



Reference List – AS and A Level Studies

Cambridge International AS & A Level Psychology 9990

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Introduction

An essential part of teaching psychology is the delivery of core studies (AS Level) and key study summaries and example studies (A Level). Students should be able to use studies to support their understanding and demonstrate their knowledge. Learning, applying and evaluating study information is fundamental to the development of students' skills and teaches them to use a wide variety of resource materials.

This reference list will provide full references for the core studies and key studies listed in the syllabus. It will also provide full references for the example studies which are only listed by author and year in the syllabus.

It will also provide some guidance on the use of studies in teaching and what candidates need to know about each type of study.

More information on using research studies in your teaching can be found in the support document *AS & A Level Psychology Teaching Research Studies*. In addition, the *AS & A Level Psychology Scheme of Work* identifies a number of sources of information for each unit of the syllabus.

These support documents can be found on the School Support Hub at **www.cambridgeinternational.org/support**

AS Level core studies

At AS Level, students should be familiar with and should have read all of the 12 core studies. Students need to have a detailed understanding of the 12 core studies outlined in the syllabus.

For each of the core studies, candidates should show understanding of:

- the **psychology** that is being investigated
- the **background** to the study
- the **aim(s)** of the study
- the **procedure** of the study, including all methodology as appropriate, such as the research methods used, sample size and demographics (if known) and sampling technique (if known), experimental design, controls, question types, research technique for data collection and measured and manipulated variables
- the **ethical issues** relating to the study
- the **results** of the study, including the main/significant quantitative findings, the main qualitative findings and how they are or could be represented and interpreted
- the **conclusion(s)** the psychologist(s) drew or that could be drawn from the study
- the **strengths and weaknesses** of all elements of the study.

Candidates should be able to:

- describe and evaluate the **methodology** used
- consider how the study relates to **psychological issues and debates**.

Biological approach

Dement, W and Kleitman, N (1957), The relation of eye movements during sleep to dream activity: An objective method for the study of dreaming. *Journal of Experimental Psychology*, 53(5): 339–46

Hassett, J M, Siebert, E R and Wallen, K (2008), Sex differences in rhesus monkey toy preferences parallel those of children. *Hormones and Behaviour*, 54(3): 359–64

Hölzel, B K, Carmody, J, Vangel, M, Congleton, C, Yerramsetti, S M, Gard, T and Lazar, S W (2011), Mindfulness practice leads to increases in regional brain gray matter density. *Psychiatry Research*, 191(1): 36–43

Cognitive approach

Andrade, J (2010), What does doodling do? *Applied Cognitive Psychology*, 24(1): 100–6

Baron-Cohen, S, Wheelwright, S, Hill, J, Raste, Y and Plumb, I (2001), The ‘Reading the Mind in the Eyes’ Test revised version: a study with normal adults, and adults with Asperger syndrome or high-functioning autism. *Journal of Child Psychology and Psychiatry*, 42(2): 241–51

Pozzulo, J D, Dempsey, J, Bruer, K and Sheahan, C (2011), The Culprit in Target-Absent Lineups: Understanding Young Children’s False Positive Responding. *Journal of Police and Criminal Psychology*, 27(1): 55–62

Learning approach

Bandura, A, Ross, D and Ross, S A (1961), Transmission of aggression through imitation of aggressive models. *Journal of Abnormal and Social Psychology*, 63(3): 575–82

Fagen, A, Acharya, N and Kaufman, G E (2014), Positive Reinforcement Training for a Trunk Wash in Nepal's Working Elephants: Demonstrating Alternatives to Traditional Elephant Training Techniques. *Journal of Applied Animal Welfare Science*, 17(2): 83–97

Saavedra, L M and Silverman, W K (2002), Case study: disgust and a specific phobia of buttons. *Journal of the American Academy of Child and Adolescent Psychiatry*, 41(11): 1376–79

Social approach

Milgram, S (1963), Behavioral Study of Obedience. *Journal of Abnormal and Social Psychology*, 67(4): 371–78

Perry, A, Mankuta, D and Shamay-Tsoory, S G (2015), OT promotes closer interpersonal distance among highly empathic individuals. *Social, Cognitive and Affective Neuroscience*, 10(1): 3–9

Piliavin, I M, Rodin, J and Piliavin, J A (1969), Good Samaritanism: An Underground Phenomenon? *Journal of Personality and Social Psychology*, 13(4): 289–99

A Level studies

At A Level candidates study two specialist options.

In each specialist option there is a full reference for both key studies and example studies.

Key studies

It is **not** necessary for students to read the original study but you must provide them with a detailed summary of the key study which must cover all the aspects listed.

For each of the key studies, candidates should show knowledge and understanding of:

- the **context** of the study and relationship to other studies
- the **main theories/explanations** included in the study
- the **aim(s)** and **hypotheses** of the study [if stated]
- the **design** of the study, including all methodology as appropriate, such as the research method(s) used, sample size and demographics [if known] and sampling technique [if known], procedure, technique for data collection
- the **results, findings and conclusions** of the study
- the main discussion points of the study.

For each key study candidates should be able to:

- describe and evaluate research methods used in and methodological concepts included in the study (for AS and A Level)
- describe and evaluate the psychological issues and debates (for AS and A Level) included in the study.

Example studies

Example studies are provided to help teachers find suitable examples of the way psychologists have investigated psychological theories and concepts, and the research methodology used in these types of investigation. Example studies will **not** be directly assessed.

They are provided for topics when it is useful for students to be familiar with a study in order to understand the content. Candidates will not be asked questions which require a specific knowledge of these example studies, however candidates should use an example in their responses.

Candidates are **not** expected to read the original study, a summary is sufficient. The focus should not be on the details of the study but rather what it might tell us about this topic of psychology. Where a research technique such as eye-tracking is specifically mentioned in the subject content, or where a research method or a methodological issue such as validity is mentioned in the relevant issues at the end of each topic, this should be a feature of the summary you provide for students.

If there is a good summary available on the internet or in a textbook this might be acceptable as long as it covers the required psychological topic and any required research methodology.

Where an example is provided, it does not necessarily cover every part of the content of the topic.

You **can** use a different example if you know of one which sufficiently covers the subject content using appropriate research methodology.

Sourcing the information

This document contains the references in full, for information only. For example studies, in some cases, a more recent or more accessible version of the original study or source is listed here than in the syllabus, and in many cases alternative sources will be possible for the same material.

Clinical Psychology

References for key studies

Freeman, D, Slater, M, Bebbington, P E, Garety, P A, Kuipers, E, Fowler, D, Met, A, Read, C, Jordan, J and Vinayagamoorthy, V (2003), Can virtual reality be used to investigate persecutory ideation? *The Journal of Nervous and Mental Disease*, 191(8): 509–14

Oruč, L, Verheyen, G R, Furac, I, Jakovljević, M, Ivezić, S, Raeymaekers, P and Broeckhoven, C V (1997), Association analysis of the 5-HT_{2C} receptor and 5-HT transporter genes in bipolar disorder. *American Journal of Medical Genetics*, 74(5): 504–6

Grant, J E, Kim, S W, Hollander, E and Potenza, M N (2008), Predicting response to opiate antagonists and placebo in the treatment of pathological gambling. *Psychopharmacology*, 200(4): 521–27

Chapman, L K and DeLapp, R C (2013), Nine Session Treatment of a Blood–Injection–Injury Phobia With Manualized Cognitive Behavioral Therapy: An Adult Case Example. *Clinical Case Studies*, 20(10): 299–312

Lovell, K, Cox, D, Haddock, G, Jones, C, Raines, D, Garvey, R, Roberts, C and Hadley, S (2006), Telephone administered cognitive behaviour therapy for treatment of obsessive compulsive disorder: randomised controlled non-inferiority trial. *BMJ: British Medical Journal*, 333(7574): 883

Examples for teaching

1.1 Schizophrenia

Sensky, T, Turkington, D, Kingdon, D, Scott, J L, Scott, J, Siddle, R, O’Carroll, M and Barnes, T R (2000), A randomized controlled trial of cognitive-behavioral therapy for persistent symptoms in schizophrenia resistant to medication. *Archives of General Psychiatry*, 57(2): 165–72

1.2 Mood (affective) disorders: depressive disorder (unipolar) and bipolar disorder

Seligman, M E, Castellon, C, Cacciola, J, Schulman, P, Luborsky, L, Ollove, M and Downing, R (1988), Explanatory style change during cognitive therapy for unipolar depression. *Journal of Abnormal Psychology*, 97(1): 13–18

1.3 Impulse control disorders

Glover, J H (1985), A case of kleptomania treated by covert sensitization. *British Journal of Clinical Psychology*, 24(3): 213–14

Blaszczynski, A and Nower, L (2003), Imaginal Desensitisation: A Relaxation-Based Technique for Impulse Control Disorders. *Journal of Clinical Activities, Assignments & Handouts in Psychotherapy Practice*, 2(4): 1–14

1.4 Anxiety disorders and fear-related disorders

Mas, M B, Jiménez, A M L, and San Gregorio, M Á P (2010), Blood-injection Phobia Inventory (BIPi): Development, reliability and validity. *Anales de Psicología*, 26(1): 58–71

Öst, L G (1992), Blood and injection phobia: background and cognitive, physiological, and behavioural variables. *Journal of Abnormal Psychology*, 101(1): 68–74

Watson, J B and Rayner R (1920), Conditioned emotional reactions. *Journal of Experimental Psychology*, 3(1)

Freud, S (1909), Analysis of a phobia of a five year old boy. *The Pelican Freud Library* (1977), Vol 8, Case Histories 1: 169–306

1.5 Obsessive-compulsive disorder (OCD)

Rapoport, J L (1989), *The Boy Who Couldn't Stop Washing*. New York: Plume

Lehmkuhl, H D, Storch, E A, Bodfish, J W and Geffken, G R (2008), Brief Report: Exposure and Response Prevention for Obsessive Compulsive Disorder in a 12-year-old with Autism. *Journal of Autism and Developmental Disorders*, 38(5): 977–81

Consumer Psychology

References for key studies

North, A C, Shilcock, A and Hargreaves, D J (2003), The Effect of Musical Style on Restaurant Customers' Spending. *Environment and Behavior*, 35(5): 712–18

Robson, S K, Kimes, S E, Becker, F D and Evans, G W (2011), Consumers' Responses to Table Spacing in Restaurants. *Cornell Hospitality Quarterly*, 52(3): 253–64

Hall, L, Johansson, P, Tärning, B, Sikström, S and Deutgen, T (2010), Magic at the marketplace: Choice blindness for the taste of jam and the smell of tea. *Cognition*, 117(1): 54–61

Becker, L, van Rompay, T J, Schifferstein, H N and Galetzka, M (2011), Tough package, strong taste: The influence of packaging design on taste impressions and product evaluations. *Food Quality and Preference*, 22(1): 17–23

Snyder, M and DeBono, K G (1985), Appeals to image and claims about quality: Understanding the psychology of advertising. *Journal of Personality and Social Psychology*, 49(3): 586–97

Examples for teaching

2.1 The physical environment

Mower, J M, Kim, M and Childs, M L (2012), Exterior atmospherics and consumer behavior: Influence of landscaping and window display. *Journal of Fashion Marketing and Management*, 16(4): 442–53

Vrechopoulos, A P, O’Keefe, R M, Doukidis, G I and Siomkos, G J (2004), Virtual store layout: an experimental comparison in the context of grocery retail. *Journal of Retailing*, 80(1): 13–22

Woods, A T, Poliakoff, E, Lloyd, D M, Kuenzel, J, Hodson, R, Gonda, H, Batchelor, J, Dijksterhuis, G B and Thomas, A (2011), Effect of background noise on food perception. *Food Quality and Preference*, 22(1): 42–47

Chebat, J C and Michon, R (2003), Impact of ambient odors on mall shoppers’ emotions, cognition, and spending: A test of competitive causal theories. *Journal of Business Research*, 56(7): 529–39

Machleit, K A, Eroglu, S A and Mantel, S P (2000), Perceived Retail Crowding and Shopping Satisfaction: What Modifies This Relationship? *Journal of Consumer Psychology*, 9(1): 29–42

2.2 The psychological environment

Dogu, U and Erkip, F (2000), Spatial Factors Affecting Wayfinding and Orientation: A Case Study in a Shopping Mall. *Environment and Behavior*, 32(6): 731–55

Gil, J, Tobari, E, Lemlij, M, Rose, A and Penn, A R (2009), The Differentiating Behaviour of Shoppers Clustering of Individual Movement Traces in a Supermarket. In Koch, D, Marcus, L and Steen, J (eds) *Proceedings of the 7th International Space Syntax Symposium*. Royal Institute of Technology (KTH): Stockholm, Sweden

Pavesic, D (2005), The Psychology of Menu Design: Reinvent Your ‘Silent Salesperson’ to Increase Check Averages and Guest Loyalty. *Hospitality Faculty Publications*, paper 5, Georgia State University

Dayan, E and Bar-Hillel, M (2011), Nudge to nobesity II: Menu positions influence food orders. *Judgment and Decision Making*, 6(4): 333–42

Lockyer, T (2006), Would a restaurant menu item by any other name taste as sweet? *Hospitality Review*, 24(1): 3

Milgram, S, Liberty, H J, Toledo, R and Wackenhut, J (1986), Response to intrusion into waiting lines. *Journal of Personality and Social Psychology*, 51(4): 683–89

2.3 Consumer decision-making

Jedetski, J, Adelman, L and Yeo, C (2002), How Web Site Decision Technology Affects Consumers. *IEEE Internet Computing*, 6(2): 72–79

Wansink, B, Kent, R J and Hoch, S (1998), An Anchoring and Adjustment Model of Purchase Quantity Decisions. *Journal of Marketing Research*, 35(1): 71–81

del Campo, C, Pauser, S, Steiner, E and Vetschera, R (2016), Decision making styles and the use of heuristics in decision making. *Journal of Business Economics*, 86(4): 389–412

Shleifer, A (2012), Psychologists at the Gate: A Review of Daniel Kahneman’s *Thinking, Fast and Slow*. *Journal of Economic Literature*, 50(4): 1–12

Burke, R R and Srull, T K (1988), Competitive Interference and Consumer Memory for Advertising. *Journal of Consumer Research*, 15(1): 55–68

2.4 The product

Atalay, A S, Bodur, H O and Rasolofoarison, D (2012), Shining in the Center: Central Gaze Cascade Effect on Product Choice. *Journal of Consumer Research*, 39(4): 848–66

Kardes, F R, Fennis, B M, Hirt, E R, Tormala, Z L and Bullington, B (2007), The role of the need for cognitive closure in the effectiveness of the disrupt-then-reframe influence technique. *Journal of Consumer Research*, 34(3): 377–85

Sinha, P K, Banerjee, A and Uniyal, D P (2002), Deciding Where to Buy: Store Choice Behaviour of Indian Shoppers. *Vikalpa*, 27(2): 13–28

Nordvall, A C (2014), Consumer Cognitive Dissonance Behavior in Grocery Shopping. *International Journal of Psychology and Behavioral Sciences*, 4(4): 128–35

2.5 Advertising

Ciceri, A, Russo, V, Songa, G, Gabrielli, G and Clement, J (2020), A Neuroscientific Method for Assessing Effectiveness of Digital vs. Print Ads Using Biometric Techniques to Measure Cross-Media Ad Experience and Recall. *Journal of Advertising Research*, 60(1): 71–86

Auty, S G and Lewis, C (2004), Exploring children's choice: The reminder effect of product placement. *Psychology and Marketing*, 21(9): 697–713

Fischer, P M, Schwartz, M P, Richards, J W, Goldstein, A O and Rojas, T H (1991), Brand Logo Recognition by Children Aged 3 to 6 Years Mickey Mouse and Old Joe the Camel. *JAMA: Journal of American Medical Association*, 266(22): 3145–48

Kohli, C, Leuthesser, L and Suri, R (2007), Got slogan? Guidelines for creating effective slogans. *Business Horizons*, 50(5): 415–22

Health Psychology

References for key studies

Savage, R and Armstrong, D (1990), Effect of a general practitioner's consulting style on patients' satisfaction: a controlled study. *BMJ: British Medical Journal*, 301(6758): 968–70

Yokley, J M and Glenwick, D S (1984), Increasing the immunization of preschool children; an evaluation of applied community interventions. *Journal of Applied Behavior Analysis*, 17(3): 313–25

Brudvik, C, Moutte, S D, Baste, V and Morken, T (2016), A comparison of pain assessment by physicians, parents and children in an outpatient setting. *Emergency Medicine Journal*, 34(3): 138–44

Bridge, L R, Benson, P, Pietroni, P C and Priest, R G (1988), Relaxation and imagery in the treatment of breast cancer. *BMJ: British Medical Journal*, 297: 1169–72

Shoshani, A and Steinmetz, S (2014), Positive Psychology at School: A School-Based Intervention to Promote Adolescents' Mental Health and Well-Being. *Journal of Happiness Studies*, 15(6): 1289–1311

Examples for teaching

3.1 The patient–practitioner relationship

McKinstry, B and Wang, J X (1991), Putting on the style: What patients think of the way their doctor dresses. *British Journal of General Practice*, 41(348): 270, 275–78

McKinlay, J B (1975), Who is Really Ignorant – Physician or Patient? *Journal of Health and Social Behavior*, 16(1): 3–11

Safer, M A, Tharps, Q J, Jackson, T C and Leventhal, H (1979), Determinants of Three Stages of Delay in Seeking Care at a Medical Clinic. *Medical Care*, 17(1): 11–29

Aleem, A and Ajarim, D S (1995), Munchausen Syndrome – Presenting as Immunodeficiency: A Case Report and Review of Literature. *Annals of Saudi Medicine*, 15(4): 404–6

3.2 Adherence to medical advice

Laba, T L, Brien, J A and Jan, S (2012), Understanding rational non-adherence to medications. A discrete choice experiment in a community sample in Australia. *MBC Family Practice*, 13(61)

Riekert, K A and Drotar, D (1999), Who Participates in Research on Adherence to Treatment in Insulin-dependent Diabetes Mellitus? Implications and Recommendations for Research. *Journal of Pediatric Psychology*, 24(3): 253–58

Chung, K F and Naya, I (2000), Compliance with an oral asthma medication: a pilot study using an electronic monitoring device. *Respiratory Medicine*, 94(9): 852–58

Chaney, G, Clements, B, Landau, L, Bulsara, M and Watt, P (2004), A new asthma spacer device to improve compliance in children: A pilot study. *Respirology*, 9(4): 499–506

3.3 Pain

MacLachlan, M, McDonald, D and Waloch, J (2004), Mirror treatment of lower limb phantom pain: A case study. *Disability and Rehabilitation*, 26(14–15): 901–4

3.4 Stress

Chandola, T, Britton, A, Brunner, E, Hemingway, H, Malik, M, Kumari, M, Bradrick, E, Kivimaki, M and Marmot, M (2008), Work stress and coronary heart disease: What are the mechanisms? *European Heart Journal*, 29(5): 640–48

Wang, J, Rao, H, Wetmore, G S, Furlan, P M, Korczykowski, M, Dinges, D F and Detre, J A (2005), Perfusion functional MRI reveals cerebral blood flow pattern under psychological stress. *Proceedings of the National Academy of Sciences of the United States of America*, 102(49): 17804–09

Evans, G W and Wener, R E (2007), Crowding and personal space invasion on the train: Please don't make me sit in the middle. *Journal of Environmental Psychology*, 27(1): 90–4

Budzynski, T H and Stoyva, J M (1969), An instrument for producing deep muscle relaxation by means of analog information feedback. *Journal of Applied Behavior Analysis*, 2(4): 231–37

3.5 Health promotion

Janis, I L and Feshbach, S (1953), Effects of fear-arousing communications. *The Journal of Abnormal and Social Psychology*, 48(1): 78–92

Lewin, B, Robinson, I H, Clay, E L, Irving J B and Campbell, M (1992), Effects of self-help post myocardial-infarction rehabilitation on psychological adjustment and use of health services. *The Lancet*, 339(8800): 1036–40

Tapper, K, Horne, P J and Lowe, C F (2003), The Food Dudes to the rescue! *Psychologist*, 16(1): 18–21

Fox, D K, Hopkins, B L and Anger, W K (1987), The long-term effects of a token economy on safety performance in open-pit mining. *Journal of Applied Behavior Analysis*, 20(3): 215–24

Weinstein, N D (1980), Unrealistic optimism about future life events. *Journal of Personality and Social Psychology*, 39(5): 806–20

Seligman, M E (2004), Can happiness be taught? *Daedalus*, 133(2): 80–87

Organisational Psychology

References for key studies

Landry, A T, Zhang, Y, Papachristopoulos, K and Forest, J (2019), Applying Self-Determination Theory to understand the motivational impact of cash rewards: New evidence from lab experiments. *International Journal of Psychology*, 55(2): 487–98

Cuadrado, I, Morales, J F and Recio, P (2008), Women’s access to managerial positions: an experimental study of leadership styles and gender. *The Spanish Journal of Psychology*, 11(1): 55–65

Claypoole, V L and Szalma, J L (2019), Electronic Performance Monitoring and sustained attention: Social facilitation for modern applications. *Computers in Human Behavior*, 94: 25–34

Swat, K (1997), Monitoring of Accidents and Risk Events in Industrial Plants. *Journal of Occupational Health*, 39(2): 100–04

Giacalone, R A and Rosenfeld, P (1987), Reasons for Employee Sabotage in the Workplace. *Journal of Business and Psychology*, 1(4): 367–78

Examples for teaching

4.1 Motivation to work

Saeednia, Y (2011), Generating a scale measuring hierarchy of basic needs. *Procedia-Social and Behavioral Sciences*, 15: 3084–94

4.3 Group behaviour in organisations

Tuckman, B W and Jensen, M A (2010), Stages of Small-Group Development Revisited. *Group Facilitation: A Research & Application Journal*, 10

Earley, P C (1993), East Meets West Meets Mideast: Further Explorations of Collectivistic and Individualistic Work Groups. *Academy of Management Journal*, 36(2): 319–48

Einarsen, S (1999), The nature and causes of bullying at work. *International Journal of Manpower*, 20(1/2): 16–27

4.4 Organisational work conditions

Kompier, M A (2006), The ‘Hawthorne effect’ is a myth, but what keeps the story going? *Scandinavian Journal of Work, Environment & Health*, 32(5): 402–12

Oldham, G R and Brass, D J (1979), Employee Reactions to an Open-Plan Office: A Naturally Occurring Quasi-Experiment. *Administrative Science Quarterly*, 24(2): 267–84

Gold, D R, Rogacz, S, Bock, N, Tosteson, T D, Baum, T M, Speizer, F E and Czeisler, C A (1992), Rotating shift work, sleep, and accidents related to sleepiness in hospital nurses. *American Journal of Public Health*, 82(7): 1011–14

Fox, D K, Hopkins, B L and Anger, W K (1987), The long-term effects of a token economy in safety performance in open-pit mining. *Journal of Applied Behavior Analysis*, 20(3): 215–24

4.5 Satisfaction at work

Belias, D and Sklikas, D (2013), Aspects of job design. *International Journal of Human Resource Management and Research*, 3(4): 85–94

Presenting studies

AS Level core studies

At AS Level candidates must study all 12 core studies. Candidates may be asked questions about any aspect of the core studies.

The studies have been chosen to ensure that they exemplify the approach being studied, cover a range of research methods and issues and debates and are relatively easy to read for AS Level students.

A Level studies

At A Level there are two types of studies: key studies and example studies.

Students are **not** expected to have read the original study. Some are quite complex and teachers should provide a good summary of the studies which cover the necessary points for their candidates.

The studies at A Level cover a broad range of psychological research and some of the studies cover more than one experiment.

Where they cover more than one experiment, we indicate which one will be the focus of any questions. Candidates should still study the context, theories and main discussion points but we will only test the design and results of the experiment stated as the focus.

Key studies

These are the studies which students will need to understand in some depth. To help teachers we have provided a list of things that students should know about the key studies.

We may ask questions on any of the aspects of the key studies listed in the syllabus and your summary must include details of these aspects.

Example studies

These studies are provided to help you deliver the course using suitable examples of psychological research to illustrate the content, research methods and issues and debates.

You do not need to use the study suggested, but should provide an example to help candidates understand the content. If you choose to replace an example study with another study you should make sure that the replacement study covers the content, relevant research methods and issues and debates.

Students do **not** need to read an original study, but may do so if you think it is appropriate. Some are quite short and readable, while others are more complex and will need summarising by you. If there is a good summary available on the internet or in a textbook this should be acceptable as long as it covers the required psychological topic and any required research methodology.

There is a greater emphasis on the role of studies in furthering our understanding of psychology compared to AS Level. Therefore the study summaries you produce are likely to have less detail about the study itself and the way it was conducted, and instead explore the issues the study has raised in more detail.

Teachers are advised to consult the support document *Teaching Research Studies* which is available on the School Support Hub at www.cambridgeinternational.org/support

Example summaries of key studies

Example 1

Key study on association analysis of genetics of depressive disorder: Oruč et al. (1997).

Oruč, L, Verheyen, G R, Furac, I, Jakovljević, M, Ivezić, S, Raeymaekers, P and Broeckhoven, C V (1997), Association analysis of the 5-HT_{2C} receptor and 5-HT transporter genes in bipolar disorder. *American Journal of Medical Genetics*, 74(5): 504–06

Context of the study and relationship to other studies

It should be noted that bipolar disorder (manic and depressive episodes) should only be considered in sub-topic 1.2.1 whereas depressive disorder (unipolar) applies to all sub-topics (1.2.1, 1.2.2 and 1.2.3). The title of the key study is ‘genes in *bipolar* disorder’ (which appears in sub-topic 1.2.2). This study is *explanation* (i.e. sub-topic 1.2.2) and is included as an illustration of the genetic explanation. The genetic explanation applies equally to both bipolar and unipolar disorders however this study only used bipolar participants.

Bipolar disorder is when mood alternates between episodes of manic and depressive episodes. Depressive disorder (unipolar) is depressive episodes only. Several explanations have been proposed to explain depressive disorder (unipolar). These are **Biological explanations** (biochemical and genetic) and **Psychological explanations** (Beck’s cognitive theory and learned helplessness/attributional style).

Biological – biochemical: This explanation proposes that depressive disorder may be caused by neurochemicals. Schildkraut (1965) for example suggested that too much noradrenaline causes manic episodes and too little causes depressive episodes. It has also been found that both serotonin and noradrenaline imbalances are involved in mood (affective) disorders.

Biological – genetic: See below.

Psychological explanations – Beck’s cognitive theory of depression (1979) proposes that people react differently to aversive stimuli because of negative automatic thoughts (NATs). Depressive disorder results from the negative cognitive triad, comprising unrealistically negative views about the self, the world and the future.

Psychological explanations – learned helplessness/attributional style, e.g. Seligman, et al. (1988). If a person makes an internal attribution (they are the cause), and if they believe that this is stable and global (that the cause is consistent and applies everywhere), then they may feel helpless and may experience depression.

Note that treatments for depressive disorder generally match explanations. For example, if the cause is biochemical then anti-depressant biochemicals are given. If the cause is psychological (cognitive) then Beck’s cognitive restructuring can be used.

Main theories/explanations included in the study

Biological (genetic)

The genetic explanation involves studying people with depressive disorder and their first-degree relatives (parents and siblings) because they share 50 per cent of their DNA. Evidence suggests that bipolar depression may be transmitted from one generation to the next.

In relation to issues and debates this study raises, the genetic explanation is nature rather than nurture. It is also biological determinism and genetics exclude free-will. Reducing a cause to genetics alone is reductionist.

Aim(s) and hypotheses of the study [if stated]

Oruč et al. (1997) focused specifically on the genetic factors involved in bipolar disorder by studying the disturbances (or variations in DNA, which are called DNA polymorphisms) in serotonin transmitters (5-HTT), serotonin (5-HT) and serotonin receptors (5-HTR2c).

Aim: to find out whether the genes encoding for 5-HHT and 5-HTR2c are associated with susceptibility to bipolar disorder.

Design of the study

The study: method(s): clinical interviews; psychometric tests; blood/DNA analysis.

Sample: 42 patients (25 female, 17 male, aged 31–70) diagnosed with bipolar disorder and 40 controls (no personal or family history of mental ill-health).

Sampling technique: (specific technique not stated) participants recruited among in- and out-patients of two hospitals in Croatia.

Procedure: all participants were interviewed (clinical interview) by a psychiatrist and given psychometric tests. A clinical interview format is semi-structured (some standardised questions but flexibility for variation) and in this case the technique was face-to-face. For inter-rater reliability all interviews were reviewed and confirmed by a second psychiatrist. 16 participants (of the 42 with bipolar disorder) had a positive family history of mood (affective) disorders. The diagnosis was confirmed by medical records which is an objective measure. The same procedure was applied to the controls and all 40 had no history of mental ill-health. Participants provided a blood sample and using the standardised procedure (a scientific, objective process) for extracting DNA (known as an ABI automated DNA synthesizer) the specific DNA polymorphisms were identified.

Data: quantitative. No qualitative data was gathered.

[Results,] findings and conclusions of the study

Results: in this case the results are very complex; recall of these results will not be required.

Note: many academic studies include complex results and statistical analysis (such as in this study).

What is **not** required:

- (i) statistical testing and associated numbers (such as $p < 0.05$) because statistical testing is not a syllabus requirement
- (ii) complex tables of results/numbers (as in this study)
- (iii) full tables of numbers.

Findings:

- (i) There was no significant association between participants with bipolar disorder in the 5-HTR2c receptor gene or any other participant.
- (ii) There was no significant association between 5-HTT and bipolar disorder.
- (iii) Although just significant, evidence showed a difference between male and female participants in 5-HTR2c (note that serotonin levels are sexually dimorphic, meaning females produce more serotonin than males naturally).

Conclusions:

- (i) A genetic basis for bipolar disorder is not supported. However, there are limitations to the procedure used, such as the ‘power’ of the study and low sample size.
- (ii) The findings suggest that females might be more susceptible to bipolar disorder than males.

Main discussion points of the study

Discussion 1: Oruč et al. state that ‘No significant associations were found in the total patient sample’. Initially this seems to suggest that the genetic explanation for depressive episodes is incorrect. However, Oruč et al. were only looking at the serotonin transmission and receptor gene and, as they say, this is one approach and there are many others. Further, it is only one study, which might have errors, and so a whole approach should not be dismissed on this basis. Is the cause of depressive episodes therefore nature or nurture?

Discussion 2: Oruč et al. report that ‘these results suggest that variations in these genes may be responsible for a minor increase in susceptibility for bipolar disorder in women’. Is this a possibility? Are women more susceptible to bipolar disorder than men? If so, are their genetics responsible or should a social explanation be considered?

Candidates should be able to:

- **describe and evaluate research methods used in and methodological concepts included in the study (for AS and A Level)**

Note: For key studies candidates should consider the whole of the methodology, not just the aspects mentioned at the end of the topic (in this case experiments and reliability).

The research methods used were clinical interviews (face-to-face), standardised psychometric tests to confirm diagnosis and blood/DNA analysis.

- 1 The clinical interview was one-to-one and to avoid any misdiagnosis a second psychiatrist reviewed the interviews. This is checking the reliability and consistency of the diagnosis.
- 2 The researchers used standardised scientific testing (and equipment) which produces objective (rather than subjective) data.

The sample included 42 patients diagnosed with bipolar disorder and 40 controls. On the one hand this is a small sample but it can be argued that as this is genetics and ‘pure biology’ (no social variation or influence) a small sample is all that is needed. As genetics are common in all people across the world the fact that the study was conducted in only one location is irrelevant and the findings can be generalised. If a psychological explanation was being investigated, then the society in which the person lives would be crucial and so generalisations from a study in Croatia would be less secure.

- **describe and evaluate the psychological issues and debates (for AS and A Level) included in the study.**

Nature versus nurture: Because of its focus on genetics, this study is an example of the nature side of the debate. Genes are passed from one generation to the next and so if a parent has depressive episodes then the nature approach suggests that a person may inherit the genes that cause depressive episodes from a parent. The findings of the Oruč et al. study do not support this claim, but it is just one study with a limited focus. It does not mean that the nature explanation is wrong.

Reductionism versus holism: The limited focus mentioned above is that the study by Oruč et al. focused on the serotonin transmitters and serotonin receptors only, and so this is reductionist because it does not study other potential aspects of gene transmission and it does not consider the role of psychological factors that may cause depressive episodes. A more holist approach would suggest that many factors including both biological and psychological factors should be taken into consideration.

Determinism versus free-will: Focusing on genetics as the cause of depressive episodes is biological determinism. The Oruč et al. study does not consider free-will at all. A cognitive explanation would consider free-will.

Example 2

Key study on musical style and restaurant customers' spending: North et al. (2003).

North, A C, Shilcock, A and Hargreaves, D J (2003), The Effect of Musical Style on Restaurant Customers' Spending. *Environment and Behavior*, 35(5): 712–18

Context of the study and relationship to other studies and main theories/explanations included in the study

Background: There are many factors in the physical environment that can affect shoppers. These include retail atmospherics (such as odour and crowding) and retail store design. Sound has a major effect on consumers, influencing things like how much money is spent on food and the taste of the food itself. Sound includes noise (generally negative) and music (generally positive). Noise can occur in a shopping mall or it could be the background noise when eating food. Background music can also be played in shopping malls and different types of music can influence customer experience and spending in a restaurant. North et al. (2003) investigated the effect different types of music might have on restaurant customer spending. Previous research revealed that playing classical music resulted in customers spending more money on purchases of wine.

Aim(s) and hypotheses of the study [if stated]

Aim: to investigate whether the playing of background classical music would generalise from sales of wine from a wine store to increased spending of food and drink eaten in a restaurant.

Design of the study

The study: the study was a field experiment conducted in an 'upmarket' (expensive) restaurant in England.

Sample: 393 people, approximately equal numbers of male and female. 142 were exposed to the pop music condition, 120 to the classical and 131 to no music.

Sampling technique: opportunity sample where participants simply went to the restaurant to eat and did not know they were participants in a study.

Design: field experiment conducted over three weeks (18 evenings, closed Sundays).

IV: classical music, pop music and no music played at a constant volume level (control) lasting for 152 minutes (2 × 76 minute CDs) before any music was repeated (control). Participants were exposed to only one type of music (an independent measures design).

Controls: each condition was counterbalanced by day of the week, so each type of music was played on six different days over the three weeks.

DV: the mean amount of money (pounds sterling/GBP/£) spent per customer which could be analysed overall (total spend) or broken down into total food and total drink. Analysis could be further broken down into starters, main course, dessert, coffee, bar (for alcoholic and non-alcoholic drinks) and wine.

Data: quantitative because money is numerical. No qualitative data was gathered.

Results, findings and conclusions of the study

Results: total spend: classical music £32.51; pop music £29.46; no music £29.73.

Findings: playing background classical music leads to increased spending on food and drink.

Additionally:

- (i) There was very little difference in the amount spent on main course, starters or dessert.
- (ii) The no music condition resulted in greatest spending on wine alone (not what was expected) but if ‘bar’ (all drinks) and ‘wine’ are put together, then spending is the greatest for classical music.
- (iii) The greatest difference was spending on coffee: classical £1.06, pop £0.80 and no music £0.53.

Conclusions: the playing of background music influences customer spending in a restaurant with classical music resulting in the greatest amount spent per person.

Note: this study includes a full results table. Numbers from the full table are not required. As shown here the results are used to support the findings. It is logical to include the main findings, but ‘any two findings’ will receive credit.

Main discussion points of the study

Discussion 1: North et al. proposed three explanations for the findings. The first is that of ‘*synergy*’, *different atmospheric variables matching with classical music* resulted in increased spending. Second, *classical music was preferred* by participants which increased spending. However, neither explanation matches the findings of other studies. The third explanation, classical music promoting an ‘*upmarket*’ *atmosphere* resulting in increased spending, being the most likely.

Discussion 2: North et al. found that one restaurant with one type of music (classical) resulted in increased spending. What about other types of restaurant? Would classical music result in increased spending in all types of restaurant? It may be that other types of music would result in increased spending in other types of restaurant. In other words, to what extent can the findings of this restaurant be generalised? Further, what about other countries? Cultural differences would suggest that the findings of this study may only apply to one country.

Candidates should be able to:

- **describe and evaluate research methods used in and methodological concepts included in the study (for AS and A Level)**

Note: For key studies candidates should consider the whole of the methodology, not just the aspects mentioned at the end of the topic (in this case generalisations from findings and validity).

The research method was a field experiment with the IVs (type of music) and DV (spending) clearly defined. The setting is an actual restaurant and the people eating there did not know they were participating. Ecological validity is high. Many controls were applied as was counterbalancing. The data gathered is objective rather than subjective because the amount spent is in GBP/£ and participants did not know they were in a study.

The sample was an opportunity sample because the researchers took the opportunity to study people eating at the restaurant. If participants had volunteered, they would be aware of what was happening and give informed consent. However, the data gathered would then not be natural. To control participant variables the study was not conducted during school holidays and the music was counterbalanced over six days (closed on one day) so participants eating on the same day each week were exposed to each type of music.

- **describe and evaluate the psychological issues and debates (for AS and A Level) included in the study.**

Reductionism versus holism: The results could be considered overall (holist): total spend for the three types of music. Total spend can be broken down into food and drink. Food can be broken down into starters, main course and dessert and drink can also be divided into types. Restaurant owners would also break down each course, such as 'main course' into individual items so they would know what ingredients to order and which items sell more than others.

Determinism versus free-will: Is increased spending behaviour *determined* by the music playing in the background in the environment (environmental determinism)? The findings of this study suggest that it is.

Individual and situational explanations: The findings would suggest the specific situation the person is in (classical music resulting in more spending than pop music or no music) rather than something that is 'individual'.

Example summaries of example studies

Example 1 – McKinstry and Wang (1991)

Syllabus: 3.1 The patient–practitioner relationship

3.1.1 Practitioner and patient interpersonal skills

- non-verbal communications with a focus on practitioner clothing, including a study, e.g. McKinstry and Wang (1991).

Relevant issues and debates and methodology for this topic include: idiographic versus nomothetic, experiments, questionnaires, quantitative data, generalisations from findings.

The focus is not on the details of the study but rather what it might tell us about this element of psychology. The whole study is only shown here to demonstrate how this might lead to an evaluation sheet that would help learners summarise the key points.

McKinstry, B and Wang, J X (1991), Putting on the style: What patients think of the way their doctor dresses. *British Journal of General Practice*, 41(348): 270, 275–78

Background: psychologists are interested in the interpersonal skills shown by both patient and practitioner in a consultation. These include verbal communications and non-verbal communications. Verbal communication is what is said. Non-verbal communication is what is not said and includes things like hand movements, facial gestures and the clothes the practitioner is wearing. Non-verbal feedback from a patient is important to a practitioner because it conveys how much the patient understands, is happy or is upset. It is also important to know how much respect and confidence a patient has in a practitioner for example, which might be caused by the clothes the practitioner is wearing (the way they are dressed).

Aim: McKinstry and Wang (1991) investigated how acceptable patients found different styles of doctors' clothing and whether patients felt that this influenced their respect for his or her opinion.

The study: a field experiment using interviews with a questionnaire.

Sample: included 475 patients waiting to see 30 doctors in five medical practices in Scotland.

Sampling technique: opportunity sample where an interviewer asked people waiting to see a doctor to participate.

Design: Field experiment conducted in a waiting room of a medical practice. Eight photographs (the IV) were used of the same man and same woman. The man was dressed in five different styles: (a) white coat over formal suit; (b) formal suit, white shirt and tie; (c) tweed jacket, informal shirt and tie; (d) cardigan, sports shirt and slacks; and (e) denim jeans and open-neck short-sleeved shirt. The woman was dressed in three different styles: (f) white coat over skirt and jumper (sweater/pullover); (g) skirt, blouse and woollen jumper (sweater/pullover); and (h) pink trousers, jumper (sweater/pullover) and gold earrings. As participants looked at all eight photographs the experimental design is repeated measures.

DV: the 'acceptability' of each model, from 0 (low) to 5 (high) (5-point rating scale).

Procedure: the interview format was structured (same questions in same order to all participants); the technique was face-to-face (rather than by telephone) and the questions were closed. The first question was ‘Which doctor would you feel happiest about seeing for the first time?’, with 0–5 rating (closed question). Then they were asked about their confidence in the ability of the doctors, whether they would be unhappy about consulting any of them, and which one looked most like their own doctor. After that, a series of more closed questions followed about doctors’ dress in general.

Data: quantitative because we have data on which clothing style patients preferred and subjective because patients may not be truthful when asked by the interviewer.

Results, findings and conclusions

Results: Acceptability scores

Male: Style (b) 238, Style (a) 183 through to Style (e) 60

Female: Style (f) 263, Style (g) 222 and Style (h) 104

Findings: patients preferred a male doctor to be wearing a formal suit, white shirt and tie and a female doctor to be wearing a white coat over skirt and jumper (sweater/pullover).

Additionally, 41 per cent had more confidence in a formally dressed doctor. Older patients preferred a formally dressed doctor.

Conclusions: the majority (64 per cent) of patients thought that the clothes a doctor wears in a consultation is of some importance and so this is a relevant non-verbal factor in a patient-practitioner relationship.

	Discussion of issue	Impact on psychological understanding
Methodology	<p>Design: a field experiment with IVs and DV using a repeated measures design.</p> <p>The study used interviews: technique: face-to-face; format: structured with closed questions (quantitative data).</p> <p>The study used closed questions using a 5-point rating scale (quantitative data).</p> <p>The study followed ethical guidelines: people waiting to see a doctor were invited to participate in an interview about doctors.</p> <p>The sampling technique was opportunity sample because interviewers invited people in the waiting room to participate.</p>	<p>The experimenter manipulates the variables (eight different photographs) and measures the DV (ratings of each model on a 5-point scale). Repeated measures design eliminates participant variables (because each participant sees all eight photographs).</p> <p>Using a face-to-face interview is much more personal than using a telephone. The study was conducted in the waiting room of a health centre making it authentic for the participants.</p> <p>A structured interview means that all participants are asked the same questions in the same order and so their answers can be compared.</p> <p>Closed questions and a 5-point scale is quantitative data but as a participant may not be honest the data is subjective rather than objective.</p> <p>Using a 5-point scale allows participants to express variation in their answers. However, a 5-point scale has a middle or neutral option which a 4-point scale does not have.</p> <p>It is important that ethical guidelines are applied to all participants in the conduct of psychological studies. For example, these participants gave informed consent.</p> <p>An opportunity sample is sometimes called a 'convenience' sample and in this instance it was convenient for the interviewers to ask people in the waiting room to participate.</p>
Application to everyday life	<p>The study was conducted in a real-life setting, not an artificially created laboratory environment (high ecological validity).</p> <p>The study is a clear demonstration of this sub-topic and shows the importance of non-verbal communication.</p>	<p>In a medical consultation many verbal and non-verbal communication factors apply, and this study shows how important just one of those factors is, the way in which a doctor is dressed. Other factors may be more or less important, but they were not studied in this instance.</p>
Idiographic versus nomothetic	<p>Should we focus on what makes us unique or on what features we all have in common?</p>	<p>The aim of this study was to see if people preferred the same style of appearance in a doctor and the findings suggest that most people had confidence in a doctor wearing a white coat. However, not all did, and so perhaps a nomothetic approach does not apply to this topic.</p>

	Discussion of issue	Impact on psychological understanding
Generalisations from findings	Can the findings of this study be generalised to all people?	This study was conducted in five different waiting rooms, but they were all in Scotland. There may be cultural differences between preferences of people in Scotland and other countries across the world. Further, 475 people were studied and although this is a reasonably large number, the sample size does not make the sample representative.
Quantitative data	The study gathered quantitative data using closed questions.	Gathering quantitative data allows the analysis of the numbers so comparisons can be made between the conditions of the IV. Gathering qualitative data would have allowed the participants to explain their reasons for their choice.

Example 2 – Oldham and Brass (1979)

Syllabus: 4.4 Organisational work conditions

4.4.1 Physical work conditions

- impact of the design of the work environment focusing on open plan offices, including a study, e.g. Oldham and Brass (1979).

Relevant issues and debates and methodology for this topic include: determinism versus free-will, experiments, questionnaires, longitudinal studies, quantitative and qualitative data.

The focus is not on the details of the study but rather what it might tell us about this element of psychology. The whole study is only shown here to demonstrate how this might lead to an evaluation sheet that would help learners summarise the key points.

Oldham, G R and Brass, D J (1979), Employee Reactions to an Open-Plan Office: A Naturally Occurring Quasi-Experiment. *Administrative Science Quarterly*, 24(2): 267–84

Background: The conditions of the physical (and psychological) working environment should make people feel safe and comfortable. They should not experience any negative effects, whether physical or mental. Physical work conditions include things like illumination, e.g. the Hawthorne studies, temperature and noise which apply in many factories/industry. In an office environment the design (or type) of office can also affect levels of worker concentration, productivity and satisfaction. This is environmental (or specifically architectural) determinism.

Aim: Oldham and Brass (1979): to investigate the effects of moving from a conventional office (multi-room) to an open plan office (which has no interior walls or partitions).

The study: a naturally occurring quasi experiment using questionnaires and interviews to gather data.

Sample: 128 newspaper employees participated. They were divided into three groups.

Sampling technique: opportunity sample where workers in different types of office were invited to participate. 12 people invited did not participate (right to withdraw).

Design:

IV: (i) experimental group (n=76) who moved to the open plan office. (ii) control group (n=5) who did not move office. (iii) Quasi-control (n=26) who were chosen at random to move office.

DV: ratings of 15 variables such as work satisfaction and internal motivation on a 7-point scale. As all participants were exposed to only one type of office this is an independent measures design. All other factors were controlled as much as possible.

Data: data was collected at three time intervals, T1, T2 and T3. T1 data was collected 8 weeks before the move. T2 data was collected 9 weeks after the move and T3 data was collected 18 weeks after the move. The study is longitudinal.

Procedure: At each time point, all workers completed the same questionnaire. The technique was paper and pencil and the format included closed questions (using a 7-point rating scale where 1=low and 7=high). This gathers quantitative data. Fifteen variables were measured, including (i) Work satisfaction: the degree to which an employee is satisfied and happy with the job. (ii) Interpersonal satisfaction: the degree to which an employee is satisfied with co-workers and supervisors at work. (iii) Internal work motivation: the degree to which an individual experiences positive internal feelings when performing effectively on the job.

In addition, workers were interviewed, gathering qualitative data allowing workers to explain their feelings in relation to the office move. The interview format was unstructured, the technique was face-to-face and the questions were open-ended.

Results, findings and conclusions

Experimental group: all variables showed a decrease in:

- (i) ratings of work satisfaction (means of 5.37, 5.19 and 5.11 – taken at the three time points)
- (ii) rating of interpersonal satisfaction 5.22 to 4.95 to 4.90, and internal work motivation from 6.05 to 5.89 to 5.86.

Control group: no decrease in any variable.

In the interviews employees described the new office space as a 'fishbowl,' 'cage,' or 'warehouse', showing an inability to concentrate, develop close friendships and complete a job. It was reported as impossible in the open plan office to engage in a private conversation with co-workers or with supervisors.

Conclusions: open plan offices, the physical work environment, does have a negative effect particularly on the psychological well-being of workers, affecting their satisfaction, concentration, motivation and friendship opportunities.

	Discussion of issue	Impact on psychological understanding
Methodology	<p>The study used a naturally occurring quasi experiment with IV, DV and independent measures design.</p> <p>The study used questionnaires: technique: paper and pencil; format: closed questions using 7-point rating scale (quantitative data).</p> <p>The study used interviews: technique: face-to-face; format: unstructured with open questions (qualitative data).</p> <p>The study followed ethical guidelines: workers were invited to participate and 12 exercised their right to withdraw. Other guidelines do not apply; no deception for example.</p> <p>Sampling technique was opportunity sample because office workers involved in the office move were invited to participate.</p>	<p>An experiment has IV (type of office) and DV (ratings on 15 variables) and so is a 'powerful' research method.</p> <p>Paper and pencil questionnaires allow workers to answer the questions in their own time and with privacy.</p> <p>Using closed questions and a 7-point scale produces quantitative data but as a participant may not be honest the data is subjective rather than objective.</p> <p>Using a 7-point scale allows participants to express variation in their answers. This may be better than a 5-point scale. However, a 7-point scale has a middle or neutral option which a 4-point scale does not have.</p> <p>Using a face-to-face interview is much more personal than using a telephone.</p> <p>Open questions allow a participant to say as much or as little as they wish; it allows expansion of any views the participant has.</p> <p>It is important that ethical guidelines are applied to all participants in the conduct of psychological studies.</p> <p>The sample may be representative of any worker working in an open plan office.</p>
Approach	n/a	

	Discussion of issue	Impact on psychological understanding
Application to everyday life	<p>The study was conducted in a real-life setting, not an artificially created laboratory environment (high ecological validity).</p> <p>The study was conducted with office workers moving office, not participants with no experience of office work.</p> <p>The study is a clear demonstration of this sub-topic and the wider topic of the effect of physical working conditions on worker behaviour.</p>	<p>Many workers work in different types of office, so it is important to know which type of office (i) is the most productive and (ii) allows workers appropriate physical and psychological working conditions. Some workers like to socialise (open plan better) but others prefer not to be distracted (traditional office better).</p> <p>The study was not artificially created, but involved real workers moving permanently from one office type to another.</p>
Determinism versus free-will	Does the environment in which we work determine our behaviour?	This study suggests that it does. This is environmental determinism. For example, an open plan office with increased noise levels results in lower levels of concentration. The worker may have the choice to wear headphones to reduce the noise. The implications of office design are evident.
Longitudinal studies	The study was longitudinal as data was collected at T1 8 weeks before the move, T2 9 weeks after the move and T3 18 weeks after the move.	Gathering baseline data (T1) is important for any comparison. Gathering data after the move is also important (T2) but gathering data after 18 weeks (T3) allows workers to express their views after they have settled into their new environment.
Quantitative and qualitative data	The study gathered both quantitative data (closed questions) and qualitative data (open questions).	Gathering quantitative data allows the analysis of the numbers. Gathering qualitative data allows participants to express the way they feel and explain the reasons for the ratings they chose.

School feedback: ‘While studying Cambridge IGCSE and Cambridge International A Levels, students broaden their horizons through a global perspective and develop a lasting passion for learning.’

Feedback from: Zhai Xiaoning, Deputy Principal, The High School Affiliated to Renmin University of China

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