

## To What Extent Is motivated Forgetting Produced By Failure Feedback?

### INTRODUCTION

#### Background Research

Freud believes that you never lose anything from memory. The information is stored on an unconscious level. He says that we protect ourselves from memories that cause us distress or anxiety, by repressing them in our unconscious so we don't consciously experience the feelings. However it is not believed to be very psychologically healthy and if prolonged, could cause mental disorder. There is some evidence that could prove that Freud's theory is correct.

Parkin (1993) found people who are suffering from post - traumatic stress disorder, repression of traumatic events does often occur in them. However, even though this does seem to fit in with Freud's theory and motivated forgetting did occur, it had a more positive effect on the individual because they had adjusted much better to their traumatic experiences compared to those who kept recalling the details of their traumatic events.

Similarly, Kaminer and Lavie (1991) found that the survivors of the Holocaust were often judged to be better adjusted when they didn't recall the traumatic events they had experienced compared to those who did recall them. They did not recall them in order to protect themselves from the trauma.

In some other cases, Herman and Schatzow (1987) found 28% females who were victims of incest said they had found it difficult recalling other events from childhood. Williams (1992) found 38% of African women whom when they were seventeen had been abused, reported repressed memories of the abuse.

Elliot (1995) surveyed 500 people about their memories of traumatic events they might have experienced. 20% of the people said there was a time when they had not been able to recall the details of the traumatic events. This was because they repressed the traumatic experiences.

From this kind of research that has taken place, in these cases it does seem that motivated forgetting does occur but in a relatively small proportion of the cases. Also, there is a problem with this kind of research. On verifying the findings there isn't any way of knowing for sure that the events reported by the participants actually occurred. So we cannot determine whether the people's inability to recall the events is due to motivated forgetting or due to the fact that they never actually happened.

There is evidence that people will still recall details of traumatic events that never really happened. Pynoos and Nader (1989) reported the case of the schoolboy who recalled experiencing a shooting that had taken place in his school, even though he was actually on holiday when the shooting took place.

Motivated forgetting has also been investigated using the concept of 'failure feedback'. Participants learn some information. They are then tested on the information and are then told they had done badly. This is supposed to create anxiety so they repress the information they have learned because they don't want to feel anxious. So when they are tested again, on the same information, they will remember less because they have repressed it. This has the advantage that it is experimentally generated so we know that the recall of the information is actually true.

There have been some investigations done on motivated forgetting in the laboratory using the concept of failure feedback. D'Zurilla (1965) did find that when failure feedback occurred, participants' memories were worse than when failure feedback didn't occur so supporting the idea of motivated forgetting.

### Rationale

We are going to use D'Zurilla's method to see if motivated forgetting occurs. This experiment that we are going to do will test the participants memory by using a number of tests. This will help to prove if motivated forgetting does or doesn't occur using the concept of failure feedback. Also we're checking to see if we can replicate similar results to D'Zurilla. It's not an exact replication of D'Zurilla's study but we're checking if failure feedback could affect memory.

## Aims

Our aims are to find out if motivated forgetting occurs when failure feedback is used during a memory test. We are going to research to what extent motivated forgetting is produced by failure feedback and to the extent to how it influences people's memory when recalling American state capitals.

## Hypotheses

- Alternate hypothesis - participants will recall more American state capitals in the 'no scores' condition compared to the 'scores' condition.
- Null hypothesis - there will be no significant difference between both the number of American state capitals recalled in the 'no scores' group compared with the 'scores' group. Any difference that does occur is due to chance factors.

## **METHOD**

### Method and Design

The method used was experimental because we are controlling the independent variables (whether the participant gets the failure feedback). This also gives a greater control of confounding variables so therefore there are fewer distortions. Also an independent participant design was used. This is when completely different participants are used in each condition of the experiment. Independent measures avoid order effects.

### Variables

The independent variable was whether failure feedback was used or not. This was manipulated by either having scores at the top of their sheet or not. The dependent variable is the extent to which they experienced motivated forgetting by the number of state capitals the participant recalled.

### Participants

In this experiment, an opportunity sample was used. This is when you select anyone who is available to be in the sample and take part. This sort

of sampling is quick and easy to get participants. In total, there were 60 participants that were experimented on. 30 took part in the test without the failure feedback and 30 with failure feedback. Also, there were an equal number of males and females, taking part, in each condition.

### Apparatus

We used Standardised instructions (S). Every time before a test began, these instructions had to be read out by the experimenter, to the participants. This was done so that the participant knew what the test was about and also so a confounding variable wouldn't take place (everyone received the instructions in exactly the same way).

Test sheets were given out (B1); more than one person could do the test at the same time. The test sheet had a list of 30 states and the state capitals (on the opposite side). The participants had to learn these in the time given (10 minutes).

The participants were then given the first response sheet (C1) and they were all the same. The participants were all given this one first. It had a space to put the participants name and a list of 20 American states. There were spaces for the participant to put the state capitals next to the relevant state.

After the first response sheet, 30 of the participants were given the second response sheet (D1) that includes spaces next to the list of 20 American states, where the relevant state capitals go. It was the same as the first response sheet, except the states were in a slightly different order and there were a couple of different states from the list of 30 states.

The other 30 were given a second response sheet where the scores were included, at the top of the sheet (D4). This response sheet was given to 30 participants after they had completed the first response sheet. All of the sheets had the same average score for the first test. The scores were purposely scored down so that it was a lot lower than the average score. This sheet was to produce the failure feedback. This sheet had the same list of states as the first response sheet.

## Procedure

60 Participants were tested in total, an equal number of males and females in each condition that are over the age of 16.

### Procedure - without failure feedback (control group)

Before a test begins, the examiner has to read out the standardised instructions (S). The participants are then given 10 minutes to learn the list of American states and their capitals (B1). After the 10 minutes, the participants are then told to stop and are given a response sheet with 20 American states on, in random order. The participants are given 10 minutes to fill in the capitals of the states in the blank spaces next to the states (C1).

When the test is over, they are told to wait a further 10 minutes for the examiner to mark the tests. They are then given a second response sheet with the scores not on (D1) and given 10 minutes to recall the capitals. When the 10 minutes are up, the experiment is complete. The participants are then given a chance to ask questions regarding the test they took part in (and debriefed).

### Procedure - with failure feedback (experimental group)

For the test with the scores, the instructions (S), that are in the brackets, had to be included, as well as the main instructions.

The rest of the procedure is the same as in the control group but after the first response sheet, the participants are given the response sheet with scores on (D4). The average score to put on was to be the same (which was 15.6) for each person no matter what their score was. The scores (in order to create failure feedback) the participant would get were deliberately scored down. The participants are then given 10 minutes to complete this second response sheet. Once the 10 minutes were up, the experiment was complete. The experimenter then answered any questions, regarding the nature of the experiment.

## Controls

We used an experimental design, which meant we could control the confounding variables. It was made sure that there was an even distribution of sexes, in each condition, taking part in the experiment because it could have distorted the results because either one or the other sex could have better memories. Also all the participants taking part had to be 16 and over.

During the tests, everyone had the same timings during the different stages of the experiment so everyone had an equal amount of time to learn the information. At the beginning the standardised questions were read out to the participants so that everyone knew what to do and so that there was no variation in the instructions between participants.

It was also made sure that the experiment was ethical. We firstly had to obtain consent from the participant and they were also told they could withdraw from the experiment anytime they wanted. At the end of the experiment, the participants were debriefed about the purpose of the tests they had taken part in, so then they know what the results will be used for.

The information (being memorised) itself was obscure. The participants were likely not to know as its not based on common knowledge, in general.

## **RESULTS**

### Summary Table

Table to show the descriptive statistics.

	Test with scores	Test without scores
Number of Participants	30	30
Totals	229	266
Mean Scores	7.63	8.87
Range	17	19

### Summary Table Commentary

From the summary table it shows that the test including the scores had a lower mean score than the test without the scores. The totals also show the same in which only 229 answers were correct in the test for the 'with scores' condition, compared to the test without scores which was 266 correct answers.

In each condition, the range was quite high, as the highest result a participant could get was 20. This shows a wide range of correct recall of state capitals the participants achieved. Also, both conditions had a very similar range, showing the wide range of correct answers was present in both conditions whether the scores were included or not.

### Additional graphical description of results

See attached graphs (A1, A2, A3 and A4)

### Descriptive Statistics Commentary

Graph 1: shows the mean results and compares them with both of the tests that were done. It shows that the group that did the test without the scores scored higher in their tests compared with the group that did the test with the scores. However, it is only slightly higher.

Graph 2 (1<sup>st</sup> distribution graph): shows how people scored in the test that did not include separate scores (D1). It shows that there are more people who scored in the 6-8-category group.

Graph 3 (2<sup>nd</sup> distribution graph): shows distributions of scores in the test that include separate scores (D4). Although there are a number of people who scored in the 6-8 group, there were also a lot of people who scored in the 3-5 ranges. This is possibly why the mean in the 'scores' condition was lower than the 'no scores' condition.

Both graphs are close to normal distribution, as they both produced a 'bell-like' shape.

### Relationship of results to hypothesis

The alternate hypothesis predicts that the group with scores on their test recall fewer American state capitals than the group without scores.

The results show that the group that did the test with no scores scored higher compared with the group that did have scores. The results show a large difference so we will accept the alternate hypothesis, although there is a question as to how significant is the actual difference. But because it is quite large, we assume it is significant; we will reject the null hypothesis.

On graph 2: it shows that most people scored at a consistent level, fairly reasonable. The results seem to agree with the alternate hypothesis is when the average is taken for each condition. Individually, its not as convincing. But with the participants who did have scores on their papers, there was a fair amount of people in the 3-5 group, supporting the alternate hypothesis and making it a bit more convincing. In the scores category, only 4 people managed to recall 12 or more correct state capitals, whereas with the no scores category, 7 people managed to get 12 or more correct answers. This shows that the participants who had no scores on their tests recalled more state capitals, supporting the hypothesis further.

However, the null hypothesis says there will be no significant difference between both groups. Any difference that does occur is due to chance factors. Since there isn't a big difference between the results (means of both conditions) we cannot be sure whether this difference is due to failure feedback or a chance factor (confounding variable for example). Therefore I have decided to reject the null hypothesis and accept the alternate hypothesis.

## **DISSCUSSION**

### Validity

The experiment was to test if motivated forgetting occurs due to failure feedback. To produce motivated forgetting, there has to be high levels of anxiety, so there is repression of information.

In the experiment that was carried out, only a small amount of anxiety was produced because the information they had to remember was not important to them. Therefore the anxiety produced is small compared to people who have experienced traumatic events during their lives such as child abuse. Because of this, the anxiety produced may not be enough to cause motivated forgetting.



Also, the information that was used does not have a high ecological validity. This is because it doesn't represent motivated forgetting in the real world. In the real world, it is episodic events (personal events) that we are appointed with motivated forgetting. In research we have used semantic (knowledge based) memories so our study doesn't reflect how motivated forgetting occurs in real life.

The low results in the 'scores' condition may not be due to motivated forgetting at all. The score at the top of the sheet may affect the participant's concentration rather than anxiety affecting ability of recall, as they could be distracted by the result rather than trying to repress the information. This is supported by Holmes' study (1972). He suggests that forgetting in failure feedback situations may not be due to repression but simply due to the inability of concentration from the participant.

Holmes also found that exactly the same effects could be achieved with feedback that was positive, rather than negative. This clearly suggests that distraction is affecting recall rather than anxiety producing repression, therefore not supporting D'Zurilla's study of failure feedback.

The scores could possibly be fictitious - if the participant may suspect something, such as the low score they got from the first response sheet, the results could be changed, which could lead to inaccurate results.

### Suggestions for Improved Validity

We can try to increase the level of anxiety because the test was not intense enough. We could make the test more important or worthwhile. The participant could win prize money if they got a certain amount of state capitals correct. So if they don't get enough correct they cannot claim the prize. This will make the test more serious so they will try to remember the information. When the participant sees the score on their 2<sup>nd</sup> test sheet, knowing they don't have enough to win, this will produce anxiety and lead to motivated forgetting. The level of anxiety could be increased further by extreme measures; for example, you could tell them that their close friend/relative has been rushed to hospital with a serious illness. This would definitely produce more anxiety that could possibly lead to motivated forgetting.

However, when creating high levels of anxiety, it's not considered as being ethical. Therefore even if you could produce high levels of anxiety, it wouldn't be carried out. To overcome this problem, the nature of this study could be changed. A case study could be carried out so natural occurring traumatic events could be observed in more detail.

The information that the participants have to learn is testing their semantic knowledge which isn't ecologically valid so we will have to produce information that is episodic such as learning well known events from history or about events from the current world news. Although focusing on episodic memories will produce more valid results, it is more time consuming.

### Reliability

Different variables may affect the ability to reproduce the experiment in future. Situation variables may occur. These are variables that relate to the environment to which the experiment took place. Light and noise levels, for example, could distort the final result. More noise can disrupt the participant's concentration. We did not control these variables as the participants were tested in different environments. These variables may not have affected the results too much if the participants were experiencing the same variables. Ideally the situations should be kept constant. If there were two participants doing the test together, there could be some competition between them to get a better result. On the one hand it's an advantage so that the participants were experiencing the same variables, on the other hand the participants could be affected by the presence of each other (lack of concentration, may not think as much about the situation, therefore the anxiety may not be produced as much), so in a way the participant is a situation variable, if doing the test together, in the same room.

There could be participant variables. Although the gender was controlled, the participant's different characteristics such as age, class, intelligence etc could affect their ability to recall information. Memory ability will affect ability of recall, showing that the inability of recall may be due to a generally poor memory rather than repression of anxious memories. Also some participants may have a good general or geographical knowledge, which will also distort results.

The behaviour of the experimenter - could have an effect on the results. We used the standardised instructions to maintain the consistency but there are also problems with this. Different experimenters took part in this investigation so there wasn't any control on how the instructions were said. Some variables such as non-verbal replies (laughing etc) were difficult to control. Also the tone of voice cannot be controlled unless it's the same experimenter for all the participants.

There were no set guidelines on how to respond to questions that the participants asked and if the experimenter made sure that they waited until the end of the test to answer them.

### Improving Reliability

To improve the reliability of the experiment we will have to keep the environment the same e.g. identify a room in which we can control noise, light, and heat etc. This will be the room in which all the participants will take part in when doing the test. The situation variables will be kept constant and so will not distort the results.

Also to make sure the behaviour of the experimenter doesn't affect the experiment, we can use the same experimenter to read out the standardised instructions and respond to questions. Also instead of having an experimenter reading out the instructions, a tape recording of the instructions could be played which will also maintain consistency.

To reduce the participant variables, a screening test could be done before the experiment to check the memory, ability and knowledge of the participants so we include people who are similar in ability. The participants could also be grouped by an 'age' category, so the ability to recall information will in general be similar.

Guidelines can be set so that the one experimenter will answer all questions, this way the variables such as non-verbal ones can be more easily controlled. Also making sure that the experiment is carried out exactly the same (method) with each participant, for example, the sheets will be given out and collected in exactly the same way for each person taking part.

### Implications of Study

The results obtained from this study showed that people who got failure feedback did score lower than the participants who didn't. This suggests that the results obtained do support D'Zurilla's study of failure feedback and Freud's theory of motivated forgetting.

However, there is a problem in relying on the results that were obtained. There doesn't seem to be a very big difference in the two tests and could be due to chance factors and the fact that there are a lot of problems with the validations of the experiment.

The main question is whether the lack of ecological validity producing unreliable results could have changed the results completely, or should we trust our results since it does support theories and studies of well-known psychologists who clearly have a much broader knowledge in this field?

### Generalisation of Findings

The sample that was used was not very representative because most of the participants were students or parents and family members. This is because the sampling technique that was used was an opportunity sample. This does not represent the community in general and their individual behaviours.

An alternative sampling technique would be random or stratified. Random samples will probably be unbiased and representative but not completely. A stratified sample would be better for ensuring the characteristics displayed in the sample will be more directly representative of the way in which they occur in the population. The downside is that a stratified sample is more complicated much more time consuming.

### Application of Study to Everyday Life

Eyewitness testimony - might be a traumatic experience so therefore motivated forgetting may occur. When memories need to be recalled it may be difficult recalling it.

According to the alternative hypothesis, the results suggest that motivated forgetting does occur and any information associated with anxiety will be repressed.

This means in education, or any place of learning, if people want to learn, an environment should be created that's relaxed and does not produce anxiety. If the environment does produce anxiety there will be repression of information so therefore motivated forgetting will occur. This would be happening all the time and cannot be controlled every single time.

There is also the problem of false memory syndrome. This is something that has been developed from therapy. People reported recovered memories about things that have happened to them that have been traumatic such as child abuse. In some cases the events reflected didn't really happen so therefore are false. This suggests you can generate false memories so psychologists have begun to question the validity of recalled memories.

Certain things that the therapist says generate the false memories. The individual takes this on board and recalls it as if it was a memory of an event that actually happened.

The evidence that suggests that motivated forgetting does occur conflicts with false memory syndrome. Motivated forgetting theory says that recovered memories can often be true but false memory syndrome says that recovered memories are distorted or false.

## Coursework References

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