SEX AND SELECTION

HOW EVOLUTION SHAPES OUR SEXUALITY

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INTRODUCTION

- Biological Basis of Sexuality
- Evolutionary Theories
- Sexuality in Early Human Ancestors,orgasm & shape of penis
- Development of Pair-Bonding (Polygamy v/s Monogamy)
- Cultural Evolution of Sexual Norms (Role of religion)
- Sexuality in the Modern Era (Homosexuality, etc)
- Challenges and Controversies
- Future Directions
- References

Biological Basis of Sexuality

- genetics - x and y chormosomes.
- Hormones --> testosterone, estrogen, oxytocin.
- sexual reproduction over asexual reproduction.
- mating strategies.

Evolutionary Theories

- Darwin’s concept of sexual selection
  - Intra-sexual selection
  - inter-sexual selection
- Parental Investment Theory.

Sexuality in Early Human Ancestors,Orgasm & Shape of penis

- sexual dimorphism.
- early human society sturctre.
- Orgasm is a physiological and emotional climax of sexual activity, characterized by intense pleasure, muscle contractions, and heightened physiological responses. It typically involves a peak of sexual arousal, often followed by a feeling of relaxation and satisfaction. In both males and females, orgasm is usually accompanied by rhythmic contractions of genital muscles, increased heart rate, and the release of tension built up during sexual stimulation.

Species	Presence of Orgasm	Sexual Behavior
Humans	Both males and females experience orgasm, with distinct physiological responses	- Male orgasm linked to ejaculation and reproduction - Female orgasm can vary in timing and frequency
Bonobos	Orgasm-like behaviors observed in both sexes	- Engage in frequent, diverse sexual activities for social bonding - Female genital rubbing and copulation
Chimpanzees	Males experience orgasm; female orgasm not well-documented	- Quick, frequent copulations - Sperm competition is high in males
Dolphins	Both males and females display orgasm-like behavior	- Engage in sexual behavior for pleasure and social bonding - Same-sex and opposite-sex interactions
Rhesus Monkeys	Orgasm-like behavior observed in males	- Mating occurs during female's fertile periods - Sperm competition is a key factor in reproductive success
Pigs	Males experience prolonged orgasm (up to 30 minutes)	- Long copulation duration for males - Sperm competition is a factor
Cats	Females may experience reflex ovulation, accompanied by behaviors that resemble orgasm	- Female ovulation is induced by mating - Mating often involves multiple partners

Aspect	Male Orgasm	Female Orgasm
Primary Function	Sperm ejection during ejaculation	Theories include sperm retention, pair bonding, byproduct, etc.
Reproductive Role	Directly related to fertilization	Indirect or debated role in reproduction
Evolutionary Theories	Reinforcement of mating behavior, reduction of refractory period	Sperm retention, byproduct, mate selection, pair bonding
Occurrence	Typically occurs with each sexual encounter	More variable, does not occur with every sexual encounter
Physiological Effects	Ejaculation, release of sexual tension	Uterine contractions, potential role in sperm movement
Behavioral Influence	Encourages frequent mating	May influence mate choice and bonding

Difference in orgasm timings.

- For men, rapid ejaculation is tied to reproductive success.
- For women, a delayed orgasm might play a role in mate selection, pair bonding, and possibly even reproductive success through mechanisms like sperm retention.

Shape of Penis

- Unique Features

1. Lack of penile spines or baculum (penile bone)
2. Pronounced coronal ridge

- Hypothesis.

1. Bipedalism and Genital Morphology Hypothesis
2. Thermoregulatory Hypothesis
3. Female Pleasure and Mate Retention Hypothesis
4. Sperm Competition Hypothesis

Development of Pair-Bonding (polygamy v/s monogamy)

- why did pair-bonding evolve in humans?

- extended period of human child development.
- social benefits
- evolution of the institution of marriage --> monogamy.
    - polygamy -- > polygyny vs polyandry.
- polygyny-- Maximizing Reproductive Success,Resource Control and Female Choice.
- polyandry-- 1.Maximizing Genetic Diversity,Resource Access and Cooperation:

Cultural Evolution of Sexual Norms (Role of religion)

- Cultural norms around sexuality can vary widely between societies.
- sexual norms are not static—they evolve over time.
- Cultural attitudes toward sexuality are also influenced by social and economic factors.
- Role of religion in shaping sexuality.

Role of religion in shaping sexuality.

- Promoting Social Cohesion and Group Survival.
- Reproductive Regulation and Kinship Systems
- Sexual Selection and Mate Choice.
- Controlling Sexual Competition and Reducing Conflict
- Facilitating Long-Term Investment in Offspring

Sexuality in the Modern Era (Homosexuality etc)

- LGBTQ+ identities.
- Homosexuality --> Kin Selection Hypothesis, Balanced Polymorphism Hypothesis, Neurodevelopmental Hypothesis,
- The digital age has also had a profound impact on sexuality.
- porn, online dating.
- online harrasments, privacy violation, misinformation about sex.
- IVF & GENETIC ENGINEERING.

Challenges and Controversies.

- issue of sexual ethics.
- sexuality and religion.
- sexual education.
- scientific controversies in the study of sexuality. --sexual orientation,gender identity,gender dysphoria

Future Directions

- Virtual reality and AI-driven sex robots.
    - research papers on Sex robots and sexuality.
- Sex Robots and the Future of Human Intimacy.(Levy, D. (2007). *Love and Sex with Robots: The Evolution of Human-Robot Relationships)
- Ethical Concerns of Sex Robots.
- The Impact of Sex Robots on Sexuality and Relationships
- Psychological Impact of Sex Robots.
- Sex Robots and Their Role in Therapy. (Cheok, A. D., Levy, D., & Devlin, K. (2016). "Could Sex Robots Become Therapeutic Tools?" *Journal of Sexual Medicine*, 13(6), 872-875.)
- Sex Robots, Consent, and Human Dignity.(Nyholm, S., & Frank, L. (2017). "From Sex Robots to Love Robots: Is Mutual Love with a Robot Possible?" *Science and Engineering Ethics*, 23(3), 791-811.)
- Some see sex robots as beneficial tools for companionship, sexual exploration, or therapy, others raise concerns about their potential to reinforce negative stereotypes, affect human intimacy, and create ethical dilemmas around consent

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THANK YOU

GOT ANY QUESTIONS

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