Developmental Psychology
PSY2231

What are the goals of developmental psychology?
- Description of behaviour
  - Involves recording behaviour and changes in behaviour. Often try to work out average or typical at certain age- we develop age norms
  - Keep in mind:
    1) Issue of variability (huge range is 'normal')
    2) Issue of multiple explanations for consistencies/differences (so we need to go beyond description to make use of normative information.)

- Explanation of behaviour:
  - Often we can generate a number of possible explanations and need to engage in testing predictions
  - Note that different explanations have different implications for treatment/intervention

- Optimisation of behaviour
  - Ultimately, it is our intention to make things better for people, whether we are educationalists, clinicians or whatever role we find ourselves occupying

Domains of Development:
Physical: Biological Changes

Cognitive: Thinking
- Language ability and use
- Memory

Psychosocial: Emotions
- Interpersonal Relatioships

Themes that Permeate the Text
Hoffnung et al. (2010) discuss Balte's propositions about development.
Development is:
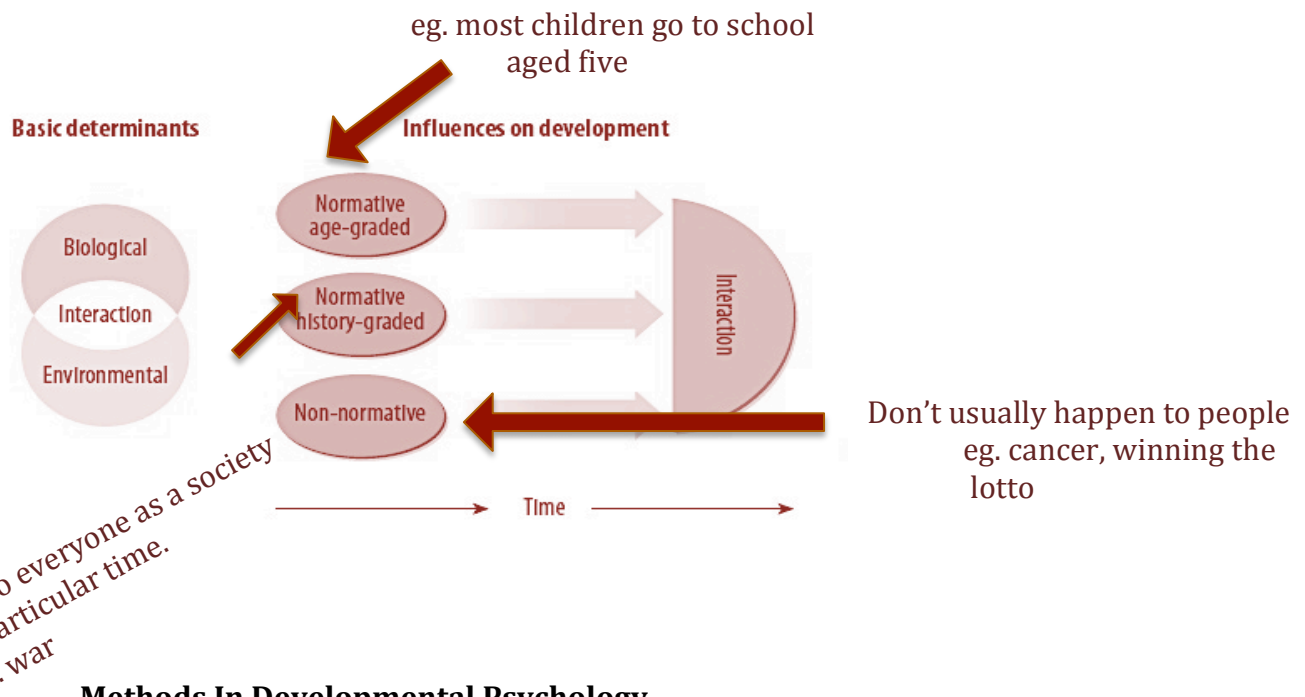*-Lifelong: every era is as important as the next*
-Multidimensional: Your body, your mind, your emotions, and your relationships are always changing and affecting each other.
   -Development consists of biological, cognitive and socioemotional dimensions
-Multidirectional: Throughout life, dimensions or components of a dimensions expand and other shrink
-Plastic: Has a capacity to change

-Influenced by multiple interacting forces:

eg. most children go to school
aged five

Basic determinants **Influences on development**

Biological

Interaction

Environmental

Normative
age-graded

Normative
history-graded

Non-normative

Interaction

*appening to everyone as a society
at particular time.
eg. war*

Time

Don't usually happen to people
eg. cancer, winning the
lotto

Methods In Developmental Psychology

*Most importantly: there are a large number of different designs adopted in
developmental psychological*
-NOTE: ALL designs have advantages ad disadvantages

Research Design: Three main research designs are
1) Descriptive: Aims to observe and record behaviour
2) Correlational: Aim is to describe strength and relo between two
or more events or characteristics
3) Experimental: Involves conducting an experiment to determine
cause and effect. An independent variable is manipulated,
influential, experimental factor

Cross-Sectional: Look at people in different cohorts/ages (that is, born at
roughly the same time) and test them on the same thing
-eg Intelligence
-Reasonably cheap and is also quick
-Can however have huge problems with cohort effects since
cohorts grow up in different contexts and have
different experiences

Longitudinal: Here you test the same people over time
-This generates fine-grained analysis of developmental trajectories
-It is expensive and time consuming and is subject to selective
attrition (There are particular patterns in the people who
drop out), time-of-testing effects and effects due to sitting a
test multiple times.

<u>Time lag/cross sequential (Schaie):</u> The best of these methods combine features of the previous design. In time lag you test people from different cohorts at the same age. This allows you to look at the effect that cohort is having.
-Combines the first two
-We'll look more at these designs when we look at adulthood

Theories in Developmental Psychology
The text discusses three main classes:
-Psychoanalytic/psychodynamic
-Learning (especially social learning)
-Cognitive-developmental (focus on children)

Psychoanalytic:
-Scientific method involves four main steps:
1) Conceptualise problem: *Theory often involved in conceptualising a problem*
2) Collect data
3) Analyse data
4) Draw conclusions

-According to psychoanalytic theories, development primarily depends on the unconscious mind and is heavily couched in emotion
Freud
-Behaviour is energized by psychodynamic forces eg. libido
-Three components of personality: **id, ego, superego**
-Stages of psychosexual development:
1. Oral Stage: Infants pleasure centres around the mouth
   Birth to 1½ years
2. Anal Stage: Child's pleasure focuses on the anus
   1 ½ to 3 years
3. Phallic Stage: Child's pleasure focuses on the genitals
   3 to 6 years
4. Latency Stage: Child represses sexual interest and develops social and intellectual skills
   6 years to puberty
5. Genital Stage: A time of sexual reawakening; source of pleasure becomes someone outside the family
   Puberty and onwards

-Early events can shape later development
-Not all thought processes are conscious

Eriskson
-People are born with basic drives but emphasis on social and
      cultural aspects of development
-Development from interaction of 'internal maturational pain' and
      'extreme social demands'
-Qualitative stages where we face potential conflicts or crises,
      eg basic trust versus mistrust

Psychosocial stage	Approximate age	Description (virtue attained)
Trust versus mistrust	Birth–1 year	Focus on oral–sensory activity; development of trusting relationships with caregivers and of self-trust (hope)
Autonomy versus shame and doubt	1–3 years	Focus on muscular–anal activity; development of control over bodily functions and activities (will)
Initiative versus guilt	3–6 years	Focus on locomotor–genital activity; testing limits of self-assertion and purposefulness (purpose)
Industry versus inferiority	6–12 years (latency period)	Focus on mastery, competence, and productivity (competence)
Identity versus role confusion	12–19 years (adolescence)	Focus on formation of identity and coherent self-concept (fidelity)
Intimacy versus isolation	19–25 years (early adulthood)	Focus on achievement of an intimate relationship and career direction (love)
Generativity versus stagnation	25–50 years (adulthood)	Focus on fulfilment through creative, productive activity that contributes to future generations (care)
Ego integrity versus despair	50 years and older	Focus on belief in integrity of life, including successes and failures (wisdom)

Developmental processes
Development of the ego, or sense of identity, occurs through a series of stages, each building on the preceding stages and focused on successfully resolving a new psychosocial crisis between two opposing ego qualities. No stage is fully resolved, and a more favourable resolution at earlier stages facilitates the achievement of later stages.

Learning Theories
Skinner
-**Operant conditioning**
Reinforcement: Strengthens response
      - Can be positive or negative
Punishment: Weakens response
      -Can be positive or negative
Extinction: Response disappears
Shaping: Learning new behaviours

Bandura
-**Observational Learning**
      -Imitation
      -Modelling
-Reciprocal determination
-Vicarious reinforcement

Cognitive-Developmental
-Cognitive theories emphasise thinking. reasoning, language and other cognitive processes

Piaget
-Influential in conclusions and his methods
-Children go through same sequential discoveries, come to similar conclusions and do so in similar ways
-Four major stages and process of transitions between stages involves **assimilation** and **accommodation**

-Cognitive Stage Theory
Sensorimotor
Pre-operational
Concrete operational
Formal Operational

Cognitive stage	Approximate age	Description
Sensorimotor	Birth–2 years	Coordination of sensory and motor activity; achievement of object permanence
Preoperational	2–7 years	Use of language and symbolic representation; egocentric view of the world, make-believe play
Concrete operational	7–11 years	Solution of concrete problems through logical operations; objects are organised into hierarchies and classes and subclasses; thinking is not yet abstract
Formal operational	11–adulthood	Systematic solution of actual and hypothetical problems using abstract symbols

Developmental processes
The earliest and most primitive patterns, or schemes, of thinking, problem solving, and constructing reality are inborn. As a result of both maturation and experience, thinking develops through a series of increasingly sophisticated stages, each incorporating the achievements in preceding stages. These changes occur through the processes of *assimilation*, in which new problems are solved using existing schemes, and *accommodation*, in which existing schemes are altered or adapted to meet new challenges. Together, these processes create a state of cognitive balance, or *equilibrium*, in which the person's thinking becomes increasingly stable, general, and harmoniously adapted and adjusted to their environment.

Vygotsky's Sociocultural Cognitive Theory
-Emphasis on how culture and social interaction guide cognitive development

**Sensory Register:** Mind is like computer in that individuals manipulate information, monitor it and strategize about it

Short Term (working) Memory
-Limited capacity, limited time store
-Selective attention, attention span
-Perception
-Rehearsal can keep material in STM
Long Term Memory (unlimited store)
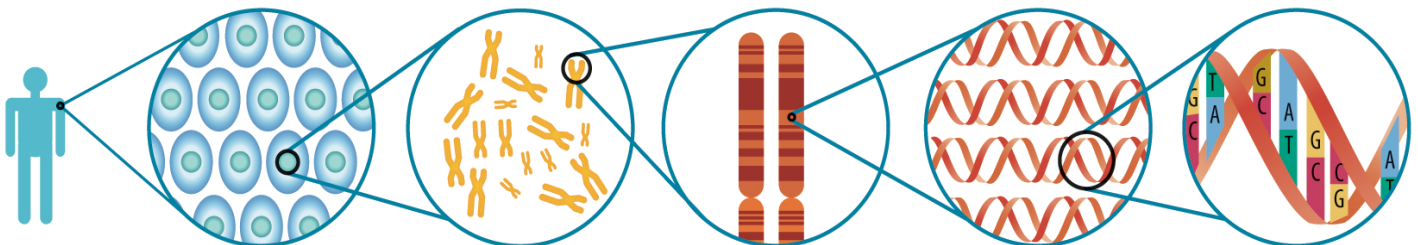-Recognition, recall, reconstruction, organisation, elaboration, metacognition

Bronfenbrenner
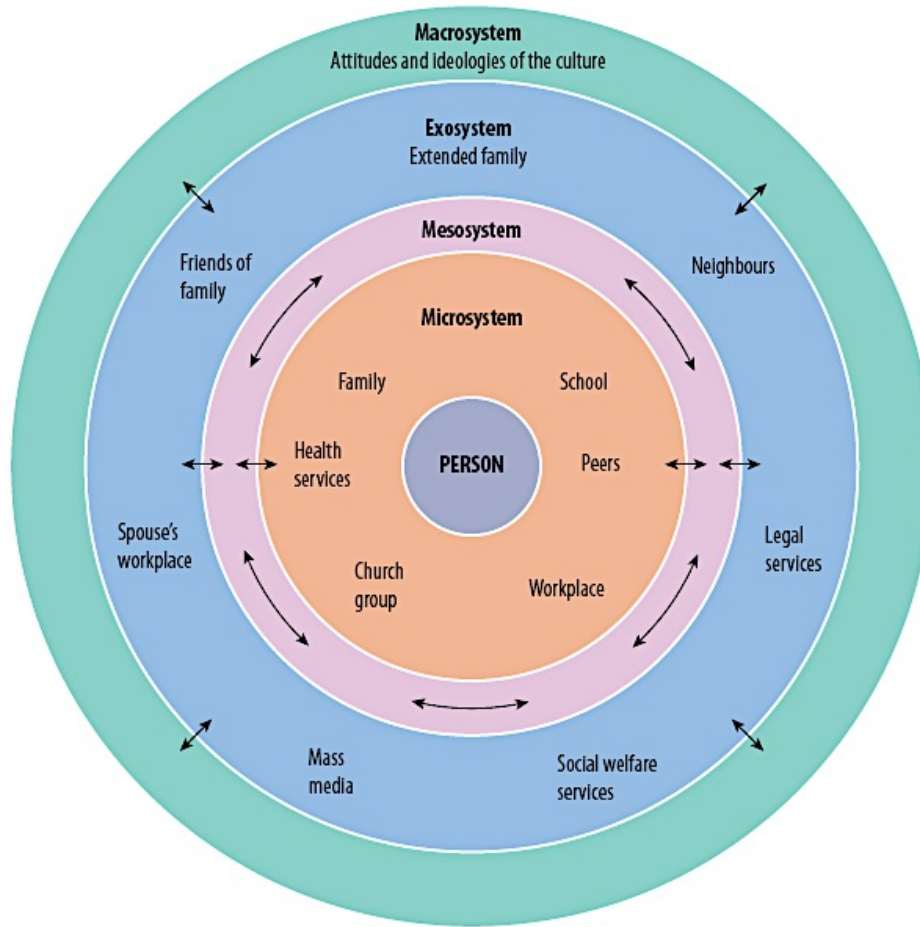
Can be used to talk about child and adult development

Genetic Influences on Development and Parental Development
Nature vs. Nurture

The human body contains 100 trillion **cells**.

There is a **nucleus** inside each human cell (except red blood cells).

Each nucleus contains 46 **chromosomes,** arranged in 23 pairs.

One **chromosome** of every pair is from each parent.

The chromosomes are filled with tightly coiled strands of **DNA**.

Genes are segments of DNA that contain instructions to make proteins — the building blocks of life.

Definitions:
Genes
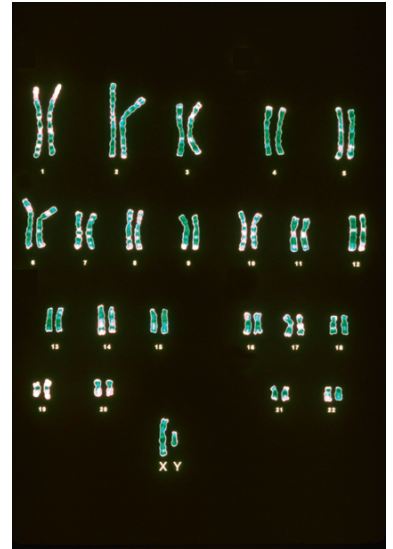Chromosomes 23 Pairs. The 23ʳᵈ pair determines sex:
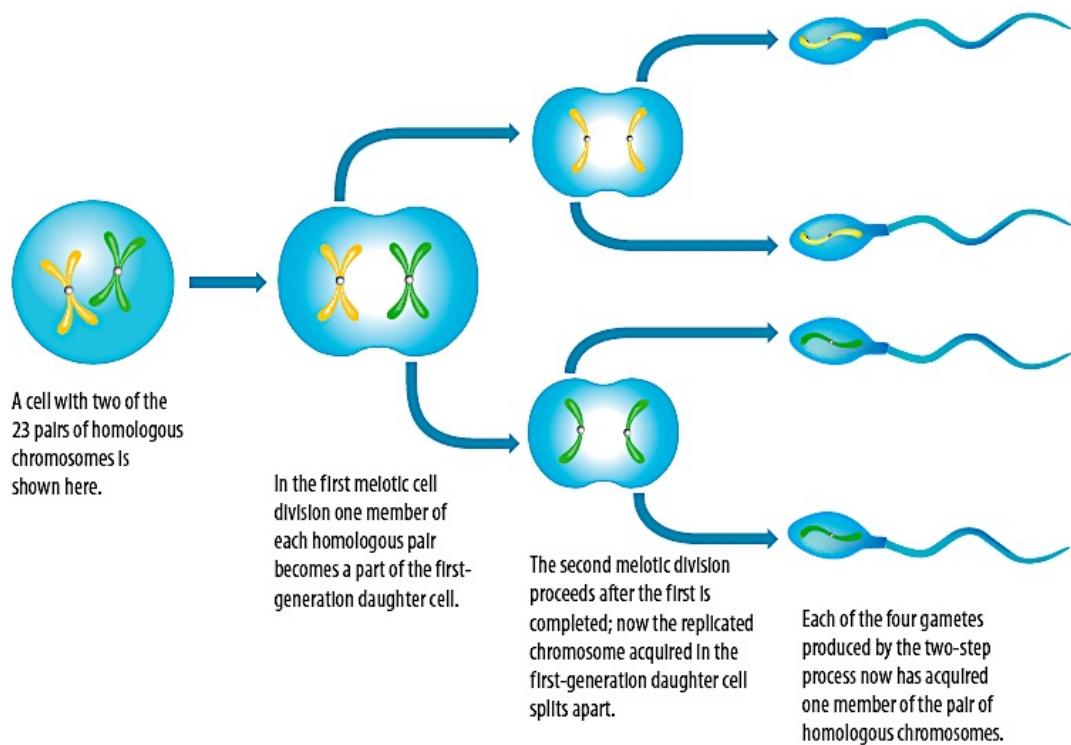*XX-Female*
XY- Male

Deoxyribonucleic Acid (DNA)
-Genetic information for each cell
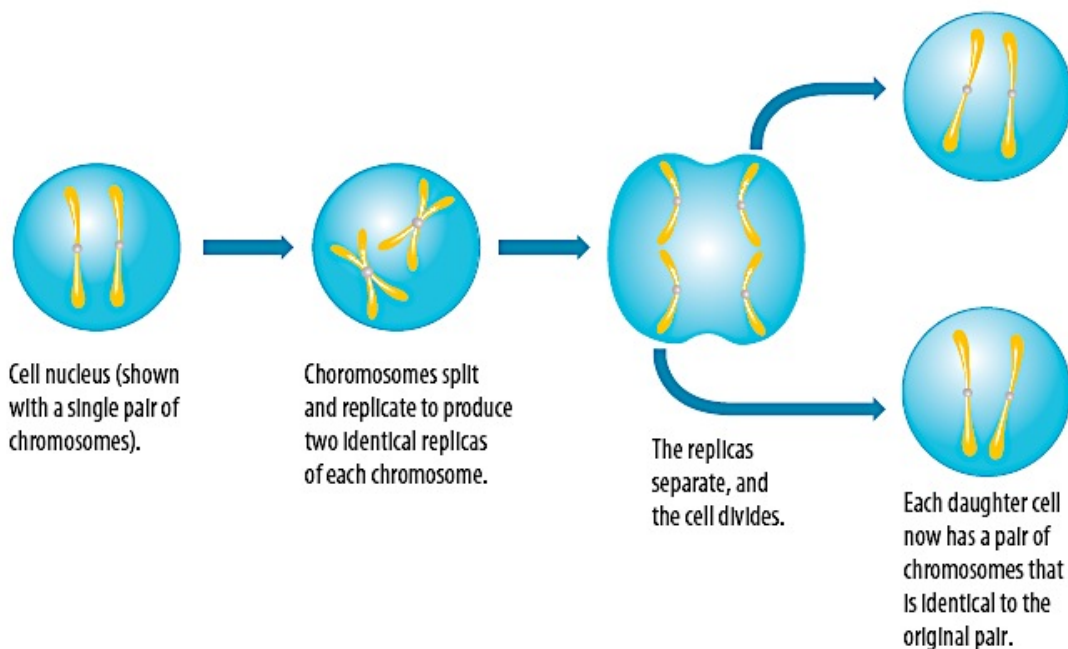Meiosis: Cells divide to form gametes (reproductive cells)
Mitosis: Process of division for all other cells

Meiosis (for sperm cells)

A cell with two of the 23 pairs of homologous chromosomes is shown here.

In the first meiotic cell division one member of each homologous pair becomes a part of the first-generation daughter cell.

The second meiotic division proceeds after the first is completed; now the replicated chromosome acquired in the first-generation daughter cell splits apart.

Each of the four gametes produced by the two-step process now has acquired one member of the pair of homologous chromosomes.

Mitosis (Most cells except gametes)

Cell nucleus (shown with a single pair of chromosomes).

Choromosomes split and replicate to produce two identical replicas of each chromosome.

The replicas separate, and the cell divides.

Each daughter cell now has a pair of chromosomes that is identical to the original pair.

Genotype: What we inherit: genetic make up of individual
Phenotype: How this is exhibited
   *Note this is an interaction between genetic potential and the
      environmental context in which it is expressed*
   Dominant Genes: Expressed in the phenotype
   Recessive: Only expressed if appears in conjunction with another
      recessive gene; if with a dominant gene, its influence will
      (*usually)* be controlled
 Alleles: Two or more alternative genetic forms
   Homozygous: Alleles for a particular trait are identical
   Heterozygous: Alleles for a particular trait are different
   *Note: Increased probability doesn't always mean a genotype will
      be seen, we are talking about probability here*

   **Not all genetic transmission follows the dominant/recessive
      pattern:**
      Co-Dominance: Both Alleles expressed
   Many characteristics are determined by many genes:
      Polygenic Traits: Affected by many genes and environment
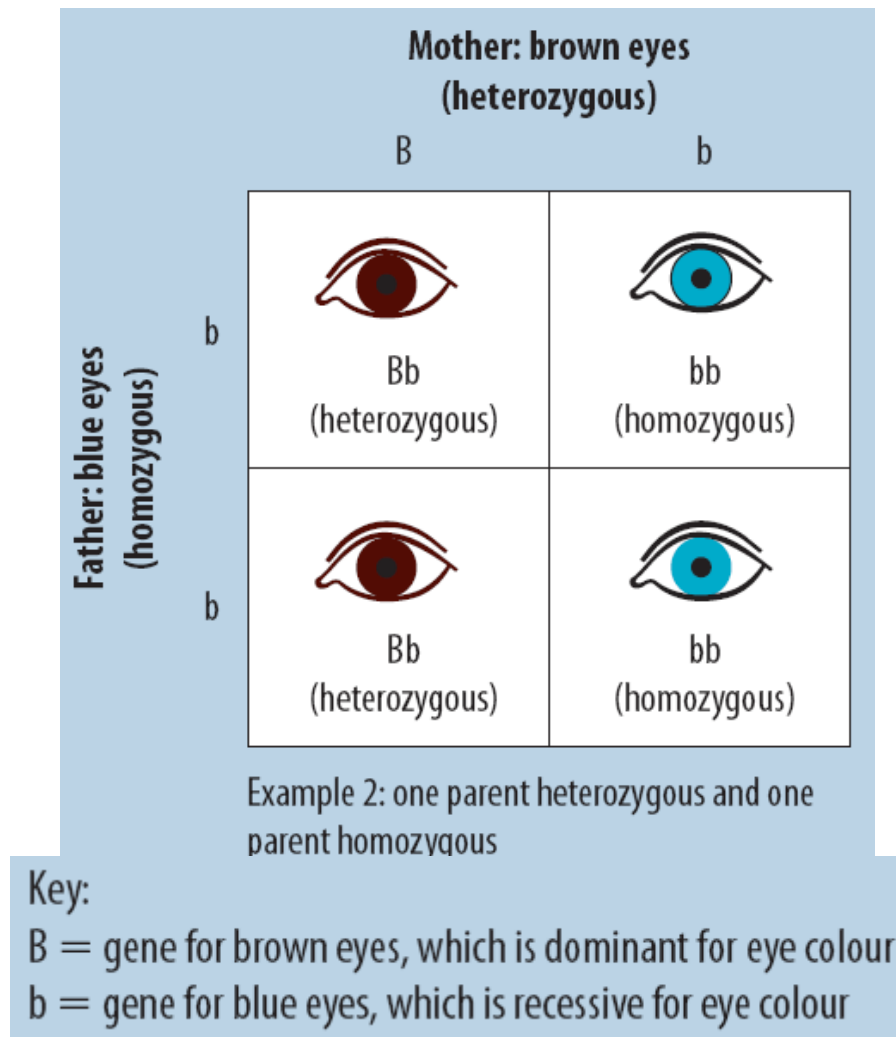
Eg with eye colour

Example 1: both parents heterozygous

Key:
B = gene for brown eyes, which is dominant for eye colour
b = gene for blue eyes, which is recessive for eye colour

Eg 2 with eye colour

Mother: brown eyes (heterozygous)

B | b

Father: blue eyes (homozygous)

b — Bb (heterozygous) | bb (homozygous)

b — Bb (heterozygous) | bb (homozygous)

Example 2: one parent heterozygous and one parent homozygous

Key:
B = gene for brown eyes, which is dominant for eye colour
b = gene for blue eyes, which is recessive for eye colour

Sex Linked Disorders

Carried on chromosomes

Carrier mother

X | X

Normal father

X — XX Normal daughter (25%) | XX Carrier daughter (25%)

Y — XY Normal son (25%) | XY Haemophilic son (25%)
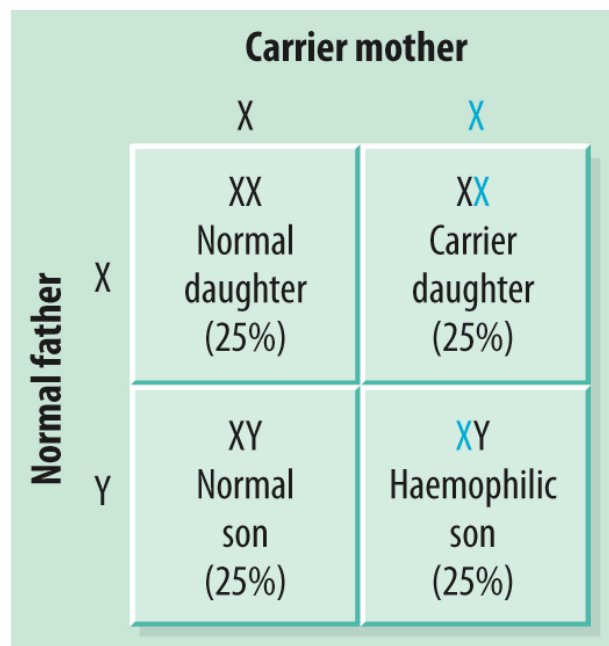
Genetic Abnormalities
  Chromosome Abnormality
    eg Down Sydnrome
  Recessive Gene Disorders (more common that dominant)
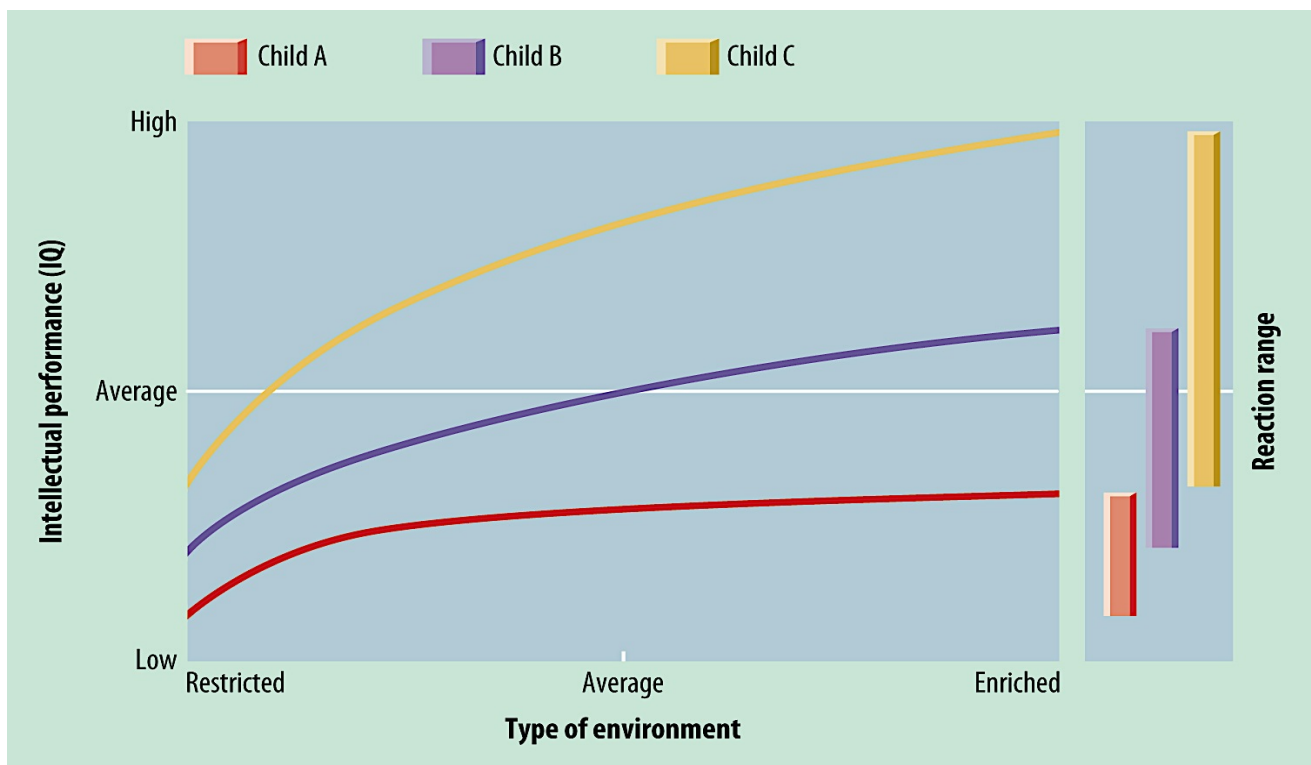   eg. Sickle-cell Disease
  Dominant Gene Disorders (relatively rare)
    eg Huntington's disease

Relationship between heredity and environment
  -Range of reaction: Range of possible phenotypes that someone with a
    specific genotype might display, in different environmental context

  Passive Correlation
  Evocative Correlation
  Active Correlation
    -Niche-picking

  How to look at this:
    Heritability Estimates Proportion of individual differences
      attributable to genetics (0-1)
    Concordance: What % of the time do twins show a trait (0-100)
    Adoption Studies: Dissimilar nature, similar nurture
    Twin Studies: Identical or fraternal, raised separately