

# Effects of Obesity and Body Type on the Food Choices of Others

**Brent McFerran, University of British Columbia**  
**Darren Dahl, University of British Columbia**  
**Gavan Fitzsimons, Duke University**  
**Andrea Morales, Arizona State University**

- **US - 66% adults, 1/3 of preschoolers overweight or obese**
- **Increased consumption, rather than a decrease in body's energy expenditure (Grundy et al. 1999)**
- **Americans eat 200 more calories a day than they did in 1980 (e.g., Chandon & Wansink 2007; NHANES 2004)**
- **Fries or Salad? Large or Small?**
  - **Difference between a 16 oz. MacDonald's Swamp Sludge McFlurry and MacDonald's Low Fat Ice Cream Cone is 560 calories**

# Research Question

- **Consumers' food choices are shaped by those around them (e.g., Herman, Roth, & Polivy 2003)**
  
- **Consequences of obese consumers on food choices of others?**



# Anchoring and Adjustment

- **Robust even when people are highly motivated for accuracy** (Epley and Gilovich 2006; Jackowitz and Kahneman 1995).
- **Wansink, Kent, and Hoch (1998) – purchase quantities**
  - **Consumers adjusted upward from a small anchor if a price justified stockpiling, and downward if a large anchor was set up (e.g. “buy 18 for your freezer”).**
- **Anchor on other consumers’ selections (rather than on retailers’ suggestions)?**

# Social Influences, Obesity and Food Choice

- **Others can have either a facilitating or attenuating effect on eating behavior**
- **Eat more (less) as others eat more (less) (Bell and Pliner 2003; Herman et al. 2003; Roth et al. 2001)**
  - **Evidence of the use of an anchor**
  - **Agnostic to who the social other is**

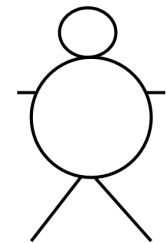
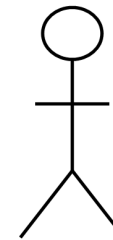
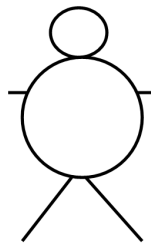
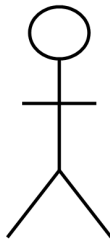
# Obesity, Consumption and Reference Groups

- **Priming overweight images leads to greater consumption (Campbell & Mohr 2008), social contagion of obesity (Christakis & Fowler 2007)**
- **Effects of social “others” moderated by whether the person is a member of an aspirational or dissociative group (Berger & Heath 2007; 2008; Escalas & Bettman 2005; White & Dahl 2006, 2007)**
  - **Diverge away from choices of dissociative groups**
  - **Thin seen as ideal; obese are stigmatized (Shapiro et al. 2007)**

## High Anchor

## Low Anchor

Other's choice



Their size



Your choice

# Healthy vs. Unhealthy Food

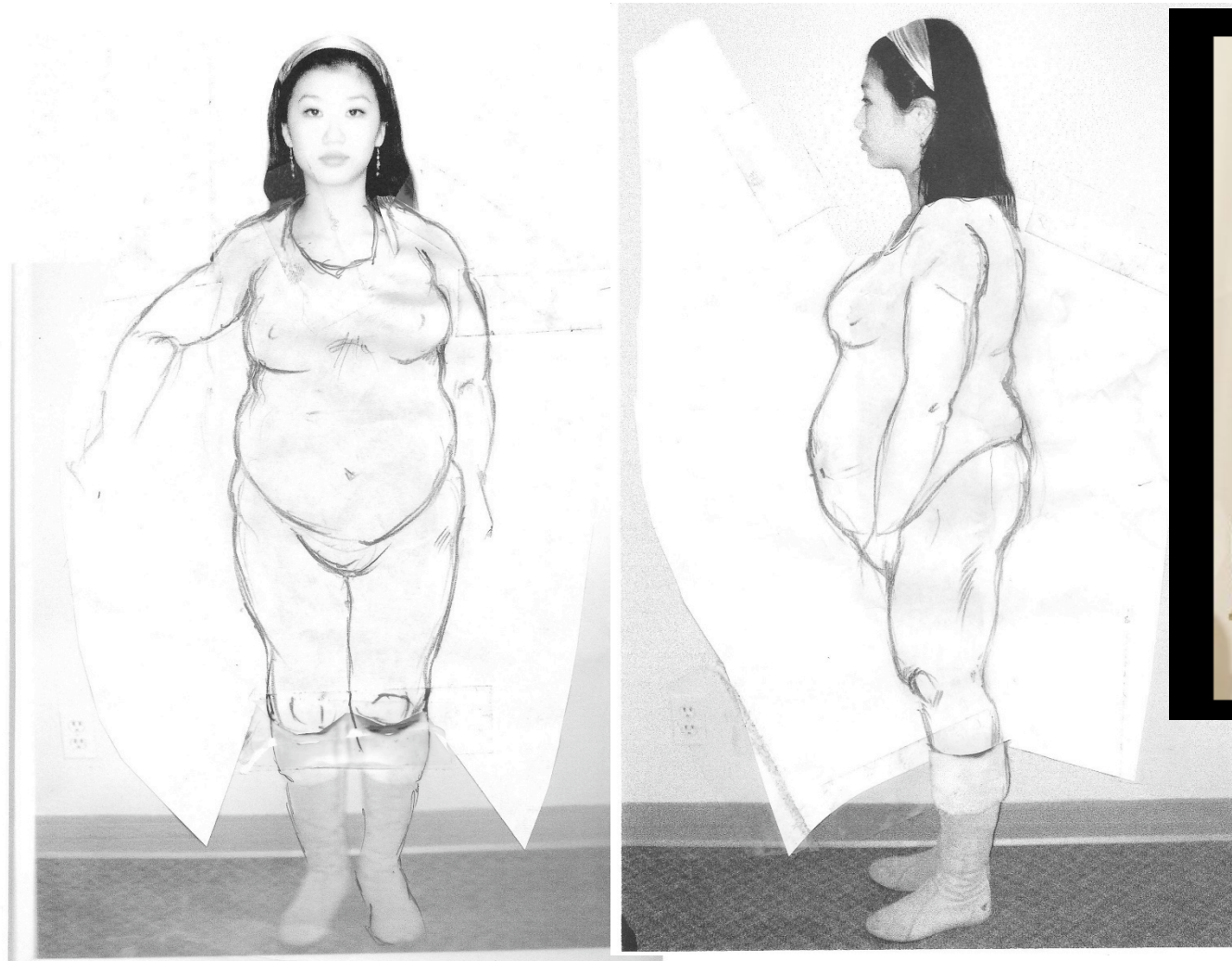
- **Should it matter?**
- **Competing predictions**
  - **Yes: Association between healthy food and obesity is not as strong (Weiner, Perry, & Magnusson 1988)**
  - **No: Obese are a stigmatized dissociative group (Shapiro et al. 2007) that presumably overeats (Johnston 2002)**



# Yun – Before



# Designing The Suit



# Yun – Before & After



Size 00, 5'2", 105 lbs



Size 16, 5'2", ~175

# Yun – Before & After



Size 00, 5'2", 105 lbs

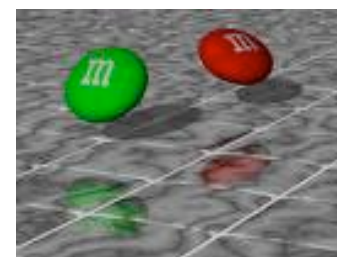


Size 16, 5'2", ~175

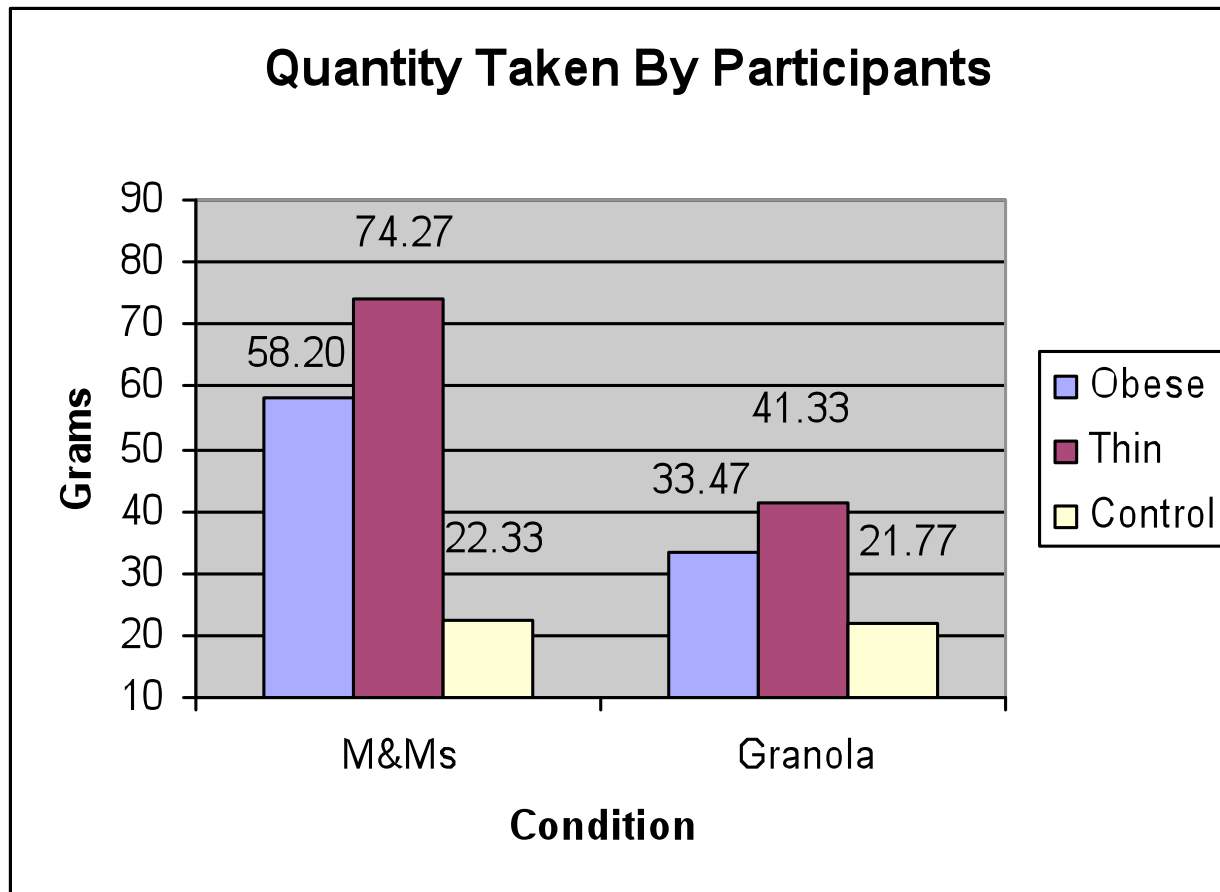
lbs

# Study 1

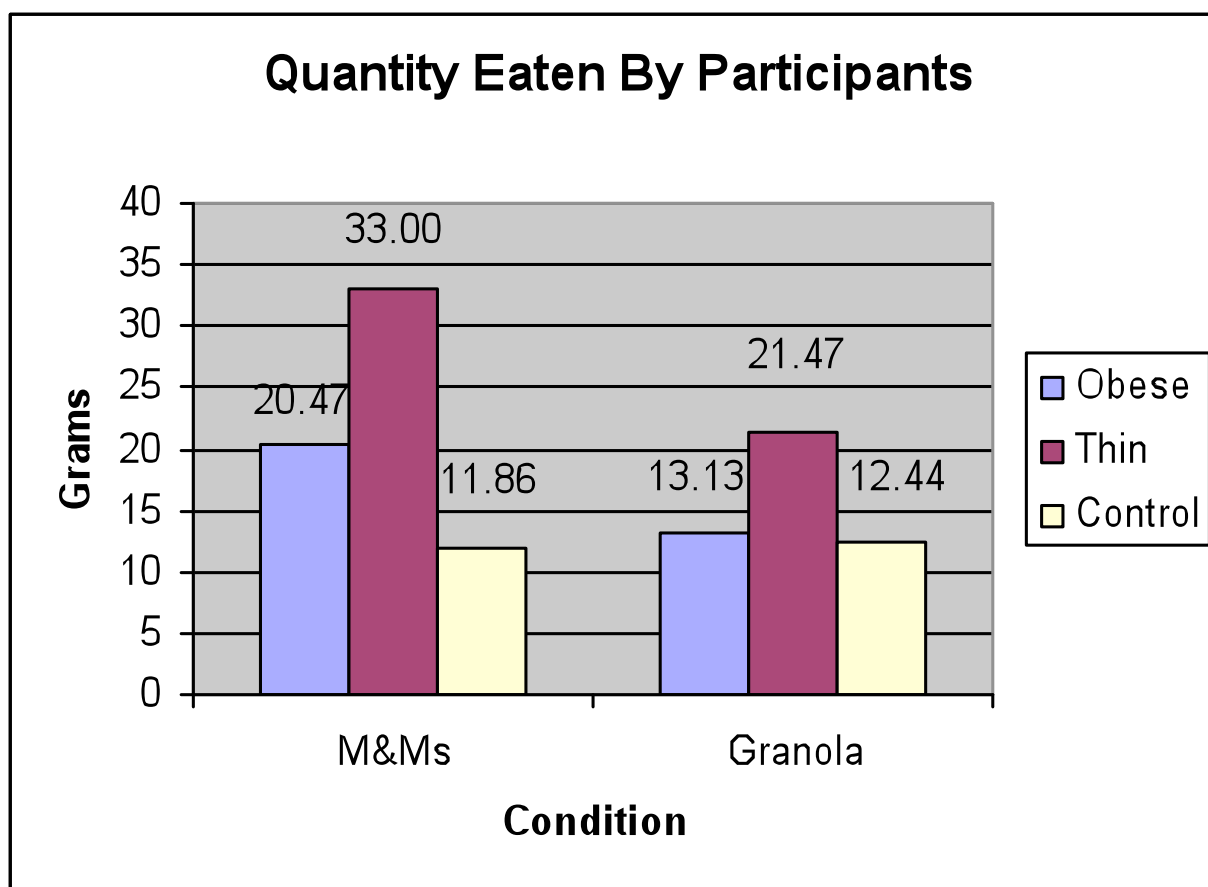
- **Design: 2 (confederate body type: thin vs. obese) x 2 (food available: healthy vs. unhealthy) + 2(control)**
  - Granola & M&Ms (Wansink & Chandon 2006) – similar in caloric density, but different in *perceived* healthiness
- **Procedure: Guise “Viewing experience”, run in pairs “to save time” and to make the video experience “more realistic”, they were offered a choice of snacks**
  - **Confederate always first, takes a large amount**
  - **Taken to separate rooms, watch 5 minute clip of I, Robot, then questionnaire**
- **DVs:**
  - **Quantity of candies taken & consumed**



**Main effect of body type  $F(1,60)=3.96, p=.05$**



**Main effect of body type  $F(1,60)=5.67, p=.02$**



## Study 2



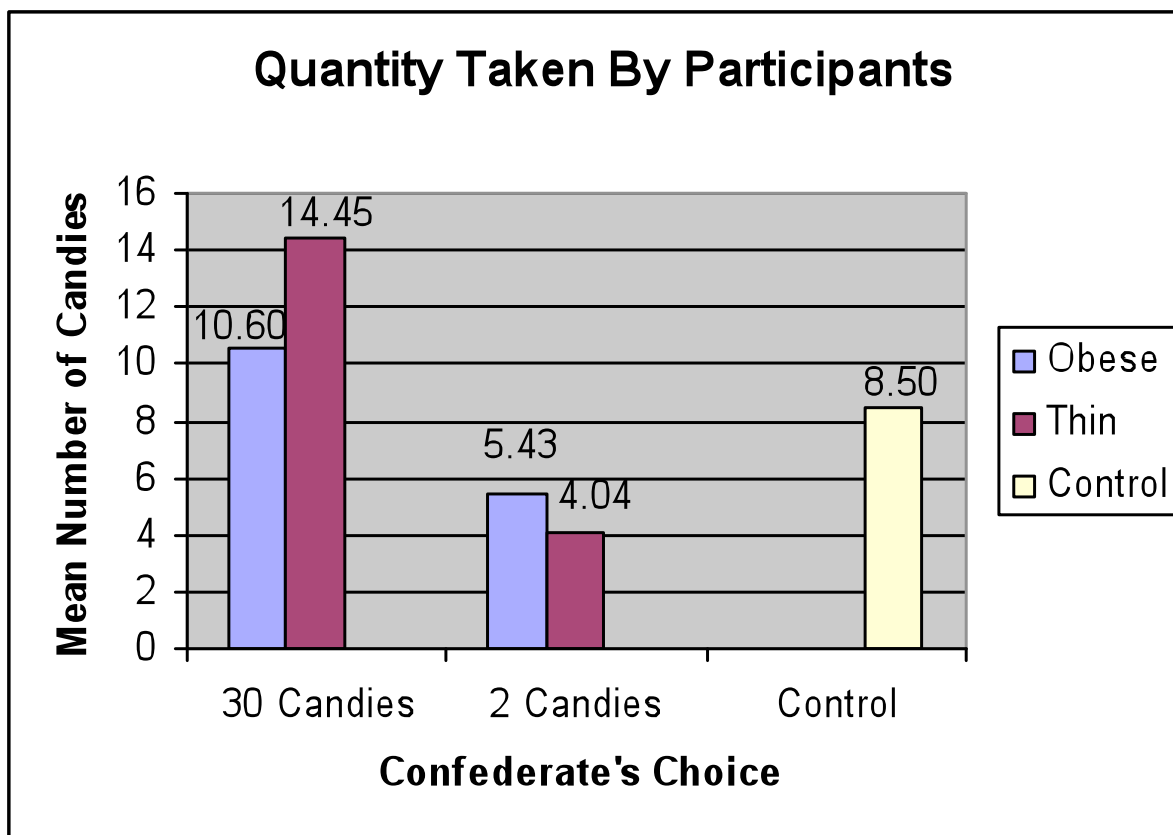
- **Diverge by reducing behavior linked with outgroup (Study 1; Berger and Heath 2008; White & Dahl 2006)**
  - Berger and Rand (2008) - people diverged away and drank less when told that graduate students (an outgroup) drank lots (high anchor), what if they had been told that graduate students were light drinkers (low anchor)?
- **Consumers will adjust upward following a small anchor (Wansink et al. 1998), but the extent of this adjustment will be moderated by other consumer's group status**
- **Design: 2 (confederate body type: thin vs. obese) x 2 (confederate quantity taken: little vs. lots) + 1 (control)**



# Quantity Taken

**Main effect of quantity taken  $F(1,62)=43.26, p<.001$**

**Body type x quantity taken interaction  $F(1,62)=7.93, p<.01$**



# Study 3

- **Body dissatisfaction increases proneness to social comparison (Trampe, Stapel, & Siero 2007)**
- **Divergence is a social process, but is it cognitive?**
  - **Cognitive load moderates anchoring and adjustment effects (e.g. Epley and Gilovich 2006; Gilbert 2002; Kruger 1999)**
- **3-way interaction between other's weight, appearance self esteem, and cognitive load**
  - **With available processing resources, those low in ASE will choose a smaller portion when the other person is obese than thin - however, among those high in ASE, this effect should be attenuated**
  - **Without available processing resources, neither the weight of the other person nor ASE will have an effect**

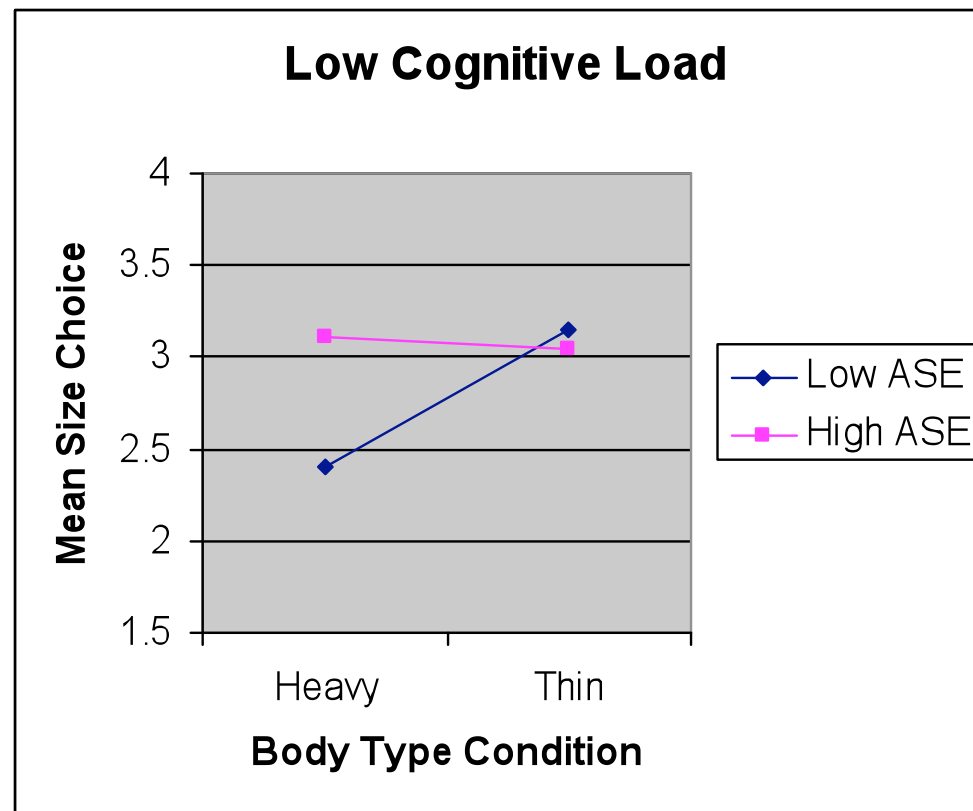
# Study 3 - Method



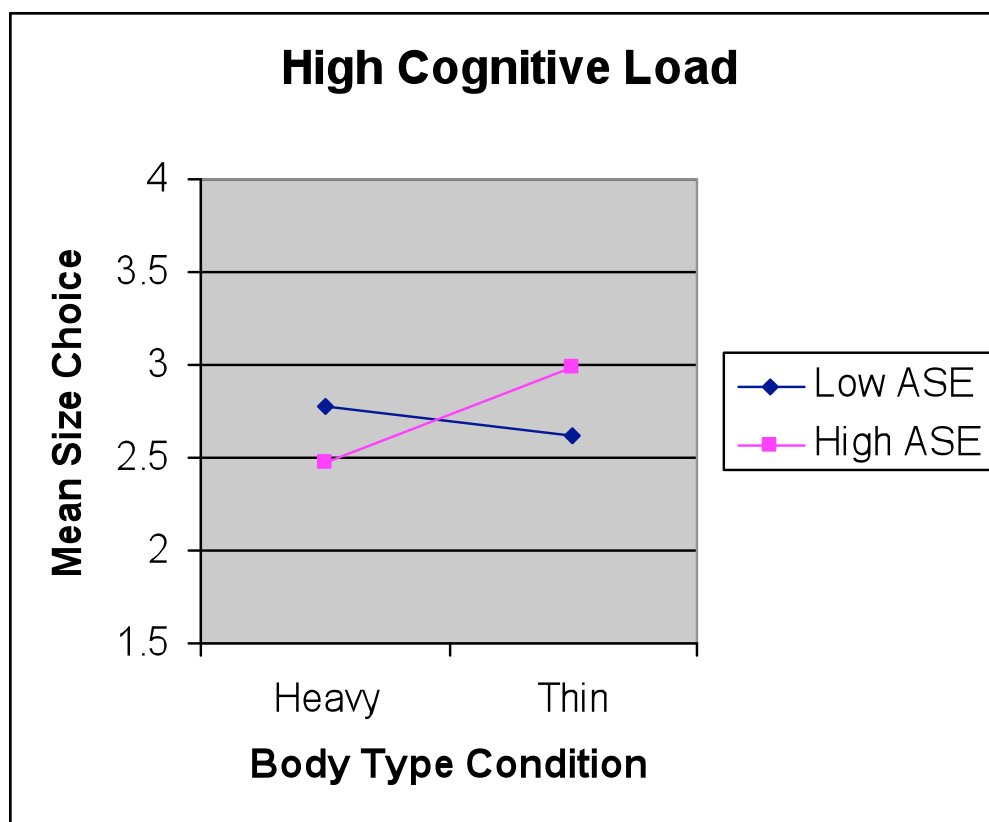
- **Scenario study (memory on decision making): Other person (obese vs. thin) chooses x-large ice cream**
- **2 (cognitive load: low vs. high) x 2 (body type of other: thin vs. obese) plus appearance self esteem (measured)**
- **“In order to make the study more realistic, the menu items presented to you are dishes actually offered by a retailer” (White & Dahl 2006)**
  - **Menu contained four flavors of ice cream available in 5 sizes (x-small, 6oz.; small, 9oz.; medium, 12 oz.; large, 15 oz.; and x-large, 18oz)**

# Results – Low Load

- Predicted 3-way ASE x load x other's weight interaction  $B=.18$ ,  $t=2.33$ ,  $p=.02$



# Results – High Load



# Contributions

- 1. People are more likely to eat greater portions when in the presence of others who do likewise (anchor)**
- 2. Extend this result to show that this effect is moderated by the body type (thin versus heavy) of the other (adjustment)**
- 3. Findings cut across food type (i.e. perceived to be healthy or unhealthy), and driven by perceived overconsumption**
- 4. Individual differences in body image satisfaction and processing capacity moderate the effects**
- 5. Identify an ironic backfire effect: increasing an undesirable behavior in order to dissociate**
- 6. Theoretical mechanisms that underlie the effects**
- 7. Methodological contribution – obesity prosthesis**

# What if Other Isn't Eating?

- **Mere Presence effects (Study 1)**
- **Role of Dieting**
  - **Worth over \$40 billion annually (Sherrid 2003)**
  - **1/4 on a diet at any given time (Crossen 2003)**
  - **Dieters exhibit backfire effects, eating more (versus less) in anticipation of an impending diet, following a “preload” of calories, after exposure to a food aroma (see Herman & Polivy 2004)**
- **Who is more persuasive ? (Study 2)**
  - **More attractive people (e.g. thinner females) are more persuasive (e.g. Eagly, Ashmore, Makhijani, & Longo, 1991)**

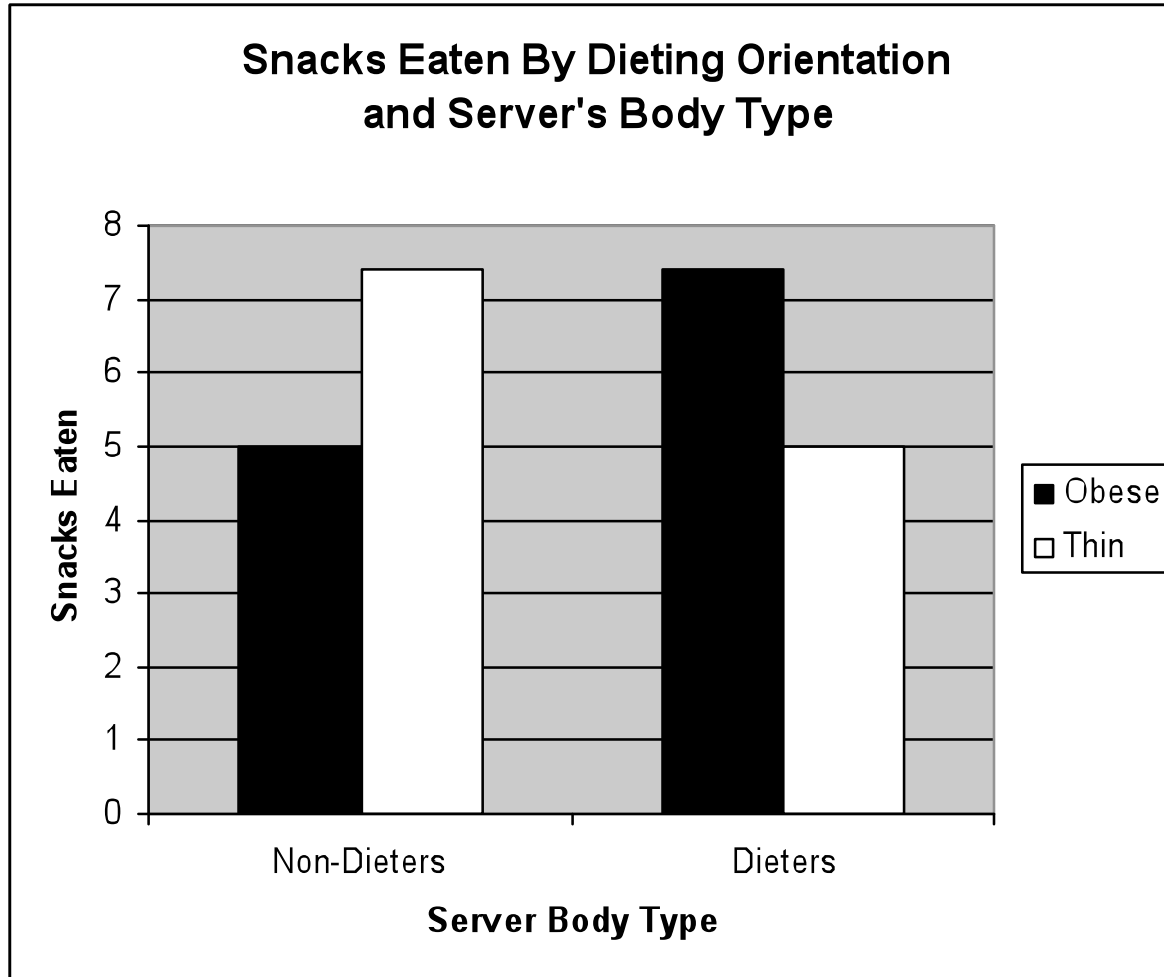
# Procedure – Study 1

- **One factor (thin vs. heavy) x measured dieting scale (restrained eating orientation, Herman & Polivy 1980)**
- **“Taste Test Study”, all females**
- **2 plates of snacks, participants choose their snack and can eat as much as they wish to evaluate**





# Results – Study 1

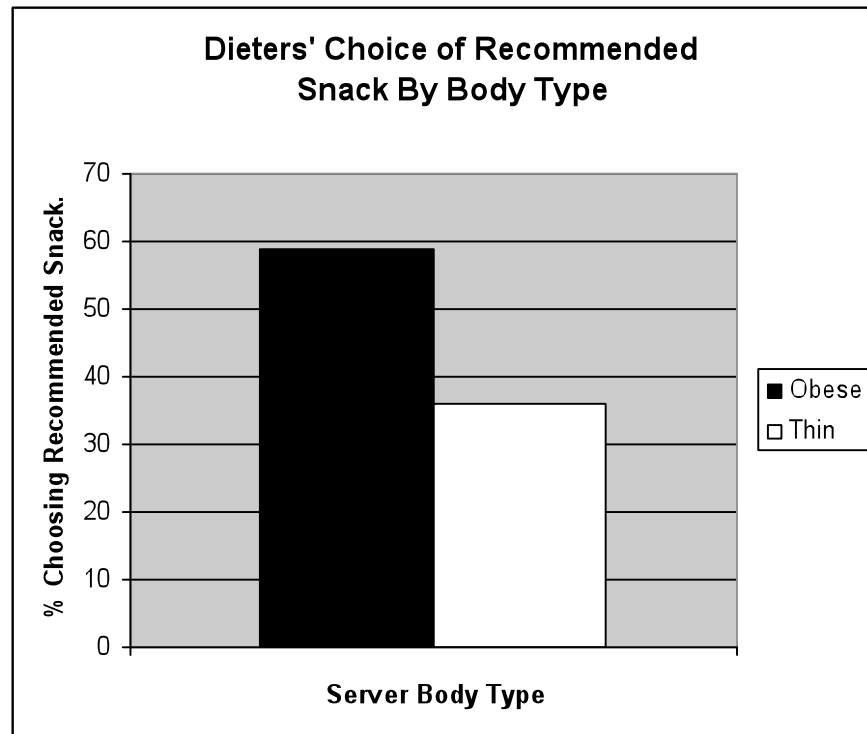


# Procedure – Study 2

- 2 (thin vs. obese) x 2 (recommend healthy vs. unhealthy) snack, between subjects
- Participants: All female dieters



# Results – Study 2



Interaction effect (Wald 3.90,  $p < .05$ ): When cookies were recommended, dieters chose cookies more often when the server was heavy than when she was thin (73% vs. 53%), but when carrots were recommended, they selected cookies with a greater frequency when she was thin than when she was heavy (53% vs. 79%).

# Some Implications

- 1. The weight of others has implications to our food choices, even their mere presence**
- 2. Most dangerous people to eat with are not those who are overweight, but rather those who are thin but are heavy eaters**
- 3. Lessons for message creation for public health initiatives**
- 4. Build awareness in consumers that context matters**

- **Limitations/ Future Research**
  - **Cross-gender effects**
  - **Broader BMI population**
  - **Social distance**
  - **Stigma a given**
  - **Positive Behaviors (e.g. Exercise)**

# Thank-you !!

- **Questions ??**