



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

- ❑ 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

- 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

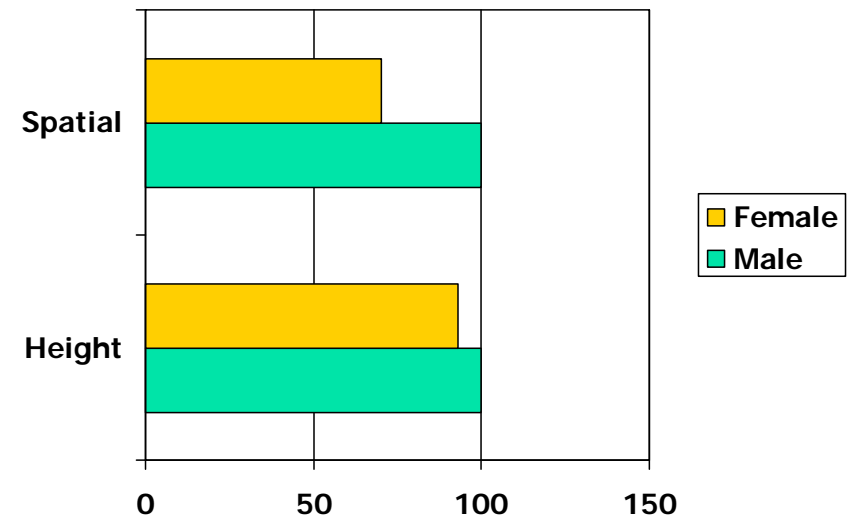
- visual and spatial (mental rotation & targeting)

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

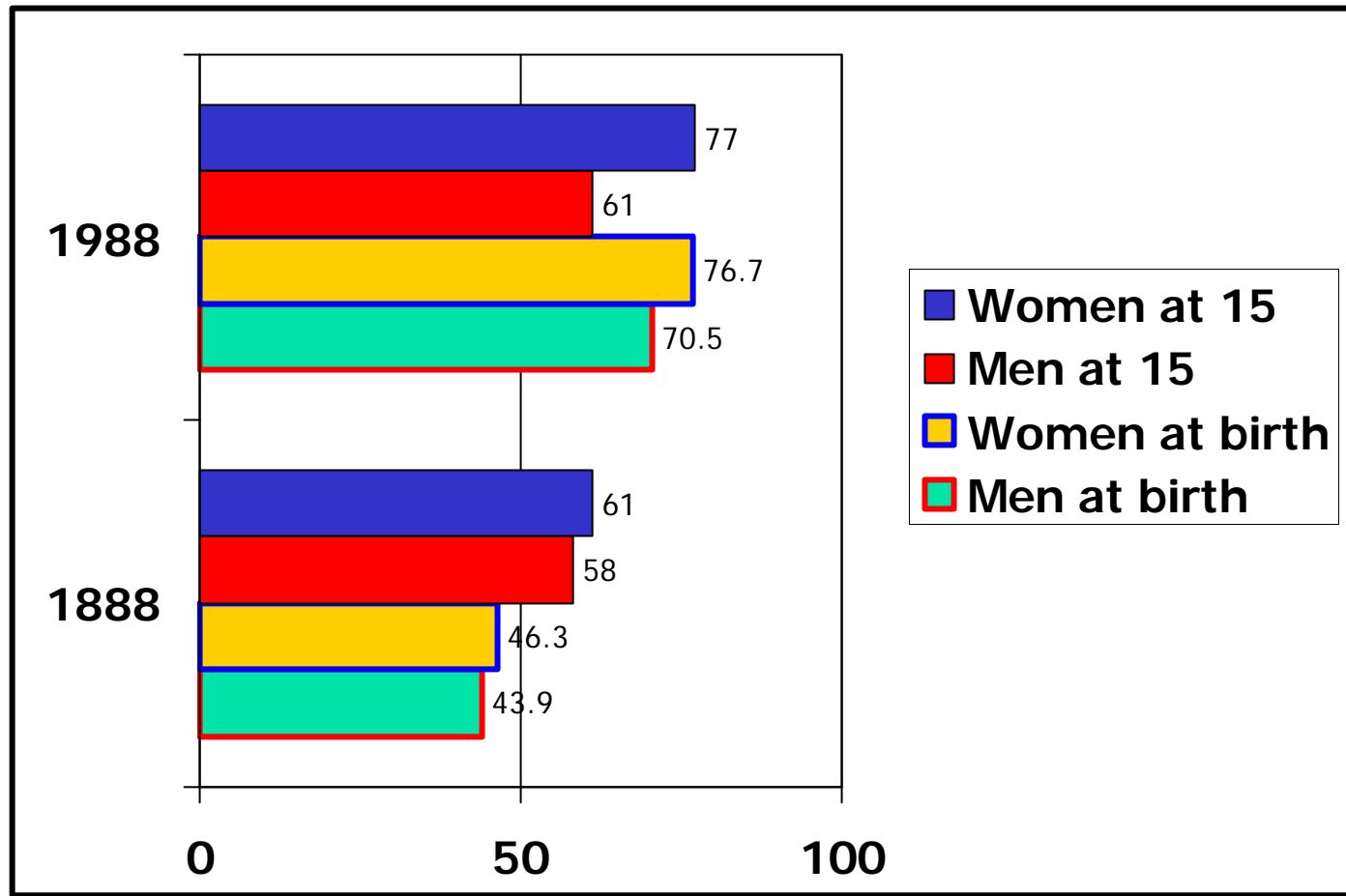
- Superior spatial memory compared to males in
 - Identity & location of objects in a spatial array
 - Detection of objects added or subtracted in a spatial array



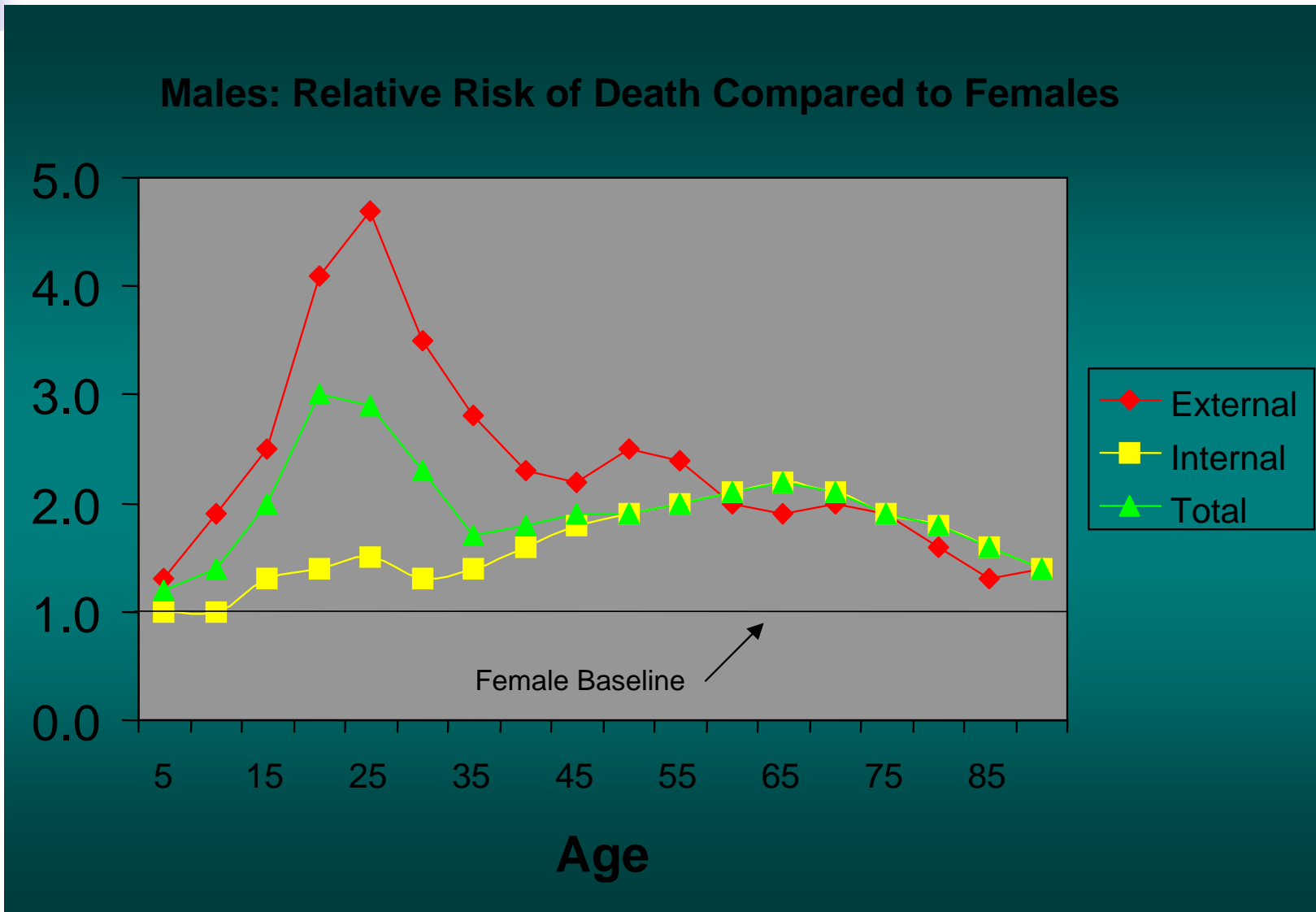
Theories of Spatial Differences

- 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: the more things change the more they stay the same



Sex differences in mortality

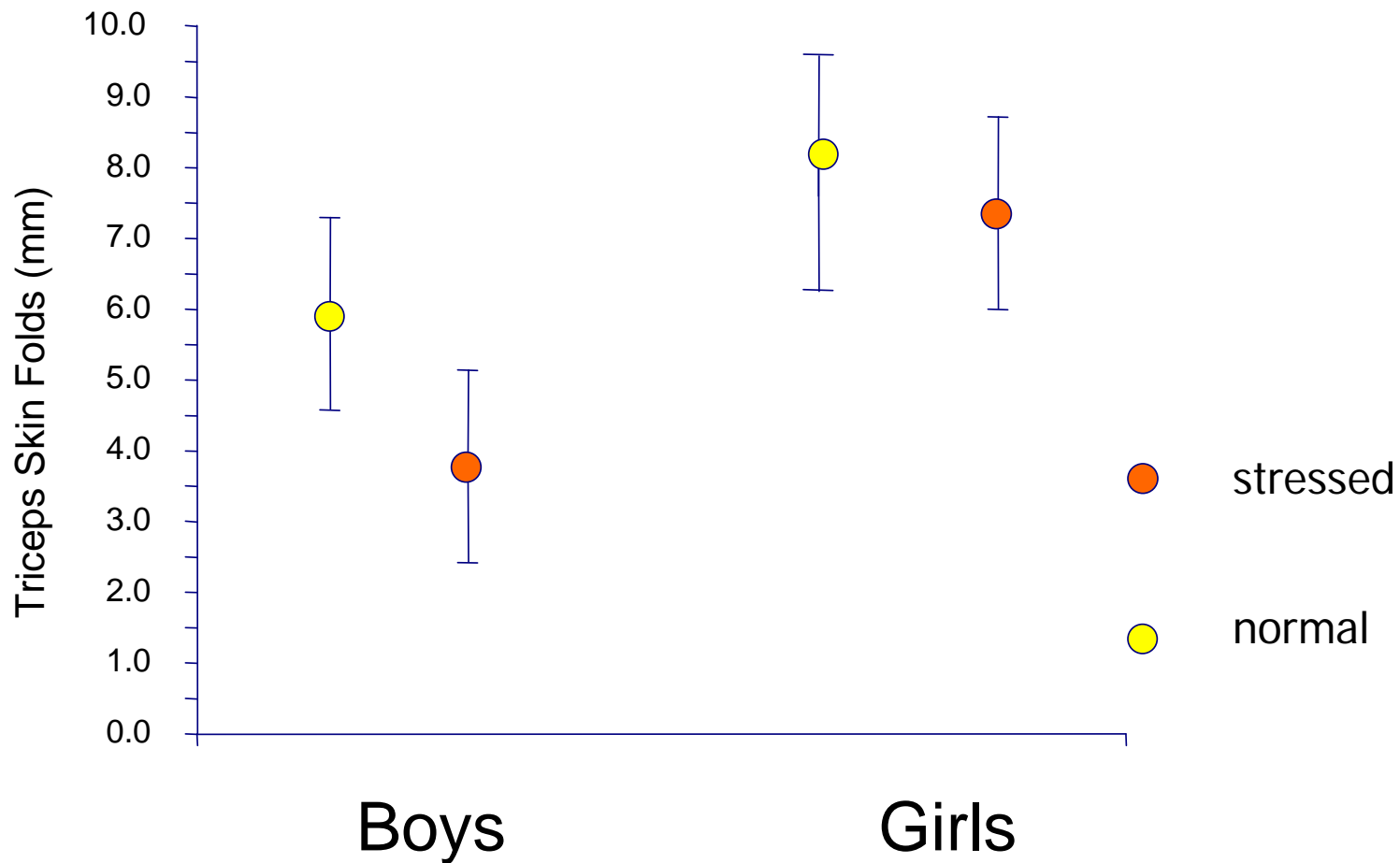




Why women outlive men

- 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

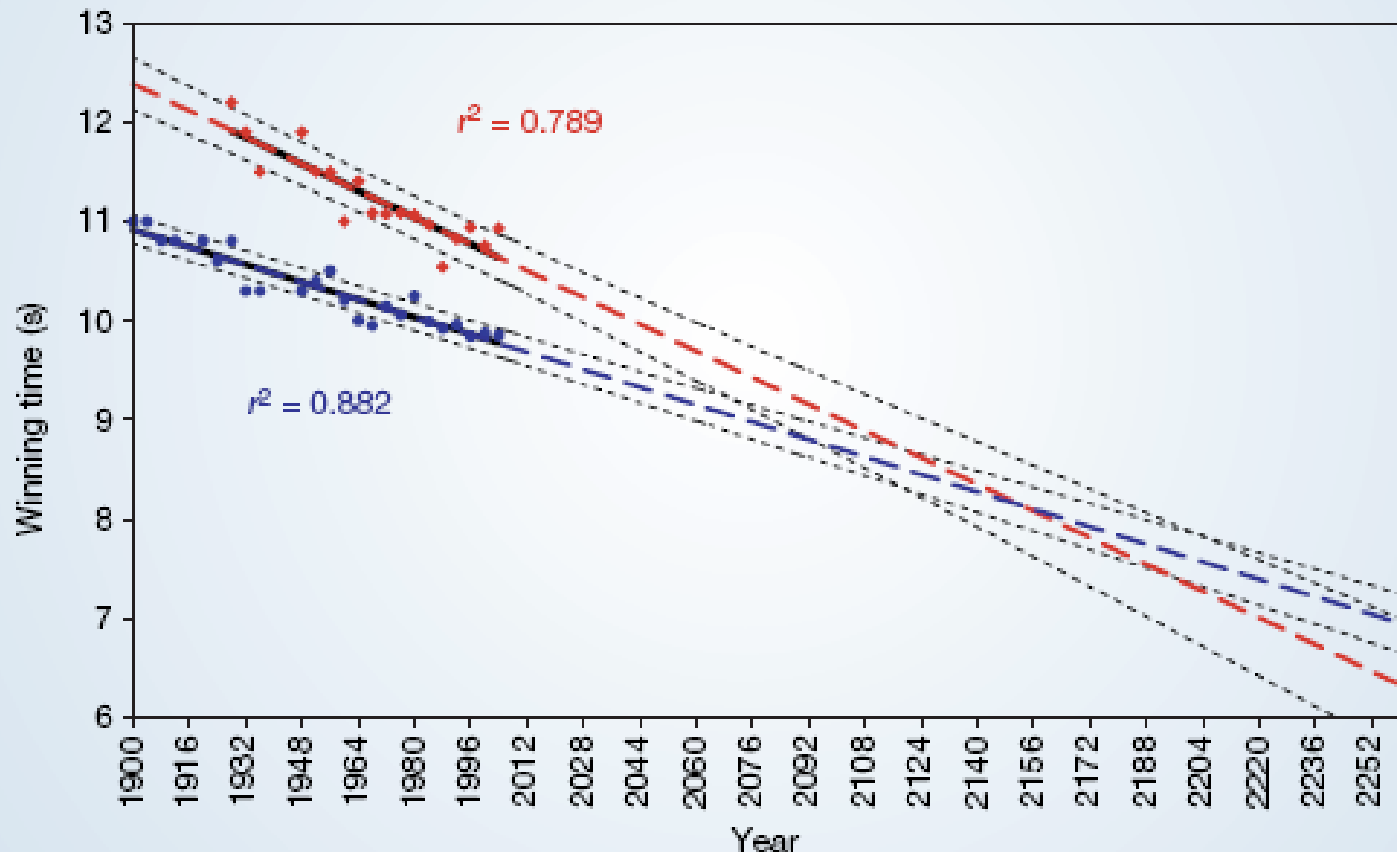
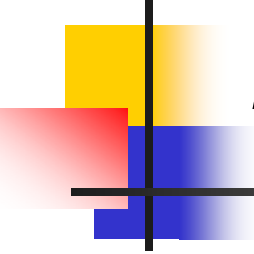


Figure 1 The winning Olympic 100-metre sprint times for men (blue points) and women (red points), with superimposed best-fit linear regression lines (solid black lines) and coefficients of determination. The regression lines are extrapolated (broken blue and red lines for men and women, respectively)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

- 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

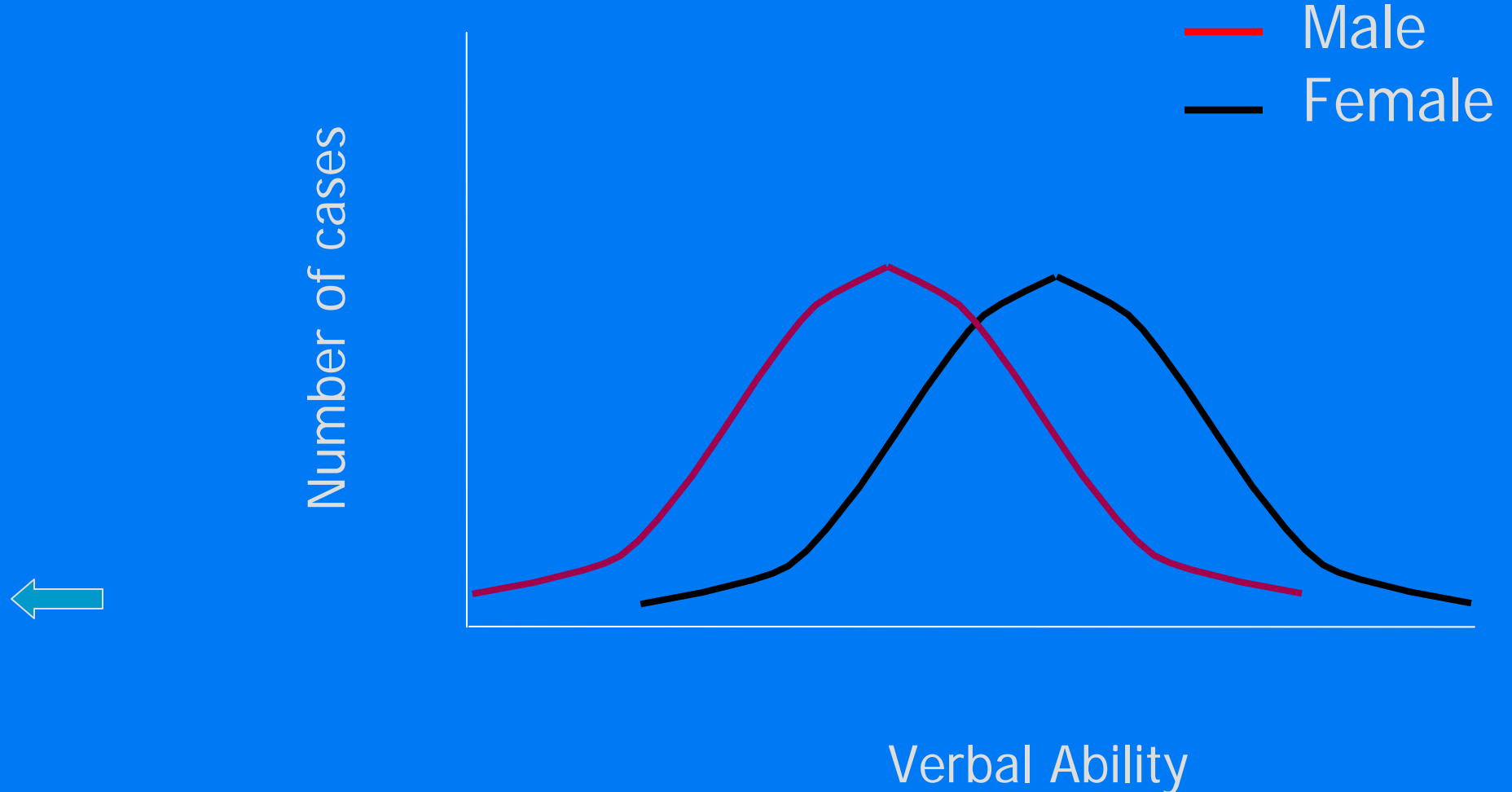
- the role of mother is structurally, culturally, and affectivity central and this centrality is culturally legitimate
- the relationship between the sexes is **relatively** egalitarian
- both women and men are important actors in economic and ritual spheres
- girls are socialized to become assertive,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



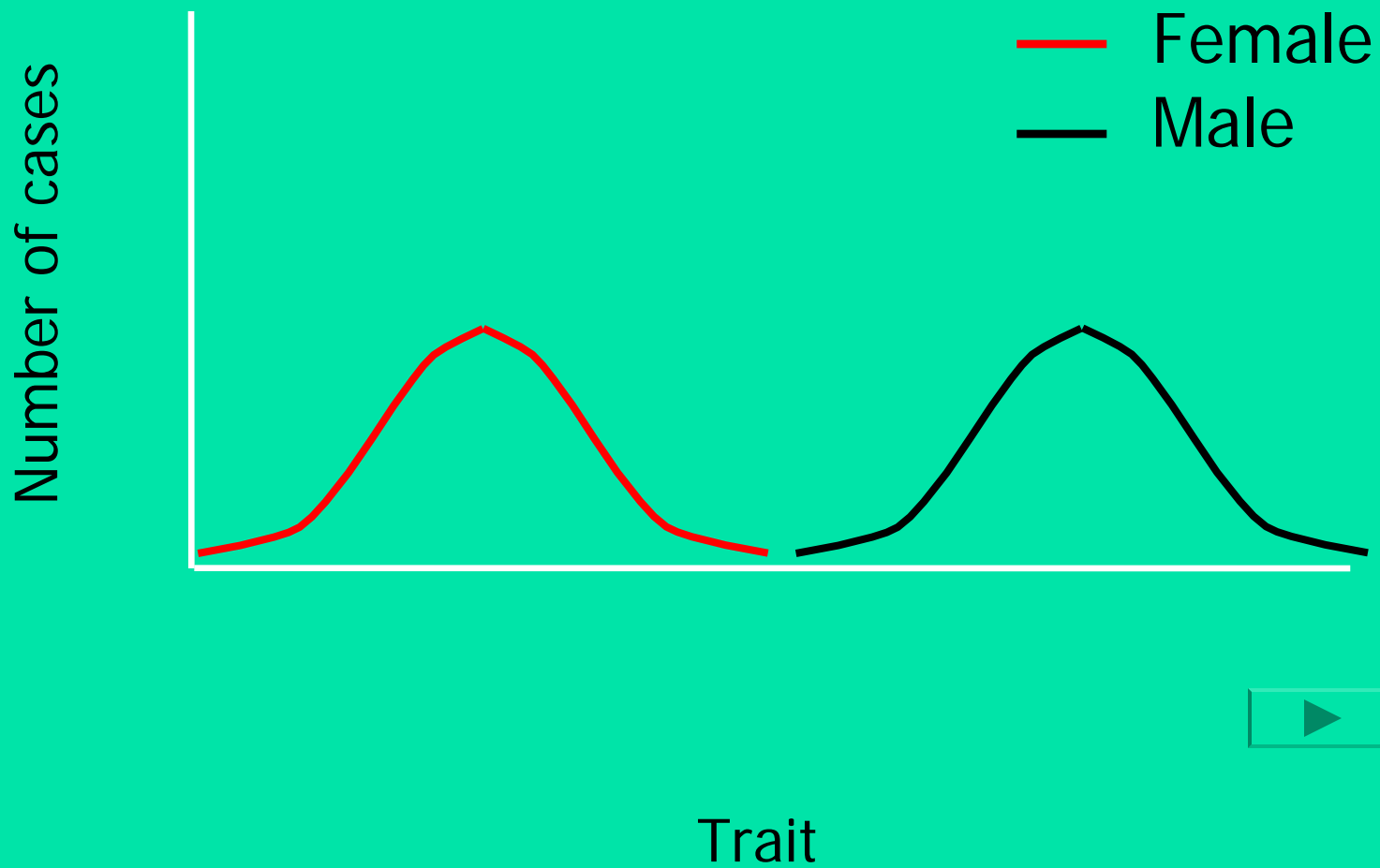
Diagram of roles from Chiñas

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

