Emotions about Kin

Kin Solidarity

- People feel closer bonds to kin than non-kin
- Kinship as a metaphor for love and solidarity:
  - Church fathers; Father Christmas; patriotism.
  - Mother country; motherhood and apple pie; maternal.
  - Blood brothers; brotherly love; fraternities
  - Sisterhood is powerful; soul sisters; sororities.
  - The family of man; crime families; one big happy family.

The Biological Problem of Altruism, Revisted

- If natural selection selects for selfish genes, why are animals so often selfless?
  - 1. Reciprocity.
- Genes versus individuals.
Genetic Relatedness

- What is the probability that Mother shares a gene (e.g., B2) with a child?
- What is the probability that a child shares a B2 with a full sibling?

<table>
<thead>
<tr>
<th>Mother's Mother's</th>
<th>Father's Father's</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mother's A1 A2</td>
<td>Father's A3 A4</td>
</tr>
<tr>
<td>Genes: B1 B2</td>
<td>Genes: B3 B4</td>
</tr>
<tr>
<td>C1 C2</td>
<td>C3 C4</td>
</tr>
<tr>
<td>D1 D2</td>
<td>D3 D4</td>
</tr>
</tbody>
</table>

Eight eggs: A1 A2 A1 A1 A2 A1 A2
Eight sperm: A3 A4 A3 A4 A3 A4 A3 A4
C1 C2 C1 C1 C1 C2 C2 C2
D1 D2 D1 D2 D1 D2 D1 D2

Four children:
A1 A3 A1 A4 A2 A4 A1 A3
B2 B4 B2 B4 B1 B4 B1 B3
C1 C3 C2 C4 C2 C3 C2 C4
D2 D4 D2 D4 D1 D4 D2 D4

Hamilton's rule:
- Altruism towards kin is selected for if:
  \[
  \text{cost-to-self} < r \times \text{benefit-to-other}
  \]
- J. B. S. Haldane:
  Q: Would you give your life for your brother?
  A: No, but for two brothers or eight cousins.
An extreme example: “Eusociality” in Social Insects

- Most animals: egg & sperm unite:
  - \( r = 0.5 \) for parent—offspring
  - \( r = 0.5 \) for sibling—sibling
- Bees: Males are from unfertilized eggs. They have no father! All their sperm are the same (clones).
- Sisters are from eggs fertilized with identical sperm.
- Worker bees, ants:
  - \( r = 0.5 \) for mother—offspring
  - \( r = 0.75 \) for sister—sister!

Familial Love

- Familial love: emotional implementation of kin-directed altruism.
- A confusion to avoid: “Genes selfishly spread themselves” does not imply that
  - People are selfish.
  - People try to spread their genes.
- It does imply that our emotions will lead us to do things that, in ancestral conditions, would have caused genes for those emotions to spread.

An extreme example: “Eusociality” in Social Insects

- Social insects: more related to sisters than to offspring
- Better to help mother produce more sisters than to reproduce oneself
- Social insects are the ultimate altruists:
  - Workers are sterile
  - Soldiers sacrifice themselves for queen
  - Castes are hyperspecialized
  - Colony as “superorganism”

Universality of the family

- Differences in family structures across cultures:
  - matrilocal societies (live near mom’s family): significant older male is uncle
  - patrilocal societies (live near dad’s family): significant older male is father
- Tribal societies (clans): based on kinship:
  - Yanomamo: allies & enemies, fissioning of villages predictable from \( r \).
Kinship mitigates hostility:

- Daly & Wilson: homicide statistics as indicator of hostility
- Homicides in American cities:
  - 25% strangers
  - 50% acquaintances
  - 25% "relatives"
- BUT: Includes steprelations, inlaws, & spouses
- Blood kin:
  - only 4% of homicides by blood relatives (probably less)
  - Homicide by nonblood relative at home 11 times more likely than by blood relative

Step-relations and child abuse

- Ubiquity of Cinderella stories
- Reality of Cinderella archetype: being a stepchild is the biggest risk factor for child abuse

Parent-Offspring Conflict
(Trivers)

- Bearing versus caring.
- Parental investment: Effort expended for the benefit of one offspring at the expense of other offspring (existing or future)
• The parent’s viewpoint:
  – Self—Jason: \( r = .5 \)
  – Self—Jennifer \( r = .5 \)
• One child’s viewpoint (e.g., Jennifer):
  – Self—Jason: \( r = .5 \)
  – Self—Jennifer (= self—self): \( r = 1.0! \)
• How to divide a pie:
  – Parent: “50% Jennifer, 50% Jason”
  – Jennifer: “67% Jennifer, 33% Jason”
  – Jason: “33% Jennifer, 67% Jason”

Some Examples of Parent-Offspring Conflict:
• Weaning conflict.
• Keeping father away from mother? (cf. Oedipal conflict)
• Infanticide.

Children's Weapons
• Cuteness.

Mickey’s evolution during 50 years (left to right). As Mickey became increasingly well behaved over the years, his appearance became more youthful. Measurements of three stages in his development revealed a larger relative head size, larger eyes, and an enlarged cranium—traits of juvenility. © Walt Disney Productions

Dandified, disreputable Mortimer (here stealing Minnie’s affections) has strikingly more adult features than Mickey. His head is smaller in proportion to body length, his nose is a full 80 percent of head length. © Walt Disney Productions

At an early stage in his evolution, Mickey had a smaller head, cranial vault, and eyes. He evolved toward the characteristics of his young nephew Morty (connected to Mickey by a dotted line).
Children's Weapons

- Cuteness: Exaggerated juvenile features (e.g., fat cheeks)
- Crying
- Brattiness & tantrums

Implications of Parent-Offspring Conflict for Socialization

- Conventional wisdom: Parents socialize children, for their own good.
- Trivers: Parents' socialization may not be for the child's own good.
  – “Be as nice to your sister as to yourself (or nicer)”
- Children should resist: develop their own personality as strategy for their own best interests.

Measuring Personality

- Projective tests:
- Rorschach (inkblot) and TAT (Thematic Apperception Test)

Objective Tests:

MMPI (Minnesota Multiphasic Personality Inventory)

- I am troubled by discomfort in the pit of my stomach every few days or oftener.
- I am afraid when I look down from a high place.
- Often I cross the street in order not to meet someone I know.
- I do not blame a person for taking advantage of someone who lays himself open to it.
- I often feel that life is not worth the trouble.
MMPI continued

- Before I do something I try to consider how my friends will react to it.
- Several people are following me everywhere.
- I seem to hear things that other people cannot hear.
- I often was in trouble in school.
- People say insulting and vulgar things about me.
- The future seems hopeless to me.
- I gossip a little at times.
- Once in a while I laugh at a dirty joke.

"The Big Five"
Personality Dimensions:

- Extraversion/Introversion (sociable or retiring).
- Neuroticism/Stability (constantly worrying or calm & self satisfied)
- Agreeableness/Antagonism (courteous & trusting or rude & suspicious)
- Conscientiousness/Undirectedness (careful or careless)
- Openness/nonopenness to Experience (daring or conforming)

Measuring Effects of Heredity & Environment

- Behavioral genetics: how much of the variation in personality is correlated with genes, family environment, other causes?

1. The twin method:

- Monozygotic (identical) twins share 100% of their genes.
- Dizygotic (fraternal) twins share 50% of their genes (just like other full siblings).
- Assumption: Identical twins share their environment to the same extent as fraternal twins.
Twin method, cont.

- **Heritability** = % of variance due to genetic differences
  - High when MZ twins more similar than DZ twins
- **Shared (common) environment** = % of variance due to environment shared by twins but different from one twin pair to another (effects of family, neighborhood)
  - High when both DZ twins and MZ twins are similar
- **Nonshared environment** = % of variance due to environment not shared by a pair of sibs: prenatal differences, accidents, diseases, differential treatment.
  - High when MZ twins are not very similar

2. The adoption method.

- Heritability: high when biological sibs are more similar than adoptive siblings
- Shared environment: high when adoptive siblings are similar; low when they are dissimilar
- Nonshared environment: = what’s left over after you account for heritability and shared environment

So: Where do Personality Differences Come From?

- Heritability (Variance in personality due to genes): 50%
- Shared environment (Variance in personality due to the family): 0 -- 5%
Where’s the Other 45-50%????
(Effects of Nonshared Environment)

• Some possibilities:
  – Biological accidents.
  – Social accidents.
  – Parent-child interaction effects.
  – Sibling conflict.
  – Peers and group socialization.

Sibling Relations

• The parent’s viewpoint:
  – Self—Jason: \( r = .5 \)
  – Self—Jennifer \( r = .5 \)

• One child’s viewpoint (Jennifer):
  – Self—Jason: \( r = .5 \)
  – Self—Jennifer (= self—self): \( r = 1.0 \)

• Other child’s viewpoint (Jason):
  – Self—Jason (=self-self): \( r = 1.0 \)
  – Self—Jennifer: \( r = .5 \)

• How to divide a pie:
  – Parent: “50% Jennifer, 50% Jason”
  – Jennifer: “67% Jennifer, 33% Jason”
  – Jason: “33% Jennifer, 67% Jason”
• Sibling conflict in animals:
  – conflict among nur selings
  – conflict among nestlings
  – siblicide
• Sulloway’s hypothesis in *Born to Rebel*: Siblings develop different personalities to prosper in different niches
  – Firstborns are conservative bullies.
  – Laterborns are nice, flexible rebels.

**Evidence from personality tests:**
• Firstborns are:
  – Less open (more conforming, traditional, and closely identified with parents)
  – More conscientious (more responsible, achievement oriented, serious, and organized)
  – More antagonistic (less agreeable, approachable, popular, and easygoing)
  – More neurotic (less well-adjusted, more anxious)
• BUT: only when judged by, or with respect to, other family members
• *Not* when judged by third parties

**Other Possibilities:**
• Harris: Children differentiate themselves within their *peer group*, not family
  – Some evidence:
    • Language, accent, dress, music conform to peers, not parents
    • Juvenile delinquency, smoking, predicted by genes and peers
• Chance!
  – genetically identical lab animals can differ
  – genes provide boundary conditions, rest of development is random. “Canalization”