

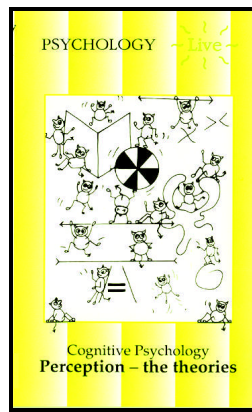
PSYCHOLOGY



SERIES

USER'S GUIDE

**Cognitive Psychology
PERCEPTION: THE THEORIES**



This Guide is designed to be read before viewing and an overview of the content and structure of the programme is given to assist with planning and lesson preparation. It is written to support the teaching of psychology and will be particularly helpful for those new to this subject. The DVD includes a menu linking to sections within the programme. The default setting is to play the DVD through automatically. To select a section highlight the relevant heading using the arrows on your remote control and press 'ENTER'. The chosen section will then play through and return to the menu for your next choice.

Running time: 45 minutes (1998)

The programme content is under copyright law and may not be duplicated in any form without written permission from Uniview Worldwide Ltd.

Any graphics reproduced in the User's Guides may be photocopied for use with students.

We hope you find this programme a useful teaching tool.



Introduction

This programme is designed to be watched in small parts with frequent breaks for consolidation. It contains too much information to be useful if watched from start to finish in one sitting.

Ideally a suitable section will be watched in one session, making liberal use of the pause or stop button for discussion and/or note-taking. There are breaks for thought, discussion and activities to be carried out throughout the programme, one requiring writing material. A message on the screen cues to pause the film for activity breaks for about 10 seconds to allow those watching on video time to pause or turn off and switch on again.

This programme assumes no prior knowledge of the study of perception but it would help students to be familiar with some of the terms before viewing (see Glossary) as well as the basic physiology of the visual system.

Aims

Our main aim is to present the major approaches to perception in a clear and understandable form. Different approaches in any area are often rather indistinguishable and we hope that the approach we have taken in this programme will clarify the differences without losing the unifying philosophical questions.

Psychology Syllabus Links

AQA(A) A2 Mod 4 13.3 Perceptual processes (a, b); 14.3 Approaches (a) Cognitive
 AQA(B) AS Mod 2 11.5.2 Key Approaches - Cognitive
 AQA(B) A2 Mod 2 11.5.1 Perception; Mod 5 14.1.3 Cognitive Perspective
 AQA GCSE Section 10 Cognitive Psychology 10.10.1 Perception

Edexcel AS Unit 1 Cognitive, Social & Developmental Processes: information-processing
 Edexcel A2 Unit 6 Cognitive Approach

OCR AS/A2 Core Studies 2541 Approaches

Timing and Content of the Video

	<p>Introduction</p> <p>Is Perception a mental activity or is it merely something that happens to us?</p> <p>Activity: to raise awareness of mental activity while carrying out. <i>NB This is a mental, not paper, activity.</i></p> <ul style="list-style-type: none"> • Remember the name of your first geography teacher. • Work out in your head 217 x 7. • Look at this picture. • Listen to this sound. • A discussion following leads to the question <p>02.00 Can perception be explained in terms of sensations?</p> <p>The survival value of senses. The kinaesthetic (proprioceptive) sense.</p> <p>Activity: the viewer is asked to follow simple physical exercises to demonstrate our awareness of our bodies (can be done sitting down).</p> <p>Muller's Law of specific nerve energy.</p> <p>Activity: viewers are invited to rub their eyes gently in a circular motion to demonstrate this.</p> <p>08.00 Break 1</p> <p>Find other examples of perceptual experiences which occur without sensory data. Which senses are being experienced?</p>
--	---

11.00	<p>(See Notes on the Breaks below) Conclusion of this section: It would seem, therefore, that perception is not the same as sensation.</p> <p>The Structuralist Approach</p> <ul style="list-style-type: none">• Work of early psychophysicists - Wundt, Weber and Fechner• Absolute thresholds• Just Noticeable Differences <p>Activity: students need a large supply of the same-sized coins (at least 40, better with up to 80) for the connected activity.</p>
13.00	<p>Break 2</p> <p>Find the Just Noticeable Difference. How many coins need to be added for a JND to be reported? Can you find a pattern?</p>
15.30	<p>The Gestalt Approach</p> <ul style="list-style-type: none">• The phi phenomenon as evidence that structuralist approach cannot account for this. Gestalt movement and Wertheimer.• Distinguishing objects from their background eg Rubin's Vase.• The whole is more than the sum of the parts. <p>Activity: five things are shown and time is left for the viewer to write down what they perceive. It is likely that they will be described using more than the information provided by the senses.</p> <ul style="list-style-type: none">• The Principles of Pragnanz• Critical Analysis – Gestalt approach (see notes below) <p>Activity: our prior knowledge affects how we interpret what we read on the screen.</p>
22.30	<p>Constructivist Approach</p> <ul style="list-style-type: none">• Perception is described as active, data-driven, top-down and indirect processing.• Setting up hypotheses using other sources eg expectations, context, instruction, motivation, emotion and the importance to the individual.• Visual Illusions are shown as examples of wrong interpretation. Richard Gregory.• Critical Analysis – top-down processing widely accepted but why are we still fooled by illusions even when we have found out the truth?

33.30	<p>Direct Perception</p> <ul style="list-style-type: none"> • Perception and movement go together. J.J. Gibson – optic arrays and optic flow patterns. • Abstract properties are directly perceivable eg affordances using graspability as an illustration. (See notes below). <p>'... I was lazily sitting in a chair reading a book in the sun. Suddenly my attention was drawn to movement to one side. I looked down and to my horror saw a large snake advancing towards me. My first instinct was to frighten it away by throwing something on it and I looked around for a suitable object. Bending down, I picked up some gravel and threw it at the snake. According to Gibson, the graspability, and throwability, of gravel was directly perceivable to me. I was able to perceive which items in my immediate environment were capable of being grasped and thrown without having to consult any previous experience. I didn't attempt to pick up and throw the nearby shrubbery or the door of the villa.'</p> <p>For Gibson there is no distinction between sensation and perception. And so we come back to the original question: 'Can perception be explained in terms of sensation?'</p>
37.30	<p>Summary</p> <ul style="list-style-type: none"> • Comparing and evaluating the theories. • Neisser's Analysis-by-Synthesis. • Checking sensory data against expectations – 'Is it a bird? Is it a plane? No, it's Superman!'
43.30	<p>Recent work and Applications</p> <ul style="list-style-type: none"> • David Marr's work on computer models of perception. • Current research eg development of artificial eyes. • Depth Perception eg lines painted on roads to slow drivers down.

Content Summary

The programme follows through the question '**Can perception be described in terms of sensations?**' The Structuralist, Gestalt, Constructivist and Direct Perception approaches are outlined and evaluated. The conclusion is reached that perception cannot be wholly explained in terms of sensations. The summary asks which approach best explains perception and concludes that each has something to offer but no single theory offers a complete answer. The contributions of each approach to our understanding of perception is discussed and Neisser's Analysis-by-Synthesis is presented as a combination of the top-down and bottom-up approaches.

Recent research includes that of David Marr's pioneering work in specifying how the brain computes 3-D models of the environment based on 2-D sensory receptors in our retinas.

This programme does not cover the Nature-Nurture debate which includes cross-cultural differences and early-years development – an area large enough to merit a programme of its own; however, this topic is usually considered thoroughly in basic text books under perception and child development sections.

Extra Notes

Break 1

Find other examples of perceptual experiences which occur without sensory data. Which senses are being experienced?

Discussion – dreams and hallucinations are possible examples.

We also assume that we all experience sensory inputs in the same way eg the smell and taste of coffee gives others the same experience as ourselves.

There is an interesting point raised after the pause:

“How can you be sure that what you are experiencing now, at this very moment, is in fact the real world? Perhaps you are dreaming or a subject in a psychological experiment where the psychologist is exciting various parts of your brain with electrodes to produce the experience of watching a video!”

It may be worth pausing the programme unprompted to discuss this further.

Break 2

Find the Just Noticeable Difference - can you find a pattern? It should be found that proportions remain constant following Weber's Law. If three coins need to be added to five for a JND to be reported, then the same proportion, three-fifths, needs to be added to ten coins ie six.

Link discussion: testing this requires Formal Operational thought.

Critical Analysis – Gestalt approach explains 2D perception, but life involves 3D perception. It does not account for the role of prior knowledge, expectations and context. In fact, none of the approaches looked at so far can account for the perception in the drama that follows.

‘Imagine that one evening you say good night to your friend and go upstairs to bed. Just as you are about to get into bed, there is a power failure. As you stumble downstairs you see a shadowy figure moving towards you along the hall which you immediately recognise as your partner in search of matches.

On another occasion, you wake in the night hearing someone moving about downstairs. Knowing that you are alone in the house, you grab the nearest large object and creep downstairs to confront the intruder. From the stairs you see a shadowy figure. As he passes, you hit him hard. Turning on the light, however, you find that you have just knocked out your partner, who has returned home unexpectedly.'

Direct Perception

Abstract properties are directly perceivable eg affordances using graspability as an illustration ...

'... I was lazily sitting in a chair reading a book in the sun. Suddenly my attention was drawn to movement to one side. I looked down and to my horror saw a large snake advancing towards me. My first instinct was to frighten it away by throwing something on it and I looked around for a suitable object. Bending down, I picked up some gravel and threw it at the snake. According to Gibson, the graspability, and throwability, of gravel was directly perceivable to me. I was able to perceive which items in my immediate environment were capable of being grasped and thrown without having to consult any previous experience. I didn't attempt to pick up and throw the nearby shrubbery or the door of the villa.'

For Gibson there is no distinction between sensation and perception. And so we come back to the original question: 'Can perception be explained in terms of sensation?'

Glossary of Perception Terms and Examples shown

Absolute Threshold – the intensity of a stimulus which is the minimum that can be perceived 50% of the time. Example - the point at which you can no longer hear a radio when turning the volume down.

Analysis-by-synthesis – we take in information through our senses and are continually updating it according to our impressions of what the environment might be like. Example - trying to pick out someone we know from a crowd (Neisser).

Optic arrays – the light rays which converge onto our retinas and provide us with new information as their position changes when we move through space and time (Gibson). Video example - pilots judge speed, direction and height during take off and landing through the use of optic flow patterns.

Depth Perception – perception of the world in three dimensions even though our visual system operates in 2-D.

Figure-Ground – an organising principle of perception by which we distinguish figures from their background (Gestalt).

Habituation – learning to ignore stimuli which are present continuously until they change. Video example - we ignore the sound of a clock ticking until the alarm goes off.

Just Noticeable Difference (JND) – the change of intensity of a stimulus which can be detected by an individual 50% of the time. Example shown - number of extra coins which need to be added to a pile of coins in the hand to notice a difference.

Kinaesthetic sense – also known as proprioception: the sense of where our body is and what position it is in. Example shown - holding your hands out behind your back and knowing where they are even when out of sight and not touching anything.

Perceptual models – hypothetical, testable propositions about the way some aspect of perception may work. Example shown - Neisser's cyclical model, Marr's computer modeling.

Perceptual constancy – the way in which objects are perceived and recognised as unchanging even though information from the senses changes. Example shown - a ball being thrown towards us does not appear to increase in size.

Phi phenomenon – a perception of movement when there is actually none which results from two separate objects or lights seen in quick succession. Example shown - the thousands of picture frames which, when placed together, produce 'movies'!

Pragnanz (Good Form) – the tendency of the brain to make sense of the world by organising incoming sensory data (Gestalt). Example shown - the laws of closure, proximity, similarity and good continuation.

Retina – a layer of light-sensitive cells at the back of the eye which receives light waves and converts them to electrical pulses for perception to occur.

Sensation – the stimulation of a sense organ such as the eye or ear which is necessary for perception to occur.

Set – the predisposition of an individual towards certain cognitions – perception is influenced by 'set' expectations and prior experience. Video example - the 'shadowy figure' drama.

David Marr's Computational Model – the way forward in the 21st Century?

The ultimate aim of computer modeling in perception is to create a machine which can mimic the way we perceive our environment. This has proved exceptionally difficult mainly because we understand so little of the neurophysiological mechanisms which control our interpretation of what our retinas are recording.

Hubel & Wiesel's work on the visual cortex in the 1960s and '70s identified specific cells which responded to lines in the visual field of a particular orientation. David Marr started his work looking at neural structures but was unable to produce a computer program which mimicked the activity of single cells because their function was too inexact eg a cell which responded to a faint horizontal line would respond at equal intensity to a bold line just off the horizontal.

Marr then realised that even if every cell in the visual cortex was mapped and its function identified this would still not be enough to understand the functions and purposes of the visual system as a whole. He saw the value of the physiological bottom-up processing approach when combined with the top-down approach which dominated the early attempts at computer modeling and developed what he hoped would be a combination of the two, explaining the whole process of perception.

Marr set out to develop a computer model which simulated the human visual system and which linked with its functions. The function of the visual system is to represent 3D shape and the visual problem to be explained is how we extract information from an image to allow objects and events to be recognised and differentiated. He argued that perception involves a variety of sub-systems which, while working independently, combined to produce a final representation. (Marr, published 1982).

The three stages of processing to achieve this, according to Marr, are:

THE PRIMAL SKETCH – our retinas receive information in the form of dots of light of varying intensity. This 'raw primal sketch' gives us a fragmented image consisting of light and shade which alters with optic array changes but allows identification of contours and edges. A 'full primal sketch' is obtained by using something analogous to the Gestalt laws of organisation which give a fuller picture, though still primitive.

THE 2D SKETCH – the visual system builds on the primal sketch by adding shading, textures, binocular disparity, more contours and motion parallax allowing more information about depth, distance and orientation of visible surfaces. This is not a complete picture because the information is still at basically 'retinal' level.

THE 3D SKETCH - the function of the final stage is to make explicit shapes and their spatial orientation so that they relate to an object in the world rather than as being specific to any particular location on the retina. This is where top-down processing comes in, using knowledge already stored about the external world and the object itself, to form a final representation.

Marr achieves his aim of combining top-down and bottom-up processing in his model but he did not make clear exactly how the two interact. What happens when your retina outlines an image about which you have no prior knowledge? Until we have a more comprehensive understanding of the way knowledge is represented in the cognitive system, this issue will never be fully resolved.

Marr & Nishihara's paper (1978) proposed that object perception can be built up by the use of a set of cylindrical cones or tube shapes. These are hierarchical in that we may identify something in the distance as a couple of cones and, as it gets closer, we add more cones with different dimensions as detail appears. Gardner (1985) suggests that this idea of cones is most applicable to perception of figures such as the human body which is easily 'assembled' in this sort of way (eg the Tin Man from the Wizard of Oz!). Most of the theory, Gardner argues, relates to the stages leading up to actual recognition of real world objects.

Marr's computational account of visual object recognition is regarded as one of the most important developments in perception theory.

Marr was, sadly, unable to complete his research and most criticisms stem from him not reaching an explanation of real objects in the real world Gardner (1985). However, his work using a multi-disciplinary approach has made a very important contribution to this area of artificial intelligence on which others are now building.

Biographies

Many textbooks, quite rightly, keep dates and details of theorists to a minimum in order not to clog up their pages or students' brains. However, it is important that students have some idea of where in the scale of time things occur. Would Weber and Wertheimer have discussed their findings? Is Gregory still alive? (very much so at the time of writing!). Also, odd facts about someone can make ideas stick or help association when revising. We have, therefore, compiled some details about the major players in Perception in the past which may be useful in your teaching or just make interesting reading!

WEBER Ernst Heinrich 1795 –1879

German Professor of Anatomy then Physiology at University of Leipzig (why does this sound familiar?). The better known half of the Weber-Fechner Law.

FECHNER Gustav Theodor 1801– 1887

Degree in Medicine from the University of Leipzig where he stayed for the rest of his life. Chair of Physics at 33 years old. Resigned his Chair after a few years with serious nervous breakdown. Became a pantheist! He is the lesser-credited part of what should be termed the Weber-Fechner Law.

WUNDT Wilhelm Max 1831–1920

The 'Father' of experimental psychology. Studied Physiology in Berlin, then medicine in Heidelberg University. He is famous for setting up the first experimental psychology laboratory (in 1875) in the world and, apparently, for his shuffle-like walk which held students' attention during lectures on Attention. He carried scientific method to its extreme but in later works (rarely translated from the German) he admitted that its application in psychology was limited. (Ref: Blumenthal, A.F., 1975).

Wundt was one of many brilliant physiologists who gathered in Berlin at this time. He studied physiology with Joannes Muller (not famous for lines with arrowheads). He was admired by his student, Titchener. Helmholtz was his boss and he was great pals with Fechner.

MULLER-LYER Franz Carl 1857-1916

Not famous for much in Psychology except lines with arrowheads! Trained as a psychiatrist ending up in private practice in Munich. His best-known work was a seven-volume Sociology book on the development of societies.

WERTHEIMER Max 1880-1943

Born in Prague. Started career at University of Frankfurt then moved to Berlin where he discovered the phi phenomenon. Published the earliest account of Gestalt psychology which established him as the 'Father of Gestalt Psychology'. Migrated to USA with the rising of Hitler.

KOFFKA, Kurt 1886-1941

German. A leading Gestalt psychologist who co-founded the journal Psychologische Forschung (which was forced to cease publication in 1938) with, amongst others, Kohler and Wertheimer. Dragged in to be a subject in some of Wertheimer's classic experiments of apparent visual motion. Emigrated to USA in 1924.

KOHLER Wolfgang 1887-1967

Born on Baltic Coast. Chair of Psychology in Berlin in 1921. A keen Gestaltist and prolific writer and justifier of his view that the road to scientific advance was through physics. Spent First World War in Tenerife studying the behaviour of anthropoid apes. Also subject in Wertheimer's experiments and emigrated to USA in 1934.

GIBSON James Jerome 1904-1979

American. Influenced by Koffka who emigrated from Germany in 1924. Professor at Cornell University where he worked on visual perception of form and motion. He discovered early in his career that distorting lenses produce reversed adaptation to curvative ones with free eye movement. Also discovered that if your wife is Eleanor Gibson (child development guru) she may take some of the limelight. His most recent contribution was in development of computer vision.

GREGORY Richard Langton 1923-

Studied at Cambridge under Sir Frederick Bartlett and then Professor Oliver Zangwill. Moved to University of Bristol in 1970 where he is currently (2006) Emeritus Professor of Neuropsychology at the University of Bristol having retired in 1988.

His outstanding contribution and interest has been to foster the public understanding of science. He founded the Exploratory Science Centre in Bristol in 1978. He has brought Cognitive Psychology to the masses through his television programmes.

Professor Gregory continues his work in Bristol and hopes to have his new book **Phenomenal Brain** ready soon, but in the meantime he has written six Editorial Essays and plans a children's book on perception in the coming years - 'this will be short with lots of pictures'.

(apologies to the many other present-day Perception personalities not mentioned)

MARR David Courtenay 1945-1980

British (Essex-man); Rugby School followed by Trinity College, Cambridge where he studied Mathematics. Worked in the Artificial Intelligence Lab at Massachusetts Institute of Technology from 1975 until his untimely death from leukaemia in 1980. His main area of interest was in computer modeling. He based his models on the real world and was the first person to take account of neurophysiological and psychological findings to uncover the way that the human visual system actually works. He, sadly, couldn't complete his work but made an original and important contribution for others to build on. Those who worked with him knew him as an inspirational character who enjoyed his work right to the end of his life.

Applications

Work on visual illusions has been used in road markings where horizontal lines become progressively closer to slow drivers down when approaching junctions or roundabouts.

Television is an illusion – well, as far as what we think we see on the screen is concerned! Television screens are set to refresh every 50th of a second based on knowledge that the retina is unable to detect anything that changes faster than 50 flashes a minute. The same principle (Apparent Motion) applies to real movies and neon lights.

Current Trends in Research

The **Information processing** approach analyses perception in stages. Marr thought that to understand vision we must explain how useful information can be extracted from a scene - what stages must we go through to understand what we see? It is seen as the most important development in perception theory for sometime and his work is being continued by others.

In perception of what we see we need to use many problem solving techniques such as rule of thumb (heuristics) and systematic analysis (algorithms). However it is often in a split second, as when driving, that our knowledge and experience is also vital to understand situations around us on the road. Hopefully James Reason's continued work on **Action Slips** will be applicable to our perception of situations. (Reason, 2003).

The information processing approach has led to the science of **Artificial Intelligence** which has moved on from getting robots to navigate around a track in a lab or devising computer programs that will provide counselling using a supply of stock phrases.

The search is now on, and will continue through the 21st century and beyond, to develop a computational Theory of Mind whereby a machine can be made, not human, but useful to mankind by extending the amazing mental abilities we already have. Ford & Hayes (1998). This would not mimic the way that humans behave in terms of emotions, social language and interaction but would develop a global model of intelligence which could be used by all systems in the universe.

Expert Systems, ie software which integrates human experts' knowledge, is an active area of research, most noticeably in the medical arena. For example, GUESSING (the wonderful acronym for Glasgow University Expert Systems in Nursing Group) is a system which has used the knowledge built up over years by clinically excellent nurses in certain areas of care, such as predicting bed sore occurrence. This is part of a small beginning to what would be an enormous task to be widely useful but, for example, if the perceptual knowledge of expert drivers could be integrated into an expert system there could be real implications for transport safety in the future.

Websites

www.uniview.co.uk

a large collection of psychology videos, DVDs, posters, brain jellies, X-psyting extras, etc worth checking regularly for latest news

www.theatp.org

the home of the Association for the Teaching of Psychology

invaluable access to information and advice for teachers of psychology in UK and Europe

www.bps.org.uk

the home of The British Psychological Society

free downloads of recent articles from The Psychologist magazine

www.apa.org

the home of the American Psychological Association

nothing free on this site!

www.psychology.heacademy.ac.uk

details of psychology events, resources and research

lists all UK university psychology departments; BPS list of accredited undergraduate courses

www.s-cool.co.uk

revision site for students on a limited number of topics; club-like feeling with an s-magazine giving advice on bank accounts, interview skills and even how to shave! Teachers World with generic information

<http://www.mrmind.com/mrmind3>

turning the Turing Test upside down, MRMIND challenges you to take the Blurring Test and prove to him(?) that you are human - make your case to a robot of your choice take the Human Quotient test - great fun and time-waster!

www.youramazingbrain.org.uk

just go and enjoy – the brain in great detail, packed with information, activities

www.holah.karoo.net

information, fun activities, links – excellent for staff and students alike

<http://psyonline.edgehill.ac.uk>

A Level resource from Edgehill College for AQA. Good and reliable resource for students and teachers. Includes a countdown to Mod 4 exams to the nearest second!

<http://psyberfun.users.btopenworld.com/>

too new to comment on but looks promisingly weird, wacky and addictive!

<http://en.wikipedia.org/wiki/Psychology>

extraordinary free encyclopedia which anyone can edit anytime even without being online! Over 1 million entries with definitions and further information

<http://www.brainconnection.com/>

an award-winning site (USA) with lots of relevant material and some excellent animated mini-demonstrations.

<http://click2amuse.com/fun/optical>

visual illusions - lots of them! Annoyingly busy site!

www.yorku.ca/eye

a wonderful site for Perception: a web book called *The Joys of Visual Perception* by Prof. Peter Kaiser

<http://www.michaelbach.de/ot/>

excellent site for animated illusions with explanations

http://ibs.derby.ac.uk/~kpat/Israel_cognitive/Israel_Visual_Perception.pps

power point presentation on visual system and perception; may take a while to load

<http://www.at-bristol.org.uk>

visit this site (or even better visit in person) for details of the amazing 21st century Science Centre with illusions and much more; located at Harbourside, Bristol

*Uniview Worldwide Ltd accepts no responsibility for the content of any external websites.
Please let us know if you experience any problems with any of these links.*

References for Film Script and Guide Update

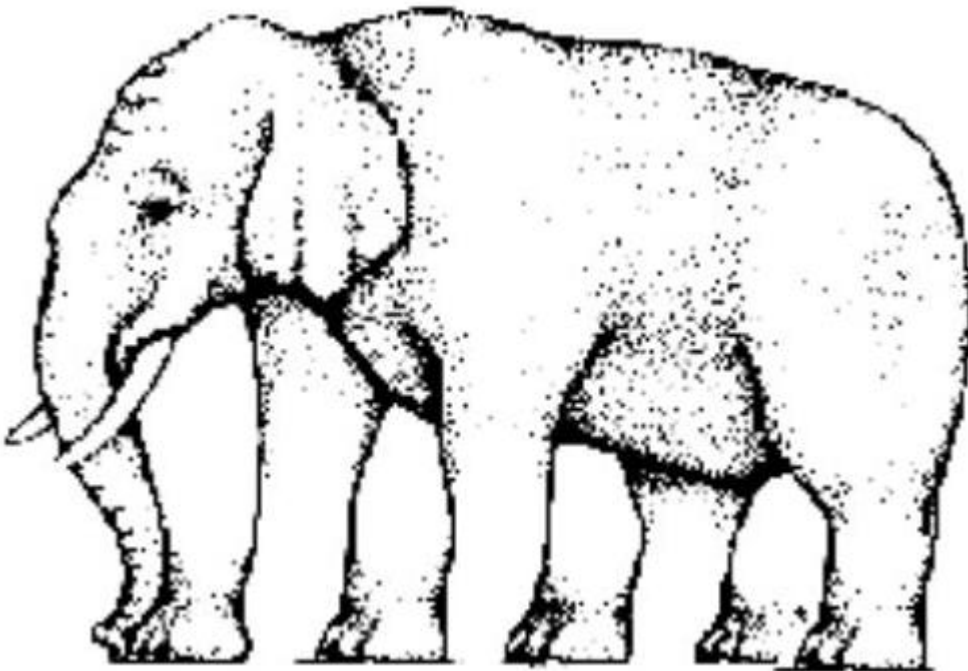
- Blumenthal, A.L. (1975) *A Reappraisal of Wilhelm Wundt* American Psych 1081-8
- Bugelski, B.R. & Alampay, D.A. (1961) *The role of frequency in the development of perceptual sets* Canadian Journal of Psychology Vol 15: 205-11
- Fechner, G.T. (1860) *Elemente der Psychophysik (Vol 1)* translated by Adler, H.E., Howes, D.H. & Boring, E.G. New York: Holt, Rinehart & Winston
- Gardner, H. (1985) *The Mind's New Science* New York: Basic Books
- Gibson, J.J. (1979) *The Ecological Approach to Visual Perception* Boston: Houghton Mifflin
- Gross, Richard (2005) *Psychology The Science of Mind and Behaviour 5th Ed.* London : Hodder Arnold
- Marr, D. (1982) *Vision* San Francisco: Freeman
- Marr, D. & Nishihara, K.H. (1978) *Representation and recognition of the spatial organisation of three-dimensional shapes* Proceedings of the Royal Society London Series B 200, 269-294
- Muller, J. (1838) *The specific energies of nerves* In W Dennis (Ed.) Readings in the history of psychology New York: Appleton-Century-Crofts, 1948
- Neisser, U. (1976) *Cognition and Reality* San Francisco: Freeman
- Penfield, W. & Rasmussen, T. (1950) *The Cerebral Cortex of Man* New York: Macmillan
- Weber, E.H. (1834) *De pulsu, resorptione, auditu et tactu: Annotationes anatomical et physiological* Leipzig: Koehler
- Wertheimer, M. (1912) *Experimentelle Studien uber das Sehen von Beugung* Zeitschrift fur Psychologie, 61, 161-265

Further Reading for Students

- Association for the Teaching of Psychology (1992) *Ethics in Psychological research: Guidelines for Students at Pre-degree Level* Leicester ATP available on <http://www.theatp.org/>
- Cardwell, M. (2003) *Complete A-Z Psychology Handbook 3rd Ed.* Ideal students' companion throughout A level and undergraduate courses. Very user-friendly, definitions and jargon explained, revision and exam tips, diagrams and worked examples
- Cardwell, M., Clark, L. & Meldrum, C. (1996) *Psychology for A Level* London Harper Collins
- Coolican, H. (Lead Author) 1996 *Applied Psychology* London Hodder and Stoughton
- Eysenck, M.W. & Keane, M.T. (1990) *Cognitive Psychology: A students handbook* Hove & London (UK), Hillsdale (USA) Lawrence Erlbaum Associates. Written for undergraduates but ideal extension reading for more advanced students
- Gregory, R.L. (1972) *Eye and Brain 2nd Ed.* London: Weidenfeld & Nicolson
- Griggs, R. A. (2005) *Psychology: A Concise Introduction* Palgrave Macmillan All the main topics in psychology covered, clearly and concisely - American. A companion website <http://bcs.worthpublishers.com/gray/content/psychsim5/launcher.html> is worth looking at for 20 animated activities
- Roth, I.A. & Bruce, V. (1995) *Perception and Representation: Current Approaches 2nd Ed.* Buckingham Open University Press

Further Reading for Teachers

- British Psychological Society (Mar 2006) *Code of conduct, Ethical Principles and Guidelines* Leicester BPS available on [http://www.bps.org.uk/document-download-area/document-download\\$.cfm?file_uuid=5084A882-1143-DFD0-7E6C-F1938A65C242&ext=pdf](http://www.bps.org.uk/document-download-area/document-download$.cfm?file_uuid=5084A882-1143-DFD0-7E6C-F1938A65C242&ext=pdf)
- Davey, Graham (Ed.) (2004) *Complete Psychology* London Hodder Education
A first year undergraduate text written by British team – very comprehensive, colour artwork throughout, activity boxes, applications, up to date and user-friendly
- Eysenck, M. (1993) *Principles of Cognitive Psychology* Hove: Lawrence Erlbaum Associates
- Goldstein, E.B. (1989) *Sensation and Perception* Belmont: Wadsworth
- Gordon, I.E. (1989) *Theories of Visual Perception* Chichester: Wiley
- Gregory, R.L. & Colman, A.M. (1995) *Sensation and Perception* London: Longman
- Hayes, N. (1994) *Foundations of Psychology* London Routledge
- Lindsay, P.H. & Norman, D.A. (1977) *Human Information Processing: An Introduction to Psychology (2nd Ed.)* New York: Academic Press
- Solso, R.L. (1991) *Cognitive Psychology (3rd Ed.)* Needham Heights Allyn & Bacon
- Wolfe, J., Levi, D., Kluender, K., Bartoshuk, L., Herz, R., Klatsky, R. & Lederman, S. (2005) *Sensation and Perception* Palgrave Macmillan. Too expensive for students but ideal library resource. Focuses in detail on the senses, colour illustrations, clearly written. Companion website with activities and demonstrations. Instructor's CD



Contacts

The Association for the Teaching of Psychology

The ATP has highly experienced teachers and examiners ready to give advice and assistance, especially for new teachers of this topic. They can recommend textbooks and resources that will get you started.

ATP Helpline: Dorothy Coombs

work: dorothy@pursglove.ac.uk 01287 280800

home: dorothycoombs@24whinchat.freemove.co.uk 01287 636502

New teachers of this topic are well advised to get in touch with the ATP:

The Association for the Teaching of Psychology
c/o The British Psychological Society
St Andrew's House
48 Princess Road East
Leicester
LE1 7DR
<http://www.theatp.org>

Annual Conference - The ATP holds an excellent conference for members each July. As well as lectures and workshops, there is an opportunity to meet the examiners and to browse all the latest books and resources.

The British Psychological Society

The British Psychological Society
St Andrews House
48 Princess Road East
Leicester
LE1 7DR
Tel: 0116 254 9568
www.bps.org.uk

The American Psychological Association

The American Psychological Association
750 First Street NE
Washington DC 20002-4242
USA
Tel: 001 202 336 5500
www.apa.org

Resources

Uniview has a large collection of resources for most areas of psychology, biology and sociology. Go online to see a full list of resources or contact Uniview to request a free copy of their latest catalogue:

Uniview Worldwide Ltd
PO Box 20
Hoylake
Wirral
CH48 7HY

Tel: 0151 625 3453
Fax: 0151 625 3707

www.uniview.co.uk
sales@uniview.co.uk

Other titles available in the Psychology Live Series include:

- ✓ [The Study of Attention](#)
- ✓ [The Study of Memory](#)
- ✓ [Classical and Operant Conditioning](#)
- ✓ [Further Approaches to Learning](#)
- ✓ [Cognitive Development](#)
- ✓ [Language Development](#)
- ✓ [Evolution by Natural Selection](#)
- ✓ [Reductionism](#)
- ✓ [Introduction to Designing Experiments](#)
- ✓ [Organising Quantitative Data](#)
- ✓ [Inferential Statistics](#)
- ✓ [Exploring Qualitative Methods](#)

Also recommended:

[Number Cruncher CD-ROM](#)

All titles are available in VHS and DVD format

New titles are always in development and we welcome suggestions for areas you would like to see included in the Series, as well as any comments you may have about these titles.

Please contact us on sales@uniview.co.uk

No part of this publication may be copied in any way or stored in a retrieval system, except for teaching purposes, without the written permission of Uniview Worldwide Ltd PO Box 20 Hoylake Wirral CH48 7HY
Tel: 0151 625 3453 Fax: 0151 625 3707

sales@uniview.co.uk www.uniview.co.uk

