Lecture 6 – Evolutionary Social Psychology

Social Psychology in 20th Century
- History of psychology snapshot
    - Introspectivism
    - Behaviourism
    - Cognitive revolution
- Standard Social Science Model
    - blank slate written on by experience
    - general purpose psychological mechanisms (e.g. learning, induction, rationality) that are domain general

In the 21st Century
- neuroscience
- genetics
- recognize the fact that social processes are grounded in bodies
- bodies are products of evolution via natural selection
- can we use evolutionary thinking to inform social psychological theorizing?

Evolution
- change in inherited characteristics within a population over successive generations
- Darwinian evolution (via natural selection)
- Three premises
    - individuals of a species show variation in traits (behavioural, morphological, psychological, physiological)
    - some of this variation is heritable: some traits will be passed on from one generation to the next
    - some traits provide benefits in terms of survival and reproductive success (adaptation(
- consequence:
    - those individuals with greater chances of survival and reproductive success (due to the possession of adaptive traits) will leave more offspring and these offspring will tend to resemble their parents (inherit their traits)
    - thus certain adaptive traits are selected for
    - these adaptive traits increase in frequency in future generations, thus coming to be widespread within a species

    Definitions
- Genotype- genetic make up
- Phenotype- physical and behavioural characteristics- interaction of genotype with environment
- Trait- individual variant of the component phenotype- eye color is component of phenotype

- Selection pressure- factor in the environment that impact the likelihood of survival or reproductive success
- Fitness –number of copies of a gene contributed to future offspring
    - Traits that increase survival and potential for reproductive success are said to increase fitness
- Adaptation: trait that has been selected due to its impact on fitness

Logic
- population of organisms (AAaAAaaaaAAaa)
- some organisms have trait a and others have A
- those with A are more likely to reproduce because it increases fitness
- if A is heritable then is possible that it will come to proliferate in future generations
- thus an adaptation: a trait that has been selected due to impact on fitness

Evolutionary Psychology (EP)
- think about adaptive characteristics
- Assumptions of EP
    • composed of collection of evolved psychological mechanisms * not blank slate*
    • adaptations
    • domain specific- domains to solve specific problems that have occurred in history
- Environment of Evolutionary Adaptedness (EEA)
    • summary of selection pressures responsible for certain adaptation
    • think of EEA as reflection on hunter gatherer pronems
    • thus adapatations may have been useful in past but not so much now

What EP does not imply
- all traits adaptations (EP is not panadaptationists)
    • adaptation: trait that has been selected due to its impact on fitness
    • by product trait: trait that is coupled with adaptation but not selected for adaptation (i.e. belly button as by product for umbilical cord)
    • Noise: traits that are not adaptations or by products
- organisms are consciously pursuing fitness

Problem of Altruism
- Problem: if evolution tailors organisms to behave in ways that facilitate their own reproductive success, doesn't that mean that organisms will be selfish
- Need to take a genes eye view, selfish genes vs. selfish individuals
- if an altruistic behaviour happens to increase likelihood that one's genetic material is passed on to future generation then such behaviour will be selected for

Inclusive Fitness
- Hamilton, 1964
- inclusive fitness: capacity for genetic information to spread in a population
  - direct (classical) fitness: number of offspring
  - indirect fitness: via increasing classical fitness of others who also share our genes i.e. kin
 - but not all kin are equal
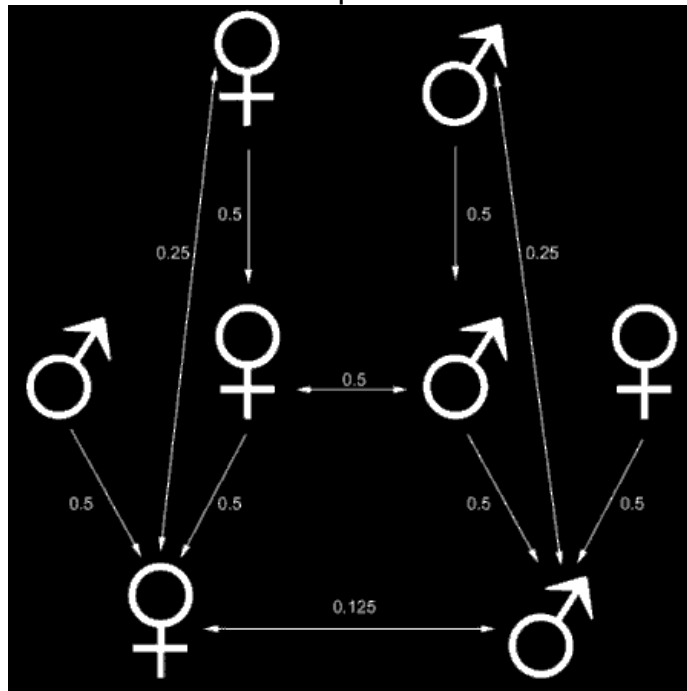
Kin Selection
- so if altruistic behaviour increases inclusive fitness, then it will be selected for Hamilton's rule:
  - $rB > C$
  - r= degree of genetic relatedness B=benefit C=cost
  - e.g. if one's brother is the recipient ($r=0.5$), the benefits to the brother would have to be more than twice the costs to the self: if the recipient is one's cousin, it would be more than eight times ($r=0.125$)

- based on Hamilton's rule, one is more likely to perform altruistic act X (with fix cost C and benefit) for- kin rather than non-kin, for close kin rather than distant kin

Sample Studies:
- Non humans- beldings ground squirrels (Sherman, 1977, 1981)
  - Alarm causes response to predators
  - Altruistic act because of B and C
  - More likely to call in the presence of nieces, aunts and sisters
- Humans- Essock-Vitale & McGuire, 1985 study on LA women report times they have received help
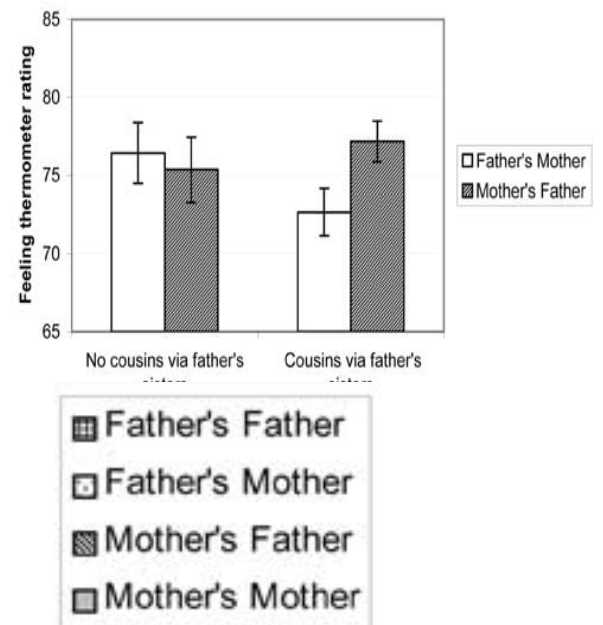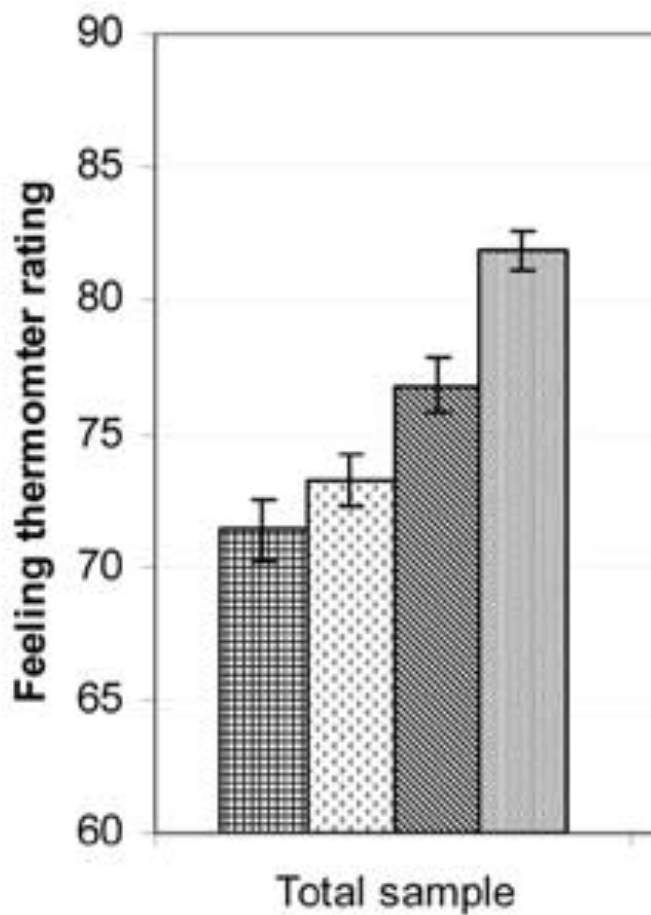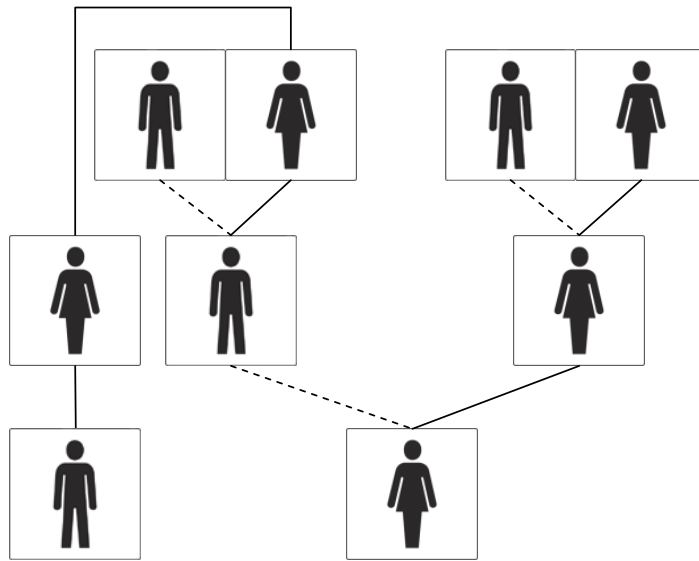
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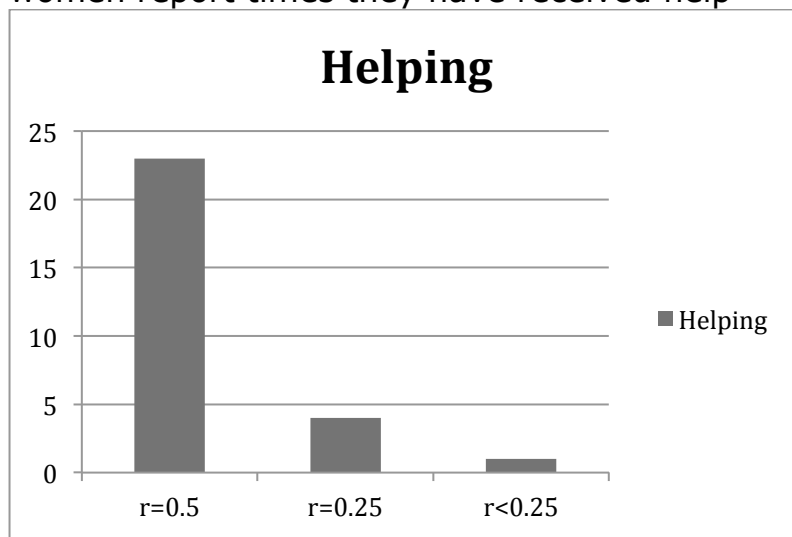
Parents and Children
- How do parents treat children
  - Daly and Wilson (1988)
    - Single largest predictor of child abuse and homicide is the presence of a step parent
    - 4-100 times higher if there is a step parent home vs. both genetic parents
- What about Mums vs. Dads?
  - Although offspring are theoretically r=0.5, there is a futher complication
  - Parental uncertainty
  - Mothers tend to be more highly invested in children

Grandparental Certainty
- Grandparent investment (Laham et al., 2005)

Father's Father

Father's Mother

Mother's Father

Mother's Mother

Why is the Father's mother scored less than Mother's Father? Only when Father's mother has more certain investment in other grandchildren.

Reciprocal Altruism
- helping non-kin
- reciprocal altruism: toward non-kin can evolve as long as such altruism is reciprocated (either at the time or at a later date)
- in the long run both the helper and recipient benefit
- computer models have shown that reciprocal altruism can evolve as long as there are repeated interactions

Detecting Cheats
- but if reciprocation is to come at a later date how do we know who to trust?
- Social contract theory (Cosmides & Tooby, 1992)
  - Reciprocal altruism can evolve if it is protected for cheaters
  - Evolved cheater detection systems: recognition of individuals memory from interaction histories, communication of one's values, model other's values, represent cost and benefits
  - We should be good at reasoning that involves the detection of cheating (i.e. detecting those who break social contract)

Detecting Cheat- Wason Card Selection and Social Contracts
- A card with a vowel on one side always has an even number on the other side
- which cards you have to turn over to see if rule is violated

Common Valid Arguments
- Conditionals
  - If P (antecedent) then Q (consequent)
  - P states the antecedent conditions (although not the only conditions) under which Q

- Modus ponens (affirming the antecedent)

If P, then Q	If it is raining, then I am wet	
P	It is raining	
Q	I am wet	(valid)

- Modus tollens (denying the consequent)

If P, then Q	If it is raining, then I am wet	
Not Q	I am NOT wet	
Not P	It is NOT raining	(valid)

Common Invalid Arguments

• Denying the antecedent

If P, then Q	If it is raining, then I am wet	
Not P	It is NOT raining	
Not Q	I am NOT wet	(invalid)

• Affirming the consequent

If P, then Q	If it is raining, then I am wet	
Q	I am wet	
P	It is raining	(invalid)

Social Contract Version
- now if a person is drinking alcohol they must be 18 or over
- most people get this one right
- when rules are presented as social contract- the module is engaged i.e. difficult with numbers- domain specificity with social contract reasoning

Alcohol	Coke	18	15