

Memory/recall paper

Abstract: ***if you restructure your intro as I suggest below, an abstract something like this might work:***

Attention and memory are tightly connected. As an evolutionary protection mechanism, attention has been shown to be directed to events that are potentially damaging to us, i.e. negative events. In addition, it has been shown that memory is stronger for personally relevant information. This paper reports on an experiment to test whether as an extension of these two psychological functions, people would remember negative personality trait words more than positive ones. Results show a significant difference ( $p < 0.05$ ) between recall of negative and positive words. Practical implications of this are discussed and recommendations made for further research.

***Suggested chain of discussion (very basic, and if you are going to detail experiments, you need to put in your own words, rather than quotes, what they were trying to do):***

Memory of things better if connected to self (Rogers et al. 1977) ***(I downloaded this paper from Edinburgh Uni library – it is cited in Fossati et al and is quite a useful start)***

When it comes to self, people pay more attention to negative than positive stimuli – good reason from evolutionary point of view – negative may mean self-preservation and require quick action, automatic processing (Pratto and John, 1991). Also may want to include automatic processing vs controlled processing here (Fisk and Schneider, 1984), as this seems to be related to the evolutionary idea.

Two parts of memory. Encoding and retrieval. It has been shown that retrieving from memory is moderated by relevance/valence with a greater activation for negative words (Fossati et al, 2004)

Final piece in the puzzle – concrete words better remembered than abstract word (more 'hooks' for recall, with image, associated context, etc) (Schwanenflugel et al, 1988 cited in Altarriba and Bauer, 2004). However, emotion words usually lumped in with abstract, and they may actually react differently. This was indeed the case, with Altarriba and Bauer suggesting that emotion words are a 'third category'.

Arising from these studies, we could hypothesise that people will remember negative personal trait words more readily than non-negative personal trait words. An experiment was set up to test this hypothesis.

## Method

### **Participants**

The participants were 30 University of Aberdeen students. This group was made up of 3 males, 26 females and 1 non-binary. The age of the participants ranged from 18-25 with the average age being approximately 20.4. The participants from the study were recruited in various ways. Opportunity sampling was used in order to recruit all participants as 12 of the participants

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were undergraduate Psychology students in the same tutorial class in which the experiment was conducted, while the other 18 were flatmates or friends of the experimenters. Each participant under took the study well with no problems so no results had to be excluded.

## Materials/Apparatus

The main material used in the study was a presentation created on Microsoft PowerPoint presented to participants on a desktop computer. The presentation consisted of a set of 30 adjective words (Appendix 1), 15 of with undesirable personality traits and the other 15 desirable personality traits. The words used in the experiment came from the University of Aberdeen online source which took lists of trait words from a study done by Pratto F & John OP<sup>1</sup> in 1991. The list consisted of common and uncommon trait words, and in this study the words were selected only from the common section. A filler task was also used in between presentation and recall, this contained a 'follow the pattern task' in which participants counted down from 100 in 3's. Microsoft Excel and SPFF were both used in result taking and calculation processes.

The presentations were randomised in order to reduce order effects in the results. This was done by having each experimenter in the group personally changing the order of words in the presentation. Therefore, over the entire experiment, there were six PowerPoints with different word orders.

## Design

This study followed a within-group design. The dependent variables were the number of undesirable and desirable personality traits recalled by the experimenter, while the independent variables were the trait words presented and time in which the participant was exposed to the trait word. In the study, order and recency effects were avoided by the use of a one-minute filler task in between presentation and recall.

<sup>1</sup> Pratto F & John OP (1991). Automatic vigilance: The attention-grabbing power of negative social information. *Journal of Personality & Social Psychology* 61, 380-391.

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**Comment [2]:** I would maybe say something like:  
While participants were offered the option of withdrawing from the study at any time, or withdrawing their data, all participants actually completed the study and all results were included.  
This also lets you slip in a little hint that you were thinking about ethical things.

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...trait words from Pratto and John's (1991) study.

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**Comment [4]:** Why? This may be something you want to pick up on in the discussion. Does it make the study stronger or weaker? Less complicated? More possible in the time? How might this have affected results?

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## Procedure

PowerPoint was set up on university computers ready for each participant to start. The participant was asked to fill in the top of the filler sheet, which asked their age and gender. The experimenter then continued to explain the procedure while the first slide was presented on the screen. This slide asked for consent from the participant; in order to consent, as well as to initiate the presentation, the participant had to press the space bar.

When the participant pressed the space bar, the presentation began after a blank slide, slide lasting 3 seconds. Then the first word appeared for three seconds followed by a one-second black slide then followed by another word for three seconds, and so on until all 30 words had been shown.

The next slide then instructed the participant to complete the filler task. On the filler task the participants were instructed to complete the pattern '100,97,94,91....'. The task continued for one minute, until the PowerPoint slide changed to instructing the participants to turn over the sheet of paper and recall as many words from the presentation as they could. This continued for one minute until the PowerPoint slide changed ordering the participants to stop.

Each sheet of paper was collected after the recall minute was up and given a 'participant number'. The participant number was matched with the results which were entered into a Microsoft Excel spreadsheet in which the titles were 'gender', 'age', 'number of desirable words' and 'number of undesirable words' (words which were not mentioned in the presentation were also recorded).

## Results

The mean results for the number of desirable and undesirable trait words remembered are shown on Figure 1. As predicted in the hypothesis, the mean

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results suggest that people are more likely to remember undesirable traits than desirable traits.

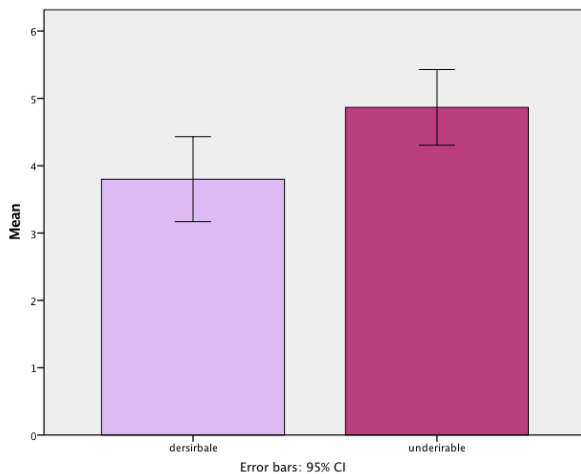


Figure 1. Mean recall number

$t(29) = 2.69, p=0.011$

$0.011 < 0.05$

$p < 0.05$

Figure 1 shows the difference in mean scores of both independent variables. Using a paired sample T-test, it was revealed that there was a significant difference in the scores for undesirable personality trait recall ( $M = 4.87, SD = 1.502, Std\ EM = 0.274$ ) and desirable personality trait recall ( $M = 3.8, SD = 1.69, Std\ EM = 0.309$ ).

The significant difference between recall scores for the two independent variables shows that the hypothesis can be supported and undesirable personality trait adjectives are better remembered than desirable ones.

Discussion

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You want to echo some of the stuff in the introduction:

People did remember negative more than positive. This would seem not only to confirm hypothesis but also to confirm previous results, such as the study by Fossati et al. What about the two parts of remembering – is the effect the result of better encoding (connected to self perhaps?) or better ‘hooks’ for retrieval, as per Fossati? Maybe emotions provide yet another ‘hook’ to add to the image, context, verbal type things mentioned by Altarriba and Bauer.

You might want to look at Altarriba and Bauer again and see what they say about emotion words and how they are different from concrete or abstract. Their experiment 3 shows that negative words might be primed differently from positive versions of the same emotion (which might imply that negative words are stored in a different way/place from positive ones). Any implications of this?

Could it be the evolutionary theory thing? Or is it about valence – people remember what’s particularly relevant to them? Rogers (1977) calls ‘self-reference’ a ‘very potent encoding device’ (p. 687) This would lead on to your point about a further study combining personality traits with a similar test, and seeing whether there is a closer correlation between personally relevant traits (negative and positive) than others.

What are the real-world implications – some of the ideas you touched on in the draft in the intro could come in here – gaming and memory. Also, because this is an automatic action, it may be that people are not aware they are paying more attention to the negative – maybe leading to biased memory and judgement. Could this have an effect, for instance, on witness recall in trials, or on the way people judge their own performances, or on job interview decisions? The final paragraph in Pratto and John might be good here.

Limitations of the study

One of the potential flaws of the experiment could be a carry-over effect because some of the participants were involved in other recall tasks in the same tutorial and their performance in another experiment straight before could affect their performance in this study. Another issue relating to the tutorial group is that all groups were looking at very similar recall tasks so the participants had prior knowledge of what the experiment was looking at. This could affect their performance in a way which biases the results.

Another potential confounding factor could be fluency of English. The participants in this study were from different nations with varying fluency of English. This could perhaps lead to complications in terms of taking too long to recognise and understand the word in the time the trait word was exposed. Some words, although part of the ‘common’ list provided for the experiment, are not used frequently in English language.

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Possible ways of dealing with these limitations might be: ensuring that it is done on a separate day from any other study the participants are involved in; using only completely fluent English speakers, or translating the PowerPoints into the participant's native languages. Finally, an obvious area of potential improvement is to increase the sample size in order to get a more reliable reflection of the population.

#### Conclusion

The study reported here supports the hypothesis that....., and confirms results reported elsewhere such as by XXX and YYY. It is not, however, clear whether the effect relates to personal valence or automatic processing and evolutionary self-preservation mechanisms. It would be useful to extend the research further by combining a similar study with personality trait tests, which may help illuminate this distinction, as if personal valence is the main mechanism, personality traits most relevant to the participants would be better recalled, rather than only negative personal traits.

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**Comment [9]:** Generally speaking, university students are a very homogenous group – age and belief and social level wise. So expansion not only in terms of size, but also in terms of age and social status, etc. might be worth mentioning.