



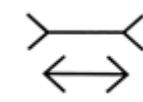
Y10 HT4 Perception Knowledge Organiser



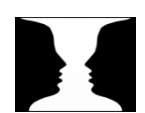
Key terms		Sensation and perception	Visual illusions
Key Term	Definition	<i>The way in which the brain works to interpret information.</i>	Types of illusions
Perception	Organisation and interpretation of sensory information by the brain in order to understand the world around us.	Sensation – physical stimulation of the 5 senses processed by sense receptors (feeling)	Explaining visual illusions
Sensation	Is the information we receive through our senses.	Perception – brain interpreting and organising the sensory information (thinking)	1) Size constancy – objects perceived as constant size despite size on retina changing with distance
Binocular depth cues	Cues only detected when both eyes are used	The difference between sensation and perception – Sensation is the detection of the stimulus. Perception is interpreting what it means.	2) Misinterpreted depth cues - objects apparently in the distance scaled up by the brain to look normal size, cause visual illusions Eg Ponzo illusions Muller Lyer illusion
Convergence	How hard the eye muscles have to work to view objects. The closer the object is, the harder the eye muscles have to work, which gives the brain info about depth and distance	Theories of perception Perception theories differ. Gregory sees a difference between sensation and perception. Gibson does not.	3) Ambiguous figures – two possible interpretations of image, brain can't decide which is correct. Eg Necker cube, Rubin's vase
Height in plane	Is that objects higher up in the visual field appear further away	Visual cues and constancies Cues – info about movement, distance etc Constancies – seeing object as the same from different angles and distances	4) Fiction – seeing something which is not there Kanizsa triangle – illusory contours create impression of a second triangle
Linear perspective	Is when parallel lines converge (come together) in a way that suggests distance	Binocular depth cues (two eyes) Retinal disparity – difference between the view of the left and right eye gives brain info about depth and distance	
Monocular depth cues	Perceptual cues that can be detected with one eye	Monocular depth cues (one eye) Height in plane – objects higher up appear further away	
Occlusion	Objects that obscure (hide) or are in front of others appear closer to us	Convergence – eyes point closer together when an object is close. Muscles work harder so know distance and depth.	
Relative size	Refers to the fact that smaller objects in the visual field appear further away	Relative size – small objects appear further away	
Retinal disparity	Is the way that the left and right eye view slightly different images. The size of the difference gives the brain info about depth and distance	Occlusion – if one object obscures part of another object, it is seen as closer	
Visual constancies	Our ability to see an object as the same even if the actual image received by the idea has changed, for example, if we get closer to it or move around it	Linear perspective – parallel lines appear closer as they become more distant	
Visual cues	Visual information from the environment about movement, distance and so on		
Ambiguity	Is the way in which some images or stimuli can be perceived in more than one way (Necker cube)		
Fiction	Is when a figure is perceived even though it is not part of the image or stimulus presented (Kanizsa triangle)		
Misinterpretation of depth cues	Some visual illusions (such as the Ponzo illusion) rely on misinterpreted depth cues in order to 'work'. The brain sees linear perspective (a depth cue) in the picture, creating the impression of distance, and mistakenly applies the rule of size constancy		
Size constancy	Is the brain's ability to perceive familiar objects as the same size, despite changes in the size of the image on the retina		
Visual illusions	The unconscious 'mistakes' of perception		
Direct theory	The argument that the rich information in the visual array is all the brain needs to perceive the world around it. Perception is the same as sensation.		
Motion parallax	Type of monocular cue that provides the brain with important information to do with movement. Objects that are far away appear to move more slowly as we move than objects that are close to us		
Nature	Refers to those aspects of behaviour that are inherited		
Constructivist theory	We make sense of the world around us by building our perceptions based partly on incoming data and partly using clues from what we know about the world		
Inference	Taking info in front of you and drawing a conclusion about what it means based on what you know. Eg you see someone smiling and you infer they are happy		
Nurture	Refers to aspects of behaviour that are acquired through experience eg learned from our interactions with the physical and or social environment		
Perceptual set	Tendency or readiness to notice certain aspects of the sensory environment whilst ignoring others. Set is affected by several factors including culture, emotion, motivation and expectation		
Culture	Refers to the beliefs and expectations that surround us		
Emotion	Strong feeling or mood that has important motivational properties, it drives an individual to behave in a certain way		
Motivation	Refers to the forces that drive your behaviour. It encourages an animal to act. Eg hunger is a basic drive state which pushes an animal to seek food		
Expectation	Is a belief about what is likely to happen based on past experience. Expectation affects perceptual set because you are more likely to notice or attend to certain stimuli because you are anticipating them		



Ponzo illusion
Misinterpreted depth cue, perceive horizontal line higher up as longer



Muller-Lyer illusion
Misinterpreted depth cue, two vertical lines the same length, line with outgoing fins appear longer



Rubin's vase
Ambiguous figure, face and vase, both pictures correct, brain alternates between both options



Ames Room
Misinterpreted depth cue, room shape of a trapezoid, people seen as different sizes even though they are the same





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Theories of perception

Gibson's theory of perception

The environment gives us all the information we need.

Sufficient info for direct perception

Sensation and perception are the same.

The eyes detect everything we need without having to make inferences.

Optic flow patterns

When moving, things in the distance appear stationary and everything else rushes past. Provides perceptual info about speed and distance.

Motion parallax

A monocular depth cue

When we are moving past them, closer objects appear to move faster than objects that are further away.

Provides perceptual info about speed and distance.

The influence of nature

Perception is inborn not learned

Evaluation

Real world meaning – research was based on 2nd WW pilots so relevant to everyday life

Theory struggles to explain visual illusions – perception is seen as accurate but illusions trick the brain, so theory is incomplete

Stretch evaluation:

Support for the role of nature – Gibson and Walk showed few infant crawl off a visual cliff, so are born with depth perception

Gregory's constructivist theory of perception

We use past experiences to make sense of the world

Contrasts with Gibson's theory

Proposes that sensation and perception are NOT the same

Perception as construction

Brain uses incoming info and info from what we already know to form a hypothesis / guess

Inference

Brain fills in the gaps to create a conclusion about what is being seen

Visual cues

Visual illusions occur because of incorrect conclusions from visual cues

Past experience – the role of nurture

Perception is learned from experience

The more we interact the more sophisticated our perception

Evaluation

Support from research in different cultures – people interpret visual cues differently (Hudson's study) showing experience affects perception

Visual illusions – Gregory's research used 2D illusions which are artificial, so theory may not apply to real world

Stretch evaluation:

How does perception get going? – babies have some perceptual abilities (Fantz) so perception can be just the result of upbringing



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Factors affecting perception			
Culture	Emotion	Motivation	Expectation
<p>Social world we live in (culture) affects what our senses pick up</p> <p>Hudson’s study (optional study) Aim – to find out whether different cultures perceive depth cues in 2D images differently</p> <p>Method – showed 2D drawings to black and white school children, schooled and unschooled Children were asked which is nearer, the man, the elephant or the antelope</p> <p>Results – black and white schooled p’s more likely to perceive depth than unschooled participants White schooled p’s more likely to perceive depth than black schooled p’s</p> <p>Conclusion – different cultures use depth cues differently, so have different perceptual set</p> <p>Evaluation Cross cultural research – language difference could have made method used unclear, so validity is affected</p> <p>Problems with the method – the way the pictures were represented on paper may have confused participants affecting findings</p> <p>Poor design – early cross-cultural studies were poorly designed (no control group) causing finding to lack validity</p>	<p>The tendency for our brain to notice exciting things and block out threatening things</p> <p>McGinnies’ study (optional study) Aim – to know if anxiety-provoking things are noticed more than neutral things</p> <p>Method – students showed neutral and ‘taboo’ words, had to say out loud, emotional arousal measured through GSR (galvanic skin responses)</p> <p>Results – took longer to say taboo words, taboo words gave bigger change in GSR</p> <p>Conclusion – emotion affects perceptual set, in this case perceptual defence</p> <p>Evaluation Objective measurement – GSR is a scientific method to measure emotion, better than rating scales</p> <p>Embarrassment not defence – delayed recognition may just be embarrassment not perceptual defence</p> <p>Results are contradictory – it’s difficult to draw conclusions from research that is inconsistent</p>	<p>Wanting something more increases its attractiveness</p> <p>Gilchrist and Nesberg (Key Study) Aim – to find out if food deprivation affects the perception of food</p> <p>Method – hungry (no food for 20hrs) and not hungry p’s shown a slide of a meal, p’s had to adjust light to level of slide shown</p> <p>Results – perceived food as brighter the longer deprived of food</p> <p>Conclusion – sensitivity greater when food deprived. Hunger is a motivating factor that affects perception of food</p> <p>Evaluation Support from similar studies – Sanford’s study found similar results which strengthens the validity of the conclusions</p> <p>Ethical issues – depriving people of food causes discomfort, a case of physical harm</p> <p>Not like everyday life – p’s judged pictures rather than real food so it may not apply to real world</p>	<p>Beliefs about past experience can affect how much we attend to things</p> <p>Bruner and Minturn’s study (Key Study) Aim – to find out if an ambiguous figure is seen differently if context is changed</p> <p>Method – p’s shown a sequence of letters or numbers with an ambiguous figure in the middle</p> <p>Results – those who saw a letter said B, those who saw a number said 13</p> <p>Conclusion – shows expectation is affected by the context a figure is presented</p> <p>Evaluation Artificial task – ambiguous figures are designed to trick perception, so task lacks validity</p> <p>Independent group design – p variables may have caused the difference in results not expectation</p> <p>Real-world application – the study can explain the sometimes serious mistakes people make in the real world</p>

