THE ROLE OF GENES AND HORMONES

Genes: (initial determination of sex)
- sex chromosomes are XY for male, XX for female
- few weeks after conception all embryos appear female – if to develop as a male, after 3 months testosterone causes male genitalia to appear
- this explains sex, but can also explain gender due to link between genitalia, genes and hormones

Hormones: (development of sex)
- produced both prenatally and in adolescence
- Genitalia: prenatal exposure to hormones
- external genitalia normally in accord with sex chromosomes – sometimes excess male hormones if too little of correct hormone resulting in androgen-insensitivity syndrome (AIS), e.g. Batista family
- Brain: Hoag, girls better at empathising, more talkative, worse at spacial navigation – Quadagno et al., female monkeys prenatally exposed to testosterone later more aggressive

John Money and Ehrhardt (1972):
- Money argued sex of rearing was most important
- David Reimer and twin, David had botched circumcision and was raised as a girl (Brenda)
- ‘Brenda’ received hormones to develop breasts in adolescence, was an outcast and in turmoil
- Parents revelled all; breasts removed, op to circumcision and was raised as a girl (Brenda)
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Mate choice (as in relationships) – men seek physical attractiveness, women seek resources – both seek fertile, good genetic qualities

Gender identity: E-S theory: Baron-Cohen et al., 2002 women better at systematising, men at systematising, result of same neural areas?

RE: Money argued sex of rearing was most important
- Mate choice: Waynforth and Dunbar, 1995 personal ads to see what each sex wanted and advertised; 44% males and 22% females wanted attractive partner, 34% males and 50% females offered attractiveness
- Tend and befriend: Taylor et al., 2000 stems from dealing with stress in EEA, opposite of fight or flight (for males), an adaptive response to group together to protect their young

Biosocial theory: Money and Ehrhardt (1972)
- produced a classic book ‘Man and woman, boy and girl’ (1972) which set out that biological factors interact with social labelling and differential treatment of boys and girls to steer development
- if labelled as the opposite sex and treated so before the age of 3 then the incorrect gender identity is acquired – label is the pivotal point

Social role theory: Eagly and Wood (1999)
- argues psychological differences are due to different roles assigned to men and women rather than vice versa (which is evolutionary exp.)
- Division of labour: men assigned role of hunter due to physical superiority, not because they are ‘better’ at systematising (this is an upshot)
- Hormonal differences: these are the outcome of social roles and psychological differences rather than the cause, e.g. testosterone is result of men engaging in more athletic events than women

Limitations:
- little supporting evidence, David Reimer study ironically disproved Money’s own theory in a way
- sample bias in other Money and Ehrhardt evidence for abnormal individuals, not useful for studying ‘normal’ gender development

Transsexual gene:
- 112 MtF transsexuals, more likely to have longer androgen receptor gene which sets out that biological gender is the outcome of physical superiority, not because they are ‘better’ at systematising (this is an upshot)
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Psychosocial explanations:
- Mental illness: Coates et al. (1991) case study boy developed GID as response (cross-gender fantasy) to mother’s post-abortion depression
- Mother-son: Stoller, 1975 GID results from distorted parent attitudes, e.g. overly close

RE: Cole et al. (1997) 435 with GD, range of psychiatric conditions no greater than ‘normal’ population – trauma not the cause
- Zucker et al. (1996) 64% of 115 with GD had separation anxiety – points to disordered attachment (but only in MtF)

Biological explanations:
- Mismatch: prenatal hormone levels may be affected by genetic conditions and lead to mismatch between hormones and sex
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RE: Chung et al., 2002 BSTc volume differences don’t develop until adulthood, most transsexuals report GD as early child – difference is an effect instead
- Rametti et al., 2011 FmT similar white matter brain patterns to those sharing gender identity (male) than sex (female)

Limitations: Luxen (2007) psychological just as important as physical (supports evolutionary)
- ‘Buss 37 cultures’ re-examined: (Eagly and Wood)
- women lower earning power, seek resources
- men want younger women as more obedient
- when women had higher status and division of labour less pronounced, sex differences in mating preferences less pronounced – social roles key

PE: (IDA) Colapinto, 2000 1 in 2,000 born with anomalous genitalia, research important in providing info on erroneous assignations

IDA: (ethics) could be harmful, if biological cause is found it could be reassuring or may suggest their condition is inevitable