

STUDYING RECALL: FOUR DIFFERENT METHODS

Memory consists of components like acquisition and storage, but the ultimate aspect of memory is recall. This is the ability to retrieve information from the memory stores when required. It has been studied in a number of ways and this article focuses upon four of them:

- i) Experiments
- ii) Quasi-experiments
- iii) Case studies
- iv) Qualitative methods

EXPERIMENTS

Experiments are the backbone of cognitive psychology and of the study of recall. Its popularity is based upon the ability to isolate variables and establish cause and effect (table 15).

A "true" experiment, as opposed to a quasi-experiment, has three elements:

- i) The random assignment of participants to conditions;
- ii) Standardised procedures;
- iii) Control over variables.

<u>ADVANTAGES</u>	<u>DISADVANTAGES</u>
<ul style="list-style-type: none">- Only method to establish cause and effect relationship between independent variable and dependent variable- Isolate and control over variables and participants- Replication possible- Measure recall precisely and allows for statistical analysis	<ul style="list-style-type: none">- Low ecological validity ie artificial recall tasks- Narrowness of independent variable and dependent variable ie memory studied out of context- Demand characteristics- Experimenter effects

Table 15 - Advantages and disadvantages of the experiment for studying recall.

The experiment allows the researcher to measure recall accurately. This is done in a number of ways:

- Free recall - recall of items in any order unaided;

- Cued recall - recall of items in any order aided by prompts (cues);
- Recognition - recall of items from presented list that includes new items as well as items seen before;
- Serial reproduction - recall of items in order presented;
- Sternberg paradigm - recall of items after and before item presented in test.

In each case, there will be a clear system of scoring, like twenty words to remember. The quantitative data is then analysed using statistical tests.

Example: Very Long-Term Recall - Stanhope et al (1993)

This experiment was centred around the recall of information about Charles Dickens' novel, "Hard Times", by Open University students. One hundred and fifty two volunteers, were recruited through the Open University student newspaper, who had studied the novel as part of an Arts course. The sample ranged from three to thirty-nine months since taking the course.

The volunteers were sent a test about the novel which they self-administered at home. Recall was scored in two key ways:

a) Name and role recall of all characters (free recall)

There were three possibilities: only name, only role, or both recalled. Roles were better recalled than names, and memory for both declined over time (1st twenty-seven months) and stabilised.

b) Fact verification of fifty-four items (eg "Stephen's wife is a drunkard") as true or false (recognition)

Participants were asked to rate their confidence level for each answer also. Recall was best for highly important events and worst for low importance.

Qualitative data was also collected at the beginning of the test in the form of a short paragraph about most vivid memories of the novel.

Evaluation

1. Sending participants questionnaires to fill in themselves was a lessening of control because the experimenters could not observe the process and verified individual answering of the questions from memory.

2. Postal questionnaires allowed the recruitment of a variety of participants from throughout the UK (age range 24-74 years) who had studied the same material on the

Arts course.

3. Of the 152 volunteers, only 140 (92%) returned the test completed. Overall, 80% (111) of the volunteers were female. The question is always about those who did not volunteer - is their recall similar to the sample?

4. More ecologically valid use of memory than random word lists.

5. Detailed piloting of test materials. A group of former Open University Arts students were tested beforehand, and a matched group of non-Arts students tried the fact verification test. This control group was used to establish the chance (guessing) level score. The fact verification test was developed from a pool of 227 statements rated by four Open University Arts tutors as suitable.

QUASI-EXPERIMENTS

Quasi-experiments are almost experiments, but do not have the randomisation of participants, for example, as with gender or age as the independent variable. It is as close as possible to an experiment when an experiment is not possible (table 16).

<u>ADVANTAGES</u>	<u>DISADVANTAGES</u>
<ul style="list-style-type: none">- As close as possible to experiment (eg age differences in recall)- Controls independent variable rather than manipulates it- Gives clues to cause and effect if not the exact relationship- Better for real life studies or where the experiment cannot be used	<ul style="list-style-type: none">- Because not an experiment, caution about claiming causality- Not necessarily replicable- Often does not have a baseline measure- No randomisation of participants

Table 16 - Advantages and disadvantages of using quasi-experiments to study recall.

Example: Autobiographical Memory - Herlihy et al (2002)

The researchers were interested in the assumption

that if recall is different in two separate interviews it is taken as a sign of fabrication. Specifically, "the assumption that discrepancies in asylum seekers' accounts of persecution mean that they are fabricating their stories" (p324).

Twenty-seven Kosovan Albanians and sixteen Bosnians seeking asylum in the UK (living in London) were invited to take part. They were interviewed on two occasions (varying between three to thirty-two weeks) by the same researcher (and interpreter) as part of a diagnostic interview and treatment for post-traumatic stress disorder. Two key events (one traumatic and one non-traumatic) were used as the focus in the second interview.

Discrepancies between the two accounts of the events were calculated, and rated by independent judges (for inter-rater reliability). The discrepancy rate was "the number of discrepant details between answers at the two interviews (including new information) divided by the total number of units of information in the first interview", and was 0.32 overall. Not surprisingly, there were significantly more discrepancies for peripheral details.

Discrepancies were linked to presence and degree of post-traumatic stress disorder rather than intention to deceive, argued the researchers.

Evaluation

1. No way of knowing if the events described ever happened as recalled. However, this was not the focus of the researchers.
2. Sample based upon those available. Overall, 23 participants were men and twenty women. But four Bosnians did not undertake the second interview.
3. Interviews by same researcher (Jane Herlihy) each time.
4. Important area of research with implications for assessment of asylum seekers, which had a good level of control of variables. The research can suggest possible reasons for discrepancies in interviews but not the cause because it was not a "true" experiment.
5. The gap between the two interviews was longer for the Bosnian sample than the Kosovan group (mean 159 days vs 29 days). The difference in time was due to practical reasons. It was not deliberate, and would have been unethical to be so. But a "true" experiment would manipulate and control all variables even this one.

The length of time between interviews did produce more discrepancies for individuals with higher levels of post-traumatic stress disorder in the whole sample.

CASE STUDIES

Case studies involve detailed collection of information about an individual or a small group of individuals. They provide richer data than experiments (table 17). Case studies collect both quantitative and qualitative data.

<u>ADVANTAGES</u>	<u>DISADVANTAGES</u>
<ul style="list-style-type: none"> - Builds up detailed picture of the whole individual - Outstanding or rare cases can be studied, like individuals with exceptional memory - Helps to discover how past influences present - Not artificial 	<ul style="list-style-type: none"> - Not possible to generalise findings - Not possible to establish cause and effect - No replicability - Researcher may miss certain details and overemphasise others

Table 17 - Advantages and disadvantages of using case studies to study recall.

Example: Exceptional or Extraordinary Memory - Luria (1968)

Luria studied "S.S" (Solomon Shereshevski), a thirty year old Russian man (at beginning of study) with a remarkable memory. He was studied since the 1920s.

Among his feats of memory, he could repeat back a list of up to seventy words (compared to less than twenty as the average) as well as repeat the list backwards or name words at any point in the list. He even remembered the list sixteen years later.

While he had perfect recall for 50 digits given three minutes to study and 40 seconds to recall, both immediately and "several months" later.

He claimed to be able to remember details of every conversation and book read, even in childhood.

There was a downside to having such a memory which included living in an inner world and appearing as a "dull, awkward, somewhat absent-minded fellow".

Evaluation

1. Though "S.S" had an exceptional memory, he also improved it more by using a mnemonic technique called method of loci. This involves remembering items by placing them (in the mind) along a familiar path (eg the way home from work), and replaying the path when recall is needed.

Wilding and Valentine (1994) interviewed 10 competitors at the Second World Memory Championships in 1993. They distinguished three groups:

- Individuals with ordinary memories who has improved with the efficient use of mnemonic strategies;
- Individuals with naturally exceptional memories;
- Individuals who combined both the above.

2. "S.S" also had synaesthesia, which is where stimuli in one sense are experienced by another sense (eg colours look hot, sounds feel).

3. He was studied in different ways including lab-based tests, and his own introspections.

4. He was studied for thirty years from the time when he was a journalist through to a stage performer as a mnemonist.

5. He was poor at using memory in same way as other people. For example when shown the matrix in figure 2, "he proceeded to recall the entire series of numbers through his customary devices of visual recall, unaware that the numbers in the series progressed in a simple logical sequence" (Luria 1969 quoted in Brace and Roth 2002 p158). Most other people would recall the information based upon the pattern rather than simple memory.

1	2	3	4
2	3	4	5
3	4	5	6
4	5	6	7
5	6	7	8
6	7	8	9

Figure 2 - Extract of matrix used to test memory of "S.S".

QUALITATIVE METHODS

Traditional research on recall collects quantitative data, but it is possible to have qualitative data as well (case studies) or instead of (table 18).

<u>ADVANTAGES</u>	<u>DISADVANTAGES</u>
<ul style="list-style-type: none">- Holistic focus, including social context, rather than just memory by itself- Studies memory in real-life use, including social situations- More detailed than quantitative data- Can explore the meaning of memory to the individual	<ul style="list-style-type: none">- Not possible to test data statistically- Cannot generalise or replicate- Subjectivity of researcher- Tends not to measure recall precisely

Table 18 - Advantages and disadvantages of using qualitative methods and data to study recall.

Example: Joint or Collective Remembering - Edwards and Middleton (1986)

Edwards and Middleton applied the method and theory of discourse analysis to produce a discursive model of remembering (working within the framework of social constructionism).

They believed in the:

[I]mportance of studying remembering as a social activity governed by the settings in which it occurs, serving a potentially large set of personal and interpersonal functions in which the significance of past experiences for current purposes is generally of greater importance than accuracy and completeness..(p423)

They asked eight 1st year psychology students at Loughborough university to recall the film "E.T", which they had all recently seen at the cinema: "Try and remember as much as you can of the film 'E.T' what happens in it, what the plot is, whatever is particularly memorable of it". The discussion was recorded, a verbatim transcript made, and discourse analysis applied.

From this analysis, three processes were highlighted:

i) Framing and orientation - the establishment of

criteria for the joint recall (framing), and how individuals locate themselves in the unfolding account (orientation);

ii) Correspondence functions - putting the ideas into words (semantic function), and structuring the order of events (continuity function);

iii) Validation function - how the joint account is agreed.

Evaluation

1. The emphasis throughout this work, and social constructionism generally, is away from memory as an individual process to a:

[W]ider, distinctively social context of establishing a mutuality of understanding between people, a shared version of past experience communicated through language
(Edwards and Middleton 1986 p441).

2. This is a real use of memory in a social situation. But Roediger and Wheeler (1992) argued that, in fact, it was as artificial as an experiment in its own way.

3. This type of research moves away from traditional information-processing models of memory, and the artificial recall of word lists.

4. It cannot distinguish between what are individual memories and group memories. But, apart from in specialist situations like examinations, individuals work together to recall information, argued Edwards and Middleton.

5. There is no truth of memory (ie what did really happen) with this approach because within social constructionism, memories are treated like other utterances (eg expressions of opinion) as actions and are used to achieve certain things. To remember an event is to tell a story.

For example, "family memories" are narratives which emphasise the common family identity as they talk about holiday snapshots (Edwards and Potter 1992). But the memories are not fixed as correct or not (accurate/not accurate). They are negotiated. Collective remembering is a negotiation process, where there is no absolute truth of what did or did not happen.

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