Selfridge-Conway Discrete Procedure: Envy-Free Division Among Three People

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Marriage and Divorce in America

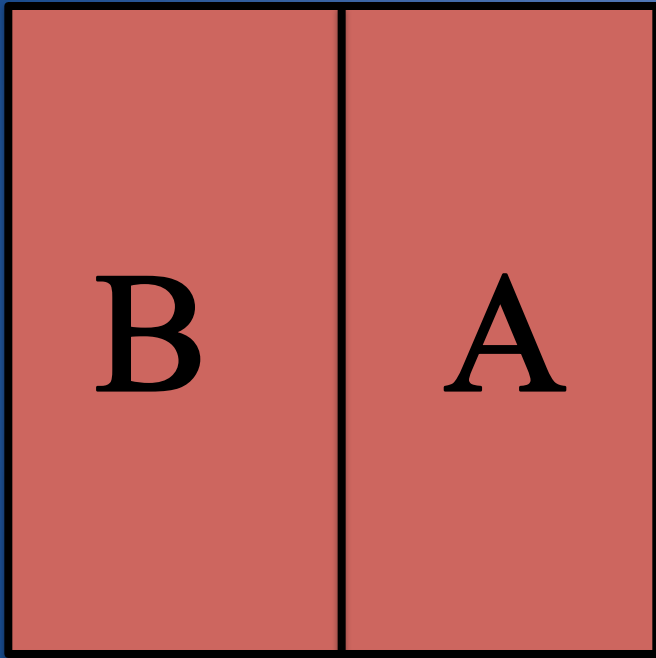- 2 million US marriages per year

- Almost half end in divorce

Post-Divorce

- Options
  - Lawyers

  - Math! Envy free division

Envy-Free Division Between Two People

- 3-way civil union (Netherlands 2005)

Victor de Brujin, Bianca, Mirjam

- Polyfidelitous union (Brazil 2012)

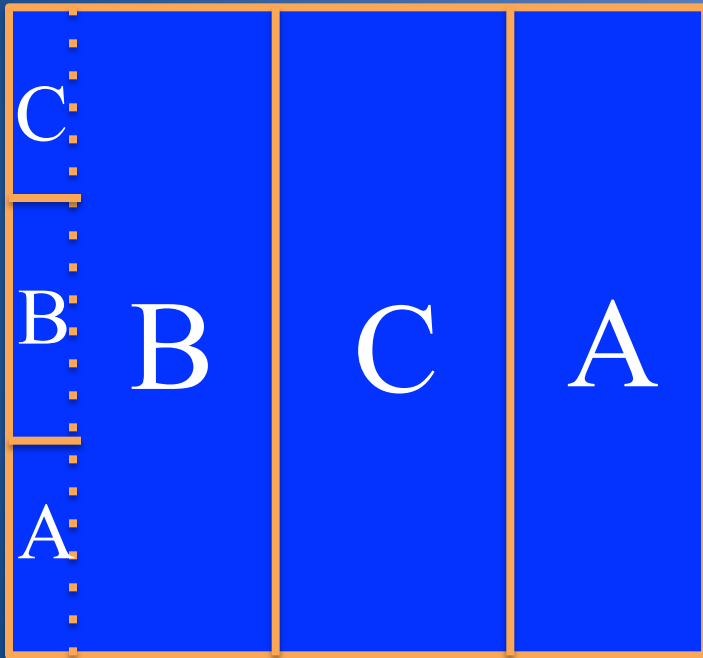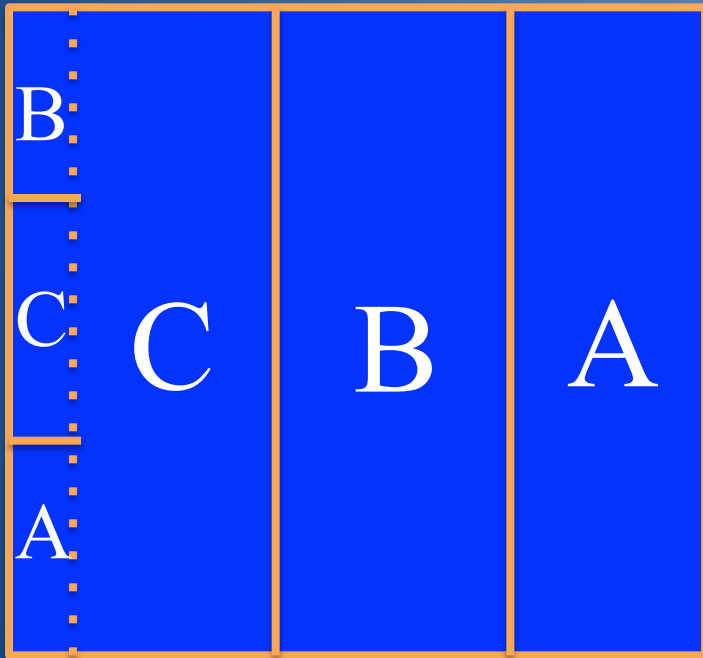# Envy-Free Division Among Three People (1960s)

John L. Selfridge

John H. Conway

Selfridge-Conway Procedure

- A cuts

- C cuts trim
  - B trims largest

- B chooses
  - C chooses

- A chooses
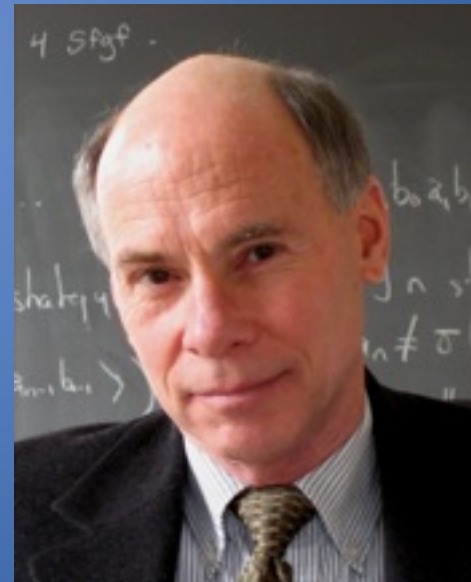 - B chooses

Selfridge-Conway Procedure, Case II

- A cuts

- B cuts trim
  - B trims largest

- C chooses
  - C chooses

- A chooses
  - B chooses

Quartets? Quintets? …?

- For n ≥ 4, number of cuts unbounded but finite for fixed n (1995)

Steven J. Brams

Alan D. Taylor