Altruism

- Why do we help others when it involves a cost to ourselves? •
- Moll and Grafman (2006) used brain-imaging techniques to show that human brain is equipped with a built-in moral compass.
- Harbaugh et al. examined neural responses to taxation and voluntary giving. They found that even mandatory activity such as tax giving elicits neural activity, but further neural activity occurs if the giving of money is voluntary.

Mate Preferences

- Females should be more concerned with traits of parenting effort in terms of material resources and males should be concerned with parental effort in terms of biological resources.
- Singh 1993/1995 discovered that men prefer women whose waists are 1/3 narrower than their hips and women prefer men to have a V-shaped physique.
- Costs in reproduction: Grammer (1989) found that women use more cues than men when evaluated prospective mates. Pawlowski and Dunbar (1999) also found that women listed many more desirable traits in a prospective mate than men.
- Parental investment: Buss (1989) discovered that sex differences are universal. He found that • across 37 cultures, that women place greater emphasis on status and wealth and males place emphasis on sexual fidelity and physical attraction.

The Brain

The Human Nervous System

- Central nervous system: made up of brain and spinal cord.
 Peripheral nervous system: made up of somatic nervous system.
 Human Brain

 Weighs approximately 1.5 kg
 Cells:
 Neurons = 100-200 km;

The Human Brain

- 100-200 billion for reall linked to 1000 others.
 - Glia Ten times more of the se than neurons. Contrary to previous belief, they have a higher purpose than just being the scaffolding of the brain.

The Spinal Cord

- Sensory conduit: injuries cause paralysis.
- Reflexes.
- Pattern generator: basic movements are automatic such as your heart beating.

Anatomical Organisation

- 1. Dorsal meaning above, sometimes referred to as superior.
- 2. Medial meaning middle.
- 3. Anterior meaning front, sometimes referred to as frontal.
- 4. Ventral meaning below, sometimes referred to as inferior.
- 5. Lateral meaning side.
- 6. Posterior meaning tail or behind sometimes referred to as caudal.

Five Major Divisions of the Brain

- Telencephalon (forebrain). ٠
- Diencephalon (forebrain).
- Mesencephalon (midbrain).
- Metencephalon (hindbrain).
- Myelencephalon (hindbrain).

Seeing Colour

- Trichromatic theory.
 - 1. Retina sensitive to primary colours. (Young, 1802; Helmoltz, 1852).
 - 2. Three cones types identified. (Wald, 1964).
- Opponent process theory (Hering, 1878).
 - 1. Red-green cones: + stimulation = red message to the brain, stimulation = green message to the brain.
 - 2. Blue-yellow cones: + stimulation = blue message to brain, stimulation = yellow message to brain.
 - 3. Light-dark cones: + stimulation = light message to brain, stimulation = dark message to brain.
- Composite theory (De Valois and De Valois, 1975).

Svnaesthesia

- Cross modal sensation: feeling sensations through the wrong senses.
- From 1 in 200 to 1 in 20,000.
- 6:1 female: male ratio.
- It is not a disorder; it gives a better recall but in turn makes the person less creative.

Perception

Background or object?

- At the most basic level, we need to know where the object ends and the background begins.
- We do this by using contrast to identify the edges of the object.
- ale.co.uk We also tend to group together all the features that belong to each object.

Form Perception: Gestalt Psychology

- Look for: order, regularity, symmetry, simplicity et •
- i ea ei Gestalt believed that the whole picture ve than the sum of its parts.
- He also believed that perception in hir than sensation

Gestalt's Laws

mity: object is at ore d o each other are perceived as a group. W DI

- law of Similarity: objects that are similar are perceived as a group.
- Law of Closure: objects grouped together are seen as a whole (the gaps are filled in).
- Law of Symmetry: symmetrical objects are grouped together.
- Law of Good Continuation: parts that are aligned together tend to be perceived as one distinct entity.

Depth Perception

- How do we perceive in 3D when the retina produces 2D images? •
- Absolute distance: distance between object and observer.
- Relative distance: distance between two objects.
- Types of cue:
 - 1. Monocular: cues present in a 2D array.
 - 2. Binocular: cues present in a 3D array.
 - 3. Oculomotor: cues from muscular contractions around the eye.

Monocular Cues

- Interposition. •
- Texture gradient.
- Linear perspective.
- Relative size.
- Location in the picture plane.