

# Lab Report Example 2 (58%)

This is an actual lab report from 2006, submitted by a second year student. First, the lab report is reproduced as it was submitted by the student. Next, it is reproduced with comments and changes to the text which are highlighted for you to compare with the original submission. I would have awarded a mark of **58%** because there was distinct confusion in the analysis and reporting of results (see the end of this document for an explanation).

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## Investigation into the effect of priming and prior knowledge on memory recall

### **Abstract**

Loftus and Palmer (1974) have shown that leading questions can have an impact on participant's memory of events. This study is designed to investigate if prior knowledge of a passage's 'complexity', and the sex of the participant affect factual memory recall. Participants were all given the same passage to read but were primed to be under the impression what they were reading was either too hard for its purpose or too easy. A 2-way ANOVA revealed a significant effect of the level of text, but not of the gender of participants. These results suggest that Loftus and Palmer's hypothesis was correct, that priming can have an effect on memory recall.

### **Introduction**

It has been well documented that leading questions and prior knowledge of an event or subject can have a significant impact on the way participants will answer questions. Loftus and Palmer (1974) carried out an experiment investigating the effect of leading questions on eyewitness accounts of motor accidents. Results showed that using different verbs in the questions asking participants about the crash significantly affected responses, for example when asked to estimate speed those who were given the word 'smashed' estimated higher than those given 'collided, bumped or hit'. It has also been found that people will estimate the duration of an event differently if given a soundtrack that implies someone is being slower than they should be e.g. 'hurry up' or 'come on' (Burt and Popple, 1996).

Evidence also shows that providing relevant and newly acquired information to children before a personally experienced event can have an impact on memory and general representation of that event (Sutherland et al, 2003). Children provided with specific information about an upcoming event remembered details of said event significantly better than those just engaged in general discussion based on prior knowledge, and those engaged in unrelated discussion. This research however was not done on adults; only children between the ages of 5 to 7 years and so may not show the same correlations with adults as it has done with children.

It has also been found that prior knowledge of a particular subject (in this case Psychology and Geography students) or discipline can influence search strategies and memory of the structure of a document within one's own speciality (Rouet, 2003). This experiment however did not show much of a difference between disciplines for search times or patterns. This data also does not tell us a great deal about whether having prior knowledge affects memory recall as participants were simply tested on reaction times of search strategies and patterns for general and specific questions.

Fecteau et al's research (2004) investigated the effect of the speaker's gender on the priming of non-speech vocalisations in 10 male participants, performing a gender identification task. Results showed a more significant priming effect for female vocalisations than male. This research however was only carried out on men, had the study included women the results may have shown women to respond better to a female voice, or if it is the case the participants respond best to the opposite sex.

The past research does not take into account how the leading questions or the prior information given affects the participants state of mind, how the information given makes them feel or react to the material used in the experiment. Therefore the current research will be investigating whether telling participants that certain information is too hard or too easy will affect the way they tackle that information. If being told something is too hard makes us more likely to give up and not take anything in, or whether it makes us more determined to understand it and prove the experimenter wrong. If being told something is too easy makes people complacent and less likely to give the task their full attention, or makes them more likely to try to 'ace' the test.

Gender of the participant has not been taken into account in past research, only gender of experimenter, and so the current experiment will investigate if the gender of the participants has any effect on the above hypothesis, that perhaps one sex or the other feels more of a need to try harder when told the passage is too hard or too easy.

### **Method**

Forty-five participants took part in the experiment, fifteen in the 'easy' condition, fifteen in the 'hard' condition and fifteen in the 'control' condition. Ages ranged from 17 to 50 years (Female  $M = 23.3$ ,  $SD = 6.48$ , Male  $M = 23.9$ ,  $SD = 7.04$ ). Participants were recruited from around Sussex University campus and from the surrounding area. All participants were naive to the purpose of the experiment. A pilot study was done one week prior to the experiment and it was decided to make the distraction task time slightly shorter, from three minutes to two, as it was clear participants were not remembering anything from the passage, regardless of group. It was also decided to include a control group, to compare to the test groups.

A Question paper was devised using an extract from 'Physical Geology' (Leet, 1982). Each participant was given the same passage to read however 15 participants were given an introduction explaining the passage was considered to be too easy for an 'A level' text book, 15 were given an introduction explaining that the passage was too hard for the text book, and 15 were simply told the passage was for an 'A level' text book (See appendix for examples). A distraction task was used using simple maths problems.

The experiment was run individually, with each participant being randomly assigned to their condition using cards picked blindly by the experimenter. Participants were then given one of the three introductions and asked to read thoroughly. The passage was then given and participants were given five minutes to read it. The passage was then removed and participants were given a maths distraction task and asked to complete on the sheet as much as possible in two minutes, the answer sheet was then provided and participants were given as long as needed to answer as many questions as possible on the sheet. At the end of the study each participant was given a debriefing statement, explaining why the experiment was carried out and an explanation of the different conditions.

### **Results**

The effect of priming participants, and their gender, on a memory recall task was investigated. To analyse the results given, a two-way independent ANOVA should be used, as each participant takes part in a different condition and the effects of both gender and priming are being investigated. Tests were also carried out to determine if the data was normally distributed, these include skewness and kurtosis, and the Kolmogorov-Smirnov test, to determine homogeneity of variance. Post Hoc tests were carried out to compare each mean against all the others.

A cross sectional study was done, with each group having 15 participants. The means and standard deviations are as follows:

Table 1: Summary of statistics

Group	Gender	Mean	Standard deviation
Basic	Male	0.571	0.787
	Female	1.625	0.518
Hard	Male	3.0	2.291
	Female	1.833	1.602
Control	Male	2.0	1.0
	Female	1.9	1.37

Figure 1 shows the mean test scores of both male and female participants for all three test conditions. The graph shows that women performed better in the Basic condition than men, however men performed better in the 'Hard' condition. However both male and female participants performance was relatively equally in the control group. This supports the idea that men want to try harder when told a task may be too challenging.

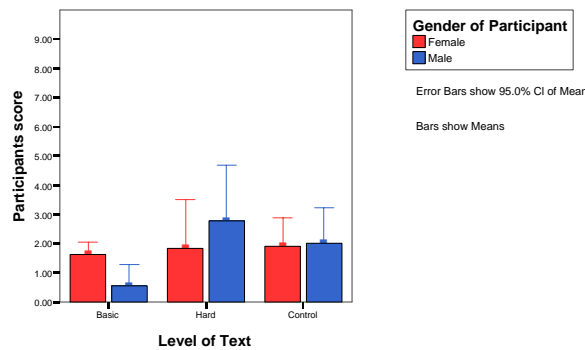


Fig 1: Graph showing separate mean test scores for males and females for each condition, Basic, Hard and the Control.

Figure 2 shows the performance of all participants in each test condition, Basic, Hard and the control. The graph shows that performance is better in the 'Hard' group supporting the idea that people will try harder when told a task may be too challenging. Scores in the Basic group are lower than both the control and the Hard groups, supporting the idea that if one is told something is too easy, one's full attention will not be given.

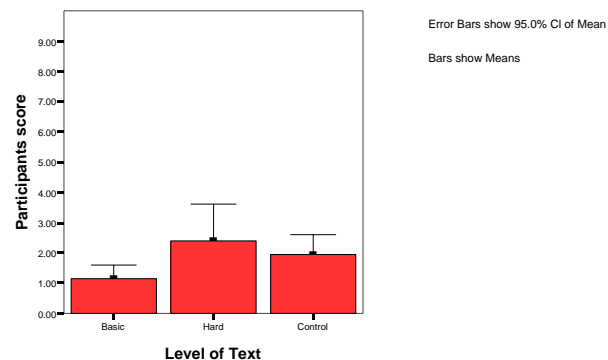


Fig 2: Graph showing mean test score of participants in each condition, Basic, Hard and the Control.

For the data as a whole, skewness and kurtosis were significantly normal,  $z(\text{skew})=3.14$ ,  $p<.01$  and  $z(\text{kurtosis})=2.40$ ,  $p<.05$ . However when tested individually all groups were significantly not normal. Kolmogorov-Smirnov's test showed that as a whole the data was non normal  $D(45) = .22$ ,  $p<.001$ . However for the individual groups the 'easy' group was significantly not normal  $D(15) = .25$ ,  $p>.05$ , but the 'hard' and control groups were significantly normal  $D(15) = .16$ ,  $p<.05$  (easy),  $D(15) = .07$ ,  $p<.05$ . Levene's test showed data was significant ( $p<0.05$ ) and so violates an assumption of ANOVA.

Although results showed the data as non-normal and so violating the assumptions of homogeneity of variance, a log transformation was carried out but had no effect on the data and so it was thought best to use the original data.

The two way ANOVA was carried out and results showed there was a significant main effect of the level of text participants were given, on their test scores,  $F(2,39) = 3.15$ ,  $p<.05$ . There was a non significant main effect of gender on test scores,  $F(1,39) = 0.03$ ,  $p = .87$ . The Games-Howell Post Hoc tests showed that none of the groups differed significantly.

## Discussion

It has been found that there is a slight effect of priming on participant's memory, with participants performing better in the 'Hard' condition than the other two. There was no interaction found between the condition participants were in and their gender, and gender did not have a significant effect on test results.

These results suggest that priming participants before they perform a task can affect how they approach tackling it. It could be suggested that because people are told that something is more of a challenge then they will try to work harder and prove that they are capable of exceeding expectations. These results follow on from the study by Rouet (2003) in which prior knowledge was investigated but memory was not tested, only reaction times and search strategies. The previous study examined if prior knowledge in a particular discipline affected participants memory of the structure of a passage, current research has continued this by examining if prior knowledge affects factual recall, and has shown that it can. An amalgamation of these two experiments, involving prior knowledge of a particular field or discipline and factual recall, would provide extra information on priming.

The current research is also an extension of that done by Loftus and Palmer (1974). The use of leading questions (and leading soundtracks implying slow speed (Burt and Poole, 1996)) on eyewitness reports showed that those participants given verbs such as 'smashed' rather than 'bumped' or 'hit' were more likely to estimate a higher speed. Current research showed

participants primed with a 'hard' passage are more likely to try harder to answer the questions.

The gender element of the current research is an extension of the work done by Fecteau et al (2004) but using different gender participants rather than speaking experimenters. Current research however did not find much difference between priming on men and women. This could be due to the relatively small sample size, had there been more participants of both genders it is possible we would have seen a difference.

One shortcoming of the experiment is that there were too few participants in each group. Only having a sample size of 45 does not accurately represent the population, as is shown by the results of the ANOVA transformation. If there were there a larger sample it is likely that the ANOVA result would be more conclusive and the data would be more normally distributed. It would also be beneficial to use a wider age range; most participants in the study were in the 20-30-age range, not an accurate representation of the population. If the experiment was to be broadened it could be useful to look at age as a dependant variable as well as gender in a three way ANOVA. This would give researchers an idea of whether age has any effect on a person's determination to prove others wrong. It could be hypothesised that young people (between approximately 18-25 years) would try to push themselves more as they feel they have more to live up to.

A beneficial accompaniment to the experiment would be a short questionnaire asking participants how they felt about the experiment, how being told the passage was too easy or too hard made them want to approach the task.

Another shortcoming of the current research is that the passage was possibly too complex and may have hindered memory recall. In future research it would be beneficial to use a more basic passage that has simpler facts to remember. This may produce a more conclusive result and show a more significant difference between groups.

In conclusion, although ANOVA results were not conclusive, it seems that test scores were slightly higher for those participants given the 'hard' level of text than the other two. This could be due to those participants determination to exceed expectations, or it is possible that the results were slightly due to chance.

### **References**

Burt, C. D. D, Popple, J. S (1996). Effects of implied action speed on estimation of event duration. *Applied cognitive psychology*, 1, 53-63.

Fecteau, S, Armony, J.L, Joannette, Y, Belin, P (2004). Priming of non-speech vocalizations in male adults: The influence of the speaker's gender. *Brian and Cognition* 55, 300-302.

Leet, L.D, Judson, S, Kaufman, M.E. (1992) *Physical geology*. 6<sup>th</sup> ed, Prentice Hall.

Loftus, E. F, Palmer, J. C. (1974). Reconstruction of Automobile Destruction: An example of the interaction between language and memory. *Journal of verbal learning and verbal behaviour* 13, 585-589.

Rouet, J, (2003). What was I looking for? The influence of task specificity and prior knowledge on student's search strategies in hypertext. *Interacting With Computers*, 15, 409-428.

Sutherland, R, Pipe, M, Schick, K, Murray, J, Gobbo, C, (2003). Knowing in advance: The impact of prior event information on memory and event knowledge. *Journal of Experimental Child Psychology*, 83, 244-263.

Appendices have been edited out

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**The same report is now reproduced with comments and corrections to explain why the mark of 58% would be awarded.**

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### Investigation into the effect of priming and prior knowledge on memory recall

#### Abstract

Loftus and Palmer (1974) have shown that leading questions can have an impact on participant's memory of events. This study is designed to investigate if prior knowledge of a passage's 'complexity', and the gender of the participant affect factual memory recall. Participants were all given the same passage to read but were primed to be under the impression what they were reading was either too hard for its purpose or too easy. A 2-way ANOVA revealed a significant effect of the level of text, but not of the gender of participants. These results suggest that Loftus and Palmer's hypothesis was correct, that priming can have an effect on memory recall.

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Comment [AF1]: This abstract is actually very good.

#### Introduction

It has been well documented that leading questions and prior knowledge of an event or subject can have a significant impact on the way participants will answer questions. Loftus and Palmer (1974) carried out an experiment investigating the effect of leading questions on eyewitness accounts of motor accidents. Results showed that using different verbs in the questions asking participants about the crash significantly affected responses, for example when asked to estimate speed those who were given the word 'smashed' estimated higher than those given 'collided, bumped or hit'. It has also been found that people will estimate the duration of an event differently if given a soundtrack that implies someone is being slower than they should be e.g. 'hurry up' or 'come on' (Burt and Popple, 1996).

Evidence also shows that providing relevant and newly acquired information to children before a personally experienced event can have an impact on memory and general representation of that event (Sutherland et al, 2003). Children provided with specific information about an up coming event remembered details of said event significantly better than those just engaged in general discussion based on prior knowledge, and those engaged in unrelated discussion. This research however was not done on adults; only children between the ages of 5 to 7 years and so may not show the same correlations with adults as it has done with children.

Comment [AF2]: This is good, but what it lacks is any connection to theory. What does this evidence tell us about theories of memory? It's a good description of past research but if it had been linked to theories of memory it would have been more impressive.

It has also been found that prior knowledge of a particular subject (in this case Psychology and Geography students) or discipline can influence search strategies and memory of the structure of a document within ones own speciality (Rouet, 2003). This experiment however did not show much of a difference between disciplines for search times or patterns. This data also does not tell us a great deal about weather having prior knowledge affects memory recall as participants were simply tested on reaction times of search strategies and patterns for general and specific questions.

Comment [AF3]: As above, a link to theories of memory would make this better.

Fecteau et al's research (2004) investigated the effect of the speaker's gender on the priming of non-speech vocalisations in 10 male participants, performing a gender identification task. Results showed a more significant priming effect for female vocalisations than male. This research however was only carried out on men, had the study included women the results may have shown women too respond better to a female voice, or if it is the case the participants respond best to the opposite sex.

**Comment [AF4]:** This paragraph needs a smoother transition from the previous one. The author just leaps into gender effects when previously gender hasn't been mentioned. What we'd expect is a build up to gender in the previous paragraphs, again by referring to theory (why should there be gender differences?).

The past research does not take into account how the leading questions or the prior information given affects the participants state of mind, how the information given makes them feel or react to the material used in the experiment. Therefore the current research will be investigating whether telling participants that certain information is too hard or too easy will affect the way they tackle that information. If being told something is too hard makes us more likely to give up and not take anything in, or whether it makes us more determined to understand it and prove the experimenter wrong. If being told something is too easy makes people complacent and less likely to give the task their full attention, or makes them more likely to try to 'ace' the test.

**Comment [AF5]:** We need to know how this effect was explained (with reference to information processing theories).

Gender of the participant has not been taken into account in past research, only gender of experimenter, and so the current experiment will investigate if the gender of the participants has any effect on the above hypothesis, that perhaps one sex or the other feels more of a need to try harder when told the passage is too hard or too easy.

**Comment [AF6]:** Again, we have leapt to a whole new area of 'state of mind'. This is particularly problematic because the experiment conducted by this student did not measure each ... [1]

## Method

**Comment [AF7]:** These are interesting ideas but t ... [2]

### Participants

Forty-five participants took part in the experiment, fifteen in the 'easy' condition, fifteen in the 'hard' condition and fifteen in the 'control' condition. Ages ranged from 17 to 50 years (Female  $M = 23.3$ ,  $SD = 6.48$ , Male  $M = 23.9$ ,  $SD = 7.04$ ). Participants were recruited from around Sussex University campus and from the surrounding area. All participants were naive to the purpose of the experiment.

**Comment [AF8]:** Again, nice ideas but they have n ... [3]

### Pilot Study

A pilot study was done one week prior to the experiment and it was decided to make the distraction task time slightly shorter, from three minutes to two, because it was clear participants were not remembering anything from the passage, regardless of group. It was also decided to include a control group, to compare to the test groups.

**Comment [AF9]:** This needs to be split into subsections.

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**Comment [AF10]:** If you have run a pilot study ... [4]

### Materials

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**Text Passage:** A Question paper was devised using an extract from 'Physical Geology' (Leet, 1982). Each participant was given the same passage to read; however 15 participants were given an introduction explaining the passage was considered to be too easy for an 'A level' text book, 15 were given an introduction explaining that the passage was too hard for the text book, and 15 were simply told the passage was for an 'A level' text book (See appendix for examples).

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**Distraction Task:** A distraction task was used using simple maths problems.

**Comment [AF11]:** I assume this was your control, ... [5]

**Answer Sheet:** ??????????

**Comment [AF12]:** There is no-where near enough ... [6]

### Procedure

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The experiment was run individually, with each participant being randomly assigned to their condition using cards picked blindly by the experimenter. Participants were then given one of the three introductions and asked to read thoroughly. The passage was then given and participants were given five minutes to read it. The passage was then removed and participants were given a maths distraction task and asked to complete on the sheet as much as possible in two minutes, the answer sheet was then provided and participants were given as long as needed to answer as many questions as possible on the sheet. At the end of the study each participant was given a debriefing statement, explaining why the experiment was carried out and an explanation of the different conditions.

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**Comment [AF13]:** No information is given a ... [7]

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**Comment [AF14]:** This needs to be described ... [8]

**Comment [AF15]:** In general there is not er ... [9]

**Results**

The effect of priming participants, and their gender, on a memory recall task was investigated. To analyse the results given, a two-way independent ANOVA should be used, ~~as each participant takes part in a different condition and the effects of both gender and priming are being investigated.~~ Tests were also carried out to determine if the data ~~were~~ normally distributed, these include skewness and kurtosis, and the Kolmogorov-Smirnov test, to determine homogeneity of variance. Post Hoc tests were carried out to compare each mean against all the others.

A cross sectional study was done, with each group having 15 participants. The means and standard deviations are as follows:

Table 1: Summary of statistics

Group	Gender	Mean	Standard deviation
Basic	Male	0.571	0.787
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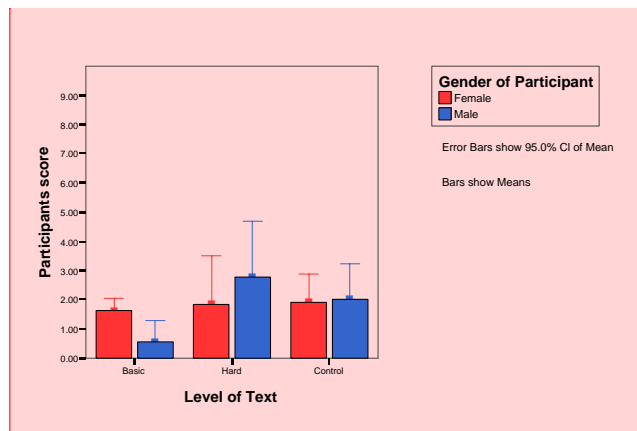
Comment [AF16]: Common mistake: 'data' is plural so you should say 'the data are' or 'data were', only if you have a single datum, could you say 'the datum is'

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Comment [AF17]: This isn't really necessary, just mention what tests were done, as you report them.

Comment [AF18]: You do not need both this table, and Figure 1. Chose which one to report (either is fine) but don't have both, it is just repeating information.

Figure 1 shows the mean test scores of both male and female participants for all three test conditions. The graph shows that women performed better in the Basic condition than men, however men performed better in the 'Hard' condition. However both male and female participants performance was relatively equally in the control group. This supports the idea that men want to try harder when told a task may be too challenging.



Comment [AF19]: This is good, although the y-axis scale is odd because there is a lot of dead space at the top. I would have scaled from 0-7 rather than 0-10. Also, when printed in black and white the colour bars are hard to distinguish.

Fig 1: Graph showing separate mean test scores for males and females for each condition, Basic, Hard and the Control.



Figure 2 shows the performance of all participants in each test condition, Basic, Hard and the control. The graph shows that performance is better in the 'Hard' group supporting the idea that people will try harder when told a task may be too challenging. Scores in the Basic group are lower than both the control and the Hard groups, supporting the idea that if one is told something is too easy, one's full attention will not be given.

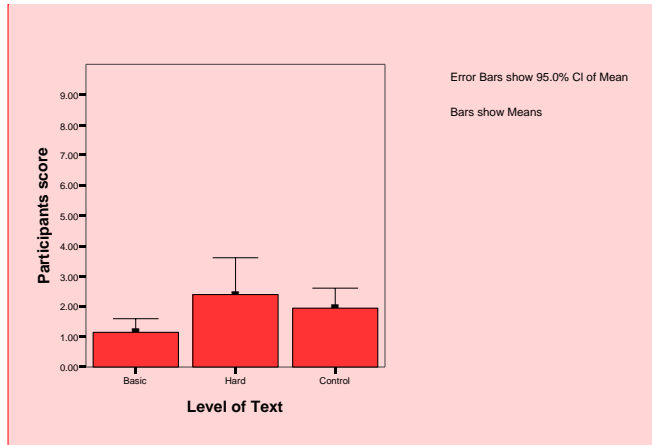


Fig 2: Graph showing mean test score of participants in each condition, Basic, Hard and the Control.

For the data as a whole, skewness and kurtosis were significantly normal,  $z(\text{skew})=3.14$ ,  $p < .01$  and  $z(\text{kurtosis})=2.40$ ,  $p < .05$ . However when tested individually all groups were significantly not normal. Kolmogorov-Smirnov's test showed that as a whole the data was non normal  $D(45) = .22$ ,  $p < .001$ . However for the individual groups the 'easy' group was significantly not normal  $D(15) = .25$ ,  $p > .05$ , but the 'hard' and control groups were significantly normal  $D(15) = .16$ ,  $p < .05$  (easy),  $D(15) = .07$ ,  $p < .05$ . Levene's test showed data were significantly heterogeneous ( $p < .05$ ) and so violate an assumption of ANOVA.

Although results showed the data as non-normal and so violating the assumptions of homogeneity of variance, a log transformation was carried out but had no effect on the data and so it was thought best to use the original data.

The two way independent ANOVA was carried out and results showed there was a significant main effect of the level of text participants were given, on their test scores,  $F(2,39) = 3.15$ ,  $p < .05$ . There was a non significant main effect of gender on test scores,  $F(1,39) = 0.03$ ,  $p = .87$ . The Games-Howell Post Hoc tests showed that none of the groups differed significantly.

### Discussion

It has been found that there is a slight effect of priming on participant's memory, with participants performing better in the 'Hard' condition than the other two. There was no interaction found between the condition participants were in and their gender, and gender did not have a significant effect on test results.

These results suggest that priming participants before they perform a task can affect how they approach tackling it. It could be suggested that because people are told that something is more of a challenge then they will try to work harder and prove that they are capable of exceeding expectations. These results follow on from the study by Rouet (2003) in which prior knowledge was investigated but memory was not tested, only reaction times and search strategies. The previous study examined if prior knowledge in a particular discipline affected participants memory of the structure of a passage, current research has continued this by

**Comment [AF20]:** You don't need this graph given you have Figure 1: you can get the information here from Figure 1.

**Comment [AF21]:** If these values are correct then they show that the data were not normal. I'm now starting to wonder whether the student understands your analysis.

**Comment [AF22]:** Put spaces around '<' and '='.

**Comment [AF23]:** Wrong. Your results show that they were significantly non-normal. Again, this raises doubts in my mind about the student understanding what they have done.

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**Comment [AF24]:** NB be careful about saying things like 'no effect' and 'no relationship'. There is always an effect, the issue is whether it is big or small. In this case, the log transform would have had an effect on the data but just not a big enough one to correct the problem.

**Comment [AF25]:** The student hasn't reported the gender x instruction interaction, which is probably the most important effect in the analysis. I'm now definitely wondering if they understand their own results.

**Comment [AF26]:** How can this be reconciled with the fact that the main effects were significant indicating group differences?

**Comment [AF27]:** This is an odd thing to say when the student reported non-significant post hoc tests. This demonstrates ... [10]

**Comment [AF28]:** There was an interaction, just not a significant one. Again, be careful about what you write. Also, this inter ... [11]

**Comment [AF29]:** The experiment reported here though doesn't test this because the student did not measure expectation ... [12]

examining if prior knowledge affects factual recall, and has shown that it can. An amalgamation of these two experiments, involving prior knowledge of a particular field or discipline and factual recall, would provide extra information on priming.

The current research is also an extension of that done by Loftus and Palmer (1974). The use of leading questions (and leading soundtracks implying slow speed (Burt and Pople, 1996)) on eyewitness reports showed that those participants given verbs such as 'smashed' rather than 'bumped' or 'hit' were more likely to estimate a higher speed. Current research showed participants primed with a 'hard' passage are more likely to try harder to answer the questions.

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One shortcoming of the experiment is that there were too few participants in each group. Only having a sample size of 45 does not accurately represent the population, as is shown by the results of the ANOVA transformation. If there were there a larger sample it is likely that the ANOVA result would be more conclusive and the data would be more normally distributed. It would also be beneficial to use a wider age range; most participants in the study were in the 20-30-age range, not an accurate representation of the population. If the experiment was to be broadened it could be useful to look at age as a dependant variable as well as gender in a three way ANOVA. This would give researchers an idea of whether age has any effect on a person's determination to prove others wrong. It could be hypothesised that young people (between approximately 18-25 years) would try to push themselves more as they feel they have more to live up to.

A beneficial accompaniment to the experiment would be a short questionnaire asking participants how they felt about the experiment, how being told the passage was too easy or too hard made them want to approach the task.

Another shortcoming of the current research is that the passage was possibly too complex and may have hindered memory recall. In future research it would be beneficial to use a more basic passage that has simpler facts to remember. This may produce a more conclusive result and show a more significant difference between groups.

In conclusion, although ANOVA results were not conclusive, it seems that test scores were slightly higher for those participants given the 'hard' level of text than the other two. This could be due to those participants determination to exceed expectations, or it is possible that the results were slightly due to chance.

## References

Burt, C. D. D., & Pople, J. S. (1996). Effects of implied action speed on estimation of event duration. *Applied cognitive psychology*, 1, 53-63.

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Loftus, E. F., & Palmer, J. C. (1974). Reconstruction of Automobile Destruction: An example of the interaction between language and memory. *Journal of Verbal Learning and Verbal Behaviour*, 13, 585-589.

**Comment [AF30]:** This is true, but you could always benefit from more participants. If you want to level this criticism at your work, you should really say something about your effect sizes, or whether the effects were 'nearly' significant. Otherwise, it's clutching at straws a bit.

**Comment [AF31]:** This shows confusion: the transformation on the data tells us nothing about sample size.

**Comment [AF32]:** Although it's true that larger samples are more likely to approximate normality, you should say how large you would need them to be for this to happen.

**Comment [AF33]:** The student actually means an 'independent variable' not a 'dependent variable' and in any case, age would be better treated as a covariate.

**Comment [AF34]:** Again, this may be true, but the experiment here didn't test 'determination to prove others wrong' because this variable wasn't measured.

**Comment [AF35]:** This discussion needs to say more about theory. It's good to acknowledge limitations, but also good to avoid obvious or unimportant ones. Also, avoid making comments about statistics that are wrong. My main point about this report is more theory. The reader needs to know what you have contributed to psychological knowledge at a theoretical or applied level. This ... [13]

**Comment [AF36]:** These are close to APA format, but still some sloppy errors.

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Rouet, J., (2003). What was I looking for? The influence of task specificity and prior knowledge on student's search strategies in hypertext. *Interacting With Computers*, 15, 409-428.

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Sutherland, R., Pipe, M., Schick, K., Murray, J., & Gobbo, C., (2003). Knowing in advance: The impact of prior event information on memory and event knowledge. *Journal of Experimental Child Psychology*, 83, 244-263.

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Appendices have been edited out

#### Some general points on reporting results in APA format:

- ⇒ 'P' 't', 'F' and other test statistics must be in italics.
- ⇒ Probability values should not have a zero before the decimal place: '.05' is correct, '0.05' is not.
- ⇒ There should be spaces around '=', '<' and other symbols:  $p < .05$  is correct,  $p < .05$  is not.
- ⇒ Mean is '*M*' and standard deviation is '*SD*' and both should be in italics.

## Marking Criteria

Why would I award 58%? Let's look at the criteria for 50-59% from the course handbook (I have inserted comments to explain the mark in blue):

**"52, 55 and 58%:** This would be an adequately organized and moderately competent project, with some of the following limitations: lack of adherence to standard format; poor organisation of material; a flawed design, a poor correspondence between design and analysis; non-trivial inadequacies in analysis or description of results; limited attempt to relate the study to previous work (theoretical and empirical); poor or clumsy expression; an inability to constructively criticise their own or past research (either on methodological and theoretical grounds) or to suggest worthwhile future research; background material used for introduction and discussion is limited to textbooks."

The project was basically OK, and it did investigate a relevant research question. However, it wasn't particularly innovative. The write up did have small deviations from traditional format (see the method section), but these were not catastrophic (so not too many marks lost there). The design was OK (not flawed) and the material organised well and the analysis was correct for the design (all of which puts this at the top end of the grade). However, there was a lack of theoretical insight, the background reading was limited (but a bit beyond textbooks), and most important there were 'inadequacies in the analysis', that is some of the analysis is incorrectly interpreted. Mainly it's these errors in the analysis that drag this below 60%. If you compare this report with the 61% they have similar weaknesses, but this for me would have gone below 60% because of the errors in the interpretation of the data. However, it clearly has many strengths compared to the marking criteria, which is why the mark would be at the top end of this boundary.

**Page 7: [1] Comment [AF6] Dr. Andy Field 5/7/2007 10:35:00 AM**

Again, we have leapt to a whole new area of 'state of mind'. This is particularly problematic because the experiment conducted by this student did not measure each participant's state of mind, so on the one hand they're criticising past research for not exploring this possibility, yet they do not then go on to explore it themselves.

**Page 7: [2] Comment [AF7] Dr. Andy Field 5/7/2007 10:35:00 AM**

These are interesting ideas but they are not linked to the rest of the literature review. If this is what the experiment is testing (which it doesn't appear to) then the whole review needs to lead up to this idea, why would memory theories (or indeed personality theories) predict these effects?

**Page 7: [3] Comment [AF8] Dr. Andy Field 5/7/2007 10:35:00 AM**

Again, nice ideas but they have not been justified by the preceding review of the literature. You need to have convinced the reader that gender will interact with 'instruction' (i.e. that men and women will react differently to the instructions given)

**Page 7: [4] Comment [AF10] Dr. Andy Field 5/7/2007 10:35:00 AM**

If you have run a pilot study then you should give proper details about it. Often you would be expected to have some data from it, but at the very least you should have some specific information about how many people were tested and so on. You should not need a pilot study to tell you that a control group is necessary - it's standard practice - but the pilot study could have made you change your mind about exactly what the control group experienced, or the materials you used.

**Page 7: [5] Comment [AF11] Dr. Andy Field 5/7/2007 10:35:00 AM**

I assume this was your control, but be explicit that it was.

**Page 7: [6] Comment [AF12] Dr. Andy Field 5/7/2007 10:35:00 AM**

There is no-where near enough detail here: how many problems were used, give a couple of examples of problems, where did they come from?

**Page 7: [7] Comment [AF13] Dr. Andy Field 5/7/2007 10:35:00 AM**

No information is given about the answer sheet used below.

**Page 7: [8] Comment [AF14] Dr. Andy Field 5/7/2007 10:35:00 AM**

This needs to be described, in detail, in the materials section.

**Page 7: [9] Comment [AF15] Dr. Andy Field 5/7/2007 10:35:00 AM**

In general there is not enough information in this methods section for me to understand what was done, or how to replicate the experiment.

**Page 9: [10] Comment [AF27] Dr. Andy Field 5/7/2007 10:37:00 AM**

This is an odd thing to say when the student reported non-significant post hoc tests. This demonstrates confusion in the student.

**Page 9: [11] Comment [AF28] Dr. Andy Field 5/7/2007 10:35:00 AM**

There was an interaction, just not a significant one. Again, be careful about what you write. Also, this interaction effect wasn't mentioned in the results section at all.

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**Page 9: [12] Comment [AF29]**

**Dr. Andy Field**

**5/7/2007 10:38:00 AM**

The experiment reported here though doesn't test this because the student did not measure expectations. It could be that if people are told something is hard they pay more attention. The experiment as conducted cannot distinguish these possibilities. So, be careful of over-interpreting your data.

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**Page 10: [13] Comment [AF35]**

**Dr. Andy Field**

**5/7/2007 10:45:00 AM**

This discussion needs to say more about theory. It's good to acknowledge limitations, but also good to avoid obvious or unimportant ones. Also, avoid making comments about statistics that are wrong. My main point about this report is more theory. The reader needs to know what you have contributed to psychological knowledge at a theoretical or applied level. This is what first class reports have: a good sense of theory and the contribution to knowledge.