

Discussion

From the analysis of the results, it clarifies that the outcome of the investigation showed that the labels given influenced the participants and so this affected the way the participants drew it from memory. These results gained were similar to Carmichael et al.'s (1932) study, which was mentioned in the introduction. The findings of this study were that the participant's drawings were much more like the verbal description than the original stimulus figures had been. So as the investigation completed has gained similar results to that of Carmichael's it can be stated that this probably happened because the participants found it easier to rely on those labels when remembering. If it had been essential to remember the drawings accurately the participants might have used more demanding processing strategies.

From the data analysis, it clearly proves the experimental hypothesis 'Interpretation of an ambiguous figure will be influenced by how it is labelled and recall will be better in females than males' correct. The graph of average results show that females scored significantly higher than males. (See results for graph). Moreover, the graph comparing the average scores in each condition also show that females scored higher than males (see appendix for graph). Also the results clearly show that both males and females scored the highest is condition A compared to condition B. This could have been due to condition A having more straightforward labels compared to that of the labels in condition B.

Now referring to the statistical test completed for males and females, the calculated value was 11.5 and 10.5 and the critical value for Mann Whitney U was 2. The two calculated values are higher than the critical value and so the null hypothesis 'There will be no difference in the interpretation of an ambiguous figure by the influence of a label and there will be no differences between genders.' is accepted (refer to appendix VI for statistical calculations).

So therefore from the data analysis the results clearly show that females were better at label and recall than males and scored higher averages. For condition A females scored an average of 32 whereas males scored only 11. This too is the same for condition B where females obtained an average score of 21 compared to the male score of 9. This clearly proves the experimental hypothesis 'Interpretation of an ambiguous figure will be influenced by how it is labelled and recall will be better in females than males.' However the statistical analysis calculated that the null hypothesis was to be accepted 'There will be no difference in the interpretation of an ambiguous figure by the influence of a label and there will be no differences between genders'. And so referring to the introduction, which mentioned Carmichael's study, the results indicate that there was no difference in gender in label and recall but there was a different in the reproduced figures compared to the stimulus figures (see appendix for reproduced figures)

There may have been limitations/problems to this study, which may have influenced in the null being accepted by the statistical analysis. The environment may have been a problem as it was conducted in a public area where confounding variables of noise could have interrupted the results. The interference task of verbally stating the alphabet backward wasn't accurate, as some participants could not complete the task fully. The sampling size was bias as it was opportunistic sampling, which doesn't generalise results to the population and it only tested twenty people overall which is a

small sample size. Other possible limitations could be demand characteristics, which are cues in the research situation that might alert the participant to the hypothesis being tested. Demand characteristics could have led the participant to react differently. This could have included a faithful participant trying to react to the situation as naturally as possible. A cooperative participant tries to find out the purpose of the study so they can help to support it. A negativistic participant tries to discover the purpose of the study in order to work against it. Investigator effects could also be a source of bias, which is when the researchers who have a particular aim or hypothesis in mind unconsciously influence how their findings turn out.

To deal with these problems, the next time this study is repeated, the same environment would be used in an isolated area (e.g. a classroom) to ensure noise levels are minimised. The interference task would be changed, for example asking the participant to spell a number of words or to verbally state a multiplication. Having a random selection of participants and having a bigger size to obtain more reliable results could improve the sampling size. To deal with the demand characteristics and investigator effects single and double blind procedures can be used. It can help guard against investigator effects and participant reactivity. A single blind procedure helps ensure participant reactivity is minimised by the participant not being informed of the research aim or hypothesis. A double blind procedure is when the researcher instructs someone else to collect the data but doesn't let the person or the participants have any knowledge of the hypothesis. This helps minimise investigator effects and participant reactivity.

To improve this study the next time it is repeated, the hypothesis could be changed to deal with age rather than gender. This experiment could be tested on people that are members of the various age groups to analyse whether age affects labelling and recall. The results that would be expected to find would indicate that as age increases the labelling and recall would also increase. Another study could be to investigate labelling and recall in different cultures as in the introduction it was stated that different cultures have a different grammar which determines the way they think and perceive the world. And so the results would probably differ to the results obtained.

Referring to the introduction, this study was based upon Carmichael et al. which were part of the linguistic relativity hypothesis. It can be seen that the reproductions of both groups were distorted away from the original stimulus, to become more like the verbal labels, which were attached to them. But these results do not show that the two groups perceived the pictures differently. The differences may have been due to the effects of the labels on memory rather than on perception.

Brown and Lenneberg (1954) carried out a series of experiments to check whether in fact labelling did alter perception. In different cultures it was found that different 'codes to colours'. Brown and Lenneberg's study suggests that colours for which there is no single name in a culture are not easily recognized by that culture, but this effect seems to be a result of the storage or coding of information (rather than of the direct influence of language on the perception of colours) very much like the Carmichael experiment.

The different colour codes of different cultures:

English:

Purple	Blue	Green	Yellow	Orange	Red
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Shona:

Cipswuka	Citema	Cicena	Cipswuka
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Bassa

Hui	Ziza
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So therefore further investigations into whether labelling did alter perception could be carried out to prove Carmichael's theory correct.

Hunt and Agnoli (1991) put forward a modified version of the linguistic relativity hypothesis. According to Hunt and Agnoli "different languages lend themselves to the transmission of different types of messages." In some languages there may be terms or concepts that make certain logical arguments easier than in another language. This would make it easier to think in that way, but would not preclude a speaker of another language from having the same thought. Thus any given language makes it easy to think in certain ways, but hard to think in other ways.

Summary

This study was replicating a classic experiment conducted by Carmichael et al. (1932) based upon the Linguistic Relativity Hypothesis. The findings of the experiment were that the labels had an effect on the memories of people; they produced drawings, which were more illustrative of the label than representations of the original drawing. The implication of the study was that language is a powerful influence on the way we construct the world mentally.