

# Status-seeking, competition, & risk



# Outline

- **Does status have fitness benefits?**
- Status-striving, risk, and costly signalling
- Sex differences in competition and dominance
- Hormones, competition, and status



# Status and reproductive success

“He who dies with the most toys wins....” what exactly?

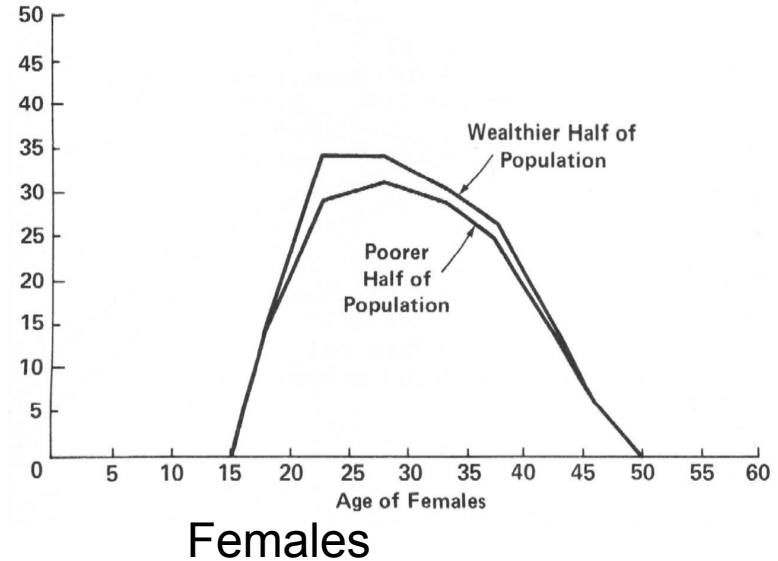
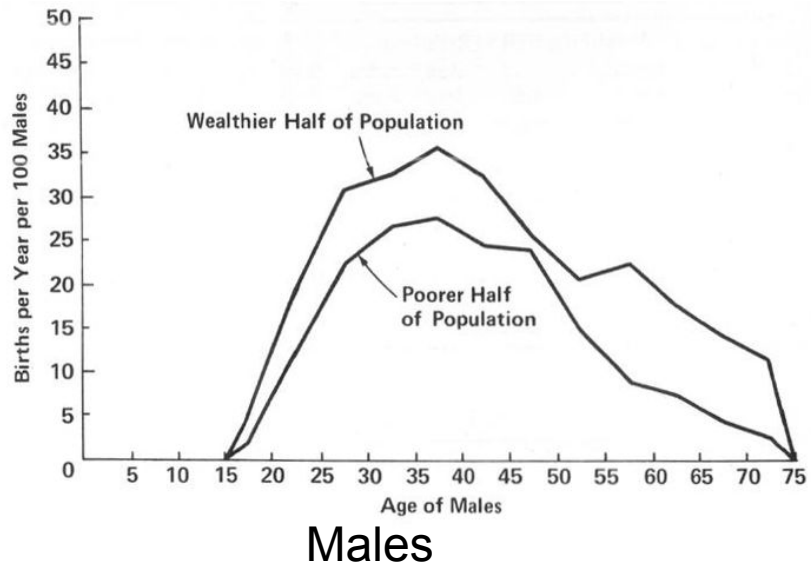
Why are people motivated to succeed? Why compete for status?

An evolutionary psychologist would suppose that people do this because status and the things that lead to it (toys, mates, respect) leads to higher fitness.

Does it?

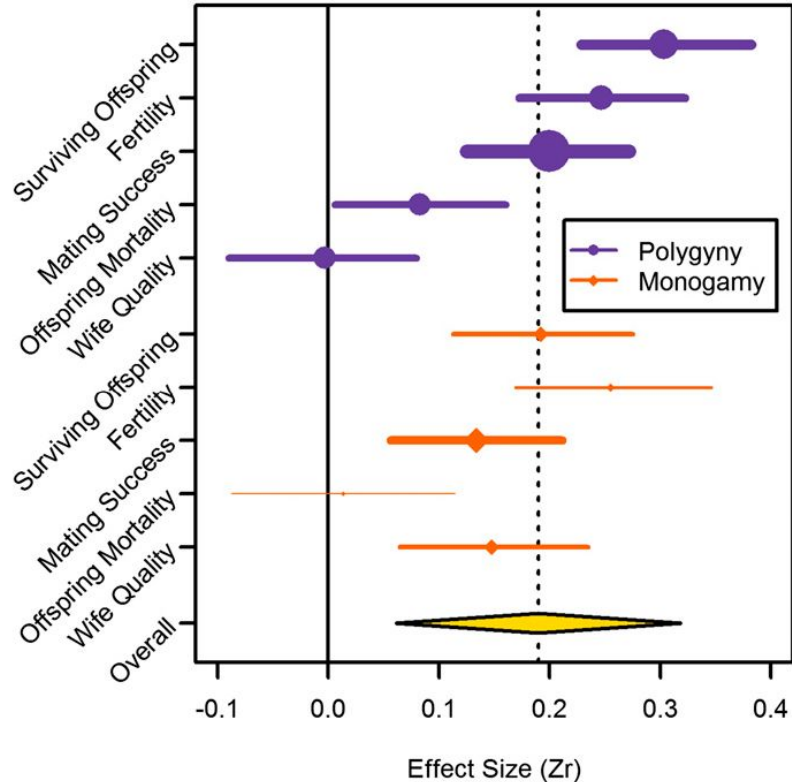
# Status and reproductive success

Does “cultural success” lead to “biological success” ?



Age-specific fertility rates for Turkmen of Persia 1973-1974 (Irons 1979)

# How does status confer fitness benefits?

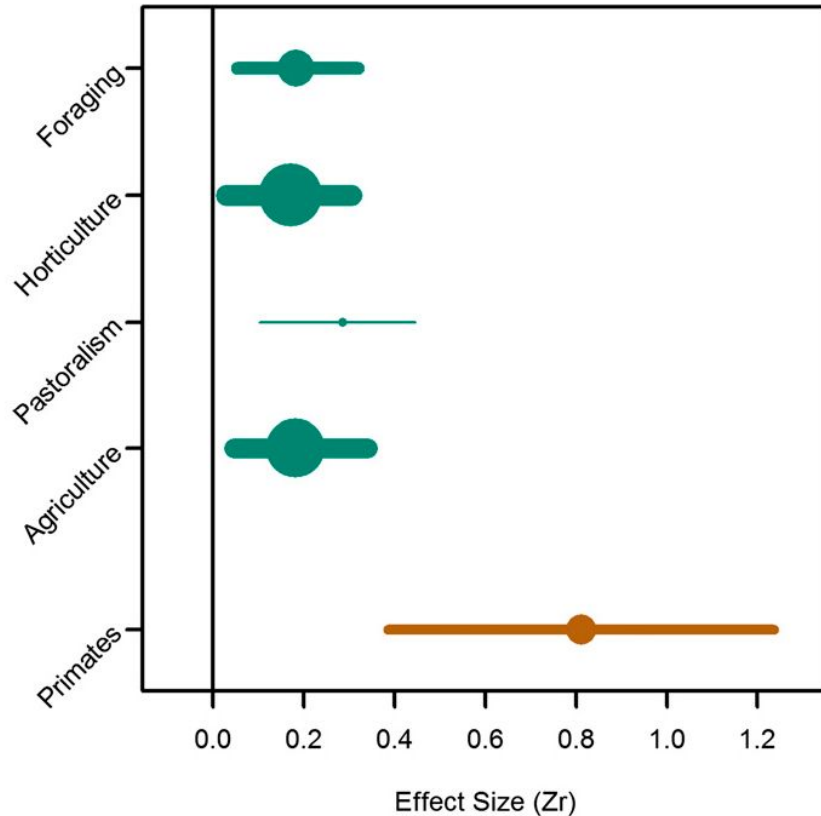


Across 33 non-industrial societies:

high status men have greater reproductive success.

Stronger effects from mating effort than parenting effort, especially in polygynous groups.

# Selection for status-seeking in foragers



Hunter-gatherers are egalitarian, but also show this pattern.

The strength of the relationship doesn't increase with domestication

but is weaker in humans than in non-human primates.

## Selection for status-seeking (cont)



The effect of status on men's reproductive success did not vary by status measure.

Their study suggests that whatever the culture values in men (physical formidability, hunting skill, material wealth, or political influence) -- is worth striving for.

# What about WEIRD societies?

Do high-status people have higher reproductive success in modern industrial societies? Probably not. Some differences:

- Birth control
- Legally-enforced monogamy
- Economic costs and benefits of children

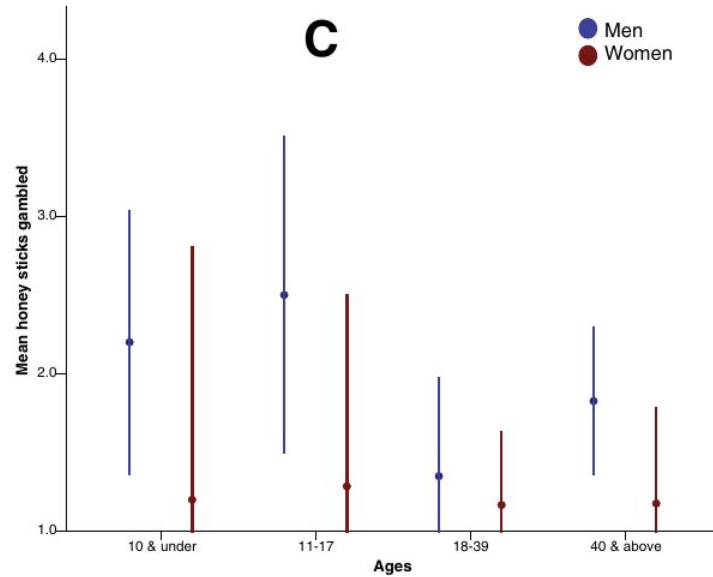
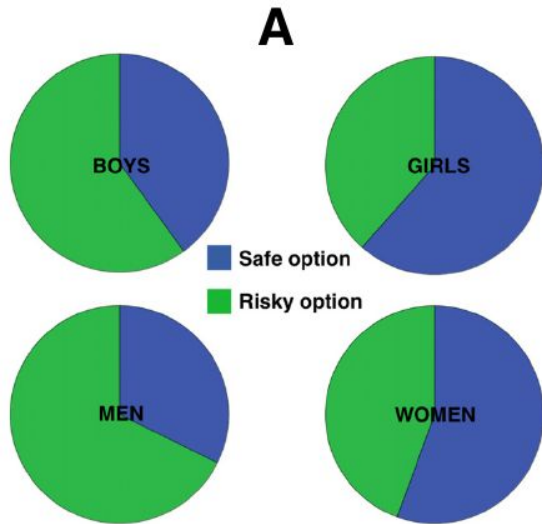
Has our desire for material resources and social success (a proximate reinforcer) become an end in itself that is now divorced from fitness?



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# Males are more risk-prone (Hadza foragers)



Double or nothing bets for (A) maize and (C) honey sticks

# Why women live longer than men

Some risk-taking (like taking risky bets for more maize or honey sticks) gets material rewards. But some just seems costly.



[BMJ](#). 2014 Dec 11;349:g7094. doi: 10.1136/bmj.g7094.

# The Darwin Awards: sex differences in idiotic behaviour.

[Lendrem BA](#)<sup>1</sup>, [Lendrem DW](#)<sup>2</sup>, [Gray A](#)<sup>3</sup>, [Isaacs JD](#)<sup>4</sup>.

## Author information

### Abstract

Sex differences in risk seeking behaviour, emergency hospital admissions, and mortality are well documented. However, little is known about sex differences in idiotic risk taking behaviour. This paper reviews the data on winners of the Darwin Award over a 20 year period (1995-2014). Winners of the Darwin Award must eliminate themselves from the gene pool in such an idiotic manner that their action ensures one less idiot will survive. This paper reports a marked sex difference in Darwin Award winners: males are significantly more likely to receive the award than females ( $P < 0.0001$ ). We discuss some of the reasons for this difference.

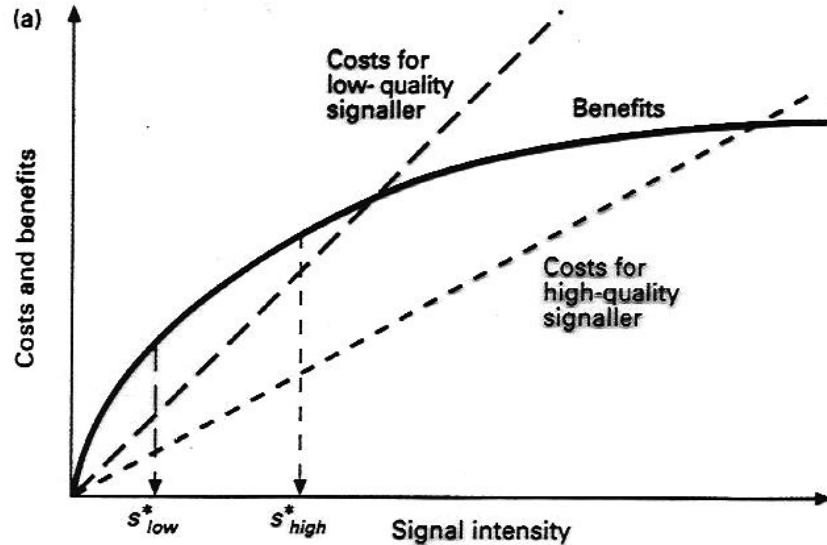
# Costly signalling

Risk-prone behavior that is not directly fitness-enhancing may be a signal (like a peacock's tail).

## **How to keep a signal honest, hard-to-fake?**

1. An honest signal may be an intrinsic feature of the trait (e.g., deep croaks in large bullfrogs); signals don't have to be costly to be honest
2. But a signal that is more costly for the low-quality individual is also honest; the low-quality individual cannot afford it

# Optimal signal intensity: Differences in quality



Here, the benefits are the same, but the costs are higher for the “low quality signaller”.

So his “optimal signal intensity” ( $S^*_{low}$ ) -- where the difference between the benefit and cost is greatest -- is lower.

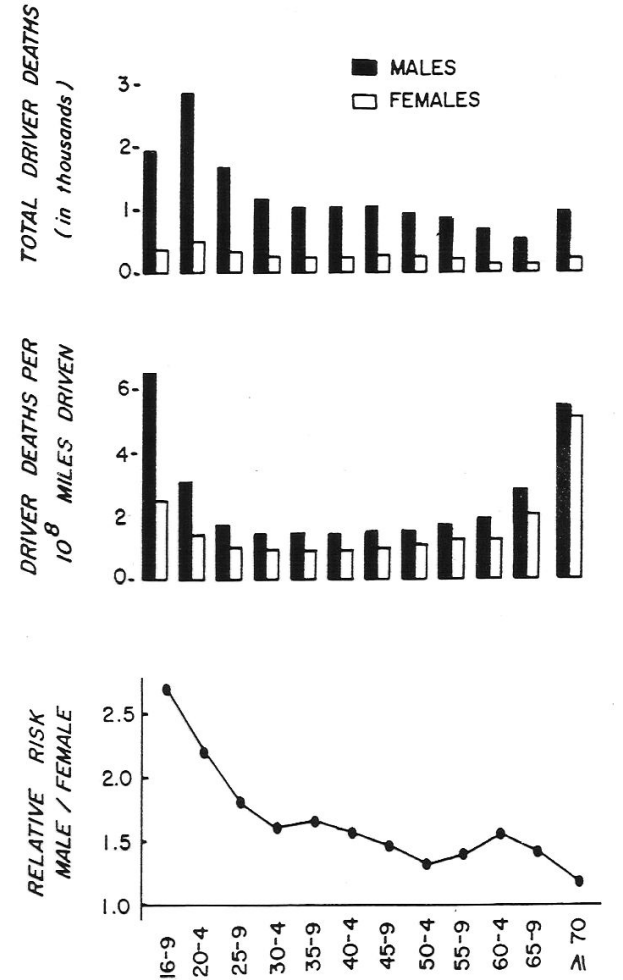
# Is risky behavior a social signal?

Males -- especially young males -- incur more driver deaths per mile driven.

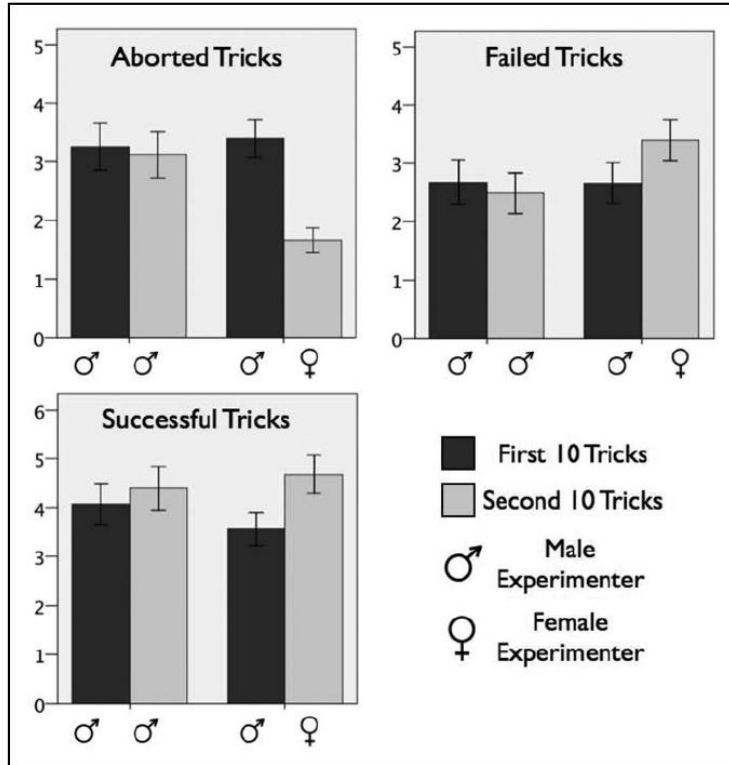
Are risky drivers showing off?

Male drivers (but not female drivers) are quicker to turn into traffic when they have male passengers.

Wilson & Daly Ethol & Sociobiol 1985



# If it is a social signal, who is the audience?



Male skateboarders take more risks in difficult tricks in the presence of an attractive female observer.

With the female (but not the male) observer, they aborted fewer tricks -- this led to more successes but also more crashes.

The increased risk-taking was partially mediated by elevated testosterone.



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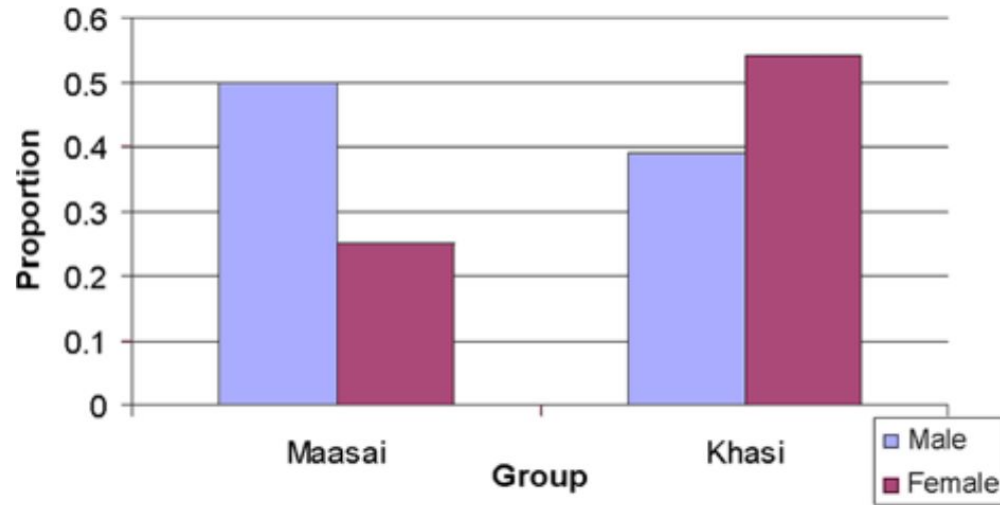
# Do women and men differ in status-seeking?

Most evolutionary psychologists expect males to compete harder: Greater male variance in RS means higher fitness payoffs to the winner

Evidence is supportive, but nuanced:

- more egoistic dominance in boys than girls, cross-culturally
- males form stable dominance hierarchies more quickly
- females often suppress their dominance when males are around
- BUT men and women compete about different things
- BUT women and men express dominance in different ways

# Cultural differences



Proportion of people who adopted the competitive payoff choice in two societies, the matrilineal Khasi and the patrilineal Maasai

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# Testosterone and competition

What gets a guy “pumped” in anticipation of competition? Testosterone rises in anticipation of competition, among males.

Why not have high T all the time? What are the costs?

“**Challenge hypothesis**” predicts strong associations between hormones and aggression only in context of competition

Correlations between T and aggression found when males are actively competing for territory, dominance or mating access.

# The tennis match - 1

Mazur and Lamb 1980: Does winning a \$100 prize get your testosterone up? It depends how you won.

- by winning a tennis match? Yes
- By winning a lottery? No

So it's not about a lucky windfall. It's about succeeding in competition.

# The tennis match- 2

Booth et al 1989 (study of 6 tennis matches):

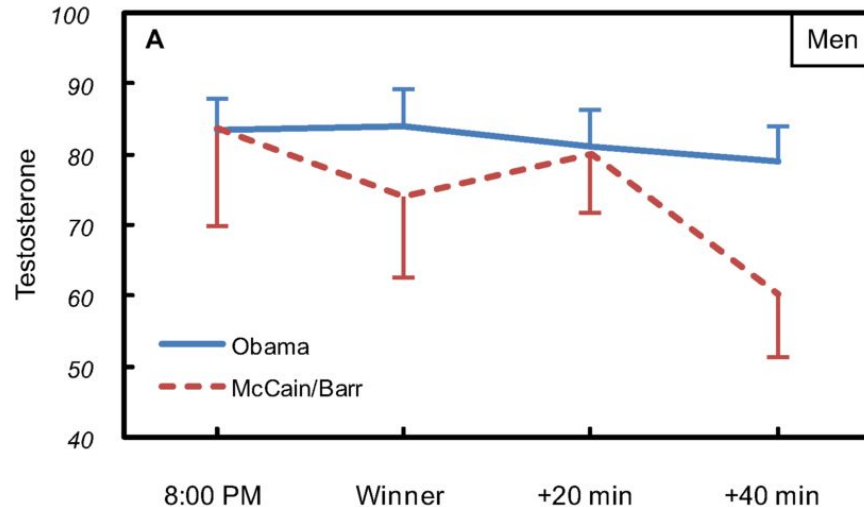
- T rose immediately before most matches
- pre-game T rise associated with increased positive mood
- post-game, T rose for winners, not losers
- post-game T rise higher for winners who felt good about performance

This affected performance on the next game:

- Winners with rising T had higher T before next game
- Losers with falling T had lower T before next game

(results for females inconsistent across studies)

# My group vs. your group



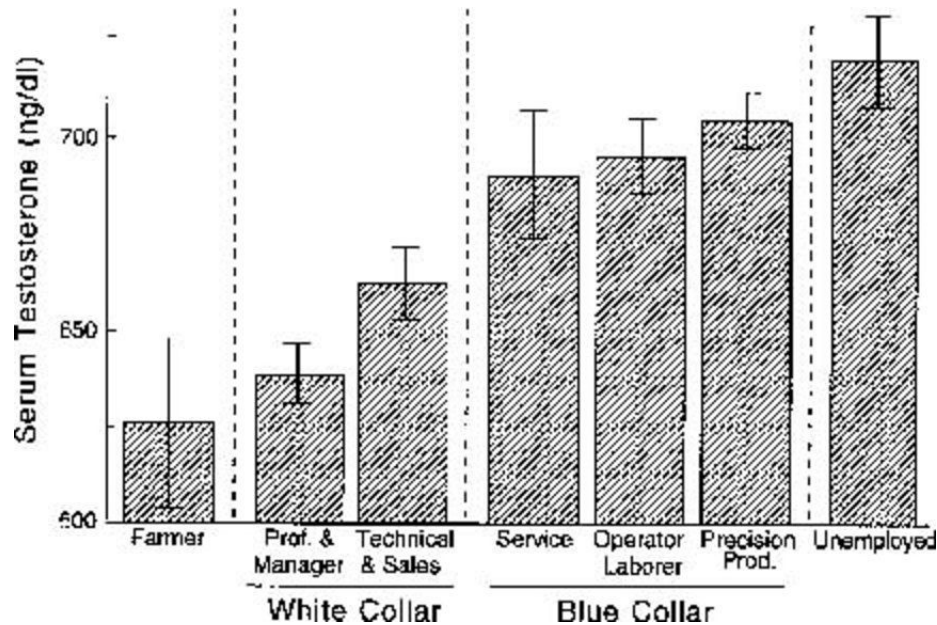
Men's testosterone levels during the 2008 presidential election in supporters of the winner & loser

Stanton et al. *PLOS One* 2009

In male fans watching college basketball & World Cup soccer match:  
Testosterone increased in fans of the winners, decreased in the fans of the losers. Bernhardt et al. *Physiology & Behavior* 1998



# Testosterone and occupation



Occupation is a marker of status in our society.

Do men in high-status occupations have higher testosterone?

(Dabbs, *Social Forces* 1992; also Dabbs et al. *JSPS* 1990)

# Testosterone & dominance in women

In a peer-ranking study (status, leadership, and popularity):

Women with higher hormone levels (including testosterone) ranked themselves higher, but were rated lower by their peers.

In women, testosterone associated with assertiveness, not necessarily higher status in female groups.

Women with high testosterone levels in this study also had more sexual partners, and more unrestricted sexual attitudes. Perhaps other women were mistrustful of them?

# Summary

Does high status have fitness benefits?

- In traditional societies, yes.
- Status leads to higher male fitness through mating effort, not parenting effort

Males are more risk-prone than females

- Predicted by higher variance in RS: Higher returns worth taking greater risk
- Crazy risk-taking may be costly signalling, showing off

Males show more status-seeking but men & women compete over different things

Testosterone facilitates competitive behavior in males (But high T doesn't necessarily mean higher status)