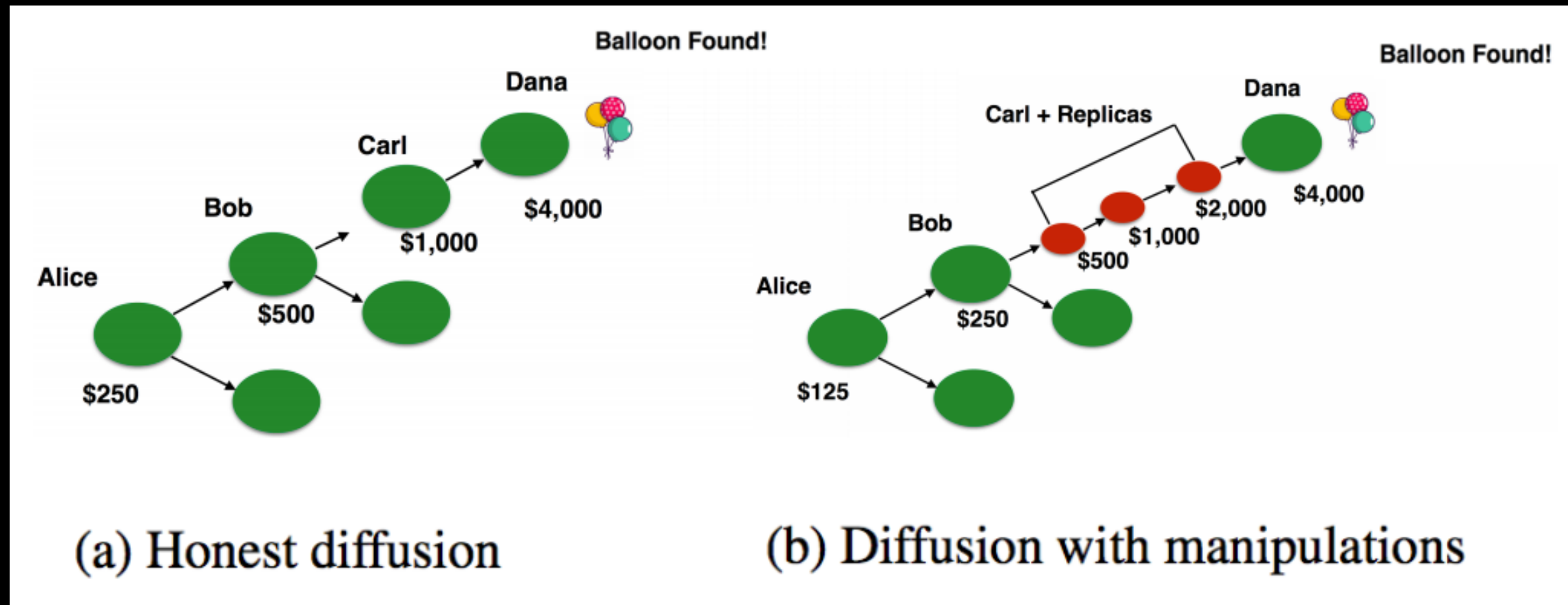


# Multi-Winner Contests for Strategic Diffusion in Social Networks

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# Strategic Diffusion in Social Networks



- Setting: Consider a principal aims to solicit as many efforts as possible from users in a social network.
- Challenges:
  - False-name attacks
  - Incentives for low-influential players
  - Scalability
- Question: How should a principal design the incentive mechanisms to address the challenges?

# Multi-Winner Contests

- Our solution:
  - Assign a positive number of credits to each player that has contributed task efforts and has made successful referrals.
  - Determine the diffusion rewards according to a ratio-form contest among players that are in the same subgraph.
  - Allocate the rewards proportionally.
- The MWC mechanism:
  - Satisfies desirable properties: false-name-proofness, individual rationality, budget constraint, monotonicity, and subgraph constraint.
  - Can be applied to large graphs with tens of thousands of nodes.