrick & Eastwood (2015) argue against the core feature of Broome's account, i.e. against the characterization of fairness as the proportional satisfaction of claims. Hooker (2005) and Saunders (2010) argue that fairness is *not* a strictly comparative value.

[2] Kirkpatrick & Eastwood (2015), Lazenby (2014), Henning (2015), Hooker (2005), Saunders (2010) and Vong (2015) all argue, in one way or the other, that Broome misconceives the

We examine how current philosophical theories of fairness that have been proposed as developments of Broome's (1990) account fare with regards to indivisible goods. They can be divided into two families of accounts: some recommend the use of weighted lotteries, such as Broome's (1990) original account, and the theory proposed by Curtis (2014). We will show that these accounts either have to stay silent on a number of important cases or fall prey to an objection by Hooker (2005). Other accounts, such as the one by Lazenby (2014), do without weighted lotteries and thus evade these problems, but we will argue that these accounts fall prey to three fairness paradoxes. Analysing fair division of indivisible goods on the basis of current philosophical theories of fairness thus seems to present us with a dilemma.

We argue that *apportionment theory* provides a method that helps to avoid such a dilemma. Apportionment theory (Balinski and Young 2001) is the systematic study of methods that can and have been used to solve problems of proportional representation that often involves indivisible goods (such as seats in parliament). Although the main motivation of apportionment theory has been to study the concrete problem of (fair) political representation, it is applicable to a much wider class of problems, including the division problems as discussed in the philosophical literature on fairness.

Section 2 presents the first horn of the dilemma: theories of fairness that use weighted lotteries are either of limited applicability or fall prey to an objection by Hooker. Section 3 presents the second horn of the dilemma: accounts that do without weighted lotteries fall prey to three fairness paradoxes. Section 4 demonstrates that apportionment theory provides us with division methods for indivisible goods that do not exploit weighted lotteries and that escape the fairness paradoxes: relying on such method allows one to escape the dilemma. Section 5 briefly concludes.

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relation between fairness and weighted lotteries.

References

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