Super Size
A Discussion of Weight, Obesity and Body Image

Sponsored by the Science, Humanities and Society Program

November 10th, 2004
Tonight’s Panelists

- Dr. Patricia Turrisi, Philosophy and Religion
- Dr. Vibeke Olson, Art
- Dr. William McCarthy, History
- Dr. Tim Ballard, Biology
- Dr. Midori Albert, Anthropology
- Dr. Sue Combs, Health and Applied Human Science
- Dr. Caroline Clements, Psychology
- Dr. Paulette Aasen, Student Development
The semiotics of fat

Patricia Turrisi
Department of Philosophy
and Religion
The meaning of signs and symbols as used visually, verbally and non-verbally

- **Semantics** – the meaning of word based on their deep structure
- **Syntactics** – meaning based on usage in grammar
- **Pragmatics** – meaning based on the larger context within which words are used
The Deep Structure of “Fat”

- **Surface definition:** adipose tissue, an energy store
- **Deep structure meaning:** excess; excessive; the product of excess; padding; bloat; something to “lose,” “trim” or “reduce”
- “fat” = unnecessarily extra; superfluous
- “fat” = more than enough, plenty
People say “fat” a whole lot of ways.

<table>
<thead>
<tr>
<th>noun</th>
<th>adjective</th>
<th>direct object</th>
<th>other</th>
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<tbody>
<tr>
<td>fat of the land</td>
<td>Fat man</td>
<td>The perseverance of fat</td>
<td>It’s not over till the fat lady sings.</td>
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<tr>
<td></td>
<td>Fat woman</td>
<td>Cut the fat</td>
<td>phat</td>
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<tr>
<td>Baby fat</td>
<td>Fit or fat?</td>
<td>Trim the fat</td>
<td>My Big Fat Greek Wedding</td>
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<td></td>
<td>Fatted calf</td>
<td>Gone to fat</td>
<td>Big fat Robo</td>
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<tr>
<td>Soft fat</td>
<td>Fat and happy</td>
<td></td>
<td>My Big Fat Obnoxious Boss</td>
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<td></td>
<td>Fat salary</td>
<td></td>
<td>My big fat wallet</td>
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<tr>
<td>Hard fat</td>
<td>Fatty deposits</td>
<td></td>
<td>Fat Albert</td>
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<td>Fat Pete</td>
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</table>
The Pragmatics of Fat

Fat means a variety of things based on the context of its usage. Fat may be defined:

- Biologically
- Aesthetically
- Medically
- Sociologically
- Economically

And has meaning that represents historical, cultural and personal value.
The Feminine Ideal
Representations of the Female Form in Art

Vibeke Olsen
Department of Art and Theater
'Venus' of Willendorf

c. 25,000 – 15,000 BCE
Praxitiles

Knidian

Aphrodite

340-330 BCE
Roman Matron as Venus

c. 69-71
Titian

Venus of Urbino

1538
Peter Paul Rubens

Venus at a Mirror

c. 1615
Antonio Canova,
Paulina Borghese as Venus, 1801
Willem DeKooning

Woman #1

1950-1952
Tom Wesselmann

*Great American Nude #57, 1964*
Niki de Saint-Phalle

Black Venus

1967
Cindy Sherman
Untitled Film Still
1978
Cindy Sherman
*Untitled #175, 1987*
Indulge
Traditional stereotypes

-wealth: corpulence

-humble circumstances: (congenital?) gauntness
Early to mid 20th century masculinity
Early to mid-20th century masculinity
- Inattention to appearing attractive
- Inattention to muscle tone (except among athletes, soldiers)
Modern overweight masculinity
- affluent postwar society
Modern overweight masculinity

- money or masculinity supercede looks
- inattention to muscle tone
- heavy eating and drinking
- social acceptance of (post-marital) weight gain
Beginning of awareness
- Eisenhower heart attack
- sensitive muscular male in t-shirt
- body building
- gay inspired attention to looks
Recent increased male attention to body image

- health craze
- youth craze
- virility
- sensitivity to style
- suggestion of careless affluence
- rise of males with eating disorders
- metrosexuality
THE BIOLOGY OF OBESITY

Dr. Tim Ballard, Biology
ADIPOGENESIS – THE BEGINNING OF FAT

- differentiation begins in mid-fetal life (4th month)
- new adipocytes formed until about age 5 years
- preadipocytes remain associated with blood vessels?
TYPES OF ADIPOSE TISSUE

white fat  versus  brown fat

- unilocular
- forms the insulating hypodermis
- provides cushioning of internal organs
- energy storage
- gender differences
- internal locations

- multilocular
- hibernating fat (?) lots in the newborn
- widely distributed
- thermogenesis
HORMONAL REGULATION OF ADIPOCYTES

- thyroxine = increased lipolysis
- cortisol = increased lipolysis

**INSULIN**

- blood glucose > [110 mg%]
  (hyperglycemia)

  (stimulates)

  beta cells of the islets of Langerhans in the pancreas

  (leading to)

  increased secretion of insulin

  (has the following effects)

  1. increased cellular uptake of glucose from the blood particularly liver, skeletal muscle, and adipose cells
  2. increased glycogenesis
  3. increased lipogenesis
  4. increased protein anabolism

  (leading to)

  decreased blood glucose concentration (normoglycemia)
WHAT IS OBESITY?

- disorder of nutrition (energy intake > energy expenditure or positive energy balance)
- types of obesity

<table>
<thead>
<tr>
<th>Exogenous</th>
<th>Endogenous</th>
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<tbody>
<tr>
<td>✓ exogenous = resulting from an excess of ingested calories</td>
<td></td>
</tr>
<tr>
<td>✓ endogenous = resulting from inherent metabolic problem(s)</td>
<td></td>
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</tbody>
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<table>
<thead>
<tr>
<th>Child-onset</th>
<th>Adult-onset</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ child-onset = hyperplastic (increased cell #) and hypertrophic (increased cell size)</td>
<td></td>
</tr>
<tr>
<td>dispersed over whole body</td>
<td></td>
</tr>
<tr>
<td>few metabolic abnormalities exist</td>
<td></td>
</tr>
<tr>
<td>✓ adult-onset = hypertrophic (increased cell size)</td>
<td></td>
</tr>
<tr>
<td>dispersed centrally</td>
<td></td>
</tr>
<tr>
<td>metabolic abnormalities more common</td>
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THEORETICAL POSSIBILITIES FOR OBESITY

- **genetic theory** – obese gene product leptin regulates satiety and energy expenditure
- **fat-cell theory** – hyperplastic problem; increased number of cells fill up when in positive energy balance
- **lipoprotein-lipase theory** – LPL promotes fat storage; obese have elevated LPL
- **lipostatic theory** – higher hypothalamic set-point, making it difficult to lose weight
- **thermogenetic theory** – obese have very few brown fat cells, thus cannot “burn off” excess energy so they store it
- **Na⁺-K⁺-ATP pump theory** – pump works poorly in obese, thus they lack energy release
- **diabetes-associated theory** – excessive food intake $\rightarrow$ hyperinsulinemia $\rightarrow$ increased storage of calories
- **psychologic causation theory** – appetite based on external cues (sight, sound, smell) instead of internal cues (unstretched stomach, decreased blood glucose concentration)
Anthropology’s Perspective:
Evolutionary Considerations...

Midori Albert
Department of Anthropology

- The Hunter-Gatherer Lifestyle
- Adaptation and Normal Human Variation
- The Problem and The Solution
Hunter-Gatherer Lifestyle

- Lean and active—on the move
- Body and environment—in harmony
Adaptation and Normal Human Variation
The Problem:

Abundant calories + Sedentism = Excess Weight

Culture change outpaces biological change
The Solution:

Eat *better*...

Move *at least a little bit more*...

Work *with* your biology...
Sue Combs
Department of Health and Applied Human Sciences
We Have A Problem!

- American Kids are getting fatter.
- American Kids are getting sicker.
- American Kids are getting sadder.
- American Kids are becoming sitters.
Scary Fat Stats

- Between 15 and 25 percent of American children are overfat.
- For each of the last 3 decades, the number of overfat kids has increased.
- Children are not really eating more fat, but more unhealthy fats.
- The average child consumes more than 12 ounces of sugar a day.
- Children who are overweight at six have a 25 percent chance of becoming overweight adults.
Scary Fat Stats

- From 1979 to 1999, in children ages six to seventeen, hospitalizations for obesity-related diabetes doubled, gallbladder disease tripled, and obesity-related sleep apnea increased fivefold.

- A 1999 study reported that 60 percent of overweight five-to-ten year-old children already had at least one risk factor for cardiovascular disease, such as high blood pressure, elevated insulin levels, or high blood lipids.

- For the first time in history, there is a high chance that parents will live longer than their children.
How Kids Get Overfat, Underfit, and Unhappy

- Fat Corporations
- Fat Drinks
- Fat Genes
- Fat Schools
- Fat Sitting
There Is A Solution

- **Lifestyle** - Live by making healthy choices
- **Exercise** - Play, move, regularly, as a family
- **Attitude** - Develop a positive attitude about health
- **Nutrition** - Make wise food and eating choices
Caroline Clements
Department of Psychology

Life will be different in
40 Days

▷ Drop two dress sizes
▷ Look Younger
▷ Feel Your Best
▷ Be in Control

> You're going to love these recipes.
> You'll use the CDs for life.
Obesity is a Serious Public Health Issue

<table>
<thead>
<tr>
<th>Country</th>
<th>% Overweight</th>
</tr>
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<tbody>
<tr>
<td>United States</td>
<td>55</td>
</tr>
<tr>
<td>Russian Federation</td>
<td>54</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>51</td>
</tr>
<tr>
<td>Germany</td>
<td>50</td>
</tr>
<tr>
<td>Columbia</td>
<td>43</td>
</tr>
<tr>
<td>Brazil</td>
<td>41</td>
</tr>
<tr>
<td>China</td>
<td>15</td>
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Source: WHO
Lest We Forget … The Other Side of Hunger

Map of World Hunger
Proportion of undernourished people (1998-2000)

Proportion in total population
Percentage 1998 - 2000

- < 5%
- 5 - 20%
- 20 - 35%
- > 35%

No data available

FAO-GIS (ESMAP / BORN)
Ideal Body Weight Varies

Set Point Theory

- Adult weight is genetically determined
- Weight will naturally migrate to a “set point”
- The body will “defend” its’ set point
Obesity in rats can be genetically induced
Fancy PET Scan Showing Why Biology Is Important

PET scan comparison of obese to normal-weight subjects (click to see larger version).
Why Diets Don’t Work

- Defending the set point
  - Metabolic changes induced by reduced calorie load
  - Slowed metabolism produces rebound
  - Yo-yo’ing caused by metabolic changes
Wouldn’t It Be Great?
The doctor said he needed more activity. So I hide his T.V. remote three times a week.
What Does Work?

- Changing metabolism
  - Aerobic exercise
  - Increased muscle mass
The Javagochi at IDEAL_WEIGHT
BODY IMAGE:

Is Your’s Negative or Positive?

Paulette V. Aasen, UNC-W
Counseling Center
What is Body Image?

- Body Image is how you SEE yourself when you look in the mirror or when you picture yourself in your mind.

- Body Image is what you BELIEVE about your own appearance, including your memories, assumptions, and generalizations.

- It is how you FEEL about your body, including your height, shape, and weight.

- Body Image is how you SENSE and CONTROL your body as you move: how you feel IN your body, not just about your body.
Negative body image is a distorted perception of your shape – you perceive parts of your body unlike they really are.

Positive body image is a clear, true perception of your shape – you see the various parts of your body as they really are.

If you struggle with negative body image, you are convinced that only other people are attractive and that your body size or shape is a sign of personal failure.

If you have a positive body image, you celebrate and appreciate your natural body shape and you understand that a person’s physical appearance says very little about their character and value as a person.
How do you feel about YOUR Body?

- With a negative body image, you feel ashamed, self-conscious, and anxious about your body.

- With a positive body image, you feel proud and accepting of your unique body and refuse to spend an unreasonable amount of time worrying about food, weight, and calories.

Negative body image is feeling uncomfortable and awkward in your body.

Positive body image is feeling comfortable and confident in your body.
How common is the struggle with negative body image?

- At least 75% of American women report being unhappy with their bodies.
- On any given day, approximately 25% of American men and 45% of American women are on a diet.
- 40-60% of high school girls are dieting on any given day.
- 46% of 9-11 year olds are sometimes or very often on diets.
Impact of Negative Body Image

People with a negative body image have a greater likelihood of:

• Developing an eating disorder
• Suffering from:
  ▪ depression
  ▪ isolation
  ▪ low self-esteem
  ▪ obsession with weight loss
Eating Disorders

• 5-10 million girls and women, and 1 million boys and men, struggle with eating disorders and related conditions.

• Anorexia affects at least 1 out of every 100 girls and women in the US, while 3 out of 100 suffer from Bulimia Nervosa.

• About 1 in 10 female college students struggles with an eating disorder.
What’s the Message?

• It is often from media models that we get our idea of what a woman’s body should look like.

• However, fashion models are thinner than 98% of women in the United States.

• The average American woman is 5’4” tall and weighs 140 pounds.

• The average American model is 5’11” tall and weighs 117 pounds.
Media Influence

- 60% of Caucasian middle school girls read at least one fashion magazine regularly.

- Women’s magazines include 10.5 times more advertisements and articles promoting weight loss than men’s magazines.

- A study of one teen adolescent magazine over the course of 20 years found that in articles about fitness or exercise plans, 74% cited “to become more attractive” as a reason to start exercising and 51% noted the need to lose weight or burn calories.
Television

- The average young adolescent watches 3-4 hours of TV per day.

- A study of 4,294 network television commercials revealed that 1 out of every 3.8 commercials sends some sort of “attractiveness message,” telling viewers what is or is not attractive.

- These researchers estimate that the average adolescent sees over 5,260 “attractiveness messages” per year.
Please Join the Panel With Questions and Comments!!!