Welcome to the SSRI Food Working Group Speaker Series

**February 26** - Gavan Fitzsimons - Food Marketing  
**March 26** - Sarah Armstrong - Childhood Obesity  
**April 2** - Kelly Brownell – Food Policy  
**April 9** - Nancy Zucker - Psychiatry and Food  
**April 23** - Michelle Nowlin - Food and the Law

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Food: We love & hate it

Gavan J. Fitzsimons  
Duke University
How do we feel about food?

- Incredibly complex set of associations

Who makes your food choices?

- We all like to think that we make careful, considered food choices that are good for our bodies and the world around us, correct?
And yet... Do visuals cues sign the end of a meal?

- Participants who unknowingly ate from bottomless soup bowls ate 73% more soup, but they did not believe they had eaten more or were more sated than those eating from normal bowls.

Wansink, Painter and North 2005

Who makes your food choices?

- We all like to think that we make careful, considered food choices that are good for our bodies and the world around us, correct?
- Will review work from our lab focusing on two areas that cast doubt on this assumption:
  - Our own nonconscious processes
  - The influence of other people
- Will also discuss some early efforts into eating strategy effectiveness
Ia. Food and the unconscious: Healthy options?

Do healthy options help?

- Global diet at an all time low
- Weight and related health problems rising
- We need more healthy food choices, right?
Method

- Ps presented with options for a side with lunch
  - Either see no healthy option or a set that includes a healthy option

Choice of least healthy option

Wilcox, Vallen, Block & Fitzsimons, JCR '09
Choice of least healthy option

Wilcox, Vallen, Block & Fitzsimons, JCR '09

Not just salads...

<table>
<thead>
<tr>
<th>Study</th>
<th>Choice Set</th>
<th>No Healthy Option</th>
<th>Healthy Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sporting Event Menu Study 2a</td>
<td><img src="burger.png" alt="Burger" /> <img src="burger.png" alt="Burger" /> <img src="burger.png" alt="Burger" /></td>
<td><img src="burger.png" alt="Burger" /></td>
<td><img src="burger.png" alt="Burger" /></td>
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<tr>
<td>Snack Menu Study 2b</td>
<td><img src="chocolate.png" alt="Chocolate" /> <img src="oreo.png" alt="Oreo" /> <img src="oreo.png" alt="Oreo" /> <img src="100cal.png" alt="100 Calories" /></td>
<td><img src="chocolate.png" alt="Chocolate" /></td>
<td><img src="oreo.png" alt="Oreo" /></td>
</tr>
<tr>
<td>Lunches Menu Studies 3 and 4</td>
<td><img src="frenchfries.png" alt="French Fries" /> <img src="chicken.png" alt="Chicken Nuggets" /> <img src="bakedpotato.png" alt="Baked Potato" /> <img src="salad.png" alt="SALAD" /></td>
<td><img src="frenchfries.png" alt="French Fries" /></td>
<td><img src="chicken.png" alt="Chicken Nuggets" /></td>
</tr>
</tbody>
</table>
But why?

- We believe that the healthy option can satisfy your goal to “eat healthy”
- May cause you to remember the salad you had yesterday...
- Or may cause you to consider the salad you think you’ll eat tomorrow...

Who’s vulnerable?

- If goal to be healthy is satisfied perhaps those whose goal is chronically active are more vulnerable
- 2 (Healthy option present/absent) X measured self-control
- DV is choice of least healthy option
Who’s vulnerable?

Wilcox, Vallen, Block & Fitzsimons, JCR '09
Ib. Food & the unconscious: Resistance

- Have you ever been told to “eat healthy” so many times that your first response is to want to eat more unhealthy foods?
- What if you weren’t even told by someone to eat healthy but simply saw the words “diet” and “nutrition” on a billboard?

Liu & Fitzsimons, in prep

Background

- People resist attempts to persuade them (Friestad and Wright 1994)
- Resistance to stimuli can become automatized and nonconsciously activated (Chartrand, Dalton, and Fitzsimons 2007)
- How can we activate healthy eating in consumers if priming persuasion attempts may backfire?
Routes to persuasion?

- Eating behavior
- Direct prime
- Indirect prime
Routes to persuasion?

Direct prime
*Diet*

Indirect prime
*Exercise*

Eating behavior

Backlash to Direct Prime?

Routes to persuasion?

Direct prime
*Diet*

Indirect prime
*Exercise*

Eating behavior
Study 1 Method

- **Priming (scrambled sentence) condition:**
  - Control
  - Direct Prime (Diet words)
  - Indirect Prime (Exercise words)

- **DV: choice of food products (all consumed during study):**
  - Chocolate chip cookies vs. chocolate rice cakes
  - Soda vs. water
  - Chips vs. pretzels
  - Gummies vs. apples
  - Toaster pastry vs. granola bar

Priming Words

**Direct prime**
- diet
- nutrition
- healthy
- calories
- fiber
- low fat
- vitamins
- nutrient

**Indirect prime**
- training
- fit
- work out
- exercise
- gym
- active
- athlete
- fitness
Study 1 Results

Liu & Fitzsimons, in prep

Study 2 Method

- Priming (scrambled sentence) condition:
  - Direct Prime (Diet words)
  - Indirect Prime (Exercise words)
- DV: choice of food products (all consumed during study)
- Moderator
  - Trait reactance (Hong 1992; Hong and Faedda 1996)
Are you reactant?

- Regulations trigger a sense of resistance in me
- I find contradicting others stimulating
- I resist the attempts of others to influence me
- I become angry when my freedom of choice is restricted

Moderation by reactance...

Liu & Fitzsimons, in prep
Routes to persuasion?

- Direct prime
  - Diet

- Indirect prime
  - Exercise

Backlash to Direct Prime?

Eating behavior
Routes to persuasion?

- Direct prime
  - Exercise
- Indirect prime
  - Diet

Does it work in reverse?

- Priming (scrambled sentence) condition:
  - Control
  - Direct Prime (Exercise words)
  - Indirect Prime (Diet words)
- DV: choice of exercise activities performed during study
  - Jumping jacks
  - Stepping stairs
  - Chair squats
  - Grouping jelly beans
  - Cutting paper
  - Cutting string
Exercise activities...

IIa. Social influence: Size of those consuming around us

Liu & Fitzsimons, in prep
Movie study

• Design: 2 (confederate body type: thin vs. obese) x 2 (confederate quantity taken: little vs. lots)

• Procedure: Guise “Viewing experience”, run in pairs “to save time” and to make the video experience “more realistic”, they were offered a choice of snacks
  – Confederate takes first, either 2 or 30 from 7 bowls of different candies
  – Taken to separate rooms, watch 5 minute movie clip

• Quantity taken and consumed measured

McFerran, Dahl, Fitzsimons & Morales, JCR ‘10

Confederate - before
Confederate – before and after

Size 00, 5’2”, 105 lbs  Size 16, 5’2, ~175 lbs

Confederate – before and after

Size 00, 5’2”, 105 lbs  Size 16, 5’2, ~175 lbs
Candy taken

Control = 8.5

McFerran, Dahl, Fitzsimons & Morales, JCR ‘10
IIb. Social influence: Size of those we are choosing for

Context

- We often make food choices for others (e.g., SOs, colleagues, etc)
- At times these others are members of a growing stigmatized group – the obese
- When choosing food simultaneously for a large other do change your own choices?
The scenario

- You have agreed to pick-up take-out for dinner and your friend has told you what they wanted for their entrée but not what they want for their side dish.
- When you get to the restaurant, there are two side dishes available.

Food for a friend...

Would you choose the same or different side dishes for yourself and Sarah...
...depending on whether Sarah looks like this...

...or like this?

Do we match?

Liu, Campbell, Fitzsimons & Fitzsimons in prep
What if the choice set isn’t stigma relevant?

Stigma relevance as a moderator

Percent Choosing Matching Options

Liu, Campbell, Fitzsimons & Fitzsimons in prep
So far...

- It’s quite possible that despite our best efforts to balance our internal conflicts about food we are being guided by:
  - people and norms in your social environment
  - forces outside your awareness

- What can we do?

Sample interventions...
More information?

• Is the solution to the eating problem a lack of information?
• Perhaps if we provide more nutrition information on menus everyone will make “better” choices?
• Empirical support?
• If not information, what?

IIIa. What eating strategies “work”?

• Avoidance
  – No consumption of a forbidden fruit
  – No exposure to tempting stimuli allowed

• Moderation
  – Never go to excess, but let moderation be your guide (Cicero)
  – Limited quantity of or exposure to tempting stimuli
  – Precommitment, “fun” money

Haws, Lamberton, Dzhogleva & Fitzsimons, in prep
Research question

• When are avoidance vs moderation strategies used?
• When are they most effective?
• What are situational and individual moderators of these answers?

Food strategies...

• Preliminary data suggest that moderation may be more effective when Ps find a situation less challenging

• We measure individual food self control and prime the use of either a moderation or avoidance strategy (through an essay writing task)
• Then measure actual food choice
Food self-control

- “I display a lot of self-control when it comes to eating”
- “I have a lot of experience controlling my eating behavior”
- “I tend to engage in indulgent eating more than I should” (reversed)
- “I wish I were able to avoid indulgent eating more often” (reversed).

Giner-Sorolla 2001

% of healthy items selected (higher is less SC failures)

Haws, Lamberton, Dzhogleva & Fitzsimons, in prep
Strategy effectiveness...

- People use both moderation and avoidance strategies on regular basis
- Matching avoidance to high difficulty tasks appears to make sense
- Attempting moderation for high difficulty tasks or when individuals are low in perceived self-control runs risk of SC failure

IIIb. Shopping on an empty stomach

- Ps fasted for five hours prior to the experiment
- Half ate wheat thins until they were full
- Then went shopping in online grocery store
Number of high calorie choices by category

- Snacks
- Dairy
- Grocery
- Meat

Same results for shoppers 4-7pm versus 1-4pm!

Tal and Wansink 2013

How do our kids feel about healthy eating?

- Childhood obesity on the rise
- Kids tend to avoid healthy foods
- What can we do to help?
  - A. Simple priming intervention by former PhD student
  - B. Partnership with Compass Foods and their K-12 division, Chartwells
IIIc. Veggie priming

- 800 elementary school students (K-5)
- Compare control to intervention day – same meals are served
- Students helped themselves to pre-portioned servings of applesauce, orange slices, green beans, and carrots

Reicks et al, 2012

Percent of veggies taken

Reicks et al, 2012
Grams of veggies consumed

Reicks et al, 2012

IIIId. Field study design

- 3 schools: No intervention
- 2 schools: FV Challenge
- 2 schools: FV Challenge + Parent Involvement
Timeline

- Week 1: Pre-week
- Week 2: Contest week
- Week 3: Post-week

FV Challenge
Sticker
Tracking
Posters

FRUIT & VEGETABLE CHALLENGE

<table>
<thead>
<tr>
<th>CIRCLE</th>
<th>TEACHER NAME</th>
<th>CLASSROOM</th>
<th># OF STUDENTS</th>
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2/27/14
Parent Involvement Booklets

Exhibit 1. Weighted Average Fruit and Vegetable Servings per Meal (Baseline, Intervention, and Post-intervention) and % Change from Baseline

<table>
<thead>
<tr>
<th></th>
<th>Baseline Average FV servings per meal</th>
<th>Intervention Average FV servings per meal (% Change from Baseline)</th>
<th>Post-Intervention Average FV servings per meal (% Change from Baseline)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>2.78</td>
<td>2.81 (1%↑)</td>
<td>2.50 (6.5%↓)</td>
</tr>
</tbody>
</table>

Liu, Schwartz, & Fitzsimons, in prep
Thanks!