

## **Reading Assignments:**

- 1. Biology of the Face
- 2. An Evolutionary Theory of Female Physical Attractiveness
- 3. Health Signals Beauty
- 4. Biological Basis of Sex Appeal
- 5. The Psychology and Biology of Beauty
- **6.** The Biology of Beauty
- 7. Handsome men have the best sperm
- 8. Beards: Too Hip For Their Own Good
- 9. Human Sex Pheromones: We've Got a Nose for Gender

# Biology of Beauty

"Throughout the animal world attractiveness certifies biological quality." (Randy Thornhill, U. New Mexico ecologist)

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"Every culture is a 'beauty culture'. I defy anyone to point to a society, any time in history or any place in the world, that wasn't preoccupied with beauty."



(Nancy Etcoff, Harvard Medical School, author: "Survival of the Prettiest: The Science of Beauty")

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Our extreme sensitivity to beauty is hard-wired, that is, governed by circuits in the brain shaped by natural selection."

(Nancy Etcoff, Harvard Medical School, author: "Survival of the Prettiest: The Science of Beauty")

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# Biology of Beauty

- Our human idea of beauty is influenced by many things
  - different cultures have different standards.
  - different eras (generations) have different standards.
  - these things are highly subjective and change constantly.

# Biology of Beauty

- Our human idea of beauty is influenced by many things
  - different cultures have different standards.
  - different eras (generations) have different standards.
  - these things are highly subjective and change constantly.
- However, evolution (natural & sexual selection) has left the strongest impression on what we deem beautiful, regardless of what culture or era we live in. The influence of evolution on us is VERY powerful, but not always moral or fair, and should not be judged by our cultural laws or edicts.

So, be careful friends!

Do not use nature as a moral compass!!

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# Biology of Beauty

"Do we have to indulge every appetite that natural selection has preserved in us? **Of course not!** I don't know any scientist who seriously thinks you can look to nature for moral guidance. Even the fashion magazines would provide a better compass."

(Randy Thornhill, U. New Mexico ecologist)

"It is almost impossible, systematically, to constitute a natural moral law. Nature has no principles. She furnishes us with no reason to believe that human life is to be respected. Nature, in her indifference, makes no distinction between good and evil."

(Anatole France, French poet)

### Examples of Nature – red in tooth and claw:

(Why we don't use nature as a moral compass!!)

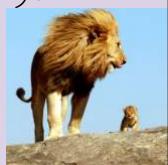
#### For Ex.

> When male lions take over a new pride they kill all the existing cubs (infanticide) in order to bring the females into heat so they can mate with them.

- tendency to Kill/harm offspring.

Similar examples of this seen in primates (even us), & rodents, among other species.





a

### Examples of Nature – red in tooth and claw:

(Why we don't use nature as a moral compass!!)

## **My Point:**

When evaluating and understanding the "Biology" of beauty, **from an evolutionary & biological standpoint**, you must <u>suspend your cultural morality</u>. Some of this stuff might be offensive or controversial. but hey – it is what it is.....





#### Remember this from Evolution of Sex??

#### **Disadvantages:**

- 1) Recombination destroys adaptive combinations of genes
- 2) Has the "Two-fold Cost of Sex" (slow process w/fewer offspring)
- 4) males & females must find each other to reproduce.
- 5) Egg usually stays put (in female) while sperm must move, find, and compete for egg entrance.
- 6) involves "being at right place, right time" evolution of reproductive cycles.
- 7) brings in complication of **competition** for access to mates.
- 8) brings in complication of *female choice* into mating (females are choosy when selecting mate)
- 9) imbalance in cost of sex between males & females
- females produce fewer eggs while males produce sperm
- human females lose eggs as they go from fetus, birth, to puberty.
- 10. This imbalance in cost of sex between males and females leads to different reproductive agendas for females and males. [often these strategies conflict w/each other

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From an evolutionary and biological perspective, the cost of sexual reproduction differs between males & females (for mammals)

- > Sperm are cheap
- > Don't & go through pregnancy > Don't go through birth
- > Don't lactate (produce milk)
- > theoretically, are Fertile for longer time in life.

From an evolutionary and biological perspective, the cost of sexual reproduction differs between males & females (for mammals)

Males:

- Females: > Eggs are expensive!
- > invest significantly more energy into pregnancy, childbirth, & lactation.
- > are afertile for shorter period in life.

  y can have fewer children in life compared to

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From an evolutionary and biological perspective, the cost of sexual reproduction differs between males & females (for mammals)

#### THEREFORE:

The **different costs of sex** between males and females leads to different reproductive agendas.

And we see the relics of evolutionary forces at work all the time.

If we understand these forces, perhaps we can better understand ourselves and each other.

## Is Sexual Reproduction Cooperative or Competitive?

#### **Battle of the Sexes?**

- Each male and female is out to maximize their own fitness.
- Each wants to maximize gains and minimize costs.
- Sometimes individual interests coincide BUT it's usually everyone out for themselves.
- Conflict of agendas = driving evolutionary force behind behavioral, anatomical, and physiological strategies of reproduction.

Males and females are out to "screw" each other to get the best genetic deal (find the most fit mate).

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# Is Sexual Reproduction Cooperative or Competitive What would happen if MALES could get pregnant?

### Ex.A) Seahorses

> males receive eggs from females, which he fertilizes, and broods embryos in a special brood pouch on his belly.

> male provides nutrients to developing embryos through brood pouch.



> Is the one that gives birth

### **Evolutionary Result?**

- > male seahorses invest more heavily in reproduction
- male seahorses are more choosy about females.

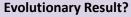
## Is Sexual Reproduction Cooperative or Competitive?

What would happen if MALES could get pregnant?

## Ex. B) Pipefish

> males receive eggs from females, which he fertilizes and the female "sticks" the fertilized eggs into a brood pouch on his abdomen.

> male provides nutrients to developing embryos through brood pouch, and protects them when hatched.



- > Males invest more heavily in reproduction than females.
- > Males are more choosy & females must

"woo" the male!

Click <u>HERE</u> for YouTube Video (8min):



Male pipefish



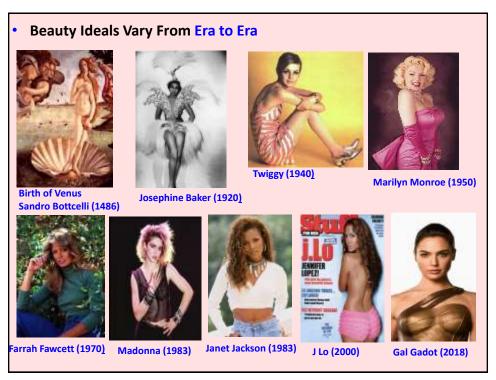
Close-up of developing pipefish in male brood pouch.

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"Survival of the Sexiest" – video (4 min) evolutionary\_psych\_20.5MB.mov







# Beauty Ideals Vary From Era to Era Michelangelo (1920) Rudolph Valentino James Dean (1940) Elvis Presley (1960) Burt Reynolds (1970) Denzel Washington (1980) Brad Pitt (2000) Ryan Reynolds (2010) Dwayne Johnson (2015) Idris Elba (2018)

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## Review

- Cinderella Effect
- Cost of sex differs between males and females

#### Males:

- > Sperm are cheap
- > Do not go through pregnancy (do not bear energetic burden or any risks)
- > Do not go through birth (no risks).
- > Do not lactate (no direct energetic burden).
- >Are fertile for longer (from 14 80 yrs?).

#### Females:

- > Eggs are expensive
- > Invest more energy and risk (pregnancy, childbirth, and lactation).
- > Are fertile for shorter (12 50's).
- > Can have fewer children than males in lifetime (because of above).
- What happens if males could be pregnant?
  - Ex. Seahorses and Pipefish

or Beauty

# "Universal Ideals for Attraction"

= Criteria, to see beauty, which transcerds culture and era (generation), and are based on evolutionary Forces on Us.

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## **Universal Ideals for Attraction**

Biological basis of attraction

- What are men looking for?
- 1. Symmetry
  2. Beauty" indicator of good genes, development,
- 3. Youth men tend to choose younger women.
- 4. Waist to hip ratio (WHR) of o.6 0.8 in women
- 5. Many mating apportunities.
- What are women looking for?
- 1. Symmetry
- 2. Beauty
  3. Waist to Hip ratio 0.9-1.0 in men.
- (loyalty) -> Fidelity & relationships. 4. Resources
- 5.

"Beauty resides in order and symmetry and definiteness."

(Aristotle, 330 BC)

"Symmetry of parts towards each other and towards a whole . . . the beautiful thing is essentially symmetrical."

(Plotinus, 270)

# 1. Bilateral Symmetry

= Extent to which the left is right sides

of body match.

- Symmetry indicates developmental stability (good genes)
- Freedom from disease
- Better overall health

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# Symmetry Symmetry is an indicator of the extent to which an individual has escaped a multitude of environmental insults during development and therefore is an indirect measure of genetic fitness (asymmetry from direct genetic mutation is normally so severe that survival is limited)

# Ex. A) Randy Thornhill (U. New Mexico ecologist) Studied scorpionflies

- Symmetrical males were more attractive to females (mated w/more females)
- Symmetry indicated fitness (good genes)
- Asymmetrical males unlucky! (mated less)



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## Ex. B) Thornhill and Gangestad – 1994 Studied college students

- Measured body symmetry in 100 college students
- Students completed questionnaire and a diary for 2 months.
- Results:
  - > more symmetrical males had sex 3 4 yrs earlier than asymmetrical males.
  - > males & females w/symmetry had greater number of sexual partners.
  - > symmetrical students reported less illness or physical complaints.
  - Asymmetrical students more physical complaints & illness.



## Ex. C) Thornhill and Gangestad - Studied 86 couples

- Women w/highly symmetrical partners were twice as likely to have orgasm during sex.
- Students completed questionnaire
- Results:
  - > more symmetrical males had sex 3 4 yrs earlier than asymmetrical males.
  - > males & females w/symmetry had greater number of sexual partners.

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# 1. Bilateral Symmetry

Ex. D) Maria Sancho-Navarro, University of Valencia, Spain - Studied male and female college students

## Handsome men have the best sperm - Click for reading assignment

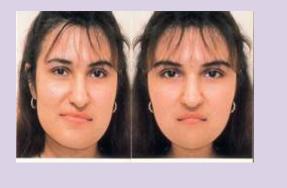
- Had female students rate facial attractiveness and symmetry of 66 male students.
- Measured the male students' facial symmetry.
- Examined semen quality of males.
- Most attractive males had sperm with best morphology (shape) and motility (movement).





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# 1. Bilateral Symmetry





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# 1. Bilateral Symmetry





[+FACIAL ASYMMETRY+]













The above examples of faces are just to show you how different each half of our faces are. The pictures on the left are the original faces of the man and woman. The pictures in the middle are the left half of each face and then mirror-imaged to try to make an entire symmetrical face. A perfectly symmetrical face can be more appealing to many, as you can see in those pictures. As for the pictures on the righh, the same thing was done but this time using the right half of the face. Clearly, the two halves of the face are not symmetrical at all and this gives rise to basically 2 different persons.

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# 1. Bilateral Symmetry



Country Music Star **A?**(Lyle Lovitt)



Country Music Star **A?**(Lyle Lovitt)



Country Music Star **B?**(Keith Urban)

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# 2. Beauty

- ❖ Typically rated by secondary sexual characteristics (those characteristics that arise after puberty (adulthood).
- ❖ Ideals of beauty, even within an era & culture can vary A LOT! (so let's just looks at some universals).
- Beauty is an <u>advertisement</u> of health & vigor that can't be faked (at least BEFORE plastic surgery!).

## 2. Beauty

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Secondary sex characteristics

w/testosterone

deep voice apple apple voice

Facial & chest hair

more myscular

thick bone brow & jaw

aller

Secondary sex characteristics w/estrogen

not to have Facial / chest

Shorter. breast is fat deposits - breast is

more delicate & angularja

has perio

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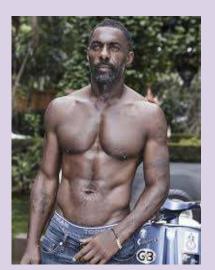
Gal Gadot (2018 sexiest woman alive – UK)

# Visual Sexual Signals in Females

- Enlarged breasts
- slender waist, wider hips (WHR 0.6 – 0.8)
- Slender jaw and brow
- Less hair

# Question:

(Why is hairlessness considered "attractive" (at least in western culture)?



**Idris Elba** (2018 Sexiest Man alive. People magazine)

# Visual Sexual Signals in Males

- Facial & chest hair
- Wider waist, wider chest
- WHR 0.8 1.0
- · Heavy jaw and brow line
- Muscularity

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# See Reading assign: ": Click for reading: Beards: Too Hip For Their Own Good

In ... the last century, we've seen many trends come and go in cycles. "Sideburns ..., then full beards," **Rob Brooks** from University of New South Wales says. "In the 1970s it was handlebar moustaches. In the 80s it was Magnum PI moustaches. In the 90s we saw a lot of clean shaven men, and now big bushy beards are back."

Sideburn (mutton chops)



mustache



Goatee w/stache

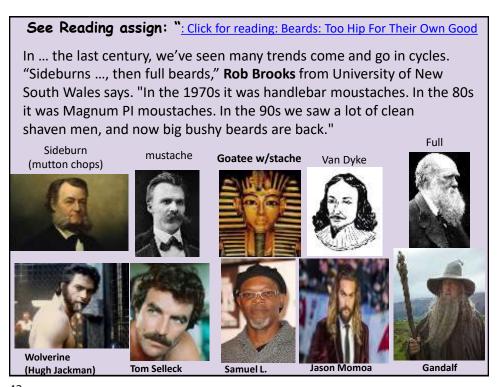


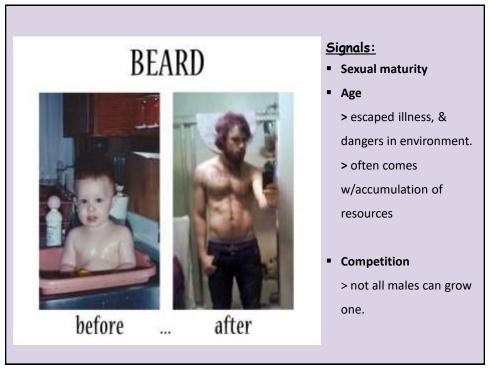
Van Dyke

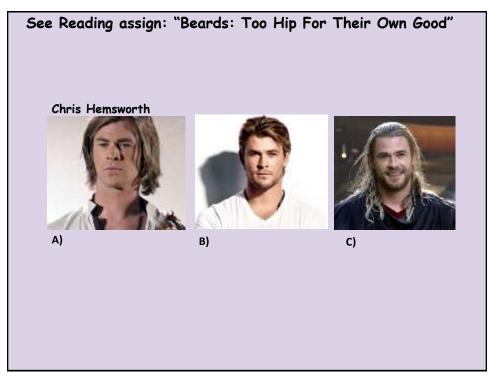


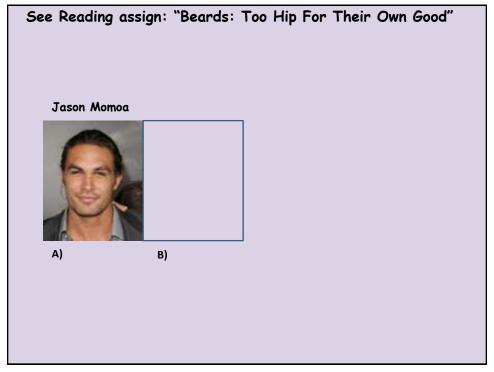
Full

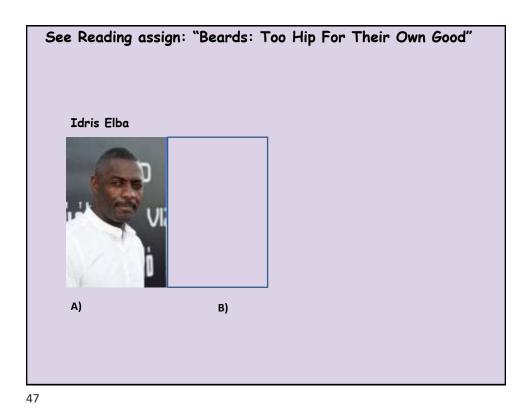












See Reading assign: ": Click for reading: Beards: Too Hip For Their Own Good

Beard study:

- ~1400 women and 213 men

- Men were photographed at different stages of beard growth
(clean-shaven, light stubble, heavy stubble, and full beard).

Researchers varied the rarity of beard types.
(Subjects either saw all clean shaven, all with full beards, or six men from each of the four levels of beardedness.)

- Women rated the men's attractiveness.

- Results showed: "Negative Frequency Dependent Selection"

- Women Saw as attractive men with the more face facial hair category.

A)

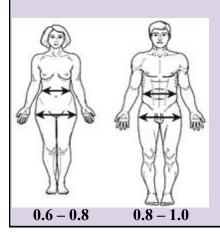
B)

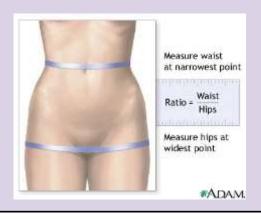
C)

D)

- 1. Symmetry
- 2. Beauty
- 3. Waist to Hip Ratio (WHR)

WHR = measurement at waist / measurement at hip





- 1. Symmetry
- 2. Beauty
- 3. Waist to Hip Ratio
  - ❖ Before puberty WHR in boys and girls is ~1.0
  - ❖ At puberty, estrogen drives fat deposits towards breast and hip development, changing female WHR more towards 0.6 – 0.8.
  - ❖ At menopause, WHR of females (and males) tends to get larger than 1.0

- 1. Symmetry
- 2. Beauty

## 3. Waist to Hip Ratio

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- ❖ At puberty, estrogen drives fat deposits towards breast and hip development, changing female WHR more towards 0.6 − 0.8.
- ❖ At menopause, WHR of females (and males) tends to get larger than 1.0

**Female:** WHR of 0.6 – 0.8

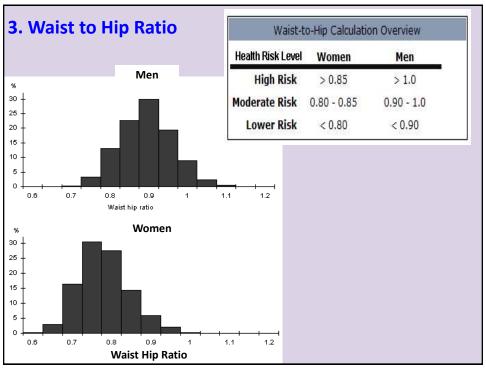
- associated with health
- greater fertility
- WHR above = less fertility

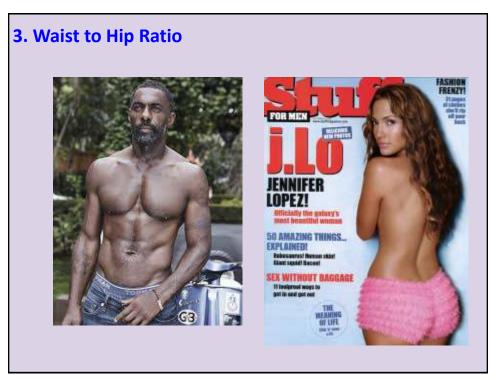
Ex. For every 0.1 increase in WHR fertility declines by 33%

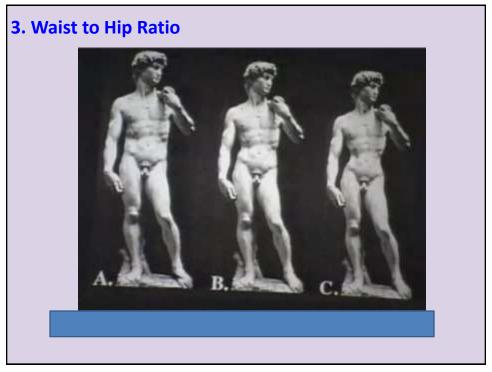
Male: WHR of 0.8 - 1.0

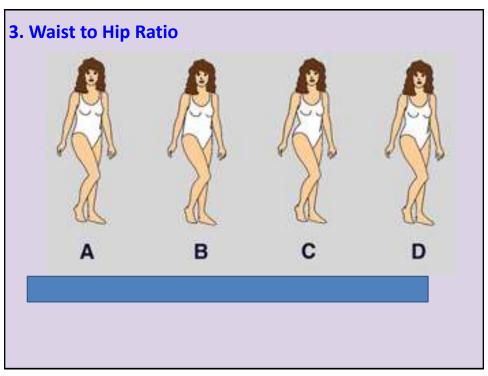
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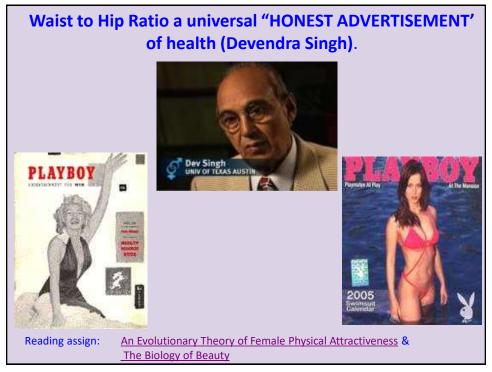
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- 1. Symmetry ✓
- 2. Beauty ✓
- 3. Waist to Hip Ratio ✓

## Other indicators of attraction:

## **Body Odor**

- ➤ Perfume / cologne multi \$ billion industry!
- Evidence that men / women detect something in body odor indicating mate quality.



Click <u>HERE</u> for Boom chicka wah wah

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# Other indicators of attraction: Body Odor

Match-N-Sniff: The MHC T-Shirt Test

(a.k.a. the nose knows attraction)

MHT = major histocompatibility complex, most variable part of human genome. Plays role in immunity.

- 1. Men wore T-shirts overnight pick up body odor.
- 2. Researchers examined the male's MHT.
- 3. Women sniffed shirts & judged which smelled best.
- 4. Shirts that women said smelled best were those from men with MHT most different from their own.

[Better to mate w/those genetically diff from you for "hybrid vigor"!]

Source:

http://www.pbs.org/wgbh/evolution/library/01/6/I\_016\_08.html



From an <u>Evolutionary Standpoint</u>, Male's Reproductive Role Differs from the Role of a Female:

Males:

1. Provide resources

2. Compete Fox Females, rank, resources

3. Take more risks.

4. Seek more sex partners

Females:

Provide afformation (of evidence

2. Compete Formales, rank, resource

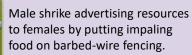
3. Take Fewer risks.

4. Seek Fewer Sex partners in preference for ty.

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# **Advertisement of Male Resources**







Male tern mate-feeding a female



Males provide resources Females provide offspring

Think humans were immune to these evolutionary forces?









# **Resources and Sex**







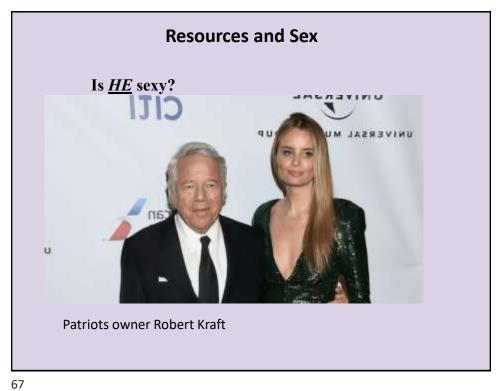
Everything you ever wanted to observe about human sexuality can be observed in one night on Bourbon St, New Orleans.

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# **Resources and Sex**



Patriots owner Robert Kraft



# **Resources and Sex**

Is <u>HE</u> sexy?



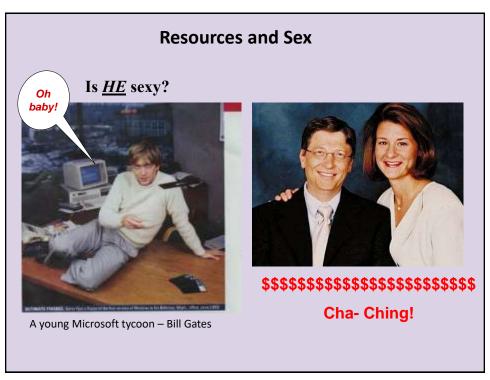
Donald Trump

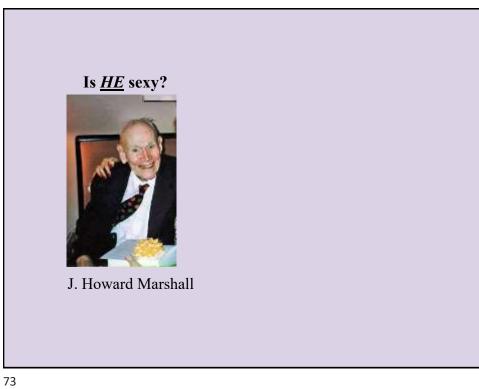


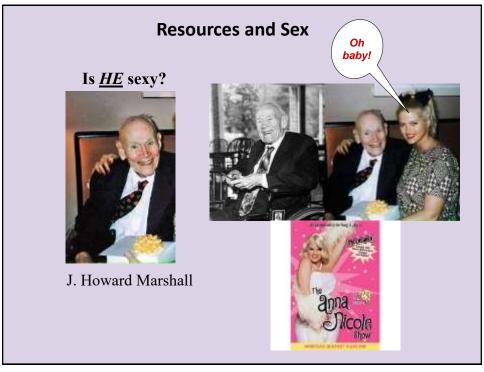


# Resources and Sex Oh baby! Is <u>HE</u> sexy? baby! A young Microsoft tycoon – Bill Gates

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## **Evolution and Sex in Music**

Click for YouTube Video: "Sharp-Dressed Man" ZZ TOP

1983



Clean shirt, new shoes and I don't know where I'm goin' to Silk suit, black tie, I don't need a reason why. <They come runnin' just as fast as they can Coz every girl crazy 'bout a sharp-dressed man.>

Gold watch, diamond ring, I ain't missin' not a single thing. And cufflinks, stick pin, When I step out I'm gonna do you in. <chorus>

Top coat, top hat, I don't worry coz my wallet's fat. Black shades, white gloves, Lookin' sharp, lookin' for love <chorus>

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## **Evolution and Sex in Music**

Click for YouTube video: "Baby Got Back" Sir Mix-A-Lot

1992



You other brothers can't deny That when a girl walks in with an itty I'm tired of magazines bitty waist And a round thing in your face You get sprung, wanna pull out your him that tough 'Cause you notice that butt was stuffed Deep in the jeans she's wearing

I like big butts and I cannot lie

Oh baby, I wanna get with you And take your picture My homeboys tried to warn me But that butt you got makes me so

Ooh, Rump-o'-smooth-skin You say you wanna get in my Benz? Well, use me, use me 'Cause you ain't that average groupie I've seen them dancin'

To hell with romancin'

She's sweat, wet, Got it goin' like a turbo 'Vette Sayin' flat butts are the thing

Take the average black man and ask

She gotta pack much back So, fellas! (Yeah!) Fellas! (Yeah!) Has your girlfriend got the butt? (Hell yeah!)

I'm hooked and I can't stop staring Tell 'em to shake it! (Shake it!) Shake it! (Shake it!)

Shake that healthy butt! Baby got back!

## **Evolution and Sex in Music**

"<u>No Scrub"</u> <u>TLC</u> ~2000



A scrub is a guy that thinks he's fine And is also known as a buster Always talkin' 'bout what he wants And just sits on his broke ass So no, I don't want your number I don't wanna give you mine and no I don't wanna meet you nowhere, no I don't want none of your time

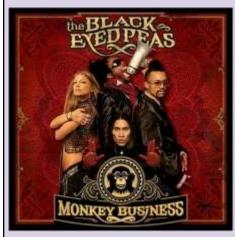
<I don't want no scrub
A scrub is a guy that can't get no love from me
Hangin' out the passenger side
Of his best friend's ride
Tryin' to holler at me> ... Repeat

But a scrub is checkin' me
But his game is kinda weak
And I know that he cannot approach me
Cuz I'm lookin' like class and he's lookin' like trash
Can't get with no deadbeat ass
So no!

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## **Evolution and Sex in Music**

"<u>My Humps"</u> <u>Black Eyed Peas</u> 2005



3.45 min

What you gon' do with all that junk?
All that junk inside your trunk?
I'ma get, get, get, get, you drunk,
Get you love drunk off my hump.
My hump, my hump, my hump, my hump, my hump,
My hump, my hump, my hump, my lovely little lumps.

I drive these brothers crazy, I do it on the daily, They treat me really nicely, They buy me all these ice-ys. Dolce & Gabbana, Fendi and then Donna Karan, they be sharin' All their money got me wearin' Fly gearrr but I ain't askin, They say they love my ass 'n, Seven Jeans, True Religion's, I say no, but they keep givin' So I keep on takin' And no I ain't taken We can keep on datin' I keep on demonstrating.

My love, my love, my love, my love
You love my lady lumps,
My hump, my hump, my hump,
My humps they got u,
She's got me spending.
(Oh) Spendin' all your money on me and spending time on me.
She's got me spendin'.
(Oh) Spendin' all your money on me, on me, on me

### Evolution and Sex in Music

"Fuck You"Cee Lo Green 2010



I see you driving 'round town with the girl I love and I'm like,

"FUCK YOU!" (Ooo,ooo,oooo)

I guess the change in my pocket wasn't enough I'm like, "FUCK YOU! And fuck her too." I said,

"If I was richer, I'd still be with ya" Ha, now ain't that some shit? And although there's pain in my chest I still wish you the best With a...

"FUCK YOU!" (Ooo,ooo,ooo)

Yeah, I'm sorry I can't afford a Ferrari But that don't mean I can't get you there I guess he's an Xbox and I'm more Atari But the way you play your game ain't fair I pity the fool that falls in love with you (Oh shit, she's a gold digger) Well (just thought you should know, nigga) Ooh, I've got some news for you Yeah, go run and tell your little boyfriend

Now I know that I had to borrow Beg and steal and lie and cheat Tryin' to keep ya, tryin' to please ya 'Cause bein' in love with your ass ain't cheap, I pity the fool That falls in love with you (Oh shit, she's a gold digger) Well (just thought you should know, nigga) Ooh, I've got some news for you

Ooh, I really hate yo ass right now...

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She take my money when I'm in need Yeah, she's a triflin' friend indeed Oh, she's a gold digger way over town

That digs on me (uh) Now I ain't sayin' she a gold digger But she ain't messin' with no broke niggas Now I ain't sayin' she a gold digger But she ain't messin' with no broke niggas Get down girl, go'n 'head get down Get down girl, go'n 'head get down Get down girl, go'n 'head get down

Get down girl, go'n 'head Cutie the bomb, met her at a beauty salon

With a baby Louis Vuitton under her underarm She said, "I can tell you rock, I can tell by your charm Far as girls you got a flock

I can tell by your charm and your arm" But I'm lookin' for the one, have you seen her? My psychic told me she have a ass like Serena Trina, Jennifer Lopez, four kids

And I gotta take all they bad ass to ShowBiz? Okay, get yo' kids, but then they got their friends I pulled up in the Benz, they all got a pen

We all went to din' and then I had to pay If you fuckin' with this girl then you better be paid You know why?

It take too much to touch her From what I heard she got a baby by Busta My best friend say she used to fuck with Usher I don't care what none of y'all say I still love her

## "Gold Digger" Kanye West, Jamie Fox 2010



18 years, 18 years

She got one of yo' kids, got you for 18 years I know somebody payin' child support for one of his kids His baby momma car and crib is bigger than he is You will see him on TV any given Sunday Win the Super Bowl and drive off in a Hyundai She was supposed to buy your shorty Tyco with your money She went to the doctor, got lipo with your money She walkin' around lookin' like Michael with your money Shoulda got that insured, Geico for your money (money) If you ain't no punk holla, "We want prenup" "We want prenup!", yeah

It's something that you need to have

'Cause when she leave yo' ass she gone leave with half 18 years, 18 years

And on her 18th birthday, he found out it wasn't his

[chorus]

# Your ideas???

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## Review

Universal Ideas of Attraction

#### Men looking for:

- 1. Symmetry = the degree to which L & R sides of body match
- 2. Beauty (indicator of good genes, development, & resources)
- 3. Youth (higher fertility in females)
- 4. Waist-to-Hip Ratio (WHR) (0.6 0.8) in females
- 5. Many mating opportunities (Males less choosy)

#### Women looking for:

- 1. Symmetry
- 2. Beauty
- 3. Waist-to-Hip Ratio (0.8 1.0) in males
- 4. Resources
- 5. Fidelity & relationships (Females more choosy. WHY??)

#### Symmetry studies

Randy Thornhill (scorpionflies), Thornhill and Gangestad (college students), Thornhill and Gangestad (couples), Maria Sancho-Navarro (handsome men and sperm)

 Beauty & secondary sexual characteristics based on hormones in men and women.

## **Review**

- Body odor and attraction (MHC T-shirt test)
- Waist Hip Ratios & attraction
  - > Difference between men and women
  - > WHR and health
- Beauty & secondary sexual characteristics based on hormones in men and women.
- Evolutionary difference is roles for men & women

#### Males:

- 1. Provide resources
- 2. Compete w/other males (for females, rank, & resources)
- 3. Take more "risks" (for females, rank, & resources)
- 4. Seek more reproductive opportunities (less choosy)

#### Females:

- 1. Provide offspring (or evidence that they can)
- 2. Compete w/other females (for males, rank, & resources)
- 3. Take fewer risks (bearing & raising children primarily on mom. If she dies, they die)
- 4. Seeks fewer but higher quality reproductive opportunities (more choosy)