

2. FIVE WAYS OF USING THE CASE STUDY METHOD IN PSYCHOLOGY WITH EXAMPLES: LEARNING FROM POLITICAL SCIENCE

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2.1. INTRODUCTION

There is a tendency in academia towards being insular, not only within a discipline, but within a sub-group of the discipline. So psychologists are only interested in what other psychologists say, or just within their own sub-group, like social psychology. Yet much can be learnt from other disciplines that can be applied to psychology for the benefit of psychology. One example discussed here is the case study method.

The case study is used in a number of different disciplines, and in varying ways to that of psychology.

The case study method allows researchers to investigate a topic in detail through concentration upon an individual or a small group (table 2.1). The length can vary from two interviews to years.

<u>STRENGTHS</u>	<u>WEAKNESSES</u>
<ol style="list-style-type: none">1. Detailed information about an individual or a small group.2. Provides insight into outstanding or unusual cases.3. Possible to follow the sequence of development of behaviour.	<ol style="list-style-type: none">1. Not possible to generalise findings.2. Cannot establish cause and effect relationships.3. Researcher can become involved and lose objectivity.

Table 2.1 - Key strengths and weaknesses of the case study method generally.

Hague et al (1998), in their introductory textbook on comparative government and politics, outlined five

types of case study:

- Representative - "This is the workhorse of case study designs, as useful as it is undramatic" (Hague et al 1998 p277). It is used to study an individual or group typical of the category/topic being studied.
- Prototypical - Studying an individual or group who are expected to be typical in the future. But "innovators are by nature unrepresentative; they often possess unusual enthusiasm and experience additional difficulties to those confronting their imitators" (Hague et al 1998 pp277-8).
- Deviant - Study of an exception to the norm. This type of case study is useful if we are arguing that X leads to Y, then it must be shown that not-X leads to not-Y (Hague et al 1998).
- Crucial - Using the case study method to test a theory in least favourable conditions. The value of a theory can be established in unfavourable conditions (a "least favourable" design) or disproved by showing its failings in favourable conditions (a "most favourable" design) (Hague et al 1998).
- Archetypal - A case study that creates a new theory or idea.

This article applies these five types of case study from political science to psychology with examples.

2.2. REPRESENTATIVE CASE STUDY

This use of the case study method concentrates upon participants who are typical of the area of study (table 2.2). It could be used in developmental psychology to look at the typical pattern of child development, for example.

EXAMPLE 1: "Marilyn" (Eatough and Smith 2006)

This study of "Marilyn", a thirty year-old woman living with her partner and son in a council house in the inner city area of an English Midlands city, was interested in how she made sense of her anger.

Using interpretative phenomenological analysis (IPA) of two wide-ranging semi-structured interviews, the "aim was to capture the richness and complexity of Marilyn's meaning making..".

STRENGTHS	WEAKNESSES
<p>1. Allows detailed study of typical examples of behaviour.</p> <p>2. Can build upon typical patterns established by quantitative research.</p>	<p>1. Even if participants are typical, it is still not advisable to generalise the findings. The individual(s) studied may not prove to be so typical after all.</p> <p>2. Researching the individual(s) can lead to changes and thus they are no longer typical.</p>

Table 2.2 - Key strengths and weaknesses of the representative case study.

She used certain discourses to account for her anger, self-harm, and physical aggression including:

- "...I mean that's all hormones as well which explains away a lot of my moods and aggression and that" (p121);
- "It was the alcohol.." (p122);
- "...I think I was in you know like an emotional pain you know, like when your heart aches.." (123).

The researchers concluded that they had been able to present "a richly detailed and nuanced analysis of personal meaning making".

EXAMPLE 2: Early relationships (Brazelton and Cramer 1991)

This book contains details of case studies of newborn infants and their earliest relationships, particularly with the mother. A number of cases are described including "Robert" and "Chris":

"As he [Robert] was placed on his mother's belly for her to inspect him, he quieted down.. His face softened as she spoke softly to him..". Robert was described as a "well-organised baby" which set the basis for a healthy relationship with the mother, while Chris, "a very different newborn who may well set the stage for failure in early interaction unless the parents are given guidance and support".

Chris was described thus: "He almost sounded as if he had a cold, and he breathed more rapidly and deeply whenever he was handled, talked to, or stimulated in any way. One had the impression that he wanted to be left

alone".

EXAMPLE 3: "Peter Tripp" (Luce and Segall 1966)

Opportunist studies have been made of individuals voluntarily staying awake for very long periods, as in world record attempts like Peter Tripp.

In 1959, in New York City, WMGM radio DJ, Peter Tripp attempted to stay awake for 200 hours (8 days 8 hours) ("wakethon") to benefit a charity. During this time, he was broadcasting his daily show from a glass-walled booth in Times Square.

Because of the concern for his health, Tripp was well studied throughout the 200 hours by doctors and psychiatrists. There was considerable interest from sleep researchers as the knowledge about sleep (and sleep deprivation) was limited at that time.

After two days, Tripp stated hallucinating. Some of the hallucinations were linked to paranoia, like a hotel desk was on fire (after 120 hours).

Memory and concentration problems increased with time - by 170 hours, he could not say the whole alphabet. By 150 hours awake, he was disoriented. Yet he still managed each day to do his three-hour radio show (5-8pm) effectively. In fact, some listeners had no idea he was not sleeping.

At the end of the 200 hours, he slept for thirteen hours, and awoke apparently refreshed, though he did have mild depression for three months.

2.3. PROTOTYPICAL CASE STUDY

This method can be seen as the first reporting of a particular behaviour. It is the study of behaviour that is expected to be typical (or more common) in the future (table 2.3).

<u>STRENGTHS</u>	<u>WEAKNESSES</u>
1. Alerts researchers to a new area or aspect of behaviour.	1. Cannot be sure that this behaviour will become more common in the future.
2. Allows the study of very rare cases.	2. Initially it is very rare, so generalisation is not going to be possible.

Table 2.3 - Key strengths and weaknesses of the prototypical case study.

EXAMPLE 4: "Eve" (Thigpen and Cleckley 1954)

This report contains details of 100 hours of interviews over fourteen months with a 25 year old married woman who was suffering from "severe and blinding headaches". She is called "Eve White" in order to keep her identity secret. Over a series of interviews, she starts to show other personalities, including "Eve Black", who is the complete opposite to the "main personality".

A number of tests are used on the personalities: Weschler-Bellevue Intelligence Scale, Weschler Memory Scale, Drawing of Human Figure, and Rorschach Ink-Blot Test. EEG readings of the brainwave patterns are also recorded.

A third personality called "Jane" later appears. The personalities gained different scores on the tests: "Eve White" obtained an IQ score of 110, and "Eve Black" 104.

EXAMPLE 5: Munchausen syndrome by proxy (Meadow 1977)

This is the first detailed report and naming of munchausen syndrome by proxy.

It included two case studies, of which "Kay" was described in more detail. She was a six-year-old who presented with her mother at a hospital with "foul-smelling, bloody urine". The medical facts did not make sense: "everyone was mystified by the intermittent nature of her compliant and the way in which purulent, bloody urine specimens were followed by completely clear ones a few hours later" (p343).

Over a seven-day period, Meadow recorded fifty-seven samples of urine, of which forty-five were normal (taken by nurses), and twelve abnormal (presented by the mother).

All the cases of illness were reported by the mother, and Kay's health was fine when her mother was away in a psychiatric outpatient consultation.

The other case study reported by Meadow was "Charles" (less than one-year-old) who was suffering from the effects of salt poisoning. This was a case of a child actually being made ill whereas Kay was more the fabrication of illness. Both occur with munchausen syndrome by proxy.

EXAMPLE 6: Music and the brain (Sacks 2007)

Sacks' book summarises a number of case studies of brain-injured patients and what research with modern

techniques like neuroimaging tells us about music and the brain.

One example is "Tony Cicoria", a forty-two year-old surgeon in New York, who was hit by lightning. After a two week recovery, "suddenly, over two or three days, there was this insatiable desire to listen to piano music", he reported. From having little interest in music, he started to write the tunes he could hear in his head.

While "Salimah M" (a woman in her early 40s) developed a sudden passion for music after removal of a tumour from her right temporal lobe. For both individuals, they also became more emotional, but showed few other personality changes.

2.4. DEVIANT CASE STUDY

The use of the case study method here concentrates upon exceptions to the norm (table 2.4).

<u>STRENGTHS</u>	<u>WEAKNESSES</u>
<p>1. Gives detailed information about deviant behaviour. There is value in studying such individuals for their own sake as well.</p> <p>2. May be able to help understand typical behaviour.</p>	<p>1. The individual(s) studied here are clearly different to the norm, so caution is required as to the applicability of findings to the norm.</p> <p>2. This method cannot establish cause of the deviant behaviour.</p>

Table 2.4 - Key strengths and weaknesses of the deviant case study.

EXAMPLE 7: "Phineas Gage" (Harlow 1868)

In 1848, a railway worker called Phineas Gage suffered a tampering iron to pass through his brain after an explosion. He survived, but with damage to the left frontal lobe, which produced severe changes in his behaviour. He went from an "upright citizen" before the accident to an anti-social individual: eg irreverent, "impatient of restraint", and "indulging at times in the grossest profanity".

EXAMPLE 8: "KF" (Warrington and Shallice 1972)

Cognitive neuropsychology tends to study brain-injured patients in order to understand cognitive processes, like memory. "KF", with left inferior parietal lobe damage as a result of a motorcycle accident, is one such example.

Research over a number of years has shown that short-term memory is affected by the type of presentation of information, and the type of information itself.

- Type of presentation of information: auditory or visual. "KF" had few problems will recall of three items presented visually (approximately 70% correct), but struggled when auditory information presentation was used (approximately 20% correct).
- Type of information to remember: numbers or letters. "KF" found difficulty recalling three letters given by auditory presentation (26 of 60 recalled correctly), and numbers to some degree (37 correct). When presented visually, few problems for both types of information (48 correct in both cases).

EXAMPLE 9: Eccentrics (Weeks and James 1995)

This book details studies of eccentrics today and throughout history. The aim is to show that individuals who show the unusual behaviour of eccentrics are not mentally ill.

One hundred eccentrics were tested for symptoms of schizophrenia, and it was found that only 8% of them showed mild to moderate symptoms.

From history comes the example of Joshua Abraham Norton who proclaimed himself "Emperor of the United States of America" in 1859. He spent his life in San Francisco wandering around dressed in a military uniform and a beaver-skin hat. He even issued his own money that the local shopkeepers accepted. San Francisco was full of unusual individuals at that time.

Alive today, among many are the case of a man who never throws things away, but builds new "contraptions" from the rubbish (eg a moon buggy made from an old bed, hair dryers, and vacuum cleaners among other items). There is the case of a Chippewa Indian who lives life backwards, and a woman who is building a perpetual-motion machine.

2.5. CRUCIAL CASE STUDY

This method is based upon case studies to test a theory in least favourable conditions (table 2.5). It is using the cases to test something that is not possible with the experimental method usually, for whatever reason (eg ethics).

<u>STRENGTHS</u>	<u>WEAKNESSES</u>
1. Allows the testing of a theory that is not possible with other methods, for example, because of ethical issues. 2. Information collected can be used in future hypotheses with other methods.	1. The testing of the theory can only be approximate, it cannot produce the cause-effect relationship of the experimental method. 2. It is not typical of the normal situation because the emphasise is upon the least favourable conditions.

Table 2.5 - Key strengths and weaknesses of the crucial case study.

EXAMPLE 10: "David Reimer" (Money and Ehrhardt 1972)

This case study is sometimes called "The circumcision that went wrong" or "John/Joan". It is particularly interesting to psychology because two identical male twins are involved, and one was raised as a boy (Brian), the other as a girl (Bruce/Brenda Reimer) for most of their childhood.

At seven months old, Janet Reimer (mother) noticed the boys' foreskins seemed to be sealing up at the tip making it difficult for them to urinate. The doctor diagnosed this as phimosis, and operations for circumcision were arranged.

Bruce was chosen for the operation first, and was given a general anaesthetic because of being eight months old. The operation was relatively simple and involved cutting away the foreskin. The doctor preferred to remove the foreskin by burning it away with a "Bovie cautery machine". Electricity is used to heat a small needle (similar to a soldering iron).

Initially, the machine did not seem to work on a low temperature, so the temperature was increased. Because the temperature was now so high, the machine burnt away more than the foreskin, and left the penis severely

damaged. A subsequent emergency operation was needed to attach a catheter to the bladder.

Bruce was to be called Brenda and treated as a girl. On 3rd July 1967, at 22 months old, Bruce was given full surgical castration (bilateral orchidectomy - removal of both testicles), and a "rudimentary exterior vagina". Ideally a further operation would have been needed to develop the vagina nearer puberty, but Brenda resisted and it never happened.

After years of problems, on 14th March 1980, Brenda (aged 14 years) was told the truth by her father. Very soon after finding out, Brenda changed her name to David, and started to dress like a boy. He received injections of testosterone, and began surgery to revert back to the biological sex of male.

John Money had developed the theory of gender development which emphasised the role of upbringing. He had studied a number of intersex individuals, where the biological sex is ambiguous, and depending how they were raised mattered most. In other words, gender identity was not biological, but based on the environment and learning.

EXAMPLE 11: Alzheimer's disease sufferer (Ashworth and Ashworth 2003)

Ashworth and Ashworth wanted to discover the experience of a woman suffering from Alzheimer's disease, even when such individuals are treated as beyond understanding. A desire to "thoroughly humanise the way elderly people with dementia are envisioned" (p180).

The sufferer continues to be a person with a unique lifeworld, and is a self "in the sense of being the centre - the point of view - on her physical and psychological world" (p191) despite how bad the illness becomes.

Understanding another to be a "person" requires three features of sociality, which are challenged by dementia:

- To know that another person is "a minded being like myself". The assumption of the other as an "alter ego";
- The world is shared by all - it is intersubjective;
- Taking the position of another person ("reciprocity of perspectives").

EXAMPLE 12: "HM" (Scoville and Milner 1957)

H.M suffered from minor epileptic fits from age 10, and these became more severe from age sixteen. This led to the experimental surgery on the medial temporal lobe (MTL), which included the hippocampus and amygdala.

The surgery reduced the number of major seizures to approximately two per year, but produced severe anterograde amnesia. In simple terms, he had no long-term memory after the operation.

The authors concluded that the hippocampus was important for normal memory function because the removal of other areas of the temporal lobe (eg amygdala) does not cause memory impairment. The size of the amount of brain removed was also important.

2.6. ARCHETYPAL CASE STUDY

This is a case study that creates a new idea or theory (table 2.6).

<u>STRENGTHS</u>	<u>WEAKNESSES</u>
1. Concentrates upon individual(s) that allows new ideas to develop.	1. Care in generalising any ideas from studying an individual or small group.
2. The new idea or theory can be tested further with other methods.	2. The individual(s) may not be typical and so any ideas are limited in their applicability to the general population.

Table 2.6 - Key strengths and weaknesses of the archetypal case study.

EXAMPLE 13: "Vince" (Hollway and Jefferson 2005)

This case study is the basis of the development of a new approach in psychology known as Social Psychoanalytic which combines the ideas of psychodynamics and social constructionism.

Vince was a married man in his 40s with three children, who lived on a council housing estate in the North of England. He had been a lorry driver for twelve years, but, at the time of the interview, had been off work for five months with depression. Though the interviews were originally to be conducted as part of a

project on anxiety and fear of crime, the focus became why Vince was sick.

One Monday morning, Vince got up and felt "absolutely shocking like". When his wife called the doctor, despite the protests, Vince started to panic.

Very quickly in the first interview, without prompting from the interviewer, Vince moved from describing his illness to talking about "that court case".

The court case related to a situation when Vince left the keys in his unlocked van parked outside the company offices (company policy). The van was stolen, but the insurance company would not pay the claim because the keys were left in the van. Initially Vince admitted to the insurance company his mistake, but when his employer took the insurers to court, Vince was under pressure to lie about the keys to save his job. It was three years between the event and the court case, and after that he became ill. The employer won the court case and Vince's job was assured. Also afterwards the employer gave Vince money for lying in court.

Vince explains his depression as the worry of the events finally catching up with him. But Hollway and Jefferson felt that his own explanation was "insufficient" because Vince did not feel better after the court case was resolved.

Hollway explored the background more. For a number of years, Vince had been working very long hours under pressure of "do it or leave it". His willingness to stay in such an unpleasant job was linked to his investment in the identity position of "family man", and, in particular, as the breadwinner.

EXAMPLE 14: Cognitive Dissonance (Festinger et al 1956)

Festinger et al (1956) first noted this phenomena of cognitive dissonance while studying a small group in USA who believed that the world would end, and they (the believers) would be saved and taken to the planet "Clarion".

The believers met at the appointed time (as set by "prophecies" given to the leader, Marion Keech), but no spaceships came to collect them. After this event, the individuals were told (by another "prophecy") that their "good works" had stopped the destruction of the world. The believers, then, became more enthusiastic to gain new members.

Logically if an event is proved to be untrue,

individuals should lose interest. But a lot of effort was involved leading up to the "end of the world", and this is hard to deny. Thus it is easier to believe that they were right, and seek others to bolster their endangered beliefs. If lots of people believe the same thing, individuals feel that they cannot be wrong.

EXAMPLE 15: "Washoe" (Gardner and Gardner 1969)

Behaviourists believe that language in humans is learnt through conditioning, and there is no innate mechanism that humans have that non-human animals don't have. If language is learnt, then it must be possible to teach it to non-human animals, like apes and monkeys.

This research involves a project to teach American Sign Language (ASL) (based on gestures and hand movements) to a female chimpanzee called "Washoe". The project began in June 1966 when "Washoe" was between 8-14 months old (her exact age not known).

ASL was taught through imitation, and operant conditioning. The latter involved the reinforcement of the use (and correct use) of signs, and not reinforcing the lack of signs. For example, stopping tickling (reinforcement) unless "Washoe" signed "more".

Twice a day researchers filled in a checklist of signs used, and "at least one appropriate and spontaneous occurrence each day over a period of fifteen consecutive days was taken as the criterion of acquisition".

After 22 months of the project, "Washoe" showed 30 signs that met the acquisition criterion. Some combination of signs spontaneously appeared (eg "go-sweet").

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