

Name:

**Summer project booklet**

**You will complete a small scale investigation over the summer.**

This is a course requirement. You will produce a written report of your investigation including the following sections:

* Abstract
* Introduction
* Method – including: design, sample, apparatus/materials, procedure, ethics
* Results – including: descriptive statistics, statistical testing
* Discussion
* References

Find more details below.

**Summer project timeline**

|  |  |  |
| --- | --- | --- |
| **Task** | **Date** | **Done?** |
| Research and choose your project topic | Between 10th June and 8th July |  |
| Create brief plan for project:   * What is your research question? * What are your IV and DV/co-variables? * How will you operationalise your DV? (In what form will you collect the data?) * What graphs and statistical tests will you use? | Add to the google document (your teacher will email this to you) - **By 8th July** |  |
| Teacher to approve project plan | 12th July |  |
| Complete project and write up research | During summer holidays |  |
| Hand in written report | **6th September** |  |

**You may choose something of your own – or use the list below for inspiration and ideas:**

|  |  |
| --- | --- |
| These are from the A2 textbook: | These are from the AQA website:  <http://www.aqa.org.uk/resources/psychology/as-and-a-level/psychology/teach/practical-activities-for-research-methods>) : |
| * The effect of arousal on performance (p24) * Gender differences in adult play (p25) * The effects of exercise of sleep (p52) * Digit ratio and running speed (p53) * Assessing the reliability and validity of an IQ test (p84) * Gender differences and free will (p108) * Nature or nurture in A level subject selection (p109) * The matching hypothesis (p138) * Testing the absorption-addiction model (p139) * Gender and multitasking (p168) * Gender stereotyping in TV ads (p169) * Formal reasoning in teenagers (p192) * Sex differences in advanced theory of mind (p193) * Survey on knowledge of Schizophrenia (p214) * The distracting effect of voices (p215) * Investigating taste aversions (p244) * Testing ironic processes theory (p245) * Daily hassles and illness – is there a link (p280) * Do men and women cope differently? (p281) * Observing the contagiousness of yawns (p310) * Male sensitivity to cuckoldry (being father to a child who is not biologically theirs) (p311) * Extraversion and risk-taking (p346) * Investigating the atavistic form (facial features of criminals) (p347) * Gambler’s assessment of probability (p378) * Why people smoke (p379) | * Investigating short term memory * Investigating handedness * Investigating gender stereotyping * Investigating aggression * Investigating age and sleep patterns * Investigating cognitive psychology * Investigating stress * Investigating social development * Investigating food preferences * Investigating holism vs reductionism in facial recognition * Investigating honesty * Investigating crime statistics |

|  |
| --- |
| **Plan, conduct and write up your research**  **Report guidelines:**   * 2-3 pages A4, typed on a word document, submitted by email to your teacher * Write in past tense, and aim to use the professional passive tense, or refer to yourself in third person as ‘the experimenter’…” The sample were collected by…”, not “I am planning to collect the sample by…”.   **No under 16s to be used as participants under any circumstances.**  **If your research is about children: you may ask parents ABOUT their child’s behaviour. You also need to inflict no harm or distress, gain informed consent, and use deception only when harm and distress is deemed unlikely to occur. Use your judgement as a Psychologist and contact your teacher if in doubt.**  **Abstract:** 150-200 words – write this last, it is a summary of the aim, research you conducted, findings and conclusions.  **Introduction:** Write this first - requires you to read and **summarise existing research** studies and theories in the field you are investigating. Read the relevant textbook page as well as doing extra research. Google scholar is a useful search tool to find published books or journal articles to read. You can also look in the school or your local library – eg New Scientist articles. At the end you should give your **aim** and your **hypothesis** (with operationalised **variables**).  **Method:** Write this second – it includes the instructions for how to carry out your research. It should contain the following subsections-  **Design:** IG, MP or RM and reasons for choice. Then how you (fully) operationalised the variables, how you are collecting the data e.g. naturalistic observation…field experiment….  **Sample:** who is your target population? What sampling method was used? How many people?  **Apparatus / Materials:** List what you used, e.g. questionnaires you used or observation categories  **Procedure:** What you did from beginning to end; briefing/consent statement (form?), standardise instructions, order of activities, and debriefing.  **Ethics:** What ethical issues you considered and how you addressed them.  **Results:** Summarise what you found.  **Descriptive statistics:** tables, an appropriate graph, measures of central tendency (average) and measures of dispersion (eg range/SD), if a qualitative method has been used then the themes/ categories.  **Inferential statistics**: which statistical test you have chosen and why, your calculated and critical values, the level of significance (almost always 5%). Raw data should also be included here. See more guidance below for selecting your inferential test.  **Discussion:** Verbally summarise results. Can you accept your hypothesis? Relate back to research. **Evaluate** the research for extraneous variables and bias. Suggest **implications** of your findings on the real world, and any applications. Should be about the same length as introduction or slightly longer.  **Referencing:** A ***very important*** section where you demonstrate the source material you read in advance (e.g. the textbook, journal articles, other books, websites).  You **must** follow referencing conventions (see p81 of textbook for further details):  How to reference the textbook:  Flanagan, C., Berry, D., Javis, M. and Liddle, R. (2016) *AQA Psychology for A level year 2.* Aberystwyth: Illuminate Publishing  You will see the structure followed is:  Surname, Initial. (year) *Title of book.* Location: publisher  For a website:  Your Hormones website (accessed august 2019) Oxytocin information. Available at <http://www.yourhormones.info/hormones/oxytocin/>  This is a useful website to help you if you get stuck:  <http://www.citethisforme.com/harvard-referencing> |
| **Inferential statistics: Which test should you use?** |

**Are you looking for a relationship or a difference?**

What kind of data have you collected?

What kind of data have you collected?

Pearson’s r

Chi-Squared

Spearman’s Rho

What design?

What design?

Related t-test

Unrelated t-test

Wilcoxon

Mann-Whitney

Sharman, Carrie

**Authority of messenger and obedience in sixth form students**

**Abstract:**

An independent groups study was undertaken with a sample of 26 sixth form students in a field experiment. A pre-reading and question task was set by a classroom teacher in one class and the same task was set, but this time by the Head of Sixth Form (IV: authority of the messenger) for the other class. The consequences of non-completion were the same for both conditions, but the authority (and, EV: manner) of the messenger varied. The classroom teacher condition led to an 8% completion rate, whilst the Head of Sixth Form condition led to 92% completion rate (completion rate was the DV). The research concludes that increased authority leads to a better homework completion rate, however an additional finding was that some participants in the high authority condition were distressed by the high authority figure’s delivery of the message, that their lesson-time focus and general co-operation was diminished, until the point at which they were debriefed.

**Introduction:**

Research into obedience has investigated a range of messenger factors. Milgram’s original research in 1963 found that a Yale University Psychologist yielded high levels of authority over participants and that this increased obedience, compared to a member of the public in casual clothing **(reported in Flanagan et al 2015)**. This research was designed to test uniform, but the effect may also be due to the different position a member of the public has compared to an experimenter. The experimenter has a greater authority, and so, even if he were dressed casually, we would predict that he would get more obedience than a member of the public dressed formally. Although this particular variation was not tested, Milgram did theorise that the legitimacy of the person in authority affected obedience, in his ‘Legitimacy of authority’ theory.

A series of field experiments continued to test the uniform of the person giving an order. These studies were conducted by Bickman in 1974 **(reported in Bailey et al 2008)** in which participants were asked to pick up rubbish or lend money to a stranger for a parking metre. When they were dressed in a security guard’s uniform 92% complied with the request to lend money, compared to 49% when he was dressed in normal, non-uniform clothing. These research findings suggest that people are affected by the physical appearance of a stranger who is making a request for compliance, and that uniform is recognised as a signifier of authority. However none of the above looks at the role of obedience to a person whose authority is known, but not necessarily signified by physical appearance. Probably because it can be hard to control extraneous variables such as gender, and other personality or physical appearance factors. However, despite these barriers, I was interested in investigating this as it has good application to the environment of a school where teachers have different levels of authority within the school hierarchy, without necessarily dressing differently from those with less authority within the teaching body.

This research study therefore aims to explore authority in a field experiment, comparing the obedience to requests made by teachers in different roles but not necessarily signified by appearance (to separate the variables of uniform and authority), and where the requests made are not in conflict with the participants’ best interests. This is done in the hope that the findings will prove useful in a school setting where non-compliance to requests made by teachers result in a large amount of wasted hours of labour.

H: A high-authority messenger’s request will lead to higher levels of obedience from sixth students than a moderate-authority messenger’s request to complete an extensive and time consuming task.

IV: The level of authority of the person giving the instruction (high – head of sixth form or moderate – classroom teacher)

DV: Level of obedience: completion of an 11-page pre-reading task (on relationship topic) and evidence of having completed 10 questions based on the reading.

**Method:**

**Design**: An independent groups design was used because the IV was head of sixth form and classroom teacher.

**Sampling**: An opportunity sample of the members of two year 13 classes were used. This was necessary to maintain the field conditions, and to prevent demand characteristics; students were unaware that they were participating in an experiment so efforts were made to make conditions as true to real life as possible. Selecting students or making alterations to teaching groups for one lesson only was likely to promote suspicions from a heavily psychologically tested cohort.

**Apparatus / Materials**: An eleven page electronic document on relationship theory ([Simpson](http://rebeccajorgensen.com/wp-content/uploads/2011/12/Attachment-and-the-experience-and-expression-of-emotions-in-adult-romantic-relationships-A-developmental-perspective.pdf) study on whether childhood attachment predicts later relationship success; see appendix) was made available to the students via the school’s internal website. Ten questions requiring close reading of the text were asked; see appendix.

**Procedure**: As part of their normal course of lessons students studying A2 Psychology were given a link to some pre-reading materials on a Monday morning either by their normal (female: aged 23, Indian heritage, wearing a trouser suit) subject teacher or by the (male: aged 47, Indian heritage, wearing a trouser suit and tie) Head of Sixth Form (HoSF). They were told they should answer the ten questions and hand the work in on the Friday of the same week (4 days after the work was set).

Since it was unusual for the Head of Sixth form to set subject homework, the HoSF ‘covered’ the first part of the lesson (usual practice when a staff member is absent), and set the homework at this time. No standardised script was used.

**Ethics:** The experimenter was also the Head of Psychology, and had oversight over the ethics. In addition, the experimenter discussed the procedure with fellow psychology teachers within the department to assess ethical issues, to form a small ‘ethics committee’.

**Deception**: it was necessary to withhold from students the fact that this was part of an experiment to reduce demand characteristics, however since the circumstances were reasonably consistent with usual school procedures, it was felt by the committee that the deceptions could be justified as the experiment did not change the usual procedure of events.

**Debrief**: Students were given a full debrief after the experiment and given a chance to discuss the research with the classroom teacher, head of sixth form and each other.

**Informed consent:** This was collected retrospectively - after the debrief, during which participants would be offered the right to withdraw or consent.

**Harm / Distress**: It was felt by the ethics committee to be unlikely that the experiment would cause undue distress because the events were within the normal school procedures.

**Socially sensitive research**: The research was potentially sensitive for the classroom teacher and head of sixth form – consequences of non-compliance may cast doubt over their abilities to teach. For this reason the experimenter agreed not to publish this research at the current school, and to keep the classroom teacher, Head of Sixth Form and School all confidential in and future use of this research. The research could only be used for educational purposes. The findings would only be shared with the participants and members of the psychology department and not reported anywhere else within the school.

**Results:**

Descriptive statistics: There were 13 students in each condition and 26 in total.

Table 1

|  |  |  |
| --- | --- | --- |
| IV:  DV | Moderate authority messenger | High authority messenger |
| Completion of task by deadline | 8% (1 student) | 92% (12 students) |
| Non completion of the task | 92% (12 students) | 8% (1 student) |

Table 1 shows that the percentage of student who complied with the high authority messenger is far higher (92%) than the percentage who complied with the class teacher (8%).

Chart 1

Chart 1 shows that in the moderate authority messenger condition there were far more non-completers than completers. In the high authority condition there were far fewer non-completers than completers.

**Measures of dispersion and of central tendency**: The range for both data sets was 12. The mode for the moderate authority messenger task condition was ‘non-completion’ and the mode for the high authority messenger task was ‘completion.

**Inferential statistics:** The DV was completion or non-completion of the work – this is nominal data (the data are categorised but there is no order or scale used within the data), additionally the study was looking for a difference and used an independent groups design so **Chi-Squared** was used.

Table 2: Contingency table of results

|  |  |  |  |
| --- | --- | --- | --- |
| IV:  DV | Moderate authority messenger | High authority messenger | Totals |
| Completion of task by deadline | 1 student A | 12 students C | 13 |
| Non completion of the task | 12 students B | 1 student D | 13 |
| TOTALS | 13 | 13 | 26 |

Table 3: Table of expected frequencies

|  |  |  |  |
| --- | --- | --- | --- |
| IV:  DV | Moderate authority messenger | High authority messenger | Totals |
| Completion of task by deadline | 6.5 students A | 6.5 students C | 13 |
| Non completion of the task | 6.5 students B | 6.5 students D | 13 |
| TOTALS | 13 | 13 | 26 |

**Calculations for Chi Squared test:**

(Observed frequencies – expected frequencies), squared, then divided by expected freq.

Cell A……………… (1 - 6.5) = -5.5 – this answered is squared =....30.25 ……./ 6.5 = 23.75

Cell B……………… (12 – 6.5) = 5.5………(5.5 x 5.5)………=.…..30.25 ……./ 6.5 = 23.75

Cell C……………… (12 – 6.5) = 5.5………(5.5 x.5.5)………=……30.25 ……./ 6.5 = 23.75

Cell D………………(1 - 6.5) = -5.5…………(-5.5 x -5.5)..……=.….30.25……./ 6.5 = 23.75

Sum of all the (E-O)2 /E = 95

My **calculated value** for Chi-Squared is 95

To find my critical value: I must work out my ‘degrees of freedom’ and then look this up in the table.

Calculation:

Number of rows in my contingency table -1 x Number of columns in my contingency table -1

For my data: (2-1) x (2-1) = 1df

My critical value can be taken from the Chi-Squared table, using ‘1’ as my ‘degrees of freedom’ measure.

For a one tailed test (directional hypothesis) at the 5% / 0.05 level of significance, the **critical value** is 2.71.

The tables states that my “calculated value must be equal to or more than the critical value in this table for significance”.

**95 (calculated value) > (is greater than) 2.71 (critical value)**

**Therefore my findings are significant at the 5% level of significance, and I can accept my hypothesis.**

In fact, the finding was so strong that they remain significant at the 1% level, because they are still greater than 5.41, which is the critical value at this level.

**Discussion:**

It appears from my results that the level of obedience is directly affected by the authority of the messenger, regardless of the clothing (uniform) since this was standardised (both messengers wore suits). However, a number of extraneous variables were present in this research, which may mean that this conclusion is not valid.

Firstly the fact that the two messengers were of different genders; the lower authority messenger was female and the higher authority messenger was male. Research by Bushman **(Bailey 2008)** has shown that women’s instructions have led to lower obedience rates. This fact will have confounded the findings since we cannot know how much of the non-completion was due to the gender and how much was due to the level of authority.

A second extraneous variable was picked up in the debrief. A flaw in the research is that when the task was given to students no standard text was used. During the debrief students felt that the HoSF had set the work in a far sterner and confrontational manner than the classroom teacher. This may have been because, in a field experiment with a real life context, the high authority messenger was heavily invested in finding that his authority would be effective. A replication would need standardised instructions and also a double-blind procedure – where the high authority messenger was unaware of the purpose. If this were the case, the investigator-effects would not have had such a pronounced effect.

The stern manner, male gender and high authority variables are all likely to have contributed to the far higher obedience rate. It may be interpreted that in order to get students to complete work set and comply with teacher requests they ought to be set by high authority men, in a stern manner, however higher task completion was *not* *the only consequence*. It was noted by the experimenter that those in the high authority group displayed a feelings of persecution and had become less co-operative in lesson time during the 4 days between the work being set and collected (and the debrief occurring). A number of student comments illustrate the cause of this negative feeling. In the debrief students were told the true purpose of the experiment and given time for small group discussions and then a whole group discussion. These comments were collected in the debrief, all the comments are from the high authority messenger condition.

*“We felt angry that Sir [High Authority Messenger] was setting us the work in such a grumpy way, like we had already missed a deadline, which we hadn’t, it was like a telling-off. Most of us did the work after that, but we were irritated and felt badly treated, and I think that showed in lessons.”*

The research therefore had confounding variables which could have been controlled for, but were not (e.g. by standardising the message and employing a double blind procedure, by controlled for gender and using the same gender across the 2 IV conditions). However, an unexpected finding came out of the research because of the lack of controls which has useful practical application for teachers. It is that increased task completion in the short term is not necessarily useful for long term co-operation and motivation; in fact, stern instructions by an authority figure can increase the likelihood of task completion *but* in the long-run they can cause resentment and undermine future task completion. Teachers may find that discussions of intrinsic motivators and long-term life goals have a more positive long term effect on task completion.

In conclusion; the research failed to control other variables to the extent that the finding cannot be trusted to be a true test of the authority of the messenger. However, other areas for research were brought up by this study; namely the concept that the manner of the message delivered has an impact on future motivation, so that even if it succeeds in short term task completion, a stern message can be counterproductive in the longer term.

The experimenter also recognises that other evaluations can be made around the lack of representative sampling, the small size of the sample and the lack of randomisation and standardisation in the procedure.

The research did, however succeed in its larger aim to support sixth form psychology students to gain a deeper understanding of the pitfall of conducting research.

**References:**

Bailey, J., McGinley, R., Willerton, J. and Wilson, J. (2008) *AQA Psychology A*, UK: Nelson Thornes

Flanagan, C., Berry, D., Javis, M. and Liddle, R. (2016) *AQA Psychology for A level year 2.* Aberystwyth: Illuminate Publishing

**Appendix:**

Article used as pre-reading task:

<http://rebeccajorgensen.com/wp-content/uploads/2011/12/Attachment-and-the-experience-and-expression-of-emotions-in-adult-romantic-relationships-A-developmental-perspective.pdf>

Questions set on the pre-reading task to ascertain ‘task completion’ – The study’s DV:

1. Summarise the abstract in a sentence.
2. How are the findings relevant to Bowlby’s theory?
3. Was the research longitudinal or cross-sectional?
4. What was the hypothesis of this study?
5. What year did the study begin?
6. How was friendship security rated?
7. Which measured variable contained the highest standard deviation? What does this mean for the findings?
8. Outline two limitations of the research.
9. Outline two strengths of the research.
10. What is the first Journal article referenced by the study?