Since the dawn of history, people have bickered and battled over fair allocation of resources -- the division of estates, disputed territories, and spoils of war. Such dilemmas have for the most part been resolved unilaterally, by kings like Solomon, by judges, or by brute force. Few truly logical solutions evolved. In the past 50 years, however, a number of mathematical devices have been discovered that offer elegant, practical, and often surprisingly simple resolutions to many problems in fair-division.

This lecture, aimed for the lay scientific audience, will discuss some of these discoveries, how they led to solutions for fair-division problems from ancient Babylon and Egypt, for practical everyday problems such as dividing a cake or choosing a leader fairly, and for modern political problems such as disarmament.

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