

School Choice Model that Minimizes Distance to Home while Guaranteeing Equal Access to Quality



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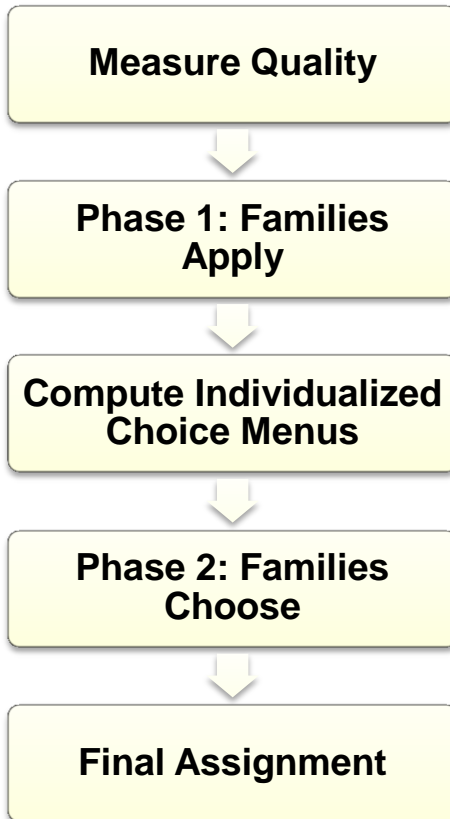
Motivation

- **Equal access to quality *and* close to home: is this possible?**
- **Yes, with**
 - No zones
 - **Individualized choice menu** of 6-7 schools that
 - Guarantees equal access to quality (in quantitatively precise sense)
 - Is optimized to be close to home



Bird's Eye Overview

Features

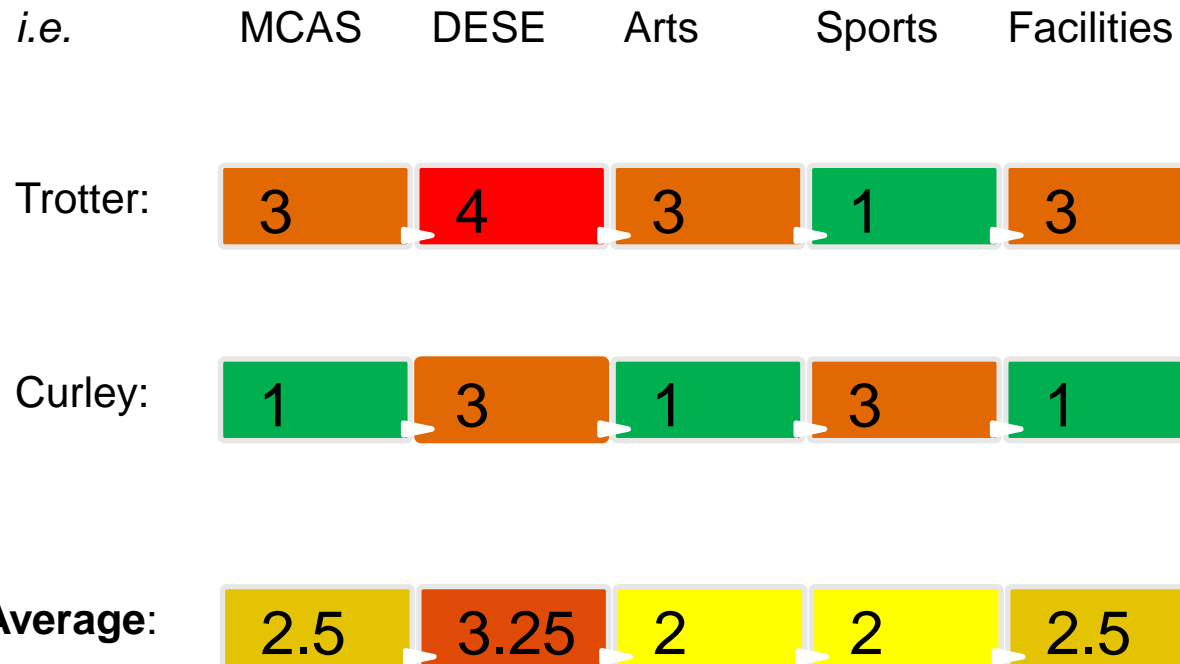


- Use list of metrics
- Menus are closest to home subject to providing equal access to quality (EAQ)
- Improved community cohesion

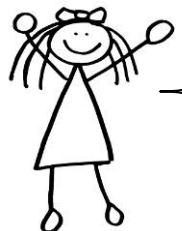


Measuring Quality

- Use list of metrics



Defining Equitable Access to Quality



MCAS DESE Arts Sports Facilities

25% × Trotter:



+

25% × Curley:



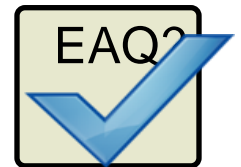
+

50% × Ellis:

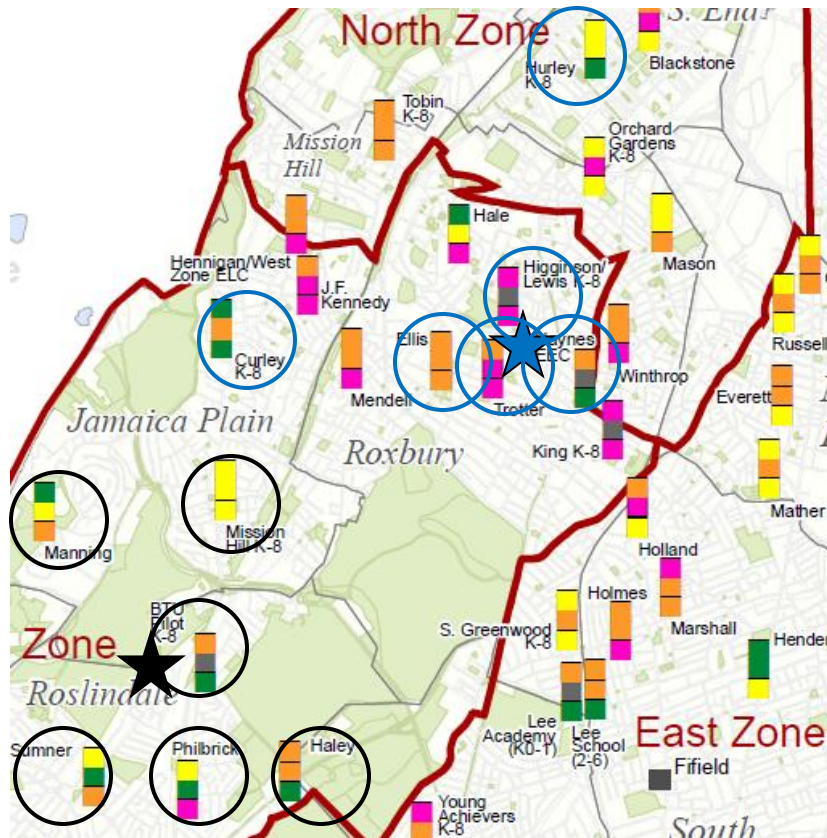


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District Average:

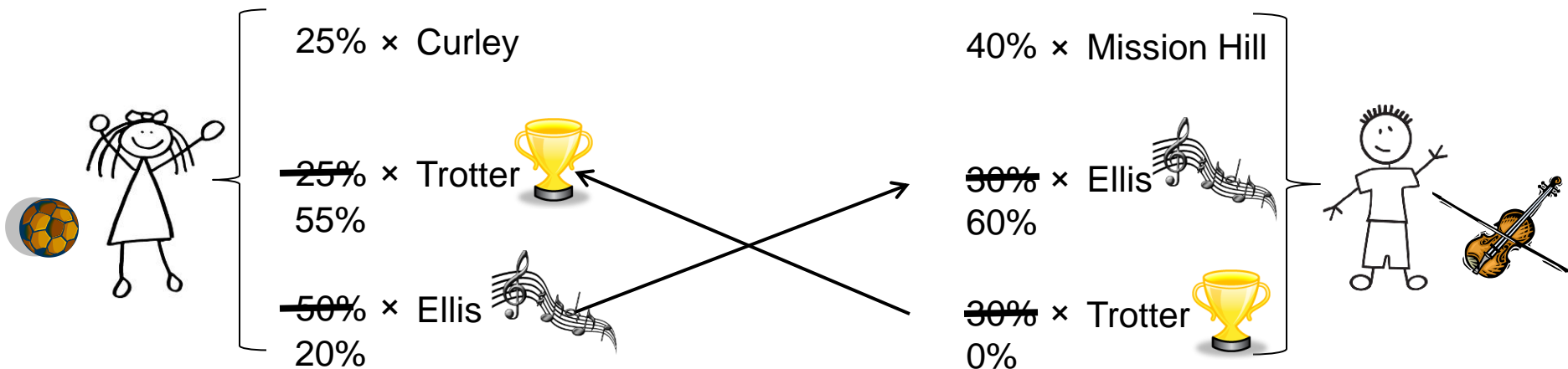


What Do Individualized Choice Menus Look Like?



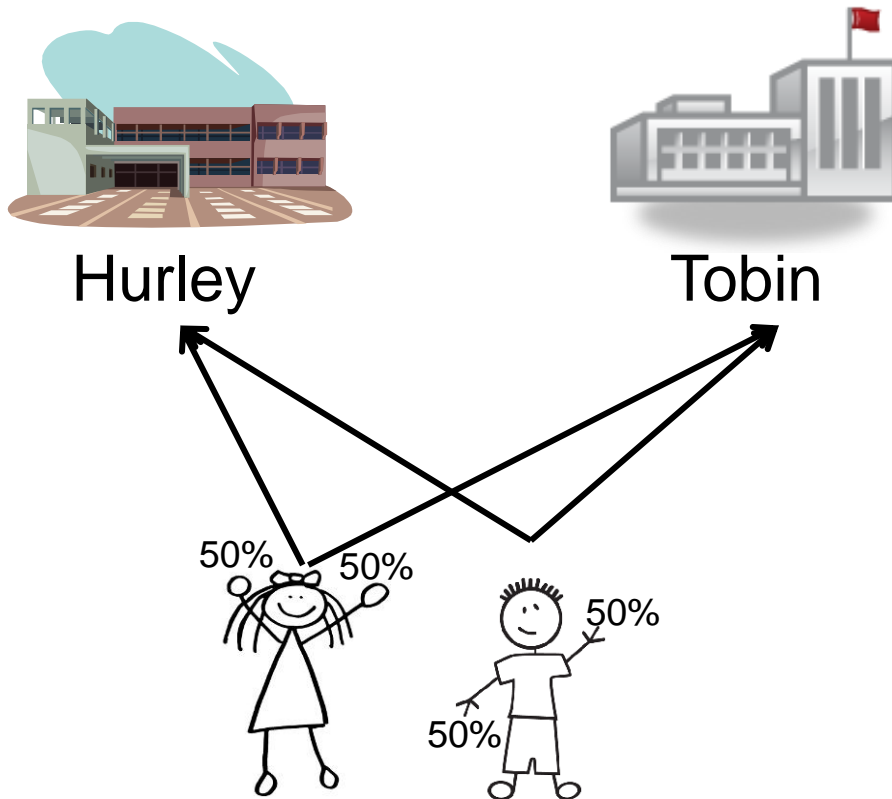
- Guarantee equal access to quality
- Minimize distance to home subject to delivering equitable quality
- Not illusion of access
- Meaningful choice

Exercising Choice: Trading Probabilities

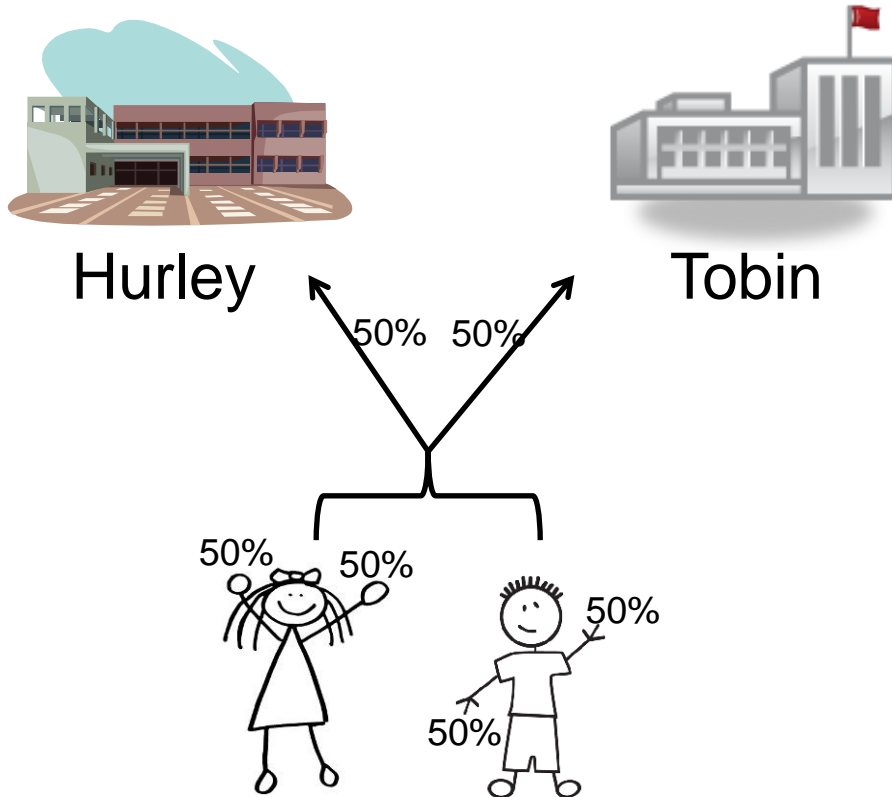


- Only trade if all parties benefit
- Use Top Trading Cycles Algorithm (used in New Orleans)

Correlated Lottery to Improve Community Cohesion

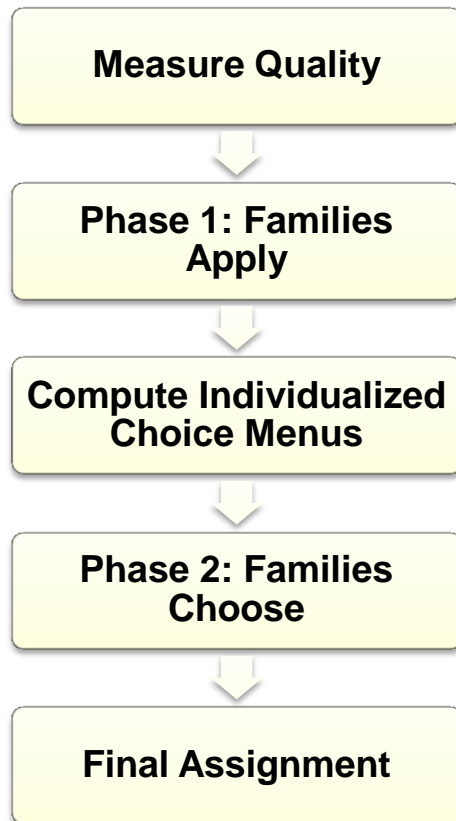


Correlated Lottery to Improve Community Cohesion



- No one's individual probabilities are altered.
- Math trick **improves community cohesion** for free!

Review



Details

- Use list of metrics
- Only siblings choose; others wait until phase 2
- Assign siblings
- Divide remaining capacity into EAQ probabilistic baskets
- Families rank schools in own menu.
- Trade probabilities if mutually benefit
- Correlated lottery to improved community cohesion



Benefits and Potential Objections

Benefits

- Guaranteed **Equal access to quality**
- Optimized to be **close to home**
- **Meaningful** choices
- Automatically **adapts to changes** in demographics or quality

Potential Objections

- Too complicated?
- Variability in choice options introduces unpredictability
- Should focus on “increasing the pie” rather than “dividing the pie”

But...

- Complexity can be shielded from families
- Choice options won't change that much
- Equitable resource sharing important even now

