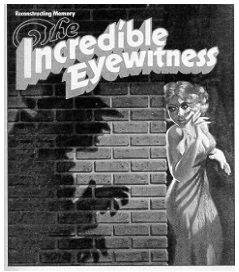
Eyewitness Testimony: Estimator Variables



Amina Memon

Why research this topic?

- Evidence in criminal trials is often based upon eyewitness testimonies.
- Police are more likely to pursue a case if they have an eyewitness.
- Memory is reconstructive so an eyewitness's evidence cannot always be relied upon.
- A jury can be persuaded by a witness.

Why research this topic?

- In the UK as many as one in five witnesses mistakenly identifies a volunteer at identity parades, despite warnings that the culprit may not be present (Wright & McDaid, 1996; Valentine et al. 2003).
- Errors are costly.

Jill Dando

The conviction of Barry George for the murder relied heavily on eyewitness evidence….

Crime scene BBC

- The 4 witnesses in the Dando investigation shared a taxi from the police station (and prior to court appearance)
- Only one witness identified Barry George, three made no identification. These witnesses became more confident in court that George could have been the one.
- Three of the four witnesses claim they only had a fleeting glance at the time they crime occurred (estimator variable)

System & Estimator Variables

- Estimator Variables are factors that are inherent in the witnessing situation. We can estimate accuracy from them.
- System Variables are factors that can be controlled by the criminal justice system to improve accuracy (see Lecture 3 for examples)

Basic Method

- Live event or video re-enactment of crime.
- Test delays ranging from 15 minutes to one month.
- Photo lineups (target-present lineups and target-absent lineups).

Simultaneous Lineup

Estimator Variables

Exposure & Age

Estimator Variable: Exposure

Case from Victoria Supreme Court of Appeal, Australia

R v Tektonopoulos 1999 VSCA93

- A young woman was asleep in bed when intruder entered her bedroom
- He carried a weapon (knife), he spoke to her in whispered tones and touched her intimate body parts
- He put on a torch (which remained on for 10-15 minutes) - the witness said she could see his face in the glow of the torch

R v Tektonopoulos 1999

- The witness described the man as having a full head of hair
- When shown photographs containing the applicant, the witness did not pick him but someone she described as bearing a 90-95% likeness to the intruder
- She picked the applicant from an identification parade (the applicant has receding hair).
- The witness was confident she recognised the intruders voice when he was asked to speak at the id parade.

Length of Exposure & Confidence

Hypothesis:

The longer the exposure the more accurate the identification.

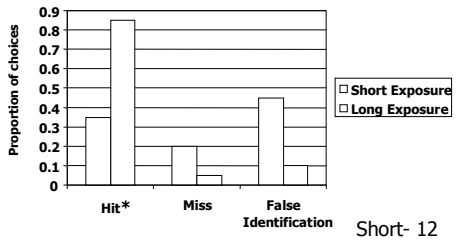
- But a longer exposure may also make a witness more confident (even when inaccurate).

Memon, Hope, Bull, 2003

Research Questions

- Will young and older witnesses benefit (accurate identifications) from an increase in exposure to a perpetrator's face?
- Will witnesses be more confident under the long exposure conditions?
- Will their confidence be an indicator of their accuracy?

Results: Old Age Group (TP)



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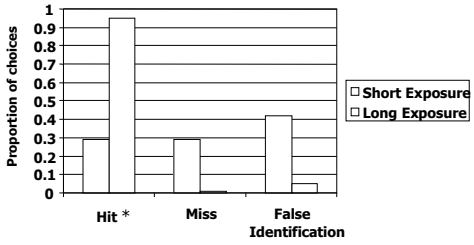
Short- 12 seconds
Long- 45 seconds

Results: Young Age Group TP



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Confidence

- But a longer exposure may also make a witness more confident (even when inaccurate).
- Similarly, Lindsay, et al (1998) found that conditions leading to high levels of confidence in correct identification (use of a three minute video) led to higher confidence in false identifications.

Confidence and metamemory

- Read (1995) : under conditions of 'longer' exposure participants make use of meta-memorial information about length of exposure in reaching a decision about whether or not a face was seen before.

Confidence and event duration

- People are not very good at estimating duration of events so their meta-memorial information may be misleading (Pederson & Wright, 2004).
- Jurors rely heavily on witness confidence as an indicator of credibility (Bornstein & Zickafoose, 1999)

Is a confident witness more likely to be accurate?

- The relationship between confidence and accuracy is complex.
- A meta-analysis (Sporer et al. 1995) concludes that the confidence-accuracy relationship is stronger for choosers (witnesses who make an identification in a lineup) than for non-choosers (witnesses who reject lineups, that is, who say that the culprit is not present in the lineup).

Confidence: Forensic Value?

- The distinction between choosers and non-choosers is forensically important.
- Choosers appear more often in court than non-choosers because non-identifications (the result of not choosing) are not of interest to the prosecution.
- The trial of Barry George was an exception in this case.

Confidence is malleable

- A number of factors can inflate confidence
- Repeated questioning can increase a witness's belief in the accuracy of their reports (Shaw & McClure, 1996);
- information that a co-witness has identified the same person increases confidence (Luus & Wells, 1994).
- Interviewer feedback (See Lecture 3).

Estimator Variable

Race of Witness and Suspect

CRE

- Ps (adults and children) are better able to recognise own-race faces
- Ps encode more qualitative details about own-race faces, information that can be used at retrieval (Meissner et al. 2005)
- Advantage of configural processing. Own Race faces processed holistically* (Tanaka et al. 2004) while for other races we rely more on features.

* Configural processing refers to coding of spatial relations between individual facial features: Holistic processing refers to the coding of perceptual wholes, (Tanaka & Farah, 1993).

Social Mechanisms: Contact

- The quality and/or quantity of interracial contact

  may play a significant role in the CRE. Increased contact may increase memory performance by:

(a) reducing the likelihood of stereotypic responses and search for individuating information (Malpass, 1981);

(b) Improve the ability to visually discriminate amongst other race faces (Goldstein & Chance, 1985)

Socio-cognitive mechanisms

- Categorisation causing people to attend to category specifying information of CR faces instead of individuating
- Verbal Instructions to individuate reduced CRE (Hughenberg et al. 2006)

Cross-race effect

- Wright et al. (2003) field study in South Africa and England.
- In each country, a black or white male confederate approached either a black or white member of the public in a shopping centre
- A few minutes later, another confederate asked questions and presented a lineup.
- An own race bias was found in response to questions about the target and in lineup accuracy.

Estimator Variable

Emotional arousal

Field Research

- An archival study of witnesses of single shooting incident in Canada involving 21 witnesses (13 were corroborated) noted accurate recall of actions and objects but numerous errors in person descriptions (Yuille& Cutshall, 1986)

Field Research

- In an analysis of capital cases of rape and robbery in Germany, Sporer (1992) examined statements of 100 witnesses. Again, the quantity of person descriptions were poor and only 30% of witnesses described the face of the perpetrator.

Emotion: Laboratory Studies

- There is a debate in literature as to the effect of emotion on memory.
- A problem in defining terms like stress, emotional, arousal and trauma and manipulating emotion in the laboratory.
- Do we define in terms of subjective qualities (feelings), the situation (e.g. threatening), consequences or bodily reactions?

Emotion can improve memory

- Emotional content of an picture (e.g. a hand grenade vs a barometer) **increased** the likelihood that specific visual details were recognised when asked whether the picture was the same, similar or a new item to that seen earlier (Kensinger et al, 2006).
- Emotional arousal affects attention deployment
- Emotional items may be attended to at the cost of items in the periphery.

Meta-analysis on stress and eyewitness memory

- Heightened stress has a detrimental effect on the ability to recognise a perpetrator as well as to recall details of the crime (See Deffenbacher et al 2004: meta-analysis).
- But the type of study, population, 'manipulation of stress' appears to be critical.

Active Duty Military Personnel

- Morgan et al. 2004 studied 530 personnel enrolled in military survival school training.
- Memory for interrogator's face after a high or low stress interrogation.
- All were exposed to sleep/food deprivation 48 hrs prior to interrogation stress.

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Results

- Various types of lineups (live, photo) were used, most containing the face of the interrogator.
- Accuracy of identification appeared to be higher in the low stress group
- Numerous methodological problems with procedures for testing/analysis.

Weapon focus

How can the presence of an emotionally arousing stimulus or threat can influence eyewitness memory?

A witness confronted with a weapon tends to focus on the weapon rather than the perpetrator's face. Hence they are less likely to recognise the face in a lineup (Steblay, meta-analysis).

Mechanisms

- Visual stimulus-weapon could serve as an "attention magnet" (Laney et al. 2003), see also attentional narrowing hypothesis (lecture 10)
- Emotion enhances memory for central details (weapon) and impairs memory for peripheral details such as what the gunmen looked like (Easterbrook Hypothesis).

Field Research

- Several field studies do not find support for weapon focus (Valentine et al. 2003 study, London; Behrman and Davey, 2001, Sacremento).
- Tollestrup et al. (Canada) found victims of crimes with weapons recalled more details.
- **Problems with field research**: numerous variables, cannot always verify accuracy, is it memory or motivation (seriousness) that influences recall?

Memory of firearms training officers

Serious violence and gun offences are an increasing problem (Accounts Commission for Scotland, 2003)

Hulse and Memon,
LEGAL AND CRIMINOLOGICAL PSYCHOLOGY 11: 313-325 Part 2 SEP 2006

Hypothesis

Easterbrook's (1959) cue-utilisation hypothesis:

As arousal increases, perceptual range reduces and attention narrows.

Thus fewer event details to be recalled but more accurate

Method

Participants:

70 Police Authorised Firearms Officers (69 male, 1 female; mean age = 37 yrs, mean experience = 8 years)

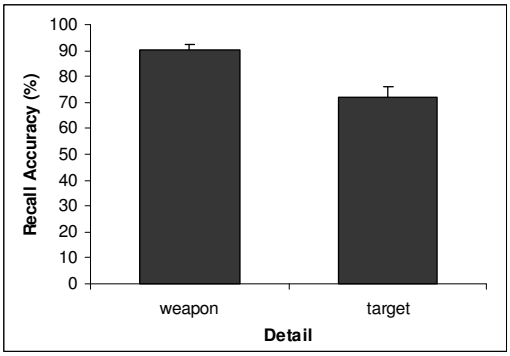
Event type:

Weapon Present (WP) "shoot" scenario vs. Weapon Absent (WA) "no shoot" scenario

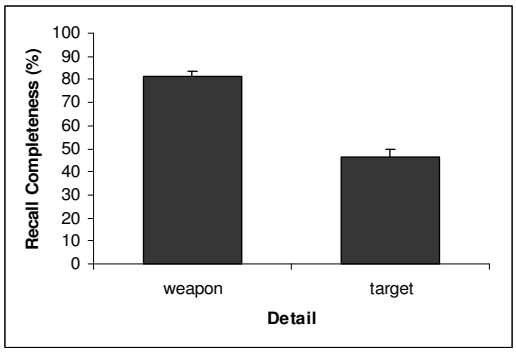
Briefing information:

Threat warning vs. No threat warning

Weapon Focus: Recall Accuracy



Weapon Focus: Recall Completeness



Weapon Focus: Identification

	Lineup response	
Event type	Correct rejection	False alarm
WP 'shoot'	74%	26%
WA 'no shoot'	61%	39%

Results

- Participants who witnessed the shooting reported experiencing significantly more arousal than did participants who witnessed the no shoot scenario
- Participants who witnessed WP 'shoot' scenario were less confident in their lineup response than participants who witnessed WA 'no shoot' scenario.
- No association between confidence and accuracy.

Summary

- Estimator variables: Many examples, we only looked at 3 in this lecture: exposure, race and stress/emotional stimulus.