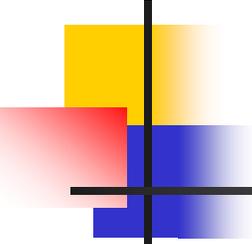
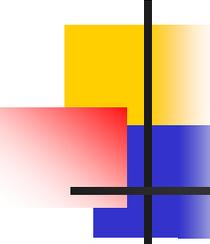


# Issues in the study of sex differences



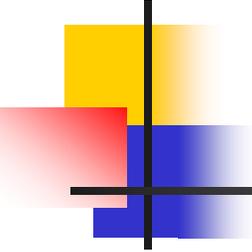
- Differences are average differences and range and variation are often ignored. 
- There are very few differences that show a completely bimodal distribution 
- Differences may be statistically significant but have no practical or functional significance.
- Differences associated with biological sex 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". This means explanation does not equal justification.



# Further points to keep in mind when considering differences

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- ❑ 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.
- ❑ It is important to understand that while we are good at studying differences we have very few theories that ultimately explain such differences.
- ❑ At an evolutionary level, the question we would like to answer is whether men and women are differently designed to pursue different productive and reproductive roles.
- ❑ We also wish to understand what role culture plays in exaggerating or diminishing such differences.



# Differences to explore

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- Anatomical
- Physiological
- Developmental
- Cognitive
- Behavioral
- Institutional

# Some anatomical, physiological, and psychological differences

## Females (>m)

### Body

- fat

### Senses

- smell
- taste
- hearing
- speech
- survival
- touch sensitivity
- fine motor coordination
- developmentally advanced

### Behavior & Personality

- Interest in babies
- nurturance

## Males (>f)

### Body

- heart
- lungs
- muscle

### Senses

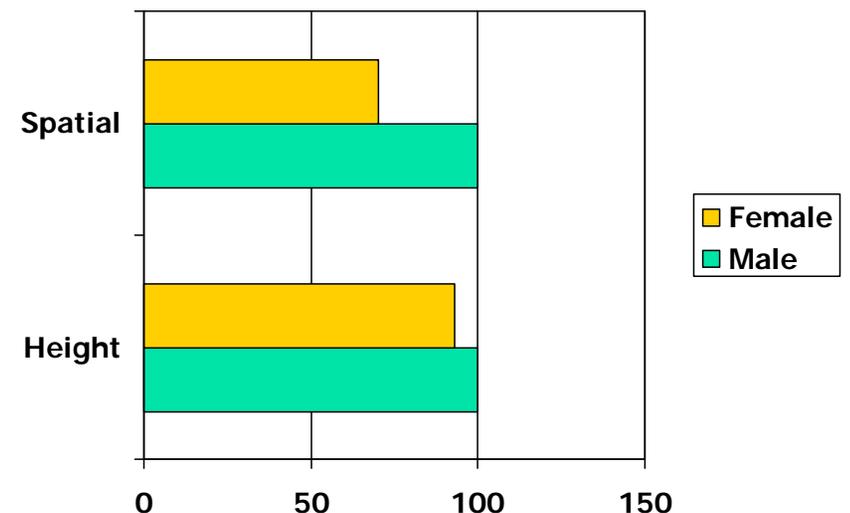
- visual and spatial (mental rotation & targeting)

### Behavior & Personality

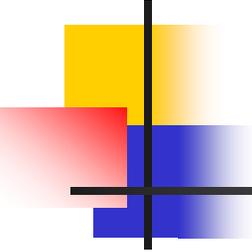
- exploratory
- aggression
- sensation seeking

# 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



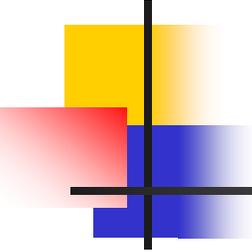
\*Locational memory an exception



# Female Spatial Memory

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- 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

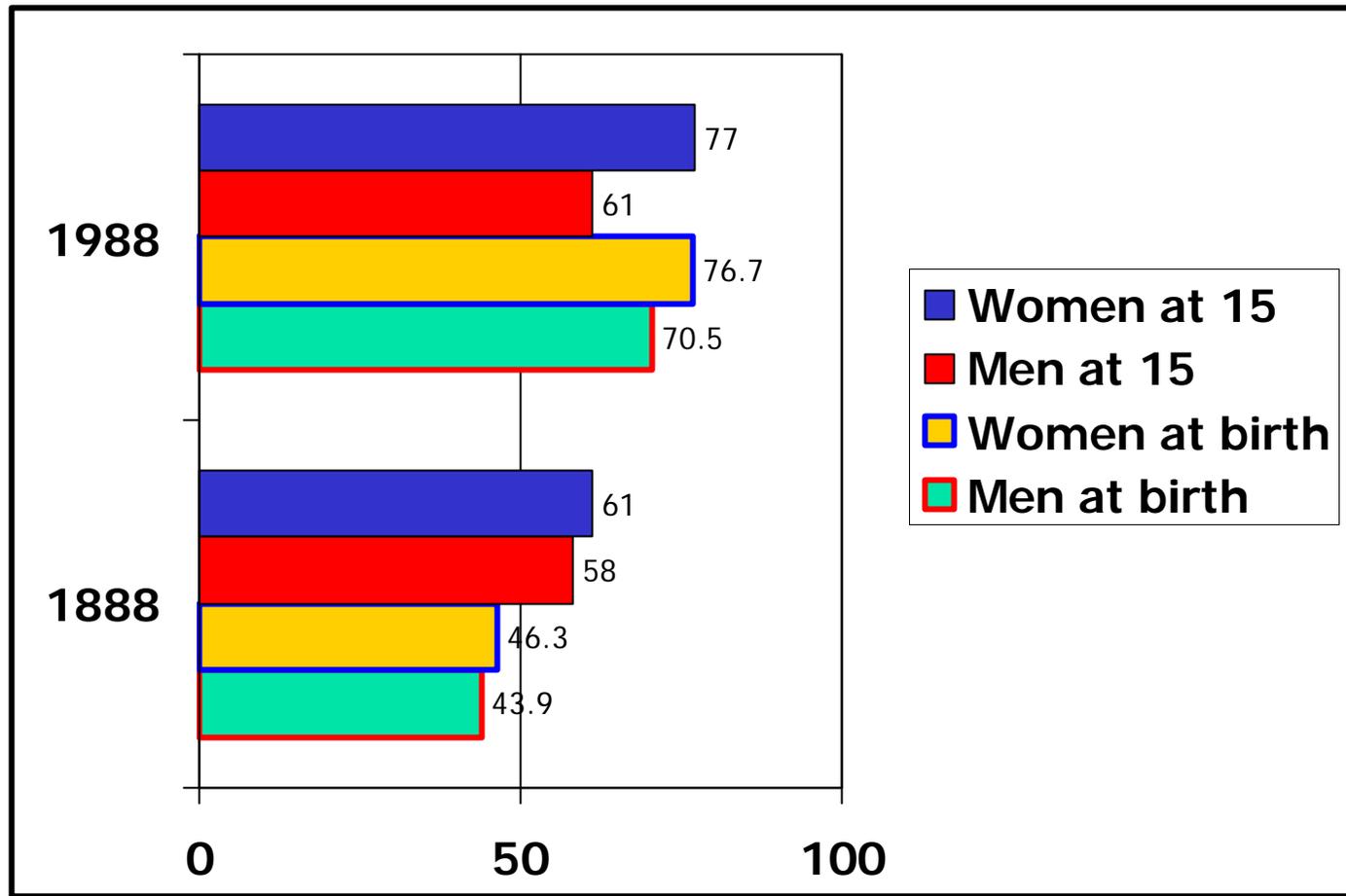


# Theories of Spatial Differences

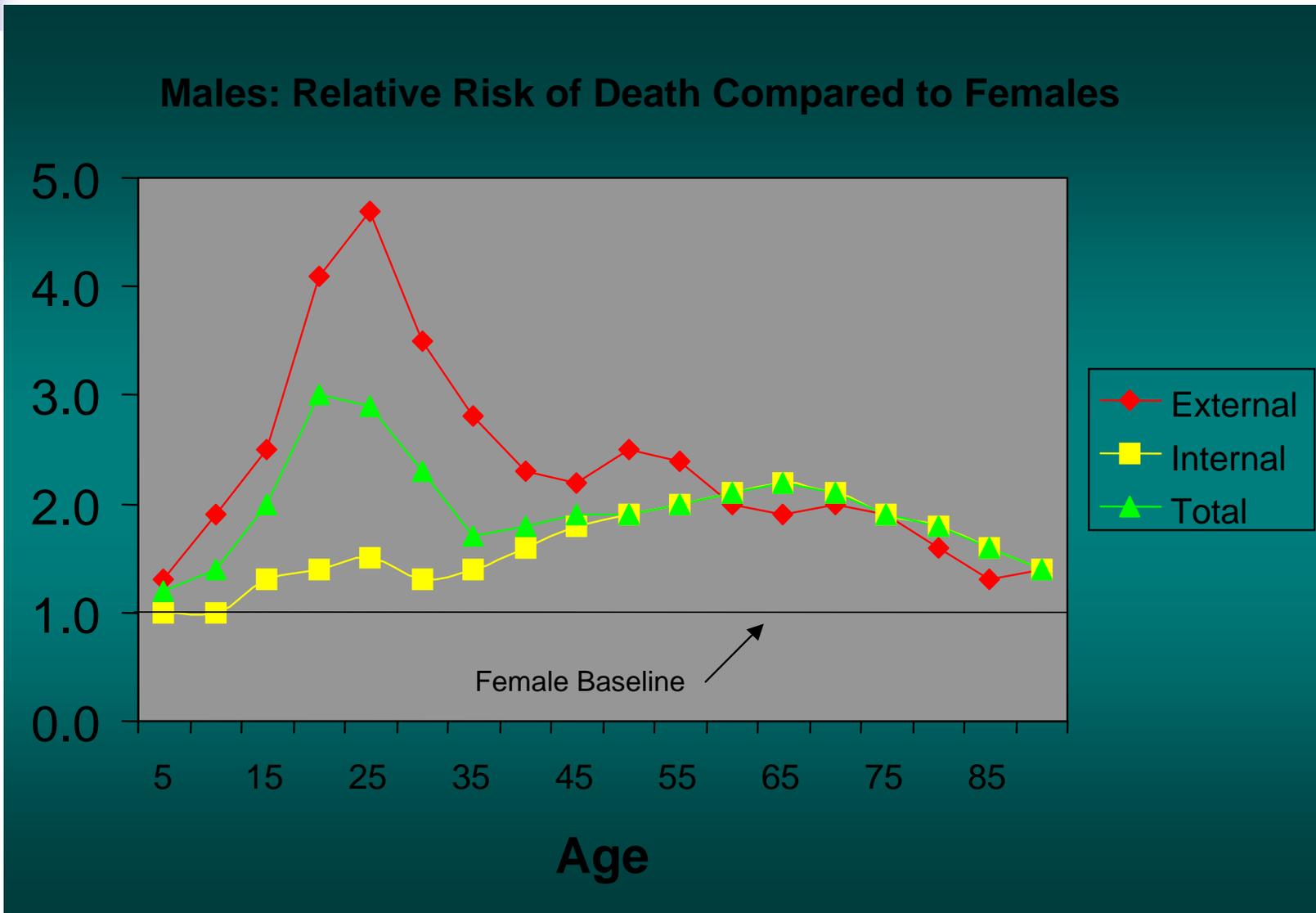
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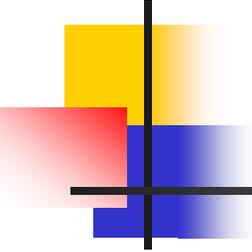
- A side-effect of high male androgens with no particular function
- Male foraging specialization
- Sexual selection
  - Range size (males must seek mates at a distance)
  - Warfare
  - Female choice of good hunters

# Historic Life Expectancy in Scotland: the more things change the more they stay the same



# Sex differences in mortality



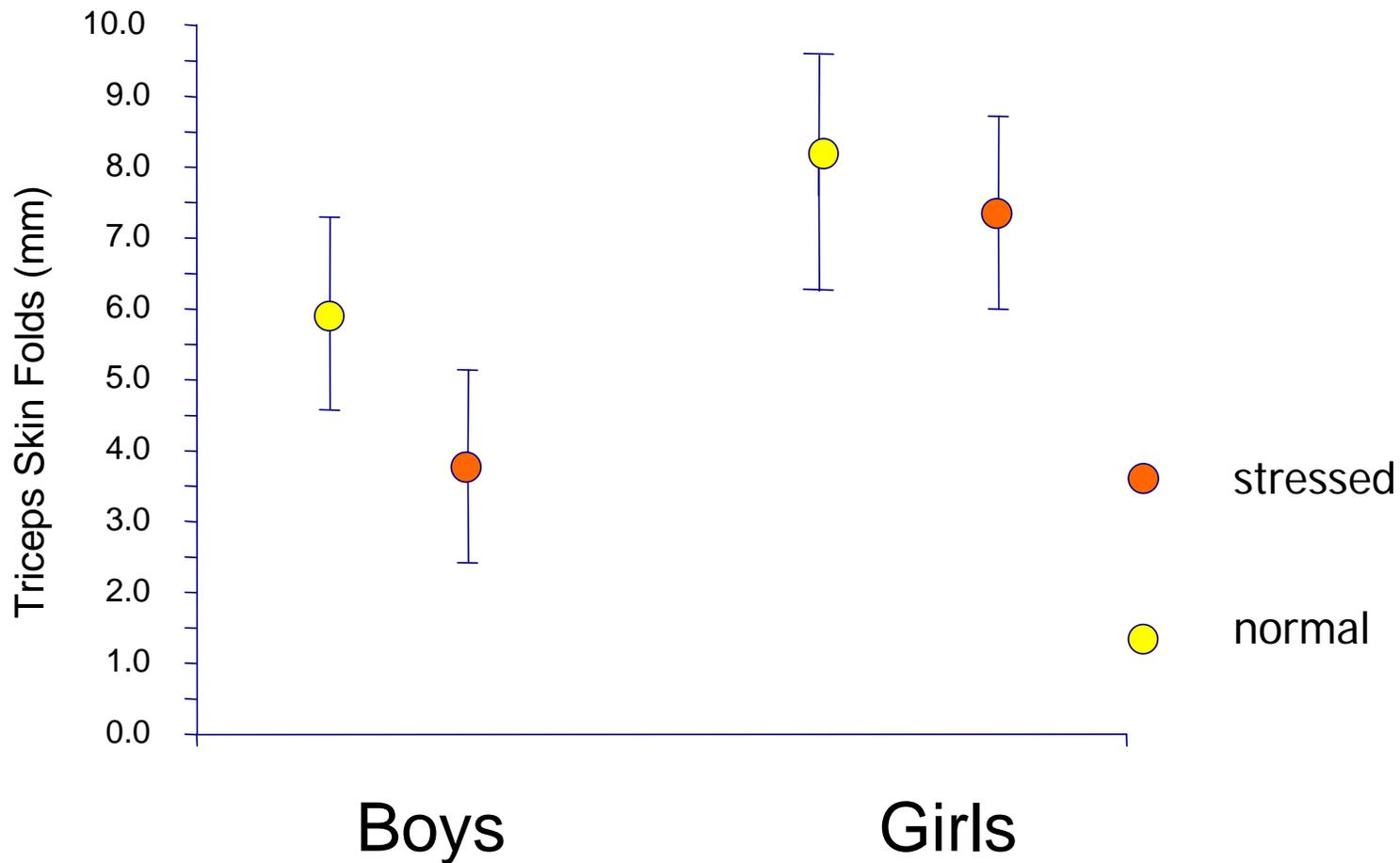


# Why women outlive men

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- Genetic: mediated through hormones
- Men engage in more hazardous activities
- Women more likely to seek medical care early

# Triceps Skinfolds of Yanomamö Boys and Girls In Normal and Stressed (El Niño) Villages: boys are more stressed than girls



# 100 Meters: Women Catching Up? Clearly, but for how long?

Blue=male  
Red=female

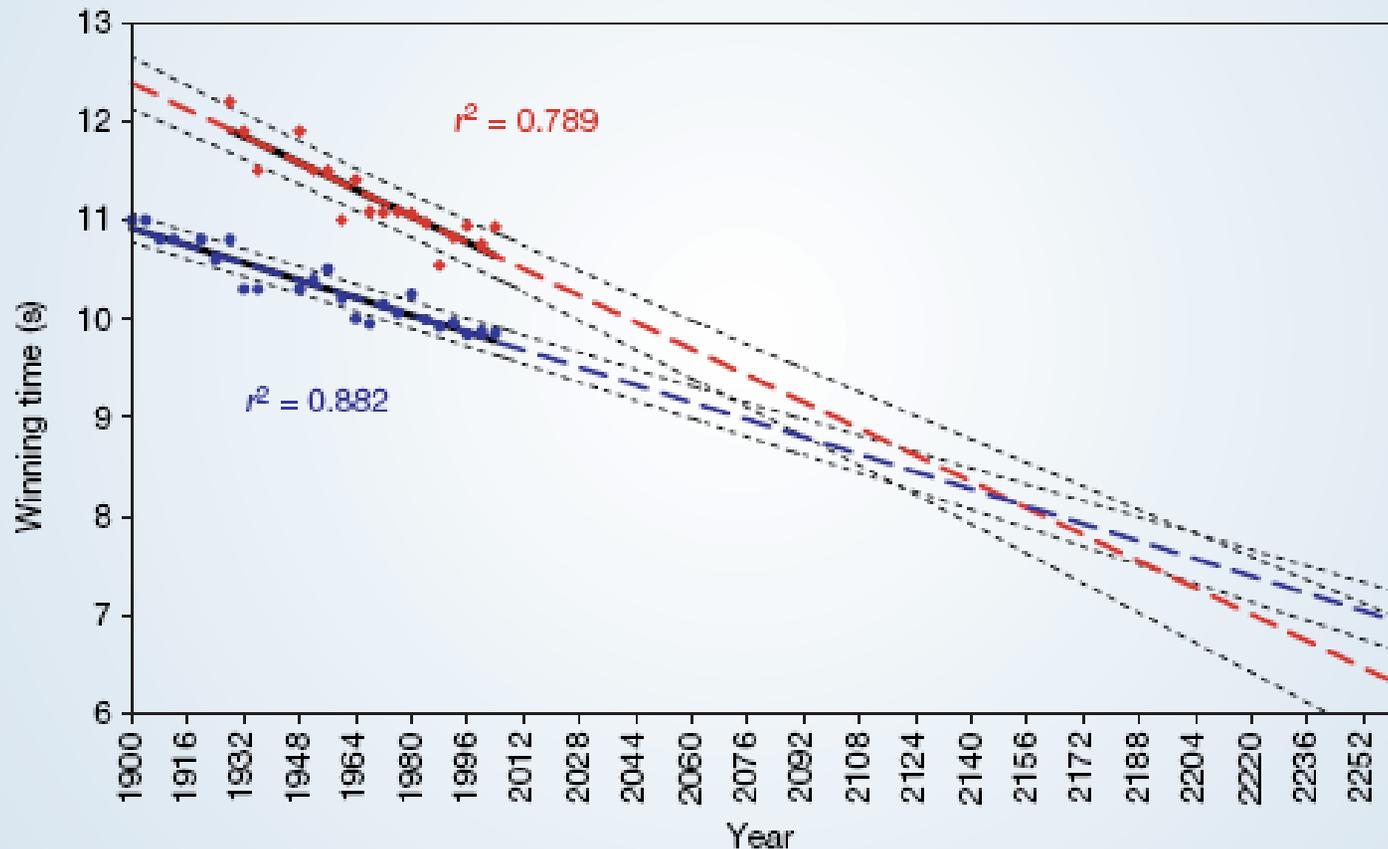
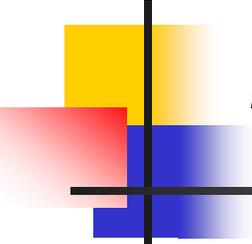


Figure 1 The winning Olympic 100-metre sprint times for men (blue points) and women (red points), with superimposed best-fit linear regression lines (solid black lines) and coefficients of determination. The regression lines are extrapolated (broken blue and red lines for men and women, respectively) 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.



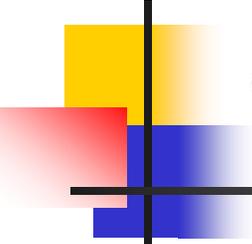
# *Sex and Temperament in Primitive Society* (Mead, 1935)

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- Through a comparison of 3 “primitive” societies Mead argues that sex differences were culturally determined and therefore biology was irrelevant:
  - 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, 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

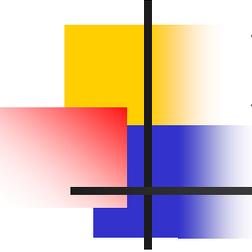
- Women cooked, did the housework, nursed the children, and cared for the children most of the time.
- Looking past Mead's rationalizations, men still had as much authority and dominance in these societies as in most other societies
  - Men ultimately control or dominate the societies through the most 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.



# Characteristics of matrifocal cultures according to Chiñas

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- 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



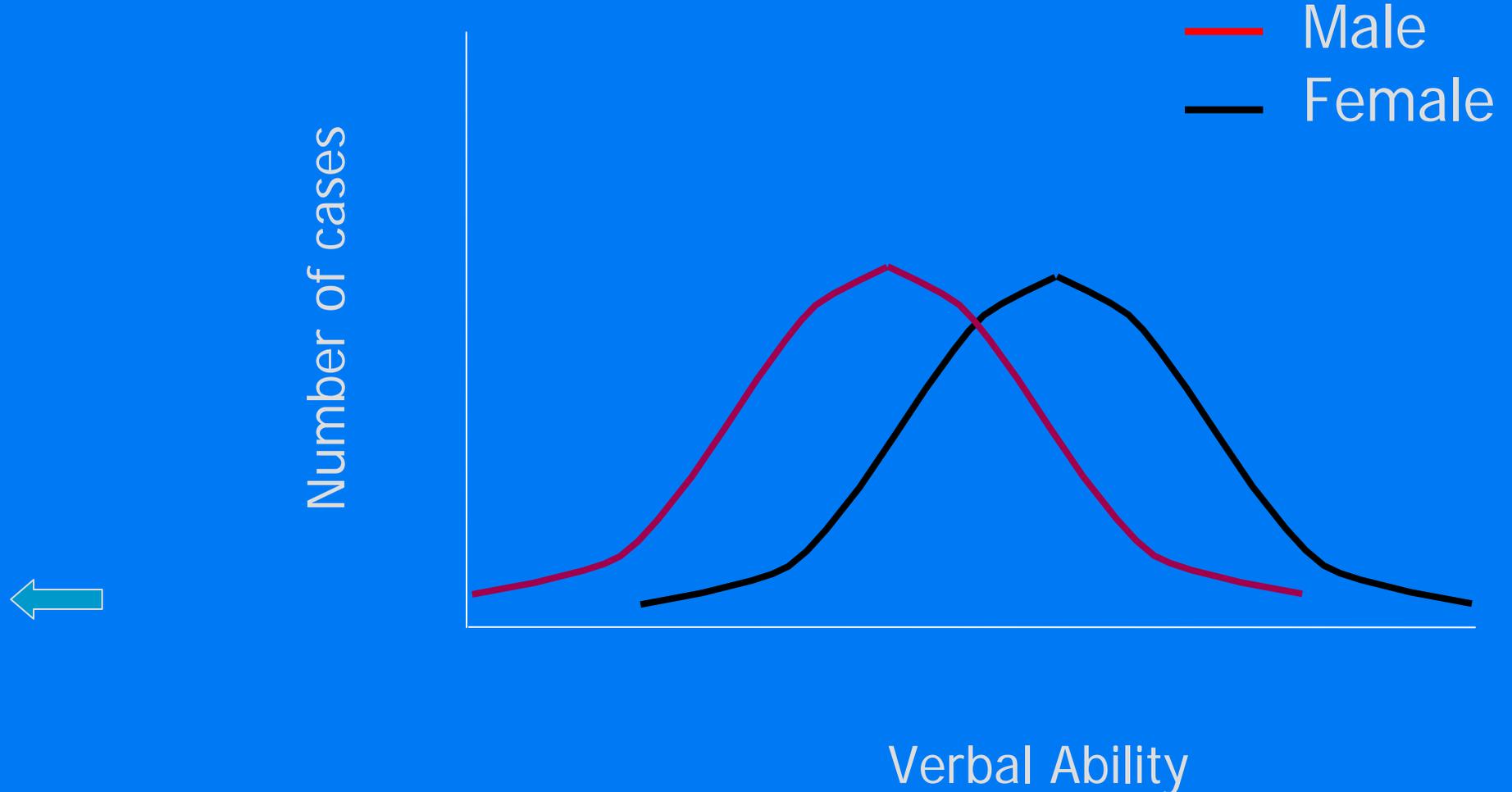
# Diagram of roles from Chiñas

## Domain

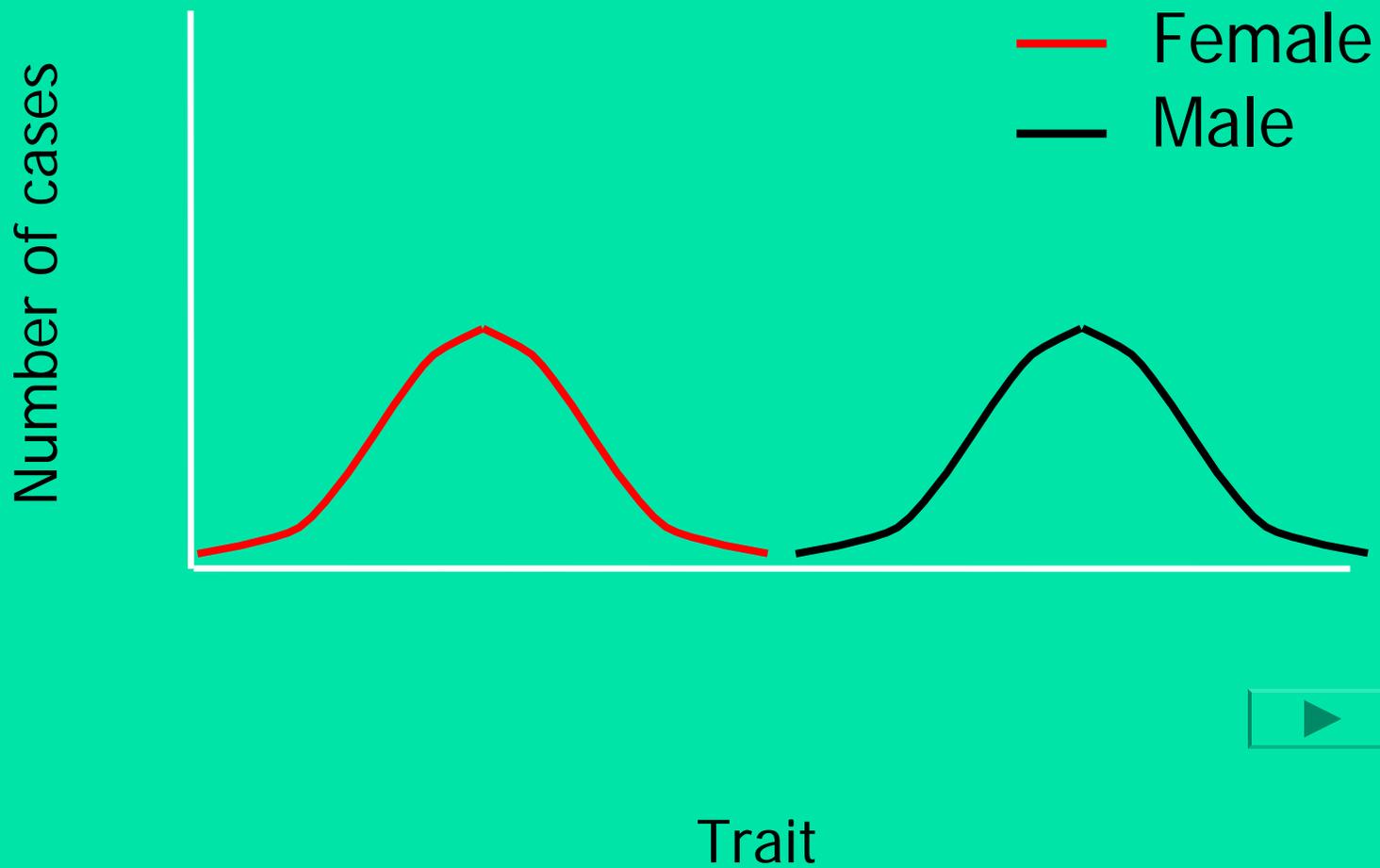
## Roles

	Public	Private	
	<ul style="list-style-type: none"><li>• house-head</li><li>• political activism</li><li>• vendors</li></ul>	<ul style="list-style-type: none"><li>• childcare</li><li>• cooking</li></ul>	Formalized
	<ul style="list-style-type: none"><li>• peace makers (especially during <i>fiestas</i>)</li><li>• reporters</li><li>• messengers</li></ul>	<ul style="list-style-type: none"><li>• household dispute settlement</li><li>• regulation of contract disputes between men</li></ul>	Non-formalized

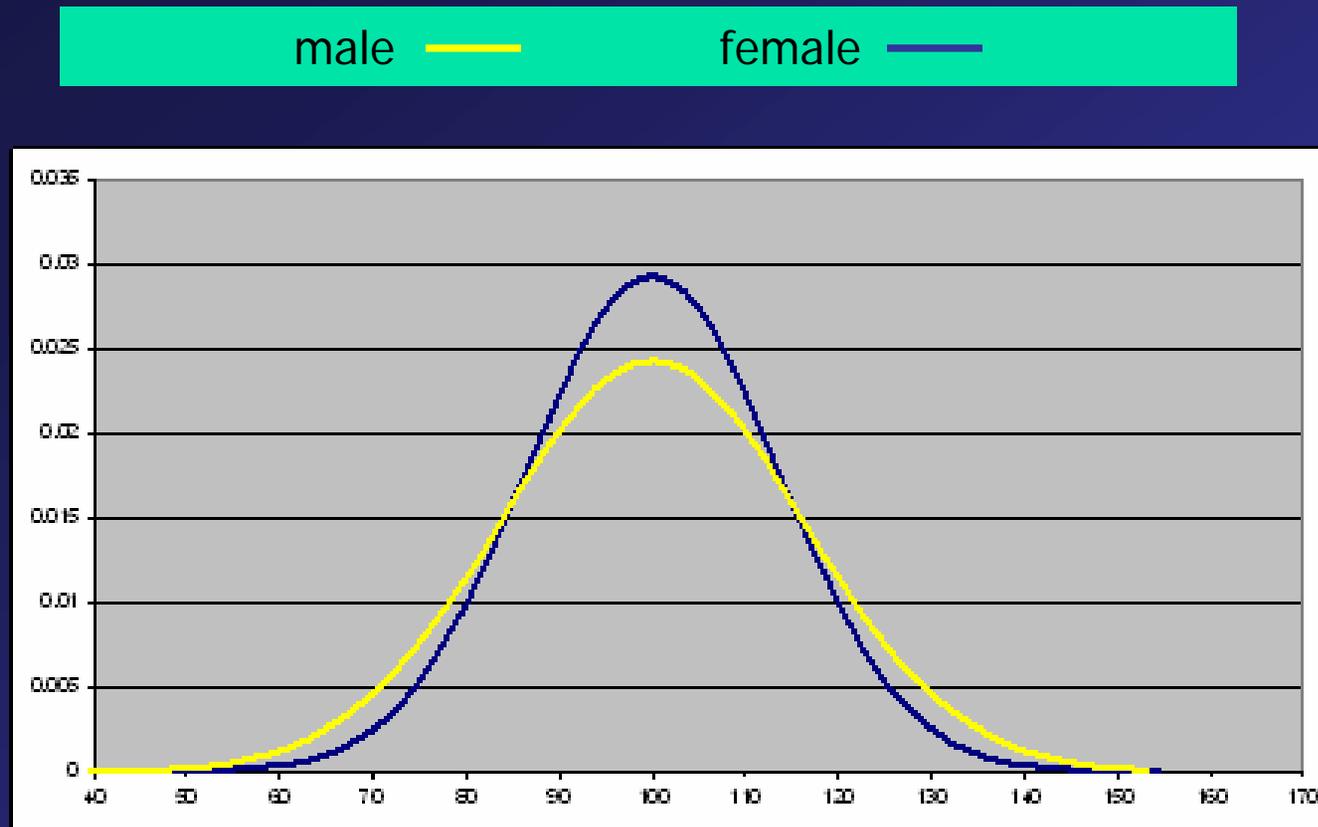
# Most Female-Male Differences: different means, considerable overlap



# Male-Female Differences: A Rare Bimodal Distribution



# IQ Distributions by Sex: same means different distributions



Males: Mean = 100, s.d. = 16.4  
Females: Mean = 100, s.d. = 13.6

