

---

## **UNIT 2 ASSESSMENT OF EYEWITNESS AND THEIR STATEMENTS**

---

### **Structure**

- 2.0 Introduction
- 2.1 Objectives
- 2.2 Eyewitness Assessment
  - 2.2.1 Definition of Eyewitness
  - 2.2.2 Role of an Eyewitness
  - 2.2.3 Assessment of Eyewitness
  - 2.2.4 Forensic Psychology and Eyewitness Assessment of Eyewitness and their Statement
- 2.3 Approaches to the Study of Eyewitness Assessment
- 2.4 Methodological Limitations
- 2.5 Nature of Eyewitness Testing
  - 2.5.1 Recall of Details and Perpetrator Identification
  - 2.5.2 Procedures to Assess Eyewitness
  - 2.5.3 Types of Variables Studied
- 2.6 Tools and Methods Used by Forensic Psychologists in India
  - 2.6.1 Polygraph Test
  - 2.6.2 Brain Electrical Oscillation Signature Profiling (BEOSP)
  - 2.6.3 Narcoanalysis
- 2.7 Post Event Information
- 2.8 Relation Between Accuracy and Confidence
  - 2.8.1 Improvement of the Reliability and Accuracy of Witness Statement
  - 2.8.2 Cognitive Interview
- 2.9 Let Us Sum Up
- 2.10 Unit End Questions
- 2.11 Suggested Readings and References

---

### **2.0 INTRODUCTION**

---

In this unit we will be dealing with the definition of eyewitness and the role of eyewitness in a crime. We will be dealing with also role of eyewitness assessment in a court of law. The relationship between forensic psychology and eyewitness assessment will be then discussed. This unit will then cover the various approaches to the study of eyewitness assessment and indicate the many methodological limitations. The nature of eyewitness testing will then be taken up with recall details and perpetrator identification. The many procedures to assess eyewitness will then be put forward. The number of variables studied in this regard will be listed out and explained. This unit will then take up some of the tools and methods used by forensic psychologists in India which includes the polygraph test, narcoanalysis and BEOSP. There will then be a discussion on post event information and how far there is a relationship between eyewitness accuracy and confidence. Then the many methods for improving the reliability and accuracy

will be put forward. Finally there will be a discussion about the cognitive interview.

---

## 2.1 OBJECTIVES

---

After completing this unit, you will be able to:

- Define eyewitness;
- Describe Eyewitness testimony;
- Explain the methods of assessment of eyewitness testimony;
- List out the methodological limitations;
- Describe the various tools and methods used by forensic psychologists in India;
- Define Post event information; and
- Analyse the methods by which reliability and confidence on the tools could be improved.

---

## 2.2 EYEWITNESS ASSESSMENT

---

### 2.2.1 Definition of Eyewitness

Simply put an eyewitness is someone who has been a spectator of a dramatic event or a crime scene first hand, the one who can give an account of the event. For example if I am walking down the street and I notice a brawl happening between two individuals. There is crowd gathered and I join the crowd. Suddenly it gets ugly and police has to be called. Now even though I may not know any of these individuals but I am an eyewitness to the event along with others gathered around.

### 2.2.2 Role of an Eyewitness

In a Democracy like India the role of the judiciary is significant. Judiciary administers justice according to law. Thus when a crime takes place justice is sought by examining the truth regarding the crime and handing penalty accordingly. Eyewitness account or testimony has a strong impact on criminal investigations and courtroom verdicts.. Although sorting out credibility and making judgments about the truth of witness statements by the opposing counsel follows.

### 2.2.3 Assessment of Eyewitness

By now we know how crucial eyewitness account is during a case trial. But what about the fact that an eyewitness is a human and thus is subject to all sorts of human errors? Or what if the eyewitness deliberately tries to mislead the case? So to minimise or control these loopholes experts in memory, forensic psychology, neuroscience and the law aim to come up with a versatile toolkit that will help police officers and judges evaluate the likely reliability of individual witnesses. Thus assessment of eyewitness and their statements has become an entire body of research.

## 2.2.4 Forensic Psychology and Assessment of Eyewitness and their Statement

Forensic psychology is the intersection between psychology and the criminal justice system. An important aspect of forensic psychology is the ability to testify in court, reformulating psychological findings into the legal language of the courtroom, providing information to legal personnel in a way that can be understood and evaluation of witness credibility. So assessment of eyewitness and their statement becomes an important task for a forensic psychologist.

---

## 2.3 APPROACHES TO THE STUDY OF EYEWITNESS ASSESSMENT

---

In order to test and maintain the credibility of eyewitness, it is important to assess the statements and information scientifically. Two very important premises that a scientific approach aims to assess is reliability and accuracy i.e. How reliable and accurate are the eyewitness statements?

### *Reliability and accuracy*

Investigators focus on information related to the actions, words, and characteristics of the perpetrator as well as to the details of the context and the roles played by other people. Eyewitness account facilitates the investigator in unwinding the truth. Thus to gain maximum from an eyewitness account the investigator has to keep questioning the reliability and accuracy of the same.

### *Victim as witness*

In a lot of cases the witnesses may also be victims. In such cases the investigators have to be appropriately inclined to investigate. Although assuming bystander to a crime scene as an unaffected witness could be questioned, but when the victim gets into the role of an eyewitness it becomes more complex. As a victim the demands of the perpetrator and the degree of threat leveled at them increases. As a result, one focus of their research has been the level of arousal and stress experienced by witnesses to and victims of crime.

### *Children as witness*

The use of children as eyewitness in criminal and civil legal proceedings has long been a controversial issue. Children are generally assumed to be less accurate and more suggestible than adults in recalling memories. From laboratory studies it seems reasonable to conclude that the problem with young witnesses is not their ability to accurately perceive but rather in their ability to accurately and meaningfully report their recollection of these events. The younger witness can have difficulty in reporting the event unless he/she receives some external prompts or cues. Thus many questions related to issues like the age limit of witness, kind of questions to be asked to child witness, reliability of child's account as compared to an adult, etc. are crucial to investigators.

---

## 2.4 METHODOLOGICAL LIMITATIONS

---

There is an abundance of studies on eyewitness assessment. These studies are based on two sources: real-world observations of witnesses/victims and research

simulations of criminal acts. Both these sources have their pros and cons as explained below:

### *Real world observations*

Recollections of real victims and witnesses are an important piece of literature to study eyewitness testimony. But in order to assess the accuracy of eyewitness testimony it is necessary to have independent knowledge of the events as they occurred. Unfortunately, in most real-world events this ground truth can never be known because independent records of events in natural contexts are rarely made. The investigators cannot know the exact truth related to the crime, they only have an approximate image of it.

Although real world observations are crucial to research but they have their own set of limitations. Such as the independent knowledge of events to compare witness recall of it is absent or limited. Also there is presence of numerous extraneous variables that make it difficult for the investigators.

### *Research simulations of criminal acts*

To circumvent this problem and to be assured of access to the ground truth, eyewitness researchers often present simulated events to witnesses (staged or on videotape) that can be later recalled. When scientists control the events to be experienced by witnesses, they also have invaluable control over most other variables relevant to the scenario. For example, researchers can manipulate the type and duration of the event, the specific features of the perpetrator(s), the age, gender, and race of the witnesses, the presence of weapons or threat, and the types of recall and identification tests. In real crimes of course, all of these are outside the control of the researcher and assessment of the credibility of a witness's allegation or a defendant's statement about an event falls to triers-of-fact (judges and jurors) in the courtroom. Depending upon the researcher's creativity, a crime simulation may be very realistic.

However, the very features that distinguish eyewitness events from mundane real world events are, for the most part, missing in the laboratory simulations; specifically, surprise, threat, and high emotional involvement. Research participants must give their informed consent before taking part in scientific experiments and ethical considerations preclude the possibility of their being exposed to highly emotional, disturbing, or life-threatening events. For these reasons, virtually all of the simulation work on eyewitness testimony is open to the criticism that it incorporates, to a greater or lesser degree, insufficient ecological validity; that is, the results may not necessarily be generalisable to eyewitness events in the real world.

---

## **2.5 NATURE OF EYEWITNESS TESTING**

---

The unpredictable nature of human perception, memory, and decision-making were well known to philosophers, scientists, police, and judges. However, psychologists did make a unique contribution to this knowledge base: systematic data collection that allowed measurement of the magnitude and frequency of human errors in the recollections of brief events.

### 2.5.1 Recall of Details and Perpetrator Identification

Two categories of eyewitness information of special interest to researchers are the details of the crime and of the perpetrator. It is recognised that the measurement of accuracy of recalled details is highly dependent upon the types of questions used to elicit responses. For example, police investigators regularly interviewed witnesses and victims, yet their interviews were usually not based upon techniques known to enhance recall in cognitive and social psychology. As of 1983 this situation began to change as researchers applied cognitive principles to police interviewing. One result was a specific interview protocol known as the cognitive interview (Fisher and Geiselman 1992) that has well demonstrated its superiority in gathering more correct information from both adults and children without increasing the numbers of errors.

The misidentification of an innocent person is a particularly dramatic kind of eyewitness error because of its serious consequences for a person's freedom. Indeed, legal opinion in most countries has emphasised the dangers of convictions based upon eyewitness testimony evidence alone (Cutler and Penrod 1995). As increasing numbers of demonstrably faulty convictions were studied, it became readily apparent that simple manipulations of photos and test instructions could have large effects upon the identification decisions of eyewitnesses. For example, Loftus (1979) showed that presenting a photo with a unique quality or different alignment in a photospread significantly raised the number of misidentifications of the person depicted in the photo. Analyses of both live and photo lineups in real cases have shown many to be poorly constructed and when so constructed, heavily biased against the police suspect (Wells and Bradfield 1998). Further, minor wording changes in the instructions given witnesses before they view a lineup dramatically raise the rate of false positive errors or selections of an innocent person. Indeed, false positive rates of 50 percent or more are not uncommon and Wells and Bradfield (1998) recently reported that when instructions encouraged witnesses to believe falsely that the perpetrator was in the photospread, all witnesses selected someone.

Similarly, social pressure from an authority figure or from other witnesses can influence lineup decisions. In particular, information may be subtly conveyed from investigators to witnesses by the kinds of questions asked of the witnesses and the investigator's responses to answers given. Wells and Bradfield (1998) have shown that when research participants were informed falsely that their identification choices had been correct, their descriptions of the perceptual qualities of the event itself were dramatically altered, for example, how much time and attention they had directed to the perpetrator, the ease and confidence of their identification, and their willingness to testify in court.

### 2.5.2 Procedures to Assess Eyewitness

There are a variety of procedures that researchers adopt to assess witness. Some of them are:

#### *Real life cases*

Some researchers take up real life cases to study eye witness assessment. It helps the researcher study some important aspects like personal threat, stress, emotional arousal etc. which are not feasible in laboratory studies.

As real life cases can also have their disadvantage as lack of control of extraneous variables a lot of researchers assess eyewitness by simulated studies in laboratory.

#### *Videotape clip*

The instructor can make a video clip of a staged crime or can show video clip of a crime from some movie or so.

#### *Staged live demonstration*

Instructor can create a staged live demonstration in which an actor or a group of actors interrupt a class and perform an act.

As the eyewitness witnesses the crime or event either in real life or laboratory setting it is then decided how to assess the witness. Some of the procedures to assess certain variables of eyewitness like memory the researcher adopts a method like:

#### *Live lineup*

A live lineup or identity parade is a process by which a crime victim or witness identifies the perpetrator. The perpetrator might or might not be present in the lineup.

#### *Photo Spread method*

It is simultaneous presentation of photographs out of which perpetrator has to be identified by the witness.

#### *Sequential Photo Presentation*

It involves showing a witness a single photograph or a single suspect at a time rather than a traditional simultaneous presentation

### **2.5.3 Types of Variables Studied**

Factors of interest to researchers may be classified as either estimator or system variables (Wells 1993)

#### i) *Estimator Variables*

In real world these variables are not under the control of either the criminal investigator or the criminal justice system and their effects upon eyewitness identification accuracy may only be estimated, for example, the age, sex, and race of the witnesses and the lighting conditions at the scene of the crime may be related to reliability of eyewitness testimony but they are inherent to the crime itself. Knowledge of the effects of these variables may assist us to better characterize the average performance levels that are obtained by specific types of people in particular environmental and viewing conditions.

#### ii) *System Variables*

On the other hand these variables are under the control of the criminal justice system, for example, the size, type, and quality of the lineup or photospread, the instructions given the witnesses, and the temporal interval between the crime and the identification task.

Wells (1993) has argued vigorously that researchers should dedicate more effort understanding system variables because the accuracy and reliability of eyewitness testimony can be improved by manipulating features of the system itself.

A striking example of this kind of improvement may be seen in the recommendation (Lindsay and Wells 1985, Wells 1993) that lineup or photospread members be presented one at a time to an eyewitness rather than together. Although simultaneous presentation of lineup and photospread members has been normative in North America and the UK for many years, doing so is well known to encourage the use of a relative judgment strategy by which witnesses attempt to choose the person who best fits their memory of the perpetrator. The difficulty with relative judgments is that every lineup or photospread necessarily includes someone who looks most like the perpetrator and, therefore, someone will virtually always be chosen. Mistaken identifications will necessarily comprise a subset of these choices. Indeed, the high levels of false positives reported for identification tests are a likely consequence of just such a strategy.

In contrast, a sequential lineup presents each member one at a time and the goal is to force witnesses to rely upon an absolute judgment strategy. For each lineup member shown, the witness must indicate whether this person matches the representation of the perpetrator in memory. Once a person or photo has been presented, it may not be viewed again. To further reduce the opportunity to make relative judgments, witnesses are not informed of the number of people in the lineup. Thus, for the witness who attempts to use a relative judgment strategy, there remains the possibility that there may yet be someone who is even more like the perpetrator among the as yet unseen lineup members.

In research comparing sequential to simultaneous lineup performance the two presentation procedures yield identical hit rates (correct identifications of the target) for target-present lineups (when the guilty person is included). However, in target-absent lineups (in which the perpetrator is not present), significantly fewer false positives are made with the sequential than the simultaneous lineup. Thus, when police investigators employ a sequential procedure, innocent persons are better protected from misidentifications than with the simultaneous presentation.

---

## **2.6 TOOLS AND METHODS USED BY FORENSIC PSYCHOLOGISTS IN INDIA**

---

With the increasing number of crimes, physical evidence left on the crime scene is nil or negligible and thus it becomes relatively difficult for the investigating agencies to gather evidences which will lead them to the perpetrator of the particular crime. Further, although the investigating agency may reach a particular suspect in a crime, it has to be proved in the court of law by the prosecution that the suspect is involved in the crime. For this purpose, the legal system has placed emphasis on oral or documentary evidences, to convict an individual of a particular crime (Puranik, Joseph, Daundkar and Garad, 2009).

Recently, there has been a lot of emphasis on newer scientific techniques which are used as an aid to an investigation process. Some of the tools used in India are Polygraphy Test, Brain Electrical Oscillation Signature Profiling (BEOSP) and Narco analysis.

## 2.6.1 Polygraph Test

It is an instrument that measures and records several physiological indices such as blood pressure, pulse, respiration, and skin conductivity. It is based on the foundation that deceptive answers/information will produce physiological responses that can be differentiated from those associated with non-deceptive answers/information.

A polygraph examination consists of three separate and distinct phases. These are:

- 1) **Pre-test Phase:** In this phase the examiner does the necessary formalities and procedures which are required before starting the test. These are:
  - Inform the examinee of the specific issue that is being investigated;
  - Advise the examinee of his or her constitutional rights, of their right to an attorney and of the voluntary action of submitting to a polygraph examination;
  - Complete the necessary documentation;
  - Provide the examinee with a detailed explanation of the polygraph instrumentation with its components and how these work;
  - Answer any questions that the examinee may have;
  - Obtain the examinee's version of the facts regarding the specific issue under investigation;
  - Formulate and review with the examinee all the questions that will be asked of him or her during the polygraph examination.

Before moving on to the in-test phase, the examiner will fasten various painless components to and around the examinee's body, thereby connecting him or her to the polygraph instrument. These components are equipped with sensors that serve to collect, measure and record, onto polygraph charts, the examinee's physiological data obtained from three major systems in the body, as he or she answers the set of previously formulated and reviewed questions during the course of the polygraph examination.

- 2) **In-test Phase:** The polygraph examination takes place during this phase. Once the examination is underway, the examiner will administer a minimum number of three separate tests each lasting approximately 5 minutes — and a maximum number of six tests — wherein the examinee's physiological data will be continuously collected, measured and recorded, onto polygraph charts, as he or she answers the set of questions that were formulated and reviewed during the pre-test phase.

The examinee will have a two-minute relaxation period between each test. Upon completion of the in-test phase, the examiner will analyse, interpret and evaluate the examinee's physiological data collected during the polygraph examination

- 3) **Post-test Phase:** During this last phase, the examiner will give the examinee the result of the polygraph examination. If the physiological data recorded on the charts shows reactions on the part of the examinee to the relevant questions that were asked, he or she will be given the opportunity to explain these reactions.

Once the post-test phase is finished, the examiner will provide the client with a verbal report of the polygraph examination and its result. This will be followed, in a timely manner, by a written report containing a factual account of all the information developed during the polygraph procedure, as well as the examiner's professional opinion of the examination results based on the analysis, interpretation and evaluation of the polygraph data.

### **2.6.2 Brain Electrical Oscillation Signature Profiling (BEOSP)**

Brain Electrical Oscillation Signature profiling is a technique developed by Dr. C.R. Mukundan in the year 2003 after lot of research. It is a process of eliciting electro physiological evidence of a suspect's participation in the crime. It is non-invasive scientific technique with a great degree of sensitivity. It is a Neuropsychological method of interrogation and is also referred to as 'brain fingerprinting'.

The human brain receives millions of arrays of signals in different modalities all through the waking periods. These signals are classified and stored in terms of their relationship perceived as function of experience and available knowledge base of an individual as well as new relationship produced through sequential processing. The process of encoding is primarily when the individual is directly participating in an activity or experiencing it.

It is considered secondary, when the information is obtained from a secondary source viz. books, conversations, hearsay, etc. in which there is no primary experiential component and the brain deals mainly with conceptual aspects.

Primary encoding is deep seated and has specific source memory in terms of time and space of occurrence of the experience, as the individual himself/herself has shared or participated in the experience/act/event at certain time in his life in a certain place.

It is found when the brain of an individual is activated by a piece of information of an event in which he or she has taken part, the brain of the individual will respond differently from that of a person who has received the same information from secondary sources (non-experiential).

BEOSP is based on this principle, thereby intending to demonstrate that the suspect who have primary encoded information or those who have participated in the suspected events will show responses indicating first hand (personally acquired) knowledge of the event.

#### *BEOSP procedure*

- i) Pretest interview with the suspect
- ii) The suspect is acquainted with BEOSP test procedure
- iii) Informed Consent is obtained

There are no questions presented to the subject during the test, rather the subject is walked through a narration of the possible crime scenario, and analysis is done to see if the Brain produces Experiential Knowledge. That is remembrance of the events narrated. There are no questions asked and no answers expected from the subject. Thus the rights of the suspect remain well preserved and protected

### 2.6.3 Narcoanalysis

It is psychotherapy conducted while the patient is in sleeplike state induced by barbiturates or other drugs, especially as a means of releasing repressed feelings, thoughts or memories.

Its use is restricted to circumstances when there is a compelling immediate need for the subject's response. This technique is also used in Forensic cases and is also sometimes called the "truth serum".

In forensic setup, narcoanalysis is conducted only when there is a jurisdictional court order for carrying out the test as it is an invasive procedure used for non medical purposes.

Various information is referred for conducting narcoanalysis on the subject. Records such as Post Mortem report, F.I.R, Inquest Panchanama, Crime scene photographs, brief summary of the case submitted by the Investigating Officer are gathered and read.

- i) Pre-test Interview is conducted
- ii) Informed consent is obtained
- iii) After all pre-test formalities are completed the team comprising of anesthetist, psychiatrist and forensic psychologist administer the narcoanalysis by injecting a drug (pentothal Sodium) and conducting Narco Interview.

In case the subject refuses to give the informed consent, no narcoanalysis is carried out and the same is informed to the jurisdictional court.

- iv) Post test interview is conducted

---

## 2.7 POST EVENT INFORMATION

---

Many factors influence a person's recall of a brief event and because human memory is assumed to involve both constructive and reconstructive processes, information considered or received by the witness following the event may also contribute to the specifics of what is ultimately recalled. For example, in postevent misinformation studies, participants view a video event, then hear a narrative about it that contains incorrect information about details in the film (e.g., the getaway car was blue rather than green).

Later, they are asked to recall details from the original video they viewed. The typical finding is that participants often incorporate information from the narrative by recalling (or recognising) details that are consistent with the misleading information.

Going well beyond distortion of minor details, research participants have also constructed complete but false autobiographical events as a result of similar suggestive misinformation techniques.

The ease with which such memories may be manipulated or constructed has contributed to the development of an entire new field of false memory research, a field whose topics often overlap with those of eyewitness testimony research.

Social scientists and legal practitioners have long recognised that suggestive forensic (or therapeutic) interview practices are a major cause of inaccuracies in eyewitness memory. Indeed, there is an extensive scientific literature demonstrating that exposure to misinformation can lead to false memories for details and even entire events that were never actually experienced.

Loftus's (1979) misinformation paradigm, in particular, has translated traditional verbal-learning research findings (e.g., Keppel & Underwood, 1962) into an ecologically relevant setting, showing that eyewitnesses' memories are malleable and can be influenced by exposure to misinformation.

Loftus's paradigm (e.g., Lindsay, Allen, Chan, & Dahl, 2004; Loftus, Miller, & Burns, 1978) includes three phases:

- i) First, subjects witness an event (e.g., by watching a video).
- ii) Second, they are exposed to a narrative description of the witnessed event that contains misinformation.
- iii) Third, subjects are tested on their memory for the event.

The typical finding is that subjects who have been exposed to misinformation in this way are less likely to recall the correct details than are those who have received no misinformation.

Other post-event mental activities such as rehearsal, verbal coding, and image generation can similarly contribute to altered recollections of the event or person. The Wells and Bradfield (1998) research dramatically demonstrated these kinds of changes as do the detrimental effects of both postevent verbal (Schooler and Engstler-Schooler 1990) and conceptual rehearsal of events and people. These kinds of retrospective reconstructions or reframing of events are likely to form the basis of much additional research in the field.

---

## **2.8 RELATION BETWEEN ACCURACY AND CONFIDENCE**

---

Analyses of jurors decision-making processes have indicated that of all the factors influencing their judgments of credibility of a witness, the confidence expressed by the witness is most influential. When witnesses claim to be absolutely certain of their statements their evidence is given more weight than that from other witnesses who expresses less certainty. Assignment of greater evidential weight to the first than to the second group of witnesses would be reasonable if subjective confidence was predictive of accuracy.

Although it is clear that the triers-of-fact do believe there is a strong relationship between accuracy and confidence, the research evidence has been equivocal. Whereas a minority of studies has demonstrated moderate to strong relationships between the two variables, the majority have not. Indeed, the obtained relationship has been generally so low as to provide virtually no predictive value from confidence to accuracy.

Witnesses subjective confidence is an estimator variable because it reflects a witness's characteristics, such as age and gender. Nonetheless, its expression by a witness may be seen also as a system variable because it can be altered by the

criminal justice system. For example, witnesses may be encouraged by others to assign high confidence to their in-court opinions, often much higher than they provided at the time of the identification. As a result, many researchers have argued that some standardised assessment of confidence should be taken by the investigating officer at the time of a witness's identification decision (Wells et al. 1998).

Therefore confidence appears to be influenced by post identification factors such as repeated questioning, briefings in anticipation of cross-examination, and feedback about the behaviour of other witnesses (Penrod and Cutler, 1995). There is widespread agreement among researchers that the correlation between identification accuracy and confidence in identification judgments is weak. For this reason, many experts caution against heavy reliance on confidence when evaluating identification accuracy (Sporer, Penrod, Read and Cutler, 1995).

### **2.8.1 Improvement of the Reliability and Accuracy of Witness Statement**

In a scientific study focus is laid on the reliability and accuracy of the results. Reliability is the consistency of your measurement, or the degree to which an instrument measures the same way each time it is used under the same condition with the same subjects. Accuracy in general, refers to precision and/or exactness. In the fields of science, engineering, industry and statistics, accuracy is the degree of conformity of a measured or calculated quantity to its actual (true) value. But reliability and accuracy in eye witness study in forensic psychology has a different dimension to it because of the following reasons:

Cases where the exact truth is known to the investigator are rare. Thus there is no actual data based on which eyewitness account can be compared for accuracy. There are many factors involved which lead to minor or major changes in eyewitness statements after the incidence takes place. Thus the reliability factor in eyewitness assessment is highly prone to doubts.

A witness may, for some reason, want to deceive the investigator. In such cases even if the statements are consistent throughout the investigation but they are not accurate.

Since eyewitness testimonies are very crucial for legal case investigations there has been a lot of researches to facilitate better reliability and accuracy. In India tools and methods like Polygraphy Test, Narco analysis and BEOS are used by Forensic Psychologists. These tools and methods help the investigator to systematically and scientifically assess the eyewitness and their statements.

However, in the initial phase of a case investigation the police personnel are assigned the duty of extracting information from the eyewitnesses. It is ironical that although the quality of a witness's or victim's report is of paramount importance in solving criminal cases, police investigators often have minimal guidance in developing effective interview techniques to facilitate memory retrieval.

A standard interview procedure is carried wherein the eyewitness statements are recorded. A lot of research points out that the Standard Interview procedure lacks in efficiency. The cognitive interview technique (CI) has received considerable

attention as one of the most successful interview techniques applied to real-life investigations. It was devised by Geiselman, Fisher, Firstenberg, Hutton, Sullivan, Avetissian and Prosk in 1984 to improve eyewitnesses' memory by using mnemonic strategies which ask witnesses to think about what happened and encourage them to make as many retrieval attempts as possible.

### 2.8.2 Cognitive Interview

In this condition, the interviewers are to describe four general memory-retrieval techniques to the subjects or the eyewitness before the questioning began. A four-item list of the techniques is placed in full view of the witness during the entire interview as a reference guide.

Otherwise, the format of this interview was the same as that for the standard interview starting with each "witness" was to be asked first to describe in their own words what they remembered (open-ended report). The following descriptions of the techniques were read by the interviewer to the subject verbatim at the beginning of the interview:

- i) *Reinstate the Context:* Try to reinstate in your mind the context surrounding the incident. Think about what the surrounding environment looked like at the scene, such as rooms, the weather, any nearby people or objects. Also think about how you were feeling at the time and think about your reactions to the incident.
- ii) *Report Everything:* Some people hold back information because they are not quite sure that the information is important. Please do not edit anything out of your report, even things you think may not be important.
- iii) *Recall the Events in Different Orders:* It is natural to go through the incident from beginning to end. However, you also should try to go through the events in reverse order. Or, try starting with the thing that impressed you the most in the incident and then go from there, working both forward in time and backward.
- iv) *Change Perspectives:* Try to recall the incident from different perspectives that you may have had, or adopt the perspectives of others that were present during the incident. For example, try to place yourself in the role of a prominent character in the incident and think about what he or she must have seen.

Thus with all its complexities eyewitness assessment can lead to a more reliable and accurate information collection by using interview procedure like cognitive interview. Tools and methods like Polygraphy Test, BEOS and Narco analysis have proved out to be a great help in the field of Forensic Sciences.

---

## 2.9 LET US SUM UP

---

Eyewitness is someone who has been a spectator of a dramatic event or a crime scene first hand, the one who can give an account of the event. . Eyewitness account or testimony has a strong impact on criminal investigations and courtroom verdicts. Assessment of eyewitness and their statement becomes an important task for a forensic psychologist.

To gain maximum from an eyewitness account the investigator has to keep questioning the reliability and accuracy of the same.

Eyewitness assessment has to be differently approached when the witness is a child or himself/herself a victim to the crime.

Eyewitness assessment studies are based on two sources: real-world observations of witnesses/victims and research simulations of criminal acts. Both of these have their advantages and limitations.

Researchers use real life cases, video clips and/or simulated stage demonstration in eye witness studies wherein the witness is assessed using live line up, sequential photo presentation and/or photospread methods.

Some of the tools and methods used by Forensic Psychologists in India during legal case investigation are the Polygraphy test, BEOS and Narco analysis.

Polygraph is an instrument that measures and records several physiological indices. It is based on the foundation that deceptive answers/information will produce physiological responses that can be differentiated from those associated with non-deceptive answers/information.

BEOSP is a non-invasive scientific technique with a great degree of sensitivity. It is a Neuro-psychological method of interrogation and is also referred to as 'brain fingerprinting'.

Conducted while the patient is in sleeplike state induced by barbiturates or other drugs, especially as a means of releasing repressed feelings, thoughts or memories.

Factors of interest to researchers may be classified as either estimator or system variables. Estimator variables are not under the control of either the criminal investigator or the criminal justice system. On the other hand these variables are under the control of the criminal justice system

Post event information may lead to misinformation in eyewitness memory. Researches on the same have come to the conclusion that going well beyond distortion of minor details, research participants have also constructed complete but false autobiographical events as a result of suggestive misinformation techniques.

There is widespread agreement among researchers that the correlation between identification accuracy and confidence in identification judgments is weak. For this reason, many experts caution against heavy reliance on confidence when evaluating identification accuracy

With all its complexities eyewitness assessment can lead to a more reliable and accurate information collection by using interview procedure like cognitive interview. Tools and methods like Polygraphy Test, BEOS and Narco analysis have proved out to be a great help in the field of Forensic Sciences.

---

## 2.10 UNIT END QUESTIONS

---

- 1) Who is an eyewitness? What is her/his role in criminal investigation?

- 2) How does an eyewitness's being the victim of the crime or a child affect assessment?
- 3) Compare advantages and limitation of real life crime case and research simulations of criminal acts as sources of eyewitness assessment study.
- 4) Write a brief note on misidentification of an innocent person by an eyewitness.
- 5) What are the procedures and methods used by researchers in assessing eyewitness and their statements?
- 6) What is polygraphy test? What is the procedure in which it is conducted?
- 7) What is BEOSP? What is the principle behind it?
- 8) How does post event information affect Eyewitness memory?
- 9) Elaborate your understanding on relation between eyewitness confidence and their accuracy.
10. What is Cognitive Interview?

---

## 2.11 SUGGESTED READINGS AND REFERENCES

---

Cutler, B. and Penrod, S. (1995) *Mistaken Identity*. Cambridge University Press: Cambridge UK.

Fisher, R.P. & Geiselman, R.E. (1992). Memory enhancing techniques for investigative interviewing: The cognitive interview. *Springfield*:

Loftus, E.F. (1979). *Eyewitness Testimony*. Cambridge, MA: Harvard University Press.

Veeraraghavan, Vimala (2009). *Handbook of Forensic Psychology*. Select Scientific Publishers. New Delhi.

### References

Penrod, S & Cutler, B. (1995). Witness confidence and witness accuracy: Assessing their forensic relation. *Psychology, Public Policy, and Law*, 1(4), 817-845.

Sporer, S. L., Penrod, S, Read, D & Cutler, B. (1995). Choosing, Confidence, and Accuracy: A Meta-Analysis of the Confidence–Accuracy Relation in Eyewitness Identification Studies. *Psychological Bulletin*. 118(3), 315-327.

Puranik, D.A., Joseph, S.K., Daundkar, B.B., Garad, M.V. (2009). Brain Signature profiling in India. It's status as an aid in investigation and as corroborative evidence – as seen from judgments. *Proceedings of XX All India Forensic Science Conference*, 815 – 822.

Wells, G. L. & Bradfield, A. L. (1998). “Good, you identified the suspect:” Feedback to eyewitnesses distorts their reports of the witnessing experience. *Journal of Applied Psychology*, in press.

Wells GL. 1993. What do we know about eyewitness identification? *Am. Psychol.* 48, 553–71

Lindsay, R. C. L. & Wells, G. L. (1985). Improving eyewitness identifications from lineups: simultaneous versus sequential lineup presentation. *Journal of Applied Psychology*, **70**, 556 – 64.

Keppel, G., & Underwood, B. J. (1962). Proactive inhibition in shortterm retention of single items. *Journal of Verbal Learning & Verbal Behaviour*, **1**, 153-161.

Lindsay D. S., Allen B. P., Chan J. C. K., Dahl L. C. (2004). Eyewitness suggestibility and source similarity: Intrusions of details from one event into memory reports of another event. *Journal of Memory & Language*, **50**, 96-111.

Loftus, E. F., Miller, D. G. & Burns, H. J. (1978). Semantic integration of verbal information into a visual memory. *Human Learning and Memory*, **4**, 19-31.

Wells GL, Bradfield AL. 1998. "Good, you identified the suspect:" Feedback to eyewitnesses distorts their reports of the witnessing experience. *J. Appl. Psychol.* **83**:360–76

Schooler JW, Engstler-Schooler TY. 1990. Verbal overshadowing of visual memories: some things are better left unsaid. *Cognitive Psychology* **22**: 36–71.

Penrod, S. & Cutler, B. (1995). Witness confidence and witness accuracy: Assessing their forensic relation. *Psychology, Public Policy & Law* & , **1**, 817-845.

Sporer, S., Penrod, S.D., Read, D. & Cutler, B.L. (1995). Gaining confidence in confidence: A new meta-analysis on the confidence-accuracy relationship in eyewitness identification studies. *Psychological Bulletin*, **118**, 315-327.

Geiselman, R. E., Fisher, R. P., Firstenberg, I., Hutton, L. A., Sullivan, S. J., Avetissian, I. V, & Prosk, A. L. (1984). Enhancement of eyewitness memory: An empirical evaluation of the Cognitive Interview. *Journal of Police Science and Administration*, **12**, 130-138.