Overview of Estimator and System Variables in Eyewitness Identification

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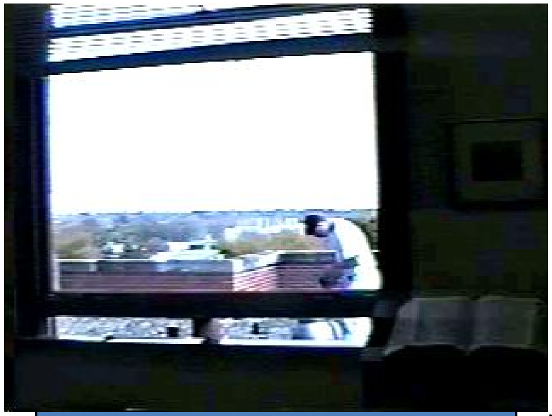
The Controlled Lab Method for the Scientific Study of Eyewitness Identification

Created
event

Created event



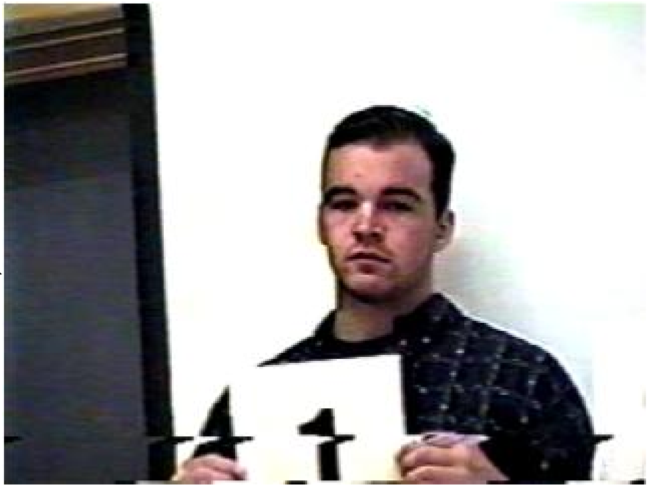
N# witnesses

View a lineup

Created event

N# witnesses

View a lineup



Created event

Nature of the witnessed event

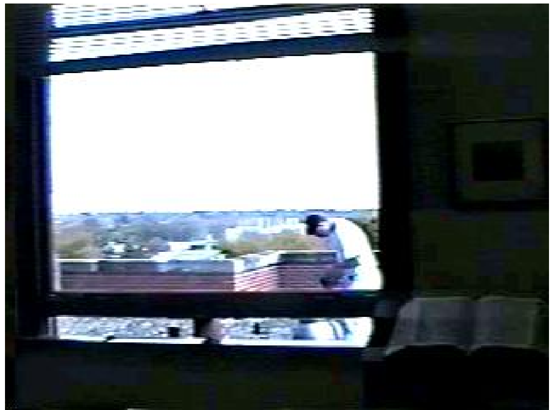
N# witnesses

View a lineup

Identification decision

Certainty of identification

Created event



N# witnesses

Characteristics of witnesses

View a lineup

Identification decision

Certainty of identification

Created event

N# witnesses

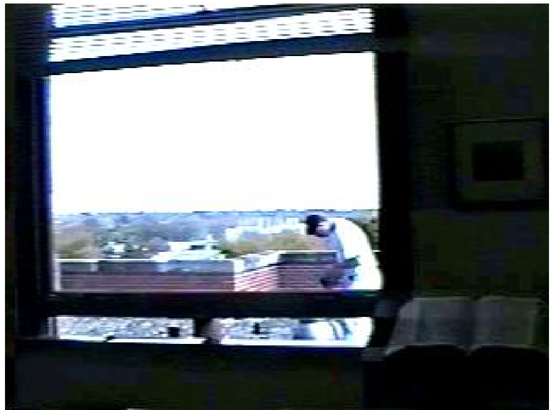
Instructions

View a lineup

Identification decision

Certainty of identification

Created event



N# witnesses

View a lineup

Type of lineup

Identification decision

Certainty of identification

Created event

N# witnesses

View a lineup

Identification decision

Certainty of identification

Behaviors of lineup administrator

System vs. Estimator distinction (Wells, 1978)

Estimator variables: Variables that affect the accuracy of eyewitness identification over which the justice system has no control (but might be used to estimate accuracy).

View (duration, lighting, distance, obstructions, disguises); Attention (distractions, weapons); Stress & fear; Race/ethnicity congruence; Retention interval; Interactions among witnesses

System variables: Variables that affect the accuracy of eyewitness identification over which the justice system has control.

Show-up vs. lineup; Initial interviews; Pre-lineup instructions; Filler selection; Suggestive lineup-administrator behaviors; Post-ID reinforcement/feedback; Repeated ID procedures (same suspect w/new fillers); Base rate for culprit presence

Note: All system variables can also be used as estimator variables, but not vice versa.

Some Estimator Variables

- Disguise
- Distance
- Stress/fear
- Weapons and other distractions
- Race/ethnicity
- Retention interval
- Appearance change
- Witness age (& witness/perpetrator age similarity)
- Co-witness contamination

Some System Variables

- Ø **Lineups versus show-ups** (show-ups suggestive and fail to distribute errors to less the harmful category of filler identifications)
- Ø **Pre-identification instructions** (to warn that culprit might not be present and legitimize a non-identification response)
- Ø **Simultaneous versus sequential presentation** (to improve proportion of accurate identifications <u>among those making identification</u>)
- Ø **Filler selection methods** (to not let suspect stand out)
- Ø **Double-blind lineup administration** (to prevent inadvertent verbal/non-verbal suggestion)
- Ø **Repeated identification procedures** (e.g. showing suspect again with different fillers)
- Ø **Collecting a certainty statement at the time of identification** (by blind administrator prior to confidence-inflating feedback)
- Ø **Base rate for culprit presence** (because harmful mis-identifications occur when culprit not present in lineup/show-up)
- Ø **Contemporaneous and complete records**(e.g., to make sure non-IDs and filler IDs are part of the record)

A fairly large portion of the system variables can be (and have been) derived from the lineups-as-scientific-experiments analogy (Wells & Luus, 1990)

Police Lineups as Experiments Analogy

(Wells & Luus, 1990)

Police conducting a lineup can be likened to scientists conducting an experiment:

Experiment term	Lineup counterpart
Hypothesis	This suspect is the culprit
Null hypothesis	This suspect is not the culprit
Experimenter	Lineup administrator
Subjects	Eyewitness(es)
Stimulus	Suspect or his/her photo
Materials	The suspect and similar-looking known-innocent fillers
Design	e.g., embed suspect among fillers; assign position; # fillers; criteria for fillers
Procedure	e.g., Pre-lineup instructions, double versus single blind
Dependent measures	Identification decision, certainty
Outcome scoring/ records	ID suspect, ID filler, reject, "don't know"
Interpretation	Increase or decrease belief in the hypothesis

Things that can go wrong with a scientific experiment can (and do) go wrong with lineups

Experiment Flaw Terms	Lineup counterpart
Pre-session contamination	e.g., “We got the guy – we need you to ID him” or prior exposure to suspect’s image
Absence of a control condition	e.g., no test of “mock witnesses”
Violations of protocol	e.g., No pre-lineup instructions or cursory/incredulous delivery
Leaking of hypothesis/Demand	e.g., suspect stands out
Experimenter expectancy/tester influence	e.g., non-blind administration, suggestive comments, non-verbal cueing
Selective/incomplete records of outcomes	e.g., no record when witness does not ID suspect; failure to document filler IDs, or “could not ID suspect” versus rejected all
Debriefing participant before all important measures collected	e.g., Post-identification feedback before securing certainty statement
Failure to objectively interpret outcome/ confirmation bias	e.g., Dismissing rejecters as poor witnesses; using only confirming witnesses

System Variables are not Restricted to Memory

System variables are <u>any</u> variables that increase or decrease the chances of mistaken identification over which the justice system has control. [Hence, for example, they include *social influence, counting rules, and base rates.]*

E,g., a "counting rule" – the single-suspect versus all-suspect lineup

A proper identification procedure is on in which there is only one suspect and the remaining are known-innocent fillers.

Lineups in which all members are suspects greatly inflate the rate at which innocent suspects are identified (Wells & Turtle, 1986, *Psychological Bulletin*).

An all-suspect lineup is like a multiple-choice test in which there are no wrong answers.

System Variables are not Restricted to Memory

Base rate (prior probability): The proportion of lineups conducted in which the suspect is the actual perpetrator.

Bayesian analyses of this lineup base-rate problem date back more than 30 years (Wells & Lindsay, 1980, *Psychological Bulletin*).

The base-rate for the lineup including the culprit is not *per se* a memory variable.

Assuming the single-suspect model:

Mistaken identifications of an innocent suspect cannot occur if the culprit is in the lineup. Identifications of an innocent suspect occur only if the culprit is absent.

Note: In every DNA exoneration case, the actual perpetrator was not present in the identification procedure.

The Base Rate as a System Variable

There is no legal requirement or standard that needs to be met to place a person in an identification procedure (Wells, *Wisconsin Law Review*, 2006).

Hence, potential suspects are commonly exposed to the jeopardy of identification tasks based on mere hunches, guesses, someone fitting the general description, and “trawling” procedures.

Proposed system reform: A detective must articulate and document reasonable suspicion (e.g., to a supervisor of detectives) before placing a potential suspect into the inherent jeopardy of a lineup.

Note: Bayesian analyses show that even modest elevations in base rate (e.g., from 40% to 60%) produce greater increases in accurate identifications and suppression of mistaken identifications than any other system variable.

Methods

Lab experiments

Cause-effect relations

DNA and other exon cases

Limited scientific utility (case studies; albeit a large set)

However, strong elements of real-world corroboration:

- high false certainty
- biased lineups
- reinforcement/feedback/certainty-inflation
- suggestive administrator behaviors
- persuasiveness to juries
- failures of Manson-type safeguards
- failures to make records of prior identification attempts

Field studies (overlooked and underappreciated)

Estimates of how often witnesses identify known-innocent fillers in actual cases involving serious crimes

Field Studies of Actual Eyewitnesses

STUDY	% of IDs that are of a known-innocent filler
Behrman & Davey (2001)	32%
Behrman & Richards (2005)	22%
Horry et al (2012)	40%
Horry et al (in press)	28%
Klobuchar et al, 2006	24%
Memon et al (2011)	49%
Slater (1994)	38%
Valentine et al (2003)	34%
Wells, Steblay, Dysart (2011)	36%
Wright & McDaid (1996)	34%
Wright & Skagerberg (2007)	27%
AVERAGE for all 11	33%

Note: Overall, 64% of witnesses made an identification, (21% filler & 43% suspect)

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Questions and Discussion