

## Economic Constraints on Children's Taste Formation and the True Cost of Healthy Eating

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## Background and Motivation

- Rates of diet-related disease have risen
- Socioeconomic disparities in diet quality and dietary health exist

## Research Question

How do low-income and higher-income parents decide what to feed their children?

## Today's Research Question

How do economic constraints shape opportunities for children's taste acquisition?

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How do low-income and higher-income parents decide what to feed their children?

How do material constraints and ideas interact to produce these decisions?

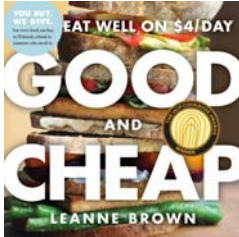
## Healthy Eating is Prohibitive

Energy-dense, nutrient-poor foods provide the most affordable dietary Energy.



(Drewnowski & Darmon 2005, Darmon & Drewnowski 2008)

## Healthy Eating is Possible



Many healthier foods are affordable, depending on how cost is measured.

(Carlson & Frazao, 2012)

## Neophobia and its Cost

- Children are wary of unfamiliar foods
- Acceptance can take 8 to 15 exposures
- Experience with a variety of foods → willingness to try and acceptance



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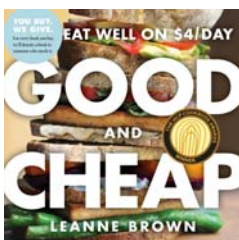


(Drewnowski & Darmon 2005, Darmon & Drewnowski 2008)

## Data and Methods

- 73 interview respondents
- 41 shopping observations, plus interview
- 53% white, 41% Black, 6% biracial
- 62% low-income, 16% moderate income, 22% higher-income

## Healthy Eating is Possible



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## Empirical Argument

Taste aversion → Waste → Risk aversion

## Contribution

- Compare tendencies of low- and higher-income respondents

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- Consider implications for taste acquisition and food trajectory, not just present intake
- Examine moderators of risk aversion
- Extend findings to debates about cost of healthy eating

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## Buying Based on Preference

"I have a bad habit of picking things that they eat a lot instead of trying different things, because I don't know if they're gonna like them."

-Sharonda  
(low-income African-American mother)

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- Consider implications for taste acquisition and food trajectory, not just present intake
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## Cooking Based on Preference

"I know they're gonna eat it, and if there's leftovers, I know that they'll have no problem with eating the leftovers."

-Tamika  
(low-income African-American mother)

### Why Defer to Kids' Preferences?

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### Liking Minimizes Waste

"I get food stamps. Even then, 'cause things are so expensive, you end up using [your own] money. So I [get] the things I know that my son will eat and like. I try to mix it up a little bit [...] but I try not to buy things that I don't know if he'll like, because, it's just, it's a waste."

- Brittany  
(poor, food-insecure white mother)

## Scarcity Limits Experimentation

"She tried it, didn't like it—let her **experiment on a budget**, you know what I'm sayin'? "Mummy, I want that!" "You're not gonna try that 'cause we can't afford it, and you don't know if you gonna like it. [...] We get that, **we're not gonna be eating** for a couple days, so **if you want an empty stomach**, you go ahead and try that."

- Trisha  
(poor African-American mother)

## Parents Defer to Children's Preferences?

- Parents fall back on what they know their children like
- Often, children like energy-dense, nutrient-poor foods

## Economic Limits on Repeated Exposure

Brittany:

No, because you know those whole ten times that they say, "No, no, no," you're **wasting that food**. So that's a big thing for me.

Me:

So if you knew that after eleven cauliflowers he would finally like cauliflower, would it be worth it?

Brittany:

No. No. **That's a lot of wasted food**. No. Not for me, not for me.

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  - Hot Pockets vs. homemade beans and rice
  - Mashed potatoes vs. collared greens

### Broad Preferences, Less Waste

- Family members can **share their food** with children
- Family members can **absorb the food** that children reject

### Moderator: Family Food Preferences

Household-level preferences define which foods are risky

### Limited Preferences, More Waste

Cassie:

I don't buy a lot of those things. If I'm at somebody's house and my daughter sees it and says, "Ooh, that looks good," then I might let her try it. Other than that I don't buy those things, so she kind of isn't getting what she should be.

Me: And what holds you back from buying stuff like that?

Cassie:

Um, the fact that I don't eat it [laughs].

### Broad Preferences, Less Waste

"[My daughter] will say, "Mommy, I don't want this," and it's a whole plate of food. I put it back with the other food or somebody else eats. I don't waste food around here. No, no, are you kidding me? There's 5 of us. No money to waste. My boyfriend—I'm sorry—is a garbage disposal. **He'll eat anybody's leftovers.** He's like a dog."

- Jackie

(low-income white mother)

### Limited Preferences, More Waste

Me: Are there any things that she doesn't eat for breakfast that you would like her to eat more of?

Cassie:

I can give her bacon and eggs and I just feel as though **it's a waste of money giving it to her** because she will leave it there.

(Low-income African-American mother)

### Children Encounter Food Elsewhere

- Low-income respondents were willing to buy foods their children had tried and liked
  - Carrot and celery sticks (school)
  - Pomegranates (school)
  - Asian pears (school)
  - Asparagus (friend's house)
  - Cauliflower parmesan (food pantry)
  - Tomatoes (cookout)

### Kids' Favorites Are Still Important

Me: And what are you most looking forward to giving them ?

Lorraine:

I'm always happy when I have certain **easy, go-to items** in the house. That always makes me feel complete. Like I'm well stocked and I can **get things done quickly**.

- Lorraine  
(higher-income white mother)

### Higher-Income Parents Take Risks

"I can take a chance on food that he might not like. He wanted [a peach-poppyseed salad], and I was like, "Okay, I'll buy it, but **I'm not sure you're going to like it.**" And then he didn't like it, and I was like, "I knew you wouldn't like it." [Raises hands in resignation.]  
Ehh. It's okay. But again, because we're lucky..."

- Claudia  
(middle-class white mother)

### Why Not Withhold Food?

### Cost Is A Less Salient Barrier

Wendy:

Yes, 'cause almonds are very easy to put in a little Ziploc bag and take it with you.

Me: Would you be at all worried that if you did that ten to fourteen times, it would kind of be a waste of money?

Wendy:

I would find a better storing solution so that they won't get rubbery and stale, but um, I, no, **I don't know if money would be a reason for me not to buy it.**

### Why Not Withhold Food?

- Hungry children are often difficult to deal with
- Eating disliked food under stress does not increase liking for that food

(Devine et al 1998)

### Why Not Withhold Food?

- Parental identity

### Scope Conditions and Caveats

- Risk aversion may not be the most immediate barrier to healthy eating
- Other beliefs and attitudes may be most effective targets for dietary change

### Why Not Withhold Food?

- Parental identity
- State intervention in family life

### Implications: Children's Health

- Without repeated exposure to varied foods, children may not come to like options that are not inherently palatable

### Why Not Withhold Food?

"So, I don't want to force him. See, I was forced to do this when I was a kid. It's either you ate it or you didn't eat, and that was it. Now, forget about it. If you do that, they're like, "I'm calling the police, I'm calling child [protective] services."

- Stefanie  
(low-income white mother)

### Implications: Children's Health

- Without repeated exposure to varied foods, children may not come to like options that are not inherently palatable
- Preferences formed in childhood tend to track over time
  - Early experiences set "food roots"



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- Without repeated exposure to varied foods, children may not come to like options that are not inherently palatable
- Preferences formed in childhood tend to track over time
  - Early experiences set "food roots"
- Risk aversion may contribute to socioeconomic disparities in diet quality

### Implications: Food Cost Estimates

- In most estimates, waste is unobserved
- Why? Studies use food intake data
- Food Cost = Quantity consumed x Price

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### Implications: Food Cost Estimates

- Food Cost = Quantity consumed x Price
  - Consumed  $\frac{1}{2}$  apple
  - 1 apple = 50 cents
- Food Cost =  $\frac{1}{2}$  apple x 50 cents = 25 cents

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### Implications: Food Cost Estimates

For parents, waste is salient

- Parents pay for what's consumed and what's wasted
- Cost = (Qty consumed + Qty wasted) x Price

#### Implications: Food Cost Estimates

- Cost = (Qty consumed + Qty wasted) x Price
- Consumed: ½ apple
- Wasted: ½ apple
- Cost of ½ apple = (½ apple + ½ apple) x 50 cents  
= 50 cents
- Cost food provided > Cost of food consumed

#### Implications: Food Cost

- The same food can have different costs depending on how much is wasted
- Foods with *similar prices* may have *different costs*
- Affordable foods can become costly

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- Social context shapes assessment of food cost

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#### Implications: Food Cost Debate

- “Healthy is possible” argument overestimates ability to provide healthy diet
- “Healthy is prohibitive” argument may be accurate for an unanticipated reason

### Scope Conditions

- Some foods are expensive no matter how little the waste
  - Fresh seafood
  - Cherries
  - Berries
  - Sushi
  - Asian pears
  - Quinoa
  - Homemade Chinese-American food

### Implications: Policy and Programming

- Distribute risk across organizations
  - Schools
  - After-school programs
  - Religious organizations
- Experiential food education increases willingness to try and acceptance (Liquori et al 1998, Heim et al 2009)
  - School-to-home spillover

### Implications: Policy and Programming

- Feeding advice should acknowledge risk aversion
  - Identify foods that create less waste
- Create positive emotions around food
  - Involve children in cooking
  - Appealing, engaging presentation (Connell et al 2016)

### Limitations and Next Steps

- Breadth and representativeness
- Magnitude relative to other barriers
- Do not quantify how much food-cost estimates would change with waste

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Thank you

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