**PART VII MATING AND MATE CHOICE**

Chapter 13

1. Which statement gives the most plausible reasons why polyandry is rare in human society?
2. It is outlawed by the world’s major religions
3. Women are inherently monogamous whilst males are inherently polygynandrous; thus polyandry would set up unbearable and disruptive tensions to the family group leading to the neglect of children. Hence it has been selected against during the long course of evolution.
4. Women have less to gain than men from simultaneous multiple partners. A woman’s reproductive rate is limited by her own physiology not the availability of men. Whereas a male’s reproductive success is not limited by physiology but by the number of willing female partners.
5. In those polyandrous societies that are found (e .g some groups who claim to be Mormons in the USA) extreme jealously is observed between the women in the family group. This is disruptive and harmful to children and so is selected against.
6. In polyandry a woman would not know which child is her own and therefore would be unable to direct attention and care to it. Natural selection has meant such systems have produced children who are less successful and by this means evolution has removed this system.
7. Primate species A is monogamous (uni-male, uni-female groups); species B is polygynous. What expectations might we have about body size dimorphism (male size / female size)?
8. We are not able to make predictions about body size only testis size
9. A will be more dimorphic than B
10. B will be more dimorphic than A
11. The dimorphism will be equal and near to one in both cases
12. The dimorphism of A will be about half that of B
13. Imagine a new species of primate has recently been found. Males have small testes (relative to that expected for their body size) but males are much larger than females. Which one of following would be a plausible inference about behaviour in this species?
    * + 1. Females are likely to be polyandrous since small testes imply the need for several males to fertilise her eggs. The large size of male is consistent with the need for males to compete with each other in this polyandrous setting.
        2. Males are likely to be polygynous but females monogamous. Small testis size implies low sperm competition and this would result if it is physical competition for mates that determined if a male was successful. Additionally, physical competition is consistent with a large body size for males.
        3. The situation is likely to be characterised by polygynandry. Small testes imply high sperm competition and this would be found if females are taking multiple partners. A large male body size is consistent with the need to males to attract females
        4. Males are likely to be monogamous since small testes imply low sperm production typical of monogamous groups. The large size of the male is also consistent with the need to attract females into a monogamous relationship.
        5. The physical characteristics described suggest that lekking is probably practised. A large male body size is attractive to females who will then choose the most desirable male. Small testes are consistent with the idea that the average male with have few copulations in each season
14. The sperm of Chimpanzees are found to swim faster in vitro than the sperm of humans. Which sentence best describes the implications of this finding?
15. The lifespan of chimpanzee sperm is shorter than that of humans due to the hot climate – hence they much swim faster to remain viable as they reach the egg of the female.
16. Chimpanzees are highly polygynous and so the males produce faster swimming sperm in order to fertilise multiple females
17. Humans produce sperm that swim more slowly but they also produce sperm in much larger volumes and in essence these two facts cancel out to make both chimpanzee sperm and human sperm equally effective.
18. This is because chimpanzees are more monogamous than humans and so produce less sperm but with a faster swimming ability than humans.
19. Female chimpanzees will often mate with multiple males and this is an example of post copulatory intra sexual selection acting on males.

Chapter 14

1. In his landmark study of Mate choice criteria, David Buss (1989) predicted that men would desire women younger than themselves. Which statement best describes the evolutionary reasoning behind this prediction?
2. Women that are younger are likely to live longer and so be able to look after infants and children for a longer period than older women
3. Women that are younger have more years of fertile life ahead of them giving a greater potential reproductive output to the male
4. Women that are younger are better looking and so more attractive to the male psyche
5. Women that are younger have more opportunities to generate wealth from their social situation
6. Women that are younger are more likely to remain faithful to one partner, thereby giving a high degree of paternity assurance
7. Which statement provides the most plausible evolutionary explanation for observed age differences in mate preferences I relation to the age of both men and women?
8. Men will always prefer women slightly younger (2.5 years) across all ages since they reach sexual maturity about 2.5 years later than women.
9. Both males and females are need to look after offspring and so will prefer partners of a similar age, with men always preferring owmen about 2.5 years younger than themselves
10. Women prefer men slightly younger than themselves when they are young (18-20) but older men after that since there are always fewer men in their own age cohort due to the fact that men die earlier than women
11. Men will prefer women with a high residual reproductive value and so older men will prefer women much younger than themselves. Hence the age gap between the age of a man and his desired age of partner will increase with a man’s age.
12. As men age they prefer partners that are progressively nearer to their own age as children no longer are a factor to consider.
13. Analysis of dating advertisements and web sites reveals what typical pattern of features offered and features sought in so far as they differ between males and females...?
14. Men advertise their physical attraction and seek resources more often than women
15. Men advertise resources and seek physical attraction more often than women
16. Women advertise their wealth and seek physical attraction more often than men
17. Women both seek resources and advertise their wealth more than men
18. Women both advertise their physical appearance and seek good physical appearance more than men.
19. Waist hip ratio (WHR) is defined as waist measurement divided by hip measurement. Why did Singh think this might be an important component of female attractiveness as judged by males?
20. The “hourglass” figure is heavily promoted by western culture
21. Singh found a connection between health, fertility and WHR.
22. Singh found that WHR preferences varied widely across geographical boundaries and through history and was intrigued why this should be the case.
23. WHR was negatively correlated with BMI (P< 0.05) and since BMI indicates health so WHR should do the same
24. A low WHR is an indicator of high testosterone and so males will prefer a higher WHR
25. Which statement best describes the conclusions of the work of Devendra Singh on waist to hip ratios (WHR) in men and women and attractiveness?
26. He found that males always preferred slimmer women whatever their WHR and explained this by reference to slimness indicating youthfulness and high residual reproductive value.
27. He found that women preferred men of WHR 0.7 whatever their weight category since this was the WHR that correlated with the highest levels of testosterone.
28. He found that men’s preferences for WHR values in women changed considerably over time and were gradually getting smaller as the fashion for slim models emerged
29. He found that women’s preferences depending on their own age, with younger women preferring higher WHRs in men than older women.
30. He found men consistently preferred a WHR of about 0.7 in women irrespective of their body weight and argued that this correlated with optimal health and fertility for women.
31. Which set of statements bests accords with recent work by researchers on the cross cultural variation in preferences for female WHR and BMI (Body Mass Index).
32. There is little cross cultural variation, WHR and BMI preferences are always incredibly close to 0.8 and 20kg/m2 respectively. This is evidence that these are universal features of the human psyche.
33. There is some cross cultural variation in both WHR and BMI. Values perceived as attractive seem to correspond with what is regarded as optimal for either ecological or cultural reasons in each culture.
34. Ideal values of BMI are invariant at about 20 kg/m2; but the ideal WHR varies widely and tends to be lower in cultures where food is scarce.
35. Ideal values of WHR are invariant at about 0.7; but the ideal BMI varies widely and tends to be lower in cultures where food is scarce
36. The idea values depend on each ethnic group and research shows that these ideal do not change when a male from one ethnic group moves to another. They also differ between groups suggesting real genetic variation underpins this responsiveness.
37. Which set of statements most accurately describes the results of studies on the phenomenon of concealed ovulation?
38. Humans are the only species where the female conceals ovulation.
39. One view is that concealed ovulation evolved as tactic for women to elicit more care from men
40. Ovulation occurs after a surge in progesterone
41. There is evidence that women have heightened sexual interest during the few days around ovulation
42. There is evidence that female lap dances receive lower earnings in tips during the time they are ovulating – a tactic probably designed to reduce unwanted fertilisation
43. There is evidence that women behave and dress in a more sexually receptive or flirtatious way during ovulation.
44. There is evidence that male voice pitch drops when their female partners are ovulating
45. (ii), (iv) and (vi)
46. (i), (iii), (vi)
47. (v); (vi) and Vii)
48. (i), (iv) and (vi)
49. (ii), (iii), (iv) and (vi)

Chapter 15

1. Which set of statements (made by recent researchers) offer a plausible account of why symmetry should be perceived as attractive in faces?
2. Symmetry may show a good immune system since it is thought parasite infection reduced symmetry
3. Symmetry may show physiological precision and a well calibrated and functioning genome and a well- nourished phenotype
4. Symmetry may simply be a reflection of a perceptual preference unrelated tio fitness parameters
5. (i) only
6. (ii) only
7. (iii) only
8. (i) and (ii)
9. (i), (ii) and (iii)
10. What statement best describes how “averaged” faces are rated when judged in terms of their attractiveness and gives a plausible evolutionary reason for the observed effect?
11. Faces that are averaged tend to be seen as attractive; this could be due to the fact that averaged faces have enhanced symmetry, or that the average in a population represents an optimum, or that the mind is comfortable with average features.
12. Averaged faces tend to be rated as average in looks, this shows that the human mind is good at judging attractiveness and that average rating is strongly correlated with average features
13. Average faces tend to be neotenous and neoteny is attractive since it evokes the nurturing response
14. Averaged faces tend to be attractive since they are more likely to be similar to the facial features of the judger and so similar to imprinted models of attractiveness. This is supported by the fact that judges with highly non-average faces find average faces less attractive.
15. Averaged faces show signs of high testosterone: attractive in male faces but not so in female faces.
16. The attractiveness judgments of women have been shown in some studies to vary across the ovulatory cycle. Which argument is sometimes used to give an underlying evolutionary reason for this?
17. Varying levels of oestrogen enhance the acuity of female judgement and their judgement become closer to the expert ratings of a panel of judges.
18. Women have two contradictory strategies “Cads and dads”. At time of peak fertility women prefer males with high testosterone characteristics since this is likely to be associated with healthy male genes
19. Women at time of peak reproductive potential are strongly attracted to caring and resourceful males who are likely to make good fathers
20. Female symmetry also varies across the ovulatory cycle and women tend to value males of roughly the same symmetry as themselves
21. Men are sensitive to signs of peak fertility through the MHC complex and so are more attracted to women when they are mid cycle.
22. Which statement best decribes some current conclusions from work on the attractiveness of neotenous faces?
23. Neotenous faces are those which are similar to thos of the viewer and are rated as attractive since people tenmd to like faces that resmeble themselves
24. Neotenous faces are those that correspond to high genetic heterozygosity and as such as perceived as attractive since heterozygosity is a sign if fitness.
25. Neotenous faces are those that correspond to high genetic homozygosity and as such as perceived as attractive since homozygosity is a sign if fitness.
26. Neotenous faces are those that bear child like features and their attractivness has been interpreted in terms of a nurturant and caring response
27. Neotenous faces carry child like features and are regarded as unattractive since they signal sexual immaturity.
28. Which statement best decribes conclusons form current work on the MHC comnplex and mate choice?
29. MHC is the Mating Hierachy Complex which sets out a series of criteri that should be applied in order of descending importnace in making mate choice decisions
30. MHC is the Mitigating Hybrid Complex and is part of the genome that ensure we find individuals with a similar geneome (e.g close realtives) unattractive. It is a fundamental part of the Westermarck effect.
31. MHC stands for Major Histocompatability Complex. It is part of the genome that directs the immune response. We are predcited to be attracted to individuals that supply a compatible and complimentary MHC complex to our own but so far work has given variable results.
32. MHC stands for Major Histocompatability Complex. It is part of the genome that directs the immune response. Researches have found a very strong and robust effect that suggest we are attracted to faces, smells and body shapes of people with a similar MHC to our own.
33. MHC stands for Mental Health Compatability and research shows we are strongly attracted to partners that compliment our owm mental strengths – this is thought to be a mechanism that ensures offsping are well balanced individuals.

Chapter 16.

1. Which sentence best describes current conclusions about the genetic basis for homosexuality?
2. A gene has been found for male homosexuality which obeys simple rules of Mendelian inheritance and it is located on the X chromosome.
3. Studies on concordance rates between identical and non-identical twins vary considerably but tend to suggest some genetic basis for male homosexuality but a basis that is not accounted for by simple Mendelian inheritance.
4. A genetic basis for female homosexuality has been discovered by male homosexuality remains a “Darwinian paradox”.
5. There is simply no evidence for a genetic basis to male or female homosexuality and this is at the heart of the Darwinian paradox of homosexuality
6. A gene has been found for male homosexuality which does not obey simple rules of Mendelian inheritance and it is located on the Y chromosome.
7. Which sentence best describes a possible “Kin Selection” explanation of male homosexuality?
8. Male homosexuals may leave fewer offspring than heterosexuals but their brothers are more fertile and hence genes influencing male homosexuality are still passed on
9. Male homosexuals may offer help to their close kin (who may also possess their genes) and help them produce more offspring than they would without help
10. The concordance rate for male homosexuality among Dizygotic twin is lower than for monozygotic twins
11. Male homosexuals are more likely than straight males to have elder brothers
12. Male homosexuality male be influenced by a region of the X chromosome which when expressed in females increases the chance she will produce male offspring.
13. Which sentence best describes the “sexual antagonistic selection” theory of male homosexuality advanced by Camperio Ciani ?
14. Female homosexuals have more offspring than male homosexuals due to an enhanced fertility component on the X chromosome
15. Male homosexuals are antagonistic to females and this can reduce female fertility if they are close relatives
16. The mothers of male homosexuals tend to produce more female offspring, which compensates for boys who do not produce so many
17. Genes on the X chromosome that incline men towards homosexuality when expressed in female relatives tend to increase their fertility
18. Genes on the y chromosome that cause homosexuality are not found in females pointing to a differ aetiology all together.
19. Which statement bests describes the “heterozygotic advantage” theory of male homosexuality?
20. It is only in the heterozygous state that a gene is able to incline men and women towards same-sex relationships.
21. Studies show that male homosexual men with highly heterozygous genes tend to live longer and this could be the basis for why such genes persist in the gene pool.
22. A gene in the homozygous state could incline people towards homosexual behaviour but in the heterozygous state could increase fertility. This could be an answer to the Darwinian paradox.
23. A gene in the heterozygous state could incline people towards homosexual behaviour but in the homozygous state could increase fertility. This could be an answer to the Darwinian paradox.
24. Homozygotic genes code for homosexual behaviour whilst heterozygotic genes code for heterosexual behaviour. There are more heterozygotic genes in the gene pool and so homosexuality exists only at a low balanced polymorphic frequency.
25. Which sentence best describes the fraternal birth order effect seen in male homosexual siblings?
26. If a male homosexual is found in a family then his brothers are more more likley than average also to be homosexual
27. Male homosexuals tend to have more older brothers than male heterosexuals
28. Male homosexuals tend to have fewer older brothers than male heterosexuals
29. If a family contains a female homosexual memebr then her brothers are more likley than average to be homosexual too
30. If the first born male child is homosexual then his male siblings are less likley than average to be homosexual.

Chapter 17.

1. Which statement best describes the “Oedipus effect” as described by Freud?
2. That early socialisation will inhibit sexual attraction
3. That daughters will pass through a stage where they are sexually attracted to their fathers
4. That sons will pass through a stage where they are sexually attracted to their mothers
5. That inbreeding reduced fitness
6. That sons will at some stage naturally desire to kill their mothers, as did Oedipus to Jocasta in ancient Greek legend
7. In a study by Fessler and Navarette it was found that females reported greater 3rd party incest aversion than males. Which statement bests describes a possible evolutionary reason for this?
8. Males pass through an Oedipal stage and so a trace of this remains reducing their aversion to incest
9. This is evidence for Freud’s Electra complex
10. Females tend to stay in the family home longer than males and so develop a stronger Westermarck effect
11. Females have a greater sense of who is kin and non-kin through more refined pheromone sensors
12. Females have more to lose than males in fitness terms from an incestuous union.
13. Which statement best describes the Westermarck effect?
14. Early association inhibits sexual attraction and this is a functional mechanism to avoid inbreeding
15. Adoption of a child to marry an existing biological child produces unstable marriage
16. Inhibition of sexual attraction only takes place between biological siblings, but not adopted members of the family group and this avoids biological inbreeding
17. The desire, suggested by Sigmund Westermarck, of sons for their mothers.
18. The depression in fitness in offspring resulting from cousin marriage.
19. Which sentence best describes the genetic basis of why inbreeding is dangerous to offspring?
20. Inbreeding produces a highly heterozygous genome which is prone to a number of errors and mutations.
21. Mating with a close relative increases the natural mutation rate leading to a risk of a genetically based disorder.
22. Each individual imprints genes in a family-specific way, if members of the same family breed the imprinting is so similar that it could lead to the lack of key functional genes being operative.
23. In breeding increases the risk of a child inheriting two faulty (recessive) genes.
24. In breeding produce two dominant copies of each gene and not a dominant/recessive pattern which is the norm. Consequently, some genes are over expressed.
25. What did the work of Arthur Wolf on minor and major Taiwanese marriage demonstrate?
26. That if coupes marry too early (<16 yrs of age) then sexual inhibition along the lines of the Westermarck effect takes place and this results in a marriage of low fertility.
27. That in a minor marriage when a young girl is adopted into the family, any marriage between a son in the family and the adopted daughter has lower success than major and non-adopted marriages since it is assumed the Westermarck effect reduces sexual attraction
28. That in a manor marriage when an adolescent girl is adopted into the family, any marriage between a son in the family and the adopted daughter has lower success than minor and non-adopted marriages since it is assumed the Westermarck effect reduces sexual attraction
29. That marriages between cousins tend to produce offspring with a slightly higher rate of inherited genetic defects.
30. In a major marriage a son is adopted to marry a daughter; in a minor marriage a daughter is adopted to marry a son. The latter are less successful than the former since the Westermarck effect impacts on girls more strongly (they have more to lose than boys).
31. In a study of marriages in a Pakistani community in Birmingham, England. Bittles found rates of lethal and chronic disorders of offspring of first cousin marriages to be 10%; this compares with 5% for European first cousin marriages and 3% for non –cousin marriages. Which set of statements provides the best interpretation of these findings?
32. This is evidence for depression of fitness caused by inbreeding
33. Cousin marriage is legal in the UK and the rates of disorders are not statistically significant
34. The rate is higher for Pakistani first cousin marriages due to lower levels of heath care in those communities
35. The rate is higher for Pakistani first cousin marriage since the parents themselves may also be products of first cousin marriages and so the inbreeding coefficient is likely to be higher than for European first cousin marriages
36. (i) and (iii)
37. (i) and (iv)
38. (i) only
39. (ii) and (iii)
40. (ii), (iii), and (iv)