

**Fair division of indivisible items between
two people with identical preferences: Envy-freeness,
Pareto-optimality, and equity**

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Abstract

This paper focuses on the fair division of a set of indivisible items between two people when both have the same linear preference order on the items but may have different preferences over subsets of items. Surprisingly, divisions that are envy-free, Pareto-optimal, and ensure that the less well-off person does as well as possible (i.e., are equitable) can often be achieved. Preferences between subsets are assumed to satisfy axioms of qualitative probability without implying the existence of additive utilities, which is treated as a special case. Algorithms that render fair division practicable are proposed, and their vulnerability to strategic manipulation is investigated.

Keywords: Fair division; indivisible items; envy-freeness; Pareto-optimality; additivity; adjusted winner.

JEL Classification: D63, D74.

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