

COGNITION IN ACTION

LECTURE FOUR: COGNITION IN FORENSIC SETTINGS I

Dr Kate Williams

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EYEWITNESS MEMORY

- Involve one-time events: e.g., witnessing a crime.
- Basics of encoding, storage and retrieval is the same.
- Following event, witness is asked to recognise/identify suspect involved.
- SDT can be applied to the study of EW memory.
- SDT Matrix can also be implemented:

		Eyewitness Response	
		"Yes"	"No"
Suspect is:	Present	Hit	Miss
	Absent	False alarm	Correct rejection

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RELEVANCE

- Criminal justice system and protection of society served by maintaining high level of sensitivity, while beta is kept neither:
- Too high = many misses would lead to criminals going free.
- Too low = greater FA would lead to innocent people being convicted of crimes they did not commit.

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WHAT INFLUENCES AN EWS ABILITY TO ID A SUSPECT?

- Eyewitness suggestibility
- Eyewitness memory importance
- Recognising suspects: Police line-ups
- Recognising suspects: Describing faces
- Police questioning and interviewing techniques
- Violence & Weapon Focus
- Research into EWM performance has influenced policy and procedure in police and legal profession

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POLICE LINE-UP

- Most common method to identify a suspect:
- Line-up: EW presented with number of individuals
 - One of which is the suspect
 - The remainder are “foils”
- Considered a two stage process
 1. Is the suspect in the line-up
 2. If so, which person is the suspect.



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POLICE LINE-UP

- By applying SDT, researchers attempt to understand characteristics of line-up procedure that might influence how the witness responds.
- Variables that impact line-up process include:
 - Presentation method:
 - Inc. simultaneous vs. sequential; live vs. pictures
 - Instructions provided to witnesses
 - Content
 - Behavioural influences

Wells & Olson (2003)

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THE EFFECT OF LINE-UPS

- Inappropriately designed line-ups can impact EWs ability to ID a suspect
 - May lead to using external cues rather than memory
- Wells, Seelau, Rydell, and Luus (1994):
 - Verbal descriptions should be obtained prior
 - Foils should resemble suspect description
 - Clothing of members in line-up must be considered
 - Instructions must not be biased



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THE EFFECT OF LINE-UPS

- Cutler, Fisher, and Chicvara (1989):
 - Generally photographic line-ups are inferior to live ones
 - However, correct and false IDs are roughly similar in both
- Photographic line-ups also have the following advantages:
 - Suspect/foils/EVW do not have to be present at the station
 - Easier to construct fair line-up due to larger pool of photographs
 - Suspects and foils in live line-ups can inadvertently draw attention to themselves



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THE EFFECT OF LINE-UPS

- Simultaneous line-ups:
 - Risk that witness will use **Relative judgment** Strategy:
 - Selecting line-up member most similar to “memory” of culprit – process of elimination (Lindsay, 1999).
 - May be acceptable if culprit **is** in the line-up.
 - But – what if true culprit not in line-up? False alarm.



Wells & Olson (2003)

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THE EFFECT OF LINE-UPS

- Sequential line-ups:
 - Less likely EW chooses innocent line-up member as it encourages conservative response criterion (Lindsay & Wells, 1985; Steblay et al., 2001).
 - EWs don't know size of line-up, which discourages relative judgements.
- However, this means hit rate will be greatly reduced (Grondlund et al., 2009; Meissner et al., 2001).

Wells & Olson (2003)

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THE EFFECT OF LINE-UPS

- What about a loss in accuracy with sequential line-up?
 - Memon & Gabbert (2003): 30% drop in accuracy with sequential.
 - Wells (2003): only a % of accurate IDs in simultaneous line-up come from relative judgement.
 - EW with weak memory may still choose suspect – An EW who guesses will still be correct a certain % of the time.
 - But this EW may not be able to ID suspect in a sequential line-up
 - An EW in a sequential line-up usually has a strong memory
 - “Guessers” are not present in sequential line-ups.
- So, drop in accuracy is due to removal of weak witnesses: which is a good thing!

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THE EFFECT OF LINE-UPS

- Line-up number: should be large enough to avoid guessing innocent person.
 - Usually one suspect and at least 5 foils
 - But foils need to be acceptable
- Luus and Wells (1991): foils that resemble suspect promote similarity, making it difficult to ID suspect
 - EW then needs to make use of extra-recognition information

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THE EFFECT OF LINE-UPS

- One technique used to identify weak witnesses is through “Dual line-ups”:
- First line-up is “blank”
 - The target is absent
- If the EW does not choose anyone then a target present line-up goes ahead.



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LINE-UP INSTRUCTIONS

- Instructions given to a witness can also impact how they respond (Wells & Olson, 2003).
- E.g., telling an EW the suspect may **not** be in line-up reduces FAs – i.e., mistaken identification (Malpass & Devine, 1981).
- As a result the US dep. of justice has added this instruction in to a set of guidelines for law enforcement (Technical Working Group for Eyewitness Evidence, 1999).

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LINE-UP OUTCOMES

- Speed of decision: 10-12 second rule:
 - Dunning & Perretta (2002) – time to ID suspect linked to accuracy
 - Fast (less than 10-12 secs) – automatic and likely to be accurate
 - Slow – conscious deliberate process – perhaps trying to justify choice to themselves?



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EW CONFIDENCE

- Once EW has made selection, usually they are told if they have selected the suspect from the line-up.
- This can impact confidence levels in their judgement
- Wells and Bradfield (1998): post-identification suggestions lead to “false certainty” that culprit was correctly identified.
- Even when true culprit was not in the line-up, FAs were accompanied by inaccurate overconfidence in judgement.

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EW CONFIDENCE

- When these EWs appear in court to testify against a suspect:
 1. They are more convinced the suspect is the culprit
 2. Jury's are more easily convinced by their confidence



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EW CONFIDENCE

- General assumption:
 - A highly confident EW is an accurate EW.
- Cutler, Penrod, and Dexter (1990): juror's rates of conviction only affected by EW confidence.
- Wells, Lindsay, and Ferguson (1979): perception of EW confidence accounts for 50% variance in juror's judgement of EW accuracy.

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EW CONFIDENCE

- Criteria for evaluating reliability of EW ID has been known to include their confidence.
- Wells and Murray (1984): no significant relationship between confidence of EW and accuracy.
 - Thus, juries should not use confidence as a measure of accuracy.
- Wells and Olson (2003): Line-ups should be administered by someone who does not know which line-up member is the suspect (or if present).

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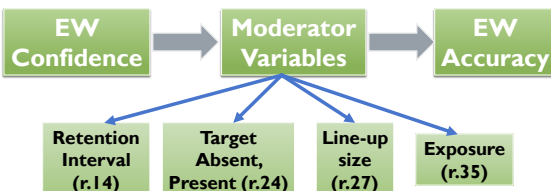
MODERATOR VARIABLES

- Bothwell, Deffenbacher, and Brigham (1987):
 - Investigated whether there was a confidence-accuracy correlation
 - Meta analysis of 40 experiments from 35 studies
 - Average Confidence Accuracy (CA) relationship = .25 (moderate but sig)
- EW who are highly confident of their ID are only slightly more accurate than unconfident EW.

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MODERATOR VARIABLES

- Bothwell, Deffenbacher, and Brigham (1987):



- Strength of relationship is mediated by variables – shows the need to measure these in real-life cases.

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OPTIMALITY HYPOTHESIS

- Factors affecting quality of memory also influence confidence
- The confidence accuracy relationship is strongest when encoding and retrieval conditions are optimal.
 - Length of time to view suspect (Deffenbacher, 1980)
 - Distinctiveness (Cutler & Penrod, 1989).
- However: quality of “foils” in line-up impact CA

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OPTIMALITY HYPOTHESIS

Line-up Conditions	Mean Confidence
1. Foils similar to witness description	3.68
2. Foils similar to suspect	3.80
3. Foils resemble neither	4.46



Accuracy

Police usually use this
– Should they?
Does it bias choice?

Wells, Rydell, & Seelau (1993)

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MODERATOR VARIABLES

- Wells et al. (1993): foil selection has influence on accuracy while confidence is related to encoding conditions.
 - Good encoding conditions = higher confidence
 - Good line-up conditions = better accuracy
- Lieppe (1980)
 - Some factors can affect accuracy without affecting confidence
 - E.g., post-event misleading info
 - While other factors can influence confidence without affecting accuracy
 - E.g., post-event questioning



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POST LINE-UP FEEDBACK

- Confidence can also be altered in the opposite way:
 - E.g., “Are you really sure?” “Do you want another look?”
 - Wells and Bradfield (1998, 1999)
 - Can influence memory retrospectively.
- Garrioch & Brimacombe (2001): Line-up administrators can influence post-ID confidence even without any post-ID feedback.
 - E.g., through intonations, tone of voice, agitation, and other non-verbal behaviour.



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POST LINE-UP FEEDBACK

- Although, post-ID feedback can work to an advantage to test EWM
- EWs with strong memory are not influenced by post-ID feedback (Bradfield, Wells, & Olson, 2002).
 - Strength of internal cues to accuracy vs. external cues.
 - When internal cues are weak, EWs rely on external cues
 - EWs with poor memory look to info during line-up to make decision

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LINE-UP INSTRUCTIONS AND WITNESS EXPECTATIONS

- Even when line-ups are conducted under the most optimal conditions possible, witness expectations may undermine the fair line-up procedures conducted
- Memon, Hope, and Gabbert (2002):
 - Despite explicit instruction that suspect may be absent from line-up
 - 90% still expected suspect to be present
 - 95% remember hearing the ‘suspect may be absent’ instruction
 - 17% felt under pressure to choose anyway
 - 78% would make the same decision in real-life line-up
 - 47% were incorrect in that decision
- Social influences during line-ups cannot be easily overcome and witness expectations can undermine good practices

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PROVIDING FACE DESCRIPTIONS

- An EW will be required to describe aspects of what they witnessed following the event.
 - This will include describing the suspects face
 - Sounds easy, but actually very difficult
- It serves the important function of:
 - Allowing law enforcement to search for the suspect
 - Give members of the public an idea of who to look out for
 - A basis on which to select foils in a line-up
- So, it needs to be as accurate as possible!

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DESCRIBING FACES

- Issue: How can we put a visual image in to words?
- Dual-code theory:
 - Suggests this type of information is stored separately
 - Visual code: global information
 - How face fits together (not just component parts).
 - Verbal code: specific information containing verbal labels
 - Independent & additive – e.g., "They had a big round nose"
- Advantage = If they cannot remember one type then hopefully they have the other as a back-up.

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DESCRIBING FACES

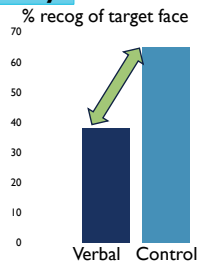
- Consequences of verbal processing:
 - Positive:
 - Elaboration – meaningful labels are associated with new stimuli.
 - Repetition – rehearsal helps the memory of visual info
 - Negative:
 - Discriminating targets from distractors is difficult if they are similar
- When people in a line-up all look similar, verbal labels are not useful
- Verbal labels are only helpful if only one person in the line-up looks like the verbal label

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Ps watch video of bank robbery

Shown slides of 8 verbally similar faces

Schooler & Engstler-Schooler (1990)

[illegible]

- Recoding Interference: verbal memory accessed but loss of retrieval availability to visual memory (blocking effect)
- Global vs Local processing: Macrae & Lewis (2002)
 - Letter ID task with 100 mismatching letters
 1. Global processing condition
 2. Local processing condition
 - Face recognition test

Diagram illustrating a nested loop structure. The outer loop (represented by the large rectangle) contains 5 iterations (rows of 'S's). The inner loop (represented by the smaller rectangles) contains 5 iterations (rows of 'S's') for each iteration of the outer loop. The total number of 'S's is 15 (from the first two rows) + 15 (from the next three rows) = 30.

