Issues in the study of sex differences

- Differences are average differences and range and variation are often ignored.
- There are very few differences that show a completely bimodal distribution.
- Differences may be statistically significant but have no practical or functional significance.
- Differences associated with biological sex should not automatically be construed as genetic differences.
- The nature/nurture debate is misconstrued: all traits have biological and environmental bases.
- Biology is not destiny: understand the difference between obligate and facultative traits.
- Don't fall for the naturalistic fallacy: "that which is natural, is good". Or, explanation does not equal justification.
Points to keep in mind when considering differences

- Studies may indicate within group differences: e.g., males are taller on average than females in society X.
- However, this does not mean that men in society X are taller on average than women in all other societies.
- Finally, even though we are good at studying differences we have very few theories to ultimately explain such differences.
- The question we would like to answer is whether men and women are differently designed to pursue their different productive and reproductive roles.
Differences explored

- Anatomical
- Physiological
- Developmental
- Cognitive
- Behavioral
- Institutional
# Male and Female Differences

<table>
<thead>
<tr>
<th>Females (&gt;m)</th>
<th>Males (&gt;f)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Body</strong></td>
<td><strong>Body</strong></td>
</tr>
<tr>
<td>- fat</td>
<td>- heart</td>
</tr>
<tr>
<td><strong>Senses</strong></td>
<td>- lungs</td>
</tr>
<tr>
<td>- smell</td>
<td>- muscle</td>
</tr>
<tr>
<td>- taste</td>
<td>- visual and spatial (mental rotation &amp; targeting)</td>
</tr>
<tr>
<td>- hearing</td>
<td><strong>Behavior &amp; Personality</strong></td>
</tr>
<tr>
<td>- speech</td>
<td>- exploratory</td>
</tr>
<tr>
<td>- survival</td>
<td>- aggression</td>
</tr>
<tr>
<td>- touch sensitivity</td>
<td>- sensation seeking</td>
</tr>
<tr>
<td>- fine motor coordination</td>
<td></td>
</tr>
<tr>
<td>- developmentally advanced</td>
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**Behavior & Personality**
- Interest in babies
- nurturance
Visual-Spatial Abilities

- One of the most intensively studied differences consistently shows that males are superior*
- In a wide variety of animals including humans evidence indicates that differential exposure to androgens in womb enhances spatial abilities
  - Females exposed to higher than normal levels of androgens in womb are superior to females who are not
  - Some spatial differences between males and females increase after puberty
- Spatial differences between the sexes is even more pronounced than height differences

*Locational memory an exception
Female Spatial Memory

- Superior spatial memory compared to males in
  - Identity & location of objects in a spatial array
  - Detection of objects added or subtracted in a spatial array
Theories of Spatial Differences

- A side-effect of high male androgens with no particular function
- Male foraging specialization
- Sexual selection
  - Range size (males must seek mates at a distance)
  - Warfare
  - Female choice of good hunters
Historic Life Expectancy in Scotland

<table>
<thead>
<tr>
<th>Year</th>
<th>Women at 15</th>
<th>Men at 15</th>
<th>Women at birth</th>
<th>Men at birth</th>
</tr>
</thead>
<tbody>
<tr>
<td>1888</td>
<td>46.3</td>
<td>58</td>
<td>43.9</td>
<td>46.3</td>
</tr>
<tr>
<td>1988</td>
<td>70.5</td>
<td>77</td>
<td>76.7</td>
<td>70.5</td>
</tr>
</tbody>
</table>

Legend:
- Women at 15
- Men at 15
- Women at birth
- Men at birth
Why women outlive men

- Genetic: mediated through hormones
- Men engage in more hazardous activities
- Women more likely to seek medical care early
100 Meters: Women Catching Up?

Figure 1 The winning Olympic 100-metre sprint times for men (blue points) and women (red points), with superimposed best-fit linear regression lines (solid black lines) and coefficients of determination. The regression lines are extrapolated (broken blue and red lines for men and women, respectively) and 95% confidence intervals (dotted black lines) based on the available points are superimposed. The projections intersect just before the 2156 Olympics, when the winning women’s 100-metre sprint time of 8.079 s will be faster than the men’s at 8.098 s.
Triceps Skinfolds of Yanomamö Boys and Girls In Normal and Stressed (El Niño) Villages: boys are more stressed than girls
Sex differences in mortality

Males: Relative Risk of Death Compared to Females

- External
- Internal
- Total

Female Baseline

Age
Male and female differences: same means different distributions
IQ Distributions by Sex

IQ Distribution: Efficiency versus Variability

Males: Mean = 100, s.d. = 16.4
Females: Mean = 100, s.d. = 13.6
Male-Female Differences: A Rare Bimodal Distribution

Number of cases

Trait

Female
Male
Most Female-Male Differences: different means, considerable overlap
Direct economic production

Female Labor time

Foraging    Horticulture    Agriculture    Intensive Agriculture
Female Strength as a Percentage of Male Strength

- Height: 93%
- Weight: 88%
- Upper body: 72%
- Leg press: 73%
- Arm curl: 57%
- Bench press: 52%
For men and women of the same size

- A woman's upper body strength is 80% of males, and
- A woman's lower body strength is 93% of males
Basic Constraints on Preindustrial Women

- High fertility (6-8 offspring)
- Long-term and on-demand nursing
- High levels of active care to safeguard children in a dangerous environment
Sex and Temperament in Primitive Society (Mead, 1935)

- Arapesh both men and women were gentle, cooperative, and nurturing.
- Mundugumor men and women were both violent and competitive.
- Tchambuli women were the main economic providers [a personality trait?], domineering, practical, and impersonal while men were sensitive and delicate devoting much of their time to their appearances and to artistic pursuits.
However, in all groups Mead studied we find the following:

- Women cooked, did the housework, nursed the children, and cared for the children most of the time.
- Looking past Mead's rationalizations, men still had as much authority and dominance in these societies as in most other societies.
  - Men ultimately control or dominate the societies through the most powerful institutions.
  - Males were warriors but females were not.
  - Males were more physically aggressive.
- The men worked outside and away from the homes vis a vis the women's work in and around the home.
  - The division of labor is along traditional lines: men work away from the homes, they do the heavy work, they do the hunting, the fishing; women work close near the homes, care for the children, cook for the family, and so forth.
According to Mead the following were “personality traits”.

- Interest in personal appearance
- Emotionally expressive
- Temperate
- Cautious
- Assertive
- Talkative
- Reserved
- Cooperative
- Dependent
- Reckless
Personality Traits as defined by modern psychologists: The Five Factor Model (OCEAN)

1. **Neuroticism**: the tendency to experience painful emotions such as anxiety, depression, irritation and self-doubt.

2. **Extraversion**: The tendency to be cheerful, vigorous, sociable and assertive. (Low extraversion is often called introversion.)

3. **Openness**: This is openness to novel experience. For example, openness to esthetics, fantasy, feelings, values, and ideas.

4. **Agreeableness**: High-agreeableness people are cooperative, compassionate, agreeable and a little gullible. Low-agreeableness people are competitive, hard-nosed, etc.

5. **Conscientiousness**: High-conscientiousness people are prompt, diligent, orderly, somewhat moralistic, and task-oriented. Low-conscientiousness people are often late, disorderly, morally lax and oriented more toward pleasure and leisure than toward productivity.
Characteristics of matrifocal cultures

- the role of mother is structurally, culturally, and affectivity central and this centrality is culturally legitimate
- the relationship between the sexes is relatively egalitarian
- both women and men are important actors in economic and ritual spheres
- girls are socialized to become assertive, active, and decisive wives and mothers
Diagram of roles from Chiñas

Domain

Roles

- Public
  - house-head
  - political activism
  - vendors

- Private
  - childcare
  - cooking

- Non-formalized
  - peace makers (especially during fiestas)
  - reporters
  - messengers

- Formalized
  - household dispute settlement
  - regulation of contract disputes between men