

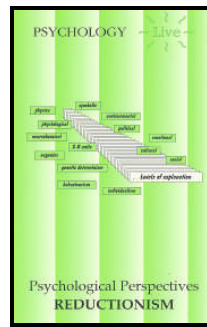
PSYCHOLOGY



SERIES

USER'S GUIDE

**Psychological Perspectives
REDUCTIONISM**



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: 30 minutes (1997)

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We hope you find this programme a useful teaching tool.

Introduction

Reductionism is an area of psychology which many students may see as very abstract and irrelevant. Far from it!

Reductionism is highly relevant to all of us because of the serious implications for society should extreme reductionist views be allowed to hold sway. It ceases to seem abstract when examples of its practice in everyday life are discussed.

'Reductionism' forms part of a series of videos exploring various perspectives in psychology. It follows a different format from other programmes in the Psychology Live Series. There are no breaks for activities as it follows a live discussion.

Dr Nicky Hayes discusses reductionist thinking with Phil Banyard in an informal setting but with a structure which allows students to take brief notes if required and/or to formulate discussion points.

Four examples of reductionism are discussed while acknowledging that others exist which are less important to psychology.

Syllabus Links

AQA (A) A2 Mod 5 14.3 Perspectives (b) Debates Reductionism

AQA (B) A2 Mod 5 14.3 Debates in Psychology Holism & Reductionism

Edexcel A2 Unit 6 Issues, Perspectives and Debates in Psychology

OCR AS Unit 2541 Core Studies 2 Reductionism

Structure of the Video

00.00	What is Reductionism?
01.50	Behaviourism
06.50	Physiological Reductionism
09.50	Individualism
15.00	Genetic Reductionism
26.00	What are the Alternatives?

The programme assumes a basic knowledge of the terms and approaches used in psychology and may therefore be best used towards the end of a course. We hope that the film and this Guide will lead students on to their own informed arguments for and against reductionist thinking.

The Participants

On the settee with Phil Banyard

Nicky Hayes is a Research Psychologist and Author who has written several books for psychology students, including 'Psychology in Perspective' and a major textbook 'Foundations of Psychology'.

She is a Fellow of the British Psychological Society and an honorary Life Member of The Association for the Teaching of Psychology. Her research interests are social representations and social identity in organisations and the psychology of science communication. She is said to make a very fine fruit cake!

On the settee with Nicky Hayes

Phil Banyard is Associate Senior Lecturer at The Nottingham Trent University where he teaches on introductory psychology and health psychology courses. He is also an examiner for GCSE Psychology and has written three books and numerous articles in between watching his football team, Nottingham Forest, and crying into his beer. Many think he should get out more!

REDUCTIONISM - some notes

Descartes (1596-1650) could be seen as the originator of reductionist thinking with his Cartesian duality theory. The mind and body are quite separate, he claimed. The mind is for reasoning, is the essence of being human and distinguishes us from other animals. The body is just a machine with no influence on the mind.

Discussion: Cartesian duality would suggest that the mind plays no part in recovery from illness or surgery. It also suggests that holistic medicine is a waste of time. **Is this true?**

Evidence against can come from research that patients with friends or those who undergo touching therapy recover more quickly. **Why?**

People with Parkinson's disease find movement very difficult, but in an emergency a patient can act very fast and with good co-ordination. **How?**

There is a range of levels at which we can try to understand behaviour. Steven Rose suggests a continuum of explanation:

from **holistic** to **Reductionist**

from **thoughts & feelings** to **atoms and molecules**

Some of the levels of explanation are more relevant to psychologists than others.

<p><i>cosmic / intergalactic</i></p> <p>cultural socio-political sub-cultural</p> <p>social cognition social groups, family etc interpersonal interaction intentions and motives cognition and emotion habits and learned associations genetics and evolution</p> <p>physiology cellular biology</p> <p><i>organic chemistry</i> <i>quantum physics</i></p>	<p><i>outside psychology's range of interest</i></p> <p>within psychology's range of interest</p> <p>main area of psychological interest</p> <p>within psychology's range of interest</p> <p><i>outside psychology's range of interest</i></p>
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Discussion: It is claimed by many psychologists that any research which looks at any one aspect of human behaviour rather than the whole person is reductionist.

Do personality inventories and intelligence tests serve any purpose?

Is this a reductionist purpose which could serve governments and other agencies but not individuals?

Psychologists are often accused of not being 'scientific' enough, but does scientific method tell us anything about the individual?

Reductionism Today

Medicine is probably the best exemplar of the debate ... Holism or Reductionism? The debate is ever-present in spite of the amazing advances in biomedicine and the huge amount of research into 'fixing the body' at a molecular level.

Clinical anatomy saw the beginnings of a reduction approach to medicine in the 16th century as the correlation between lesions and symptoms emerged. Research into the anatomy of disease and surgical treatment emerged. The focus then moved to the molecular level using the microscope. This mechanistic paradigm has continued medicine and, with advances in viral research and treatment, has become the dominant paradigm in medicine in the 21st century.

There has been fierce criticism from many areas especially in the 1960s - a period of rapid social and cultural change - which led to a re-evaluation of the way that the world's health was researched, practised and financed. At the same time, the chronic illnesses and the so-called lifestyle diseases, such as cancer and cardiovascular illness, became the dominant illnesses and were resisting the best efforts of biomedicine to find cures.

Coulter (2001) lists the four main trends in medicine that form the 'paradigm crisis':

1. The re-emergence of holism (see Cousins, 1989) – treating the whole person.
2. The phenomenological approach asking that medicine should involve the patients' understanding and experience of their illness.
3. Humanistic medicine – appealing for a more personal, dignified approach to patients.
4. The biopsychosocial paradigm (see Engel, 1989) produced as a challenge to biomedicine combining many aspects of the other three.

By the late 20th century the limitations of the biomedical model was at the centre of a worldwide debate. There was strong dissatisfaction with biomedicine and a feeling that its reductionism and emphasis on technology had diminished medicine as a primary care giver and the service being offered to the patient.

Gradually changes were seen in medical education and practice with an increased emphasis on cultural, social, and psychological aspects of health. In research the trend could be seen in the increase in qualitative research.

However, with the rapidly expanding literature on genomic medicine, it is as if a critique of biomedicine never occurred. Genomic medicine is almost a perfect representation of the "sorcerer's broom" in action (Cassell, 1993). Cassell suggests that genomic medicine runs the risk of diverting the attention of medicine away from what the public and its critics have been trying to tell it at the very moment when it seemed as if medicine was adopting a more holistic paradigm.

'If history teaches anything, it is that such distractions can be costly for medicine. Physicians' preoccupation with the "perils" of a national health care system blinded them to a greater threat to medical autonomy: the transformation of the marketplace by the private sector and the emergence of managed care. The seduction of genomic medicine might also blind the profession to the message that medicine is about people, not genes.' (Coulter, 2001)

References

- Cassell, E.J. (1993) *The Sorcerer's Broom: medicine's rampant technology* Hastings Central Report, 1993, 23, p 32-39.
- Cassell, E.J. & Siegler, M. (Eds) (1979) *Changing Values in Medicine* Frederick, MD: University Publications of America
- Conrad, P. & Gabe, J. *Sociological perspectives on the new genetics: an overview* Sociological Health Illness, 1999, 21, p 505-516
- Coulter, I. (2001) *Genomic medicine: the sorcerer's new broom? The limitations of the human genome project* Western Journal of Medicine, Dec 2001, 175(6), p 424-426
- Cousins, N. (1979) *The Holistic Health Explosion* Saturday Review, March 31 1979 p 17-19
- Engel, J.M. (1989) *The Need for a New Medical Model: a challenge for biomedicine* Holistic Medicine, 1989, 4, p 37-53

For more details of the Human Genome Project and the advances in biomolecular research see the Evolution User's Guide which accompanies the programme Evolution in this Series.

Is Reductionism Making Psychologists Redundant?

An article in *The Psychologist* (Herlihy & Gandy, 2002) highlights the concern that psychologists have had that neurologists and geneticists are taking over. They give a quote which exemplifies the current need to search for a biological cause for mental phenomena.

'... a decade ago we used to go round talking about punitive toilet training ... Now we truly understand that OCD (obsessive compulsive disorder) is a brain disorder.'
(Susan Swedo quoted in Brown, 1997)

The three main concerns discussed are that:

- There is a tendency to think that neurological theories show cause while others show correlation.
- That there is a tendency to assume that the neurological level of explanation is superior to the others.
- The general public is inclined to think that neurological explanations are the psychologist's ultimate goal.

Addressing the first point, the authors argue that reductionism is a failure to resolve **the problem of causation**. When identifying a cause of a particular event, there are many possibilities to choose from. The actual choice depends on salience – the cause identified depends on the question asked.

Concerning **levels of explanation**, they point out that every pattern of brain activity will have a corresponding pattern of behaviour. Neurological processes did not *cause* the behaviours and cognitions. We can take any phenomenon and describe it in different ways but both psychological and biological explanations are important and combination therapies (drugs, behavioural and CBT) are most effective, particularly in emotional disorders such as anxiety.

The third concern is that of the **Mind-Body dualism** which neurological reductionism leaves us with. Patients are much happier with a physical diagnosis, a 'name' to explain why they are suffering physically or behaving differently. A 'brain disorder' is easier to accept than a 'mental illness'. This dualism allows us to be responsible for our minds but victims of our bodies. It is true that health psychology is introducing a psychological level of explanation to some extent with suggestions of underlying lifestyle changes for a variety of 'medical conditions'. However, Health and Clinical Psychologists are not using the same models as a basis for diagnosis and intervention at the moment.

Herlihy & Gandy propose a new model of causation which everyone works from, in which a human being moves from one psychophysical state (biological, thought, emotion) to another, describable by different specialists at different levels. Causation would flow between these states and not between levels of description. Persuading the general public that cognitive behavioural therapy or a change of diet would help them more than drug treatment may not be so easy in an increasingly dominant medical model.

Further Reading

- Adorno, T.W., Frenkel-Brunswick, G., Levinson, D.J. & Sanford, R.N. (1950) *The Authoritarian Personality* New York: Harper
- Banyard, P. & Grayson, A. (1996) *Introducing Psychological Research: 60 Studies that Shape Psychology* London: Macmillan
- Bell, Andy (2002) *Debates in Psychology* Hove: Routledge
- Brown, P. (1997) *Over and Over and Over* New Scientist, 2093, p 27-31
- Cohen, D. & Watson, J.B. (1979) *The Founder of Behaviourism* London: Routledge
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- Gould, S.J. (1981) *The Mismeasure of Man* London: Penguin
- Gross, R. (2003) *Themes, Issues and Debates 2nd Ed.* London: Hodder and Stoughton
- Hayes, N. (1995) *Perspectives in Psychology* London: Macmillan
- Pinker, S. (2002) *The Blank Slate* MIT Press
- Rose, S., Kamin, L.J. & Lewontin, R.C. (1984) *Not in Our Genes: biology, ideology and human nature* Harmondsworth: Penguin
- Smith, Delia (1996) *The Winter Collection* London: BBC Books

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.

[Human Genome Project Information](#)

the enormous human genome project site with everything you need to know about what is happening in genetic research currently; teachers section

<http://pinker.wjh.harvard.edu>

the home site of Professor Steven Pinker, Harvard University - a very readable and prolific writer on language, cognition, evolution and reductionism. His site includes lists of his articles, books, biography *and* downloadable photos of himself! Known for looking like a rock star and belongs to the Luxuriant Flowing Hair Club for Scientists. Born in 1954. He is listed among the 100 most influential people in the world by Time Magazine. His latest book *The Blank Slate* (2002 MIT Press), is highly acclaimed and his inspirational teaching has won numerous awards. A reductionist who would like a new form of reductionism – watch out for his next book!

The Blank Slate. *From the book jacket:* Our conceptions of human nature affect every aspect of our lives, from the way we raise our children to the political movements we embrace. Yet just as science is bringing us into a golden age of understanding human nature, many people are hostile to the very idea. They fear that a biological understanding of the mind will be used to justify inequality, subvert social change, and dissolve personal responsibility and strip life of meaning and purpose. In *The Blank Slate* Pinker retraces the history that led people to view human nature as dangerous, and unsnarls the moral and political debates that have entangled the idea along the way.

<http://mitworld.mit.edu/video/23/>

“The Blank Slate: The Modern Denial of Human Nature” - a talk by Professor Steven Pinker given in October 2002 – can be viewed online

<http://psych.hanover.edu>

the psychology department of Hanover College, USA; full of notes, demonstrations, animations, links etc including learning resources

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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
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