

## National Qualifications 2008-9

### Psychology Higher C212 12

#### Research Investigation Briefs for use in Session 2008/09

This document contains detailed briefs for each of the Research Investigation titles to be used in session 2008/09. Candidates must choose one of the Research Investigation Briefs from the list below:

#### *Psychology: Understanding the Individual*

- (1) **Memory**  
Images as an aid to memory. *(see page 3 for more detail)*
- (2) **Early Socialisation**  
A questionnaire survey investigating the perceived effectiveness of different ways of developing parenting skills. *(see pages 4-5 for more detail)*
- (3) **Stress**  
A laboratory experiment on the effect of a mild 'stressor' on a biological response. *(see page 6-7 for more detail)*

#### *Psychology: The Individual in the Social Context*

- (4) **Atypical Behaviour**  
A Correlational study investigating whether specific phobias of animals (zoophobia) are related to the animals' appearance *(see page 8-9 for more detail)*
- (5) **Intelligence**  
A questionnaire survey investigating people's lay beliefs about the nature of intelligence. *(see pages 10 -11 for more detail)*

*NB Several references are provided with each brief. Some are widely-available texts, others are journal articles. It is not necessary for teachers/lecturers and candidates to access all of these sources, for the RI report. The information provided in the brief may be used, and in all cases, many other relevant research studies are covered in various textbooks.*

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### Research Investigation Briefs for Session 2008/09

#### Note

Higher Psychology candidates are required to undertake a Research Investigation (RI) as one of the two components of the external Course assessment. Teachers and candidates should select one of the five research investigation briefs provided here. For session 2008-09: three are based on a topic from the Unit 'Psychology: Understanding the Individual', and two are from 'Psychology: The Individual in the Social Context'.

Please also refer to the current Arrangements document, particularly the Guidance on Learning and Teaching in the 'Investigating Behaviour' Unit specification. The practical skills of planning and logging research are required for internal assessment of that Unit, therefore the NAB materials for the Unit provide a template for a research plan and log; it is recommended that this forms the basis of the RI. Comprehensive guidance on the conduct and reporting of the RI is given in the SQA document *Research Investigation Guidance for Higher Psychology* (2004). Information on Course Assessment can be found in the *Course Assessment Specification (CAS)*.

The research design to be followed is provided in this document. The references provide useful background information on the topic under investigation. Teachers/lecturers are encouraged to promote candidates' active participation in the design process, rather than simply giving the brief as a handout.

It is the centre's responsibility to ensure that candidates follow ethical procedures with all participants. See the BPS *Code of Conduct, Ethical Principles and Guidelines* (2000), at [www.bps.org.uk](http://www.bps.org.uk); and the ATP *Guide to Ethics for Teachers and Students of Psychology at Pre-Degree Level* (2003), the latter being included in the SQA document *Higher Psychology Research Investigation Guidelines* (2004).

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### Research Investigation Briefs for Session 2008/09

#### *Psychology: Understanding the Individual*

##### (1) Memory

An investigation into the use of images to aid memory.

**Background:** This investigation is based on research by Paivio (1969; 1986) and is concerned with the use of images as an aid to recall.

Paivio suggested the dual-coding approach i.e information can be stored in memory based on verbal codes and sensory codes. He found that abstract nouns (e.g. psychology) were harder to recall than concrete nouns (e.g. dog). This is because it is easier to store concrete nouns visually as well as verbally - the dual-coding approach. This could be regarded as a mnemonic device to aid memory. Other related research was undertaken by Bower (1972) who asked participants to create a mental image of pairs of unrelated nouns e.g. 'cat' and 'skateboard', where the two nouns interacted e.g. the cat riding a skateboard. He found that the more bizarre the image the greater the recall. Anderson (1995) found that bizarre images produced the best recall due to their distinctiveness.

**Aim:** To investigate the use of images as a mnemonic device to aid memory.

**Hypothesis:** Candidates should devise suitable null and experimental hypotheses for the investigation.

**Method:** A laboratory based experiment using an independent groups (between subjects) design; the two conditions of the Independent Variable (IV) are: presentation of words **with** and **without** images.

The dependent variable (DV) is the amount of information recalled. Controls should be discussed, with particular reference being made to the use of an independent groups design. Candidates should identify an appropriate sampling method (opportunity is acceptable) and devise an ethical standardised procedure. Stimulus material should be prepared in the form of approximately 20 **concrete nouns**: 20 will be presented with an image and **the same** 20 without an image. Images may be obtained from Clipart or other copyright-free sources. Apparatus/materials should be prepared, including brief/request for consent, standardised instructions, debrief.

**Specific Ethical Considerations:** As well as routine ethical procedures (informed consent, right to withdraw, confidentiality, debrief, etc), candidates should be encouraged to explore ethical issues specific to this investigation. They should be aware of the personal nature of the recall task, and therefore of the need to ensure privacy, and sensitive treatment of participants.

**Results:** Data obtained should be tabulated as raw data. Descriptive statistics should be applied, which are appropriate to the data, i.e. a mean recall score; suitable type(s) of graph(s) should be selected, i.e. frequency histogram or bar chart. (See Ready Reckoner from SFEU).

##### **References:**

Anderson. J. R. (1995b) *Cognitive Psychology and its Implications*. New York: W.H. Freeman & Company. Bower. G. H. (1972) Mental Imagery and Associative Learning. In L. Gregg (ed.), *Cognition in Learning and Memory*. New York: Wiley. Paivio, A. (1969) Mental imagery in associative learning and memory. *Psychological Review*, 76, 241-263. Paivio. A. (1986) *Mental Representations: A Dual Coding Approach*. Oxford: Oxford University Press.

##### **Additional Reading**

Gross. R.D. (2005) *Psychology: The Science of Mind and Behaviour*, London: Hodder Arnold, Chapter 17 page 296-297.

Williamson. M. *et al.* (2007) *Higher Psychology*, Cheltenham: Nelson Thornes, Chapter 2 pages 46 – 51.

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(2) Early Socialisation

A questionnaire survey investigating the perceived effectiveness of different ways of developing parenting skills.

**Background:** Aspects of parenting have featured increasingly in the media and in government policy, often in relation to concerns about young people’s anti-social behaviour, substance abuse, teenage pregnancy and mental health. Poor quality parenting skills are often seen as the root of these problems, and a debate has arisen over the best ways of helping parents to develop effective skills. Research into child-rearing styles has demonstrated the impact of parenting on children’s development, in terms of cognitive and social competencies, self-esteem, levels of anti-social behaviour etc. Researchers include Baumrind (1967, 1971), Steinberg et al (1994), Coopersmith (1967), Buri et al (1988), Chen et al, 1998. More recently, government bodies such as the National Family and Parenting Institute (NFPI, [www.nfpi.org.uk](http://www.nfpi.org.uk)) have conducted extensive research into parenting.

**Aim:** To discover views on how people can develop effective parenting skills.

**Hypothesis:** Candidates should devise suitable null and alternative hypotheses for the investigation. These should be hypotheses of differences in perceived effectiveness, between the different modes of developing skills.

**Method:** A non-experimental survey by means of questionnaire. The two variables of interest are the different modes of developing skills (six categories), and their perceived effectiveness, however, these should not be termed ‘IV’ and ‘DV’, as this study is non-experimental. Candidates should construct a questionnaire to measure perceived effectiveness of each of six ways (or ‘modes’) in which parents can develop and be supported in their parenting skills: learning from their own parents, media (eg TV programmes on dealing with badly-behaved children), government policies (eg parents’ telephone helpline), lessons for all schoolchildren, classes for new parents, self-help parenting books and magazines. In the questionnaire participants will be asked to indicate how effective they think each ‘mode’ is, by means of items with a 7-point semantic differential rating scale, eg:

<b>Completely ineffective</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>Highly effective</b>
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The questionnaire could contain **either** six items (one per mode), **or** more than six if some or all modes are sub-divided (eg ‘media’ might contain TV programmes, radio programmes, online information, newspapers; ‘self-help’ may include books, magazines, groups; etc).

Candidates may also consider the inclusion of open-ended item(s), for qualitative analysis. ‘Opportunity sampling’ is acceptable, and participants may or may not be parents. The questionnaire elicits views/attitudes, not personal experience as a parent or as a child.

**Specific Ethical Considerations:** As well as routine ethical procedures (informed consent, right to withdraw, confidentiality, debrief, etc), candidates should be encouraged to address ethical issues specific to this investigation. In their brief or standard instructions, candidates should **make it very clear to participants that they are NOT being asked about their own parenting practices, nor about their own childhood experience.** They should also be alert to the possibility of participant discomfort or distress, in relation to personal experiences as a child or as a parent, and be prepared to ask them if they wish to withdraw.

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#### (2) Early Socialisation (contd)

**Results:** Data obtained should be tabulated as raw data. Each participant will have obtained six scores, one for each 'mode' of skills development. Overall scores for the six modes are obtained by simply totalling item scores for each mode across all participants. If each mode has several sub-items in the questionnaire, scores for sub-items must first be totalled to give the six 'mode' scores for each participant (then mode scores totalled across participants).

Descriptive statistics should be applied, which are appropriate to the data, eg measures of central tendency and of dispersion, for each mode. Alternatively (or in addition), scores may be converted to nominal/ categorical data by assigning each participant to one of the six modes/ categories, depending on their highest score (ie the mode they perceive as most effective). Frequencies for each mode would then be obtained (ie how often each of the six modes/categories was perceived as most effective). Summary tables of the data should be constructed, and suitable graph(s)/chart(s) should be selected, eg bar charts of totals, means and/or medians (for scores); pie-charts of frequencies (for categorical data).

#### **References:**

Baumrind, D.(1967). Child care patterns anteceding three patterns of preschool behaviour. *Genetic Psychology Monographs*, 75, 43-88.

Baumrind, D.(1971). Current patterns of parental authority. *Developmental Psychology Monographs*, 4 (2, Pt.2).

Buri, J.R., Louiselle, P.A., Misukanis, T.M. & Mueller, R.A. (1988). Effects of parental authoritarianism and authoritativeness on self-esteem. *Personality and Social Psychology Bulletin*, 14(2), 271-282.

Chen, C., Greenberger, E., Lester, G., Dong, Q. & Guo, M. (1998). A cross-cultural study of family and peer correlates of adolescent misconduct. *Developmental Psychology*, 34, 770-781.

Coopersmith, S.(1967). *The Antecedents of Self-esteem*. San Francisco, CA: Freeman.

National Family and Parenting Institute (NFPI) [www.nfpi.org.uk](http://www.nfpi.org.uk)

Steinberg, L., Lamborn, S.D., Darling, N., Mounts, N.S. & Dornbusch, S.M. (1994). Over-time changes in adjustment and competence among adolescents from authoritative, authoritarian, indulgent, and neglectful families. *Child Development*, 65, 754-770.

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### Research Investigation Briefs for Session 2008/09

#### (3) Stress

A laboratory experiment on the effect of a mild 'stressor' on a biological response.

**Background:** Hans Selye 1930s led the way on our reaction to stress. Selye found that our bodies react to stress, with a recognisable pattern of responses. He identified three phases that our resistance levels go through when we are exposed to a stressor. This project focuses on the first stage, known as the *alarm phase* when the body's resistance to physical damage drops for a short-time. During this phase the sympathetic branch of the Autonomic Nervous system (ANS) prepares the body to act, this is known as the fight or flight response. During this phase it is possible to measure the 'stress response' and observe an increase in blood pressure, blood-sugar rises, muscle tension increases, we breathe faster and deeper and we get a surge of adrenaline to give us extra capabilities should we need them. If the stressor no longer exists the body quickly returns to its normal level of resistance. Stress also has a good side, this is known as *Eustress*. Eustress can have a positive impact on a person and is achieved when the brain and body feel challenged, but also feel they can meet that challenge and have the resources to respond to the demands (Selye 1974, 1985)

In the past biodots have been used to show change in biological response, e.g. colour change can show mild arousal. Alternatively, change in pulse rate could be used.

**Aim:** To investigate the effect of a mild 'stressor' on a specific biological response.

**Hypotheses:** Candidates should devise suitable null and experimental hypotheses for the investigation.

**Method:** A laboratory based experiment using independent measures (independent groups) design. The two conditions of the independent variable (IV) are task with complete set of words available in word-search grid (mild stress) or incomplete task with word missing in word-search grid (or in alternative version task with complete set of dots or task with one dot missing). The dependent variable (DV) is change in biological measure (eg change in colour of biodot or rise/fall in pulse rate). Controls should be incorporated, including those relevant to an independent measures design. Candidates should identify an appropriate sampling method ('opportunity' sampling is acceptable) and devise an ethical standardised procedure. Materials should be prepared in the form of a task with two versions. A word search task could be used where version one has a word included that is not contained within the word-search grid (this should act as a mild 'stressor' for participants). Version two should have all words listed available on word-search grid.

Alternatively, the task could be a 'join-the-dots' brief where one dot (e.g. number 26 of 38 dots) is missing, with second version being complete.

To measure biological response a set of biodots could be used. Alternatively, a heart rate monitor could be used (or a manual measure using a stop-watch). Remember to take a resting rate to act as a control between groups prior to measuring under mild stress condition. Other apparatus/materials should be prepared including brief/request for consent, standardised instructions, debrief.

**Specific Ethical Considerations:** As well as routine ethical procedures (informed consent, right to withdraw, confidentiality, debrief, etc.), candidates should be encouraged to explore ethical issues specific to this investigation, such as deliberately putting participants under stress. However, it is the case that the stress is 'mild' and is less than participants will experience in everyday life, such as that experienced in the study of Higher Psychology. Sensitive treatment of participants should be encouraged, as some participants may see this as a test of ability and therefore feel embarrassed. It is important to consider whether to test participants individually or in quiet conditions to reduce levels of possible embarrassment.

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#### (3) Stress (contd)

**Results:** Data obtained should be tabulated as raw data. Descriptive statistics should be applied, which are appropriate to the data (see Ready Reckoner from SFEU). Suitable type(s) of graph(s) should be selected, i.e. bar chart of means/medians.

#### **References:**

Selye, H. A Syndrome produced by diverse noxious agents. *Nature* 138: 32 (1936).

Selye, Hans (1946). The general adaptation syndrome and the diseases of adaptation. *Journal of Clinical Endocrinology* 6:117-230

Selye, H., *Stress without Distress*. 1974, NY: J.B. Lippincott.

#### **Further Reading:**

Brady (1958). Ulcers in "Executive" monkeys. *Science*, 199, 95-100.

[http://www.flyfishingdevon.co.uk/salmon/year1/psy128coping\\_with\\_stress/psy128coping\\_with\\_stress.htm](http://www.flyfishingdevon.co.uk/salmon/year1/psy128coping_with_stress/psy128coping_with_stress.htm)

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#### *Psychology: The Individual in the Social Context*

#### (4) Atypical behaviour

A correlational study investigating whether specific phobias of animals (zoophobia) are related to the animals' appearance.

**Background:** A number of different explanations have been proposed for the origins of specific phobias, from various psychological perspectives, in particular the psychoanalytic, behaviourist, and biological approaches; accordingly, these approaches offer a range of treatments for phobic disorders, based on their respective explanations of the causes of the disorder.

Bennett-Levy and Marteau (1984) demonstrated that people's fear of a range of small animals was strongly correlated with the animals' appearance. In particular, the amount of fear expressed related to the extent of the animals' "ugliness" or "strangeness", ie difference from the human form, for example in terms of skin texture. These findings appear to confirm that there may be a biological "readiness" to learn fear of particular stimuli (eg certain animals), which Seligman (1971) has termed "preparedness": due to our evolutionary history we may have a genetic predisposition that means we can be easily conditioned to fear things that are likely to pose an actual threat to our survival, eg snakes and spiders (which may or may not be poisonous). It may be that the ugliness /strangeness of a stimulus animal, ie perceived difference in appearance from ourselves, triggers fear and avoidance. In this way, biological and conditioning factors interact. This view of the origins of phobias has implications for the treatment of animal phobias. Reviews of the background literature on the development and treatment of animal phobias are presented in Bennett-Levy and Marteau (1984), Gross (1987), McIlveen et al (1993), Roth (1990) and Atkinson et al (1990, or later editions); all give excellent coverage.

**Aim :** To investigate the basis of people's fear of animals.

**Hypothesis:** Candidates should devise suitable null and alternative hypotheses for the investigation. These should be hypotheses of correlation between the two co variables of fear of specified animals, and perceived strangeness/ ugliness of these animals. Selection of a one- or two-tailed alternative hypothesis should be based on previous research findings.

**Method :** Non-experimental study: a survey by means of a questionnaire consisting of rating scales. Two variables will be investigated for a range of animals and insects: fear and perceived strangeness/ ugliness. Each of these will be measured by having participants rate a number of animals and insects on a 10-point scale (a list of 29 animals and insects of varying degrees of attractiveness, in random order, can be found in McIlveen et al [1993]; alternatively a list can be generated by candidates). On one scale participants will be asked to indicate how afraid they are of each of the animals and insects. On the other scale perceived strangeness will be assessed by (the same) participants rating how "ugly" they find certain animals. Participants should complete the ratings for each *variable* in turn; this may be achieved by presenting each participant with two sheets (one scale on each). The same list of animals/insects should appear on both sheets, with space for the participant to write their rating (0-10) alongside each creature.

Candidates should identify an appropriate sampling method (opportunity sampling is acceptable). Participants may be fellow students, but all must be over 16 years.

**Specific Ethical Considerations:** As well as routine ethical procedures (informed consent, right to withdraw, confidentiality, debrief etc.), candidates should be encouraged to explore ethical issues specific to this investigation. For example, candidates should avoid using any potential participants who suffer from phobic disorder, and plan for contingencies such as how they might deal with any participants who show high fear ratings, and/ or express concern about their fears.

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#### Atypical behaviour (contd)

**Results :** Descriptive statistics should be selected which are appropriate for the data. The raw data table will show all participants' ratings for all animals/insects, on both scales. The initial analysis of the data involves computing the mean **fear** value for each of the animals and insects, then the mean **ugliness** value for each animal/insect (note that although mean scores are more usually calculated for the purpose of *comparison* between conditions in respect of a hypothesis of difference, here the purpose is to obtain one score per animal, on each variable, for the purpose of discovering a *relationship*, in respect of a hypothesis of correlation). A summary table can then be constructed showing, for each animal/insect, a pair of scores (one for fear and one for ugliness). To test the correlational hypothesis a suitable type of graph would be a scattergram. Additional descriptive statistics may also be informative, such as bargraphs of animal fear and ugliness mean values in rank order.

#### References:

- Atkinson, R.L., Atkinson, R.C., Smith, E.E., Bem, J.D. and Hilgard, E.R. (1990). *Introduction to Psychology* (10<sup>th</sup> ed.) Orlando: Harcourt Brace Jovanovich.
- Bennett-Levy, J. and Marteau, T. (1984) Fear of Animals: What is prepared? *British Journal of Psychology*, 75, 37-42.
- Gross, R.D.(1990) *Key Studies in Psychology*. London : Hodder & Stoughton.
- McIlveen, R., Higgins, L., Wadeley, A. and Humphreys, P. (1993). *BPS Manual of Psychology Practicals*. Leicester: BPS Books.
- Roth, I.(ed) (1990) *Introduction to Psychology*. Milton Keynes: Open University.
- Seligman, M.(1971) Phobias and Preparedness. *Behaviour Therapy*, 2, 307-320.

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### Research Investigation Briefs for Session 2008/09

#### (5) Intelligence

**A questionnaire survey investigating people's lay beliefs about the nature of intelligence.**

##### **Background:**

The nature of intelligence remains an area of controversy amongst psychologists. One way of illuminating the issue has been to investigate lay people's beliefs about intelligence, such as: what abilities / characteristics it comprises, to what extent it is influenced by 'nature' and 'nurture', whether it is fixed or can be changed through experience etc. As long ago as 1947, Flugel investigated "popular views on intelligence", using a short questionnaire of 16 items; in 1973 a replication of his study by Shipstone and Burt found that lay and professional views of intelligence had moved closer, for example in terms of there being more than one type of intelligence, greater recognition of environmental influence, reduced belief in gender differences, etc. Goodnow (1980) described various research techniques for investigating lay beliefs: simply asking people (as in Flugel's study), using rating scales, even analysing local proverbs (eg "thinkers are not doers"), etc. Such research can be used to identify differences in beliefs between cultures, between groups (eg parents and teachers, students from different disciplines, etc), between adults and children etc. Another branch of research has attempted to link beliefs about intelligence with other variables; for example, Stella Cottrell (2003) suggests that students' academic performance is affected by such beliefs, and therefore advises students to reflect on their own views of the nature of intelligence (see Cottrell's informal questionnaire for students, p.46).

**Aim:** to discover whether there are age differences in lay beliefs about the nature of intelligence, in terms of three features:

- Is intelligence one general underlying ability or does it comprise a number of different abilities/characteristics?
- To what extent is intelligence influenced by genes or by our environment (eg education, parents, diet etc)?
- To what extent is intelligence 'fixed' in a person, or can it be changed/improved?

**Hypothesis:** Candidates should devise suitable null and alternative hypotheses for the investigation. These should be hypotheses of difference, between age groups.

It is acceptable to provide one alternative hypothesis (and one null), but data analysis of score differences will have to be conducted for each questionnaire item separately. (Three pairs of hypotheses may be used if preferred, ie one alternative and one null for each questionnaire item.)

##### **Method:**

A non-experimental study: a survey by means of a short 3-item questionnaire, adapted from items used in Shipstone and Burt's questionnaire. The variables being tested are age, and three types of beliefs about the nature of intelligence. Each questionnaire item should offer a choice of positions along a dimension between opposite views, therefore a semantic differential scale (Osgood et al, 1957) is appropriate, eg:

Item: Is intelligence one general ability or does it comprise a number of different abilities?								
One general ability	1	2	3	4	5	6	7	A number of different abilities

Participants place a cross in the box that most closely represents their view on the dimension. Candidates should identify an appropriate sampling method (opportunity sampling is acceptable), to obtain roughly equal numbers of participants in each age-group, including a roughly equal proportion of females and males in each. Participants may be fellow students of two different age groups, or students and older adults (eg parents / teachers). All participants must be over 16 years.

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### Research Investigation Briefs for Session 2008/09

#### (5) Intelligence (contd)

**Specific Ethical Considerations:** As well as routine ethical procedures (informed consent, right to withdraw, confidentiality, debrief, etc), candidates should be encouraged to explore ethical issues specific to this investigation. For example, they should ensure that their brief, debrief and /or standard instructions make it clear to the participant that they are *not* being intelligence-tested nor being asked for their beliefs about their *own* intelligence.

**Results:** Scores obtained should be tabulated as raw data, and should be presented in respect of all three items. Presentation of results should make it clear what the scores mean, in terms of the content of the questionnaire items. Descriptive statistics should be applied, which are appropriate to the data, to enable comparison between groups on each item, eg measure(s) of central tendency and dispersion, suitable graph(s), eg barcharts (other types of graph are possible, eg frequency histograms). Explanation of results in relation to the hypotheses should be given in respect of each item. In the Discussion section of the report, findings should be interpreted for each item in turn, and overall conclusions should be drawn in relation to aims and hypotheses.

#### References:

- Cottrell, S. (2003). *The Study Skills Handbook* (2<sup>nd</sup> Edition). Basingstoke: Palgrave Macmillan.
- Flugel, J. (1947). An inquiry as to popular views on intelligence and related topics. *British Journal of Educational Psychology*, 27, 140-152.
- Furnham, A. (2000) Thinking about intelligence. *The Psychologist*, 13:10, 510-514. [URL: [http://www.bps.org.uk/\\_publicationfiles/thepsychologist/furnham.pdf](http://www.bps.org.uk/_publicationfiles/thepsychologist/furnham.pdf)]
- Goodnow, J. (1980) Everyday concepts of intelligence and its development. In N. Warren (Ed.), *Studies in cross-cultural psychology: Vol 2* (191-219). London: Academic Press.
- Osgood, C.E, Suci, G.J. and Tannenbaum, P.H. (1957). *The Measurement of Meaning*. Urbana: University of Illinois.
- Shipstone, K. and Burt, S. (1973) Twenty-five years on: a replication of Flugel's (1947) work on lay popular views of intelligence and related topics. *British Journal of Educational Psychology*, 56, 183-187.