Simultaneous vs. Sequential Lineups

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Iowa State University

Presentation to:
The Connecticut Eyewitness Identification Task Force
October 19, 2011
The Scientific Method for Studying Eyewitness Identification
Created event
Created event

N# witnesses

View a lineup
Created event

N# witnesses

Nature of the witnessed event

View a lineup

Identification decision

Certainty of identification
Created event

N# witnesses

View a lineup

Identification decision

Certainty of identification

Characteristics of witnesses
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
The Relative-Judgment Process

*Eyewitnesses tend to select the person who looks most like the perpetrator relative to the other members of the lineup.*

From: Wells, *The Psychology of Lineup Identifications*
From: *What Do We Know About Eyewitness Identification?* Wells, *American Psychologist*

Note: All witnesses were warned that the actual perpetrator might not be in the lineup
Removal-without replacement and relative judgment processes [from Wells, *American Psychologist*]
Removal-without replacement and relative judgment processes [from Wells, *American Psychologist*]
No choice =
21%
32%
The problem with the relative-judgment process is that some member will always look more like the perpetrator than the remaining members of the lineup; even when the actual perpetrator is not in the lineup.
The standard simultaneous procedure
Is this the man you saw pull the trigger? “yes, no, or not sure”
Is this the man you saw pull the trigger? “yes, no, or not sure”
Is this the man you saw pull the trigger? “yes, no, or not sure”
Is this the man you saw pull the trigger? “yes, no, or not sure”
Is this the man you saw pull the trigger? “yes, no, or not sure”
Is this the man you saw pull the trigger? “yes, no, or not sure”
72 experimental tests using 13,143 participant-witnesses

Results:
Mistaken identifications from culprit-absent lineups were reduced by 22%
Identifications of the culprit were reduced by 8%

Diagnosticity ratios: 7.72 for sequential and 5.78 for simultaneous
What Happens with Actual Witnesses to Serious Crimes?

Many lab studies have used versions of the sequential that cannot or are not used in actual practice:
1. Backloading; Witness does not know how many to be viewed
2. Continuation procedure; Always go through the reminder, even if an identification is made on an earlier one
3. If more than one identification, let witness talk and resolve (but, a matter of record)
4. If witness requests a second “lap” then permit it (but, it is a matter of record…)
The Simultaneous versus Sequential Field Experiment (2011)

Four participating police departments:

1. Austin, TX
2. Charlotte, NC
3. San Diego, CA
4. Tucson, AZ

Funding:

1. Open Society Foundations
2. JEHT Foundation
3. Laura and John Arnold Foundation
The Simultaneous versus Sequential Field Experiment (2011)

Partners:

- Scientists:
  - Gary Wells
  - Nancy Steblay
  - Jen Dysart

- Organizations
  - American Judicature Society
  - Police Foundation
  - Innocence Project
Main Key Characteristics of the Study

- Photo lineups
- Administered by laptop computer
  - All instructions follow protocol
  - All responses automatically entered in record
  - Random assignment at last second to simultaneous or sequential
  - Random assignment at last second to order
- All double blind
- Single suspect embedded among five known-innocent fillers
Plus…

1. Backloading; Witness does not know how many to be viewed
2. Continuation procedure; Always go through the reminder, even if an identification is made on an earlier one
3. If more than one identification, let witness talk and resolve (but, a matter of record)
4. If witness requests a second “lap” then permit it (but, it is a matter of record…)
SunGard Remote Lineup
HOUSTON POLICE DEPARTMENT

SUNGARD\textsuperscript{©} PUBLIC SECTOR

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### Witness Information

**Case #**: 081015-0999

**Reason**: ARMED ROBBERY

**Investigator**: JOE FRIDAY

**Viewed By**: PAUL WILSON

**Add User**: SA

**Add Time**: 10/20/2008 10:47

**Supervisor Review**:  

**Review Date/Time**:  

**Lineup Type**: Q = Sequential, S = Simultaneous, X = Cancelled

### Lineup Candidates

<table>
<thead>
<tr>
<th>Name</th>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name 1</td>
<td>100</td>
<td>LOOKINGBILL, KASSY (WF 02/14/1973)</td>
</tr>
<tr>
<td>Name 2</td>
<td>200</td>
<td>HAYES, MARCY (WF 04/21/1971)</td>
</tr>
<tr>
<td>Name 3</td>
<td>300</td>
<td>HAMMOND, ROBIN (WF 07/28/1962)</td>
</tr>
<tr>
<td>Name 4</td>
<td>400</td>
<td>GRIFFIN, ROSEMARY (WF 02/26/1972)</td>
</tr>
<tr>
<td>Name 5</td>
<td>500</td>
<td>POLLEY, KELLY (WF 09/23/1978)</td>
</tr>
<tr>
<td>Name 6</td>
<td>600</td>
<td>DEFEYTER, DONYEL (WF 12/07/1973)</td>
</tr>
</tbody>
</table>

**Available For Download**
Click the 'Play Test Sound' Button on the right. Adjust the computer volume as necessary until you are satisfied with the volume level.

Play Test Sound

I Am Satisfied With The Volume Level And Would Like To Continue

The Volume Cannot Be Adjusted Appropriately (Abort Lineup)
The presentation will start in 4 Seconds

Please give control of the computer to the witness.

Pause
Before viewing the lineup, you will be asked to review a set of instructions. After each instruction, you will be asked if you understand the instruction and wish to continue. Please click Continue to begin.
Before viewing the lineup, you will be asked to review a set of instructions. After each instruction, you will be asked if you understand the instruction and wish to continue. Please click Continue to begin.
Our lineups never contain more than one suspect. However, one or more persons might be familiar to you for reasons unrelated to the crime. If you indicate that an individual is familiar, you will be asked whether the familiar person is related or unrelated to the crime. The officer may have additional questions for you.
Our lineups never contain more than one suspect. However, one or more persons might be familiar to you for reasons unrelated to the crime. If you indicate that an individual is familiar, you will be asked whether the familiar person is related or unrelated to the crime. The officer may have additional questions for you.
The photos will be displayed to you as a group of six and you will be asked if any of the individuals look familiar to you. Even if you identify someone, you will be returned to the lineup and asked if any other individuals look familiar.
The photographs will not be in any particular order. You should take as much time as you need to look at the photos.
The person who committed the crime may or may not be included.

YES, I Understand These Instructions and Wish to Continue

NO, I Do NOT Understand These Instructions and DO NOT Wish to Continue
Keep in mind that things like hairstyles, beards, and mustaches can be easily changed and that complexion colors may look slightly different in photographs.
You do not have to make an identification. This procedure is important to the investigation whether or not you identify someone.
Please press Continue to Begin the Lineup Presentation

Continue
Do Any Of These Individuals Look Familiar To You?
You indicated that this person looks familiar to you. Do you recognize this person for reasons related to the crime or unrelated to the crime?

1  2  3

4  5  6
You indicated that this person looks familiar to you. Do you recognize this person for reasons related to the crime or unrelated to the crime?
The officer would like to ask you some questions about your response. Please do not proceed until asked to do so by the officer.

1  2  3

4  5  6
Thank You. The lineup process has been completed. The officer will take control of the computer.

End Lineup
To Be Completed By The Lineup Administrator Upon Completion of the Lineup

Did You Know Which Image Was The Suspect?

Were there any aspects of the research protocol that could not be followed?

If Yes, Explain What Aspects Could Not Be Followed?

[Input Field]

Done
<table>
<thead>
<tr>
<th>Investigator</th>
<th>Lineup Id</th>
<th>Case Number</th>
<th>Description</th>
<th>Date Shown</th>
<th>Witness</th>
</tr>
</thead>
<tbody>
<tr>
<td>SGT. K.M. WILLIAMS</td>
<td>45</td>
<td>2006654321</td>
<td>ARMED ROBBERY</td>
<td>01/21/2009 03:...</td>
<td>PETERSON, SUSAN</td>
</tr>
</tbody>
</table>
Case Id: 2006654321
Investigator: SGT. K.M. WILLIAMS
Shown By: M.G. KING
Viewed By: PETERSON, SUSAN
Location Shown: OMNI WEST SIDE HOTL
Others Present: SPOUSE OF VICTIM
Lineup Language: ENGLISH
Multiple Yes Responses ?: No
Lineup Type: SIMULTANEOUS

* Image(s) Familiar To Victim/Witness: 5

<table>
<thead>
<tr>
<th>Position</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>DAVIS, CHRISTINE (WF 10/11/1971)</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td><strong>3</strong></td>
<td><img src="image1.png" alt="Image" /></td>
</tr>
<tr>
<td><strong>4</strong></td>
<td><img src="image2.png" alt="Image" /></td>
</tr>
<tr>
<td><strong>5</strong></td>
<td><img src="image3.png" alt="Image" /></td>
</tr>
<tr>
<td><strong>6</strong></td>
<td><img src="image4.png" alt="Image" /></td>
</tr>
</tbody>
</table>

☐ Lineup Suspect
Austin Police Department

Case Id: 2006654321
Lineup Id: 45

Lineup Created By: SA
Date/Time Created: 

Witness: PETERSON, SUSAN
Witness Type: VICTIM
Race: W  Sex: F  Ethnicity: 
Age: 29

Witness Description of Perpetrator

Date/Time of Description : 
Period of Observation :

Description: 
WF Approx 23 YOA

Approximate Distance From Perp. : 
Austin Police Department

Case Id: 2006654321
Lineup Id: 45

Lineup Created By: SA
Date/Time Created: 01/21/2009 15:40

Additional Case Information

Crime Location: MCDONALDS, ELM ST
Crime Type: ARMED ROBBERY

Weapon Used (Y/N): YES
If Yes, What Type of Weapon: YES

Environmental Information
Environmental Information

Lighting: INDOOR
Weather:

Other

Number of Perpetrators: 1
Number of Witnesses: 2
Did Witness Observe Physical Violence? : YES
If Yes, Was the Physical Violence Directed Against the Witness: NO
Did the Witness Observe the Crime? : YES
Austin Police Department

Case Id: 2006654321
Lineup Id: 45

Lineup Created By: SA
Date/Time Created:

<table>
<thead>
<tr>
<th>Witness Lineup Activity Log</th>
</tr>
</thead>
<tbody>
<tr>
<td>01/21/2009 03:37:22 PM: Responded 'Yes' to the question 'Do Any Of These Individuals Look Familiar To You?'.</td>
</tr>
<tr>
<td>01/21/2009 03:37:42 PM: Selected 'Confirm 'YES' and Continue' button.</td>
</tr>
<tr>
<td>01/21/2009 03:37:52 PM: Selected Image # 5 when asked to select the image familiar to the witness.</td>
</tr>
<tr>
<td>01/21/2009 03:38:14 PM: Selected 'Related to the Crime' when asked 'You indicated that this person looks familiar to you. Do you recognize this person for reasons related to the crime or unrelated to the crime?'.</td>
</tr>
<tr>
<td>01/21/2009 03:38:21 PM: Selected 'Confirm Related to the Crime' button.</td>
</tr>
<tr>
<td>01/21/2009 03:39:47 PM: Activated the 'Continue' button.</td>
</tr>
<tr>
<td>01/21/2009 03:40:44 PM: Responded 'No' To Question 'Do Any Other Of These Individuals Look Familiar To You?'.</td>
</tr>
<tr>
<td>01/21/2009 03:40:46 PM: Selected 'Confirm 'NO' and Continue' button.</td>
</tr>
<tr>
<td>01/21/2009 03:40:50 PM: Activated the 'End Lineup Presentation' button to End Presentation.</td>
</tr>
</tbody>
</table>

Lineup Viewing Duration: 4 Min. 57 Sec.
For sequential, the only difference in instructions was this one:

Photos will be shown to you one at a time and you will be asked if the individual is familiar to you. Even if you identify someone during the procedure, you will continue to be shown the rest of the photos.
Does This Person Look Familiar To You?

1

Confirm 'NO' and Continue

Go Back
Does This Person Look Familiar To You?

Yes  No  Not Sure

2

[Image of a person]
You indicated that this person looks familiar to you. Do you recognize this person for reasons related to the crime or unrelated to the crime?

Related to the Crime

Not Related to the Crime

3
You indicated that this person looks familiar to you. Do you recognize this person for reasons related to the crime or unrelated to the crime?
The officer would like to ask you some questions about your response. Please do not proceed until asked to do so by the officer.
Does This Person Look Familiar To You?

Confirm 'NOT SURE' and Continue

Go Back

4

![Image of a person]
The officer would like to ask you some questions about your response. Please do not proceed until asked to do so by the officer.

Confirm 'NOT SURE' and Continue
The officer would like to ask you some questions about your response. Please do not proceed until asked to do so by the officer.
The officer would like to ask you some questions about your response. Please do not proceed until asked to do so by the officer.
Does This Person Look Familiar To You?  Yes  No  Not Sure
Thank You. The lineup process has been completed. The lineup administrator will take control of the computer.

End Lineup
Case Id: 2006654321

Investigator: SGT. K.M. WILLIAMS

Shown By: LT. J.L. KING

Viewed By: PETERSON, SUSAN

Location Shown: OMNI WEST SIDE HOTEL

Others Present: NO OTHERS

Lineup Language: ENGLISH

Multiple Yes Responses ?: No

Lineup Type: SEQUENTIAL

* Image Selected By Victim/Witness: 3

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<td>Position</td>
<td>Name</td>
</tr>
<tr>
<td>----------</td>
<td>------------------------------</td>
</tr>
<tr>
<td>1</td>
<td>DAVIS, CHRISTINE (WF 10/11/1971)</td>
</tr>
<tr>
<td>2</td>
<td>SMITH, ANGELA (WF 04/01/1970)</td>
</tr>
<tr>
<td>3</td>
<td>WILLIAMS, BARBARA (WF 09/29/1972)</td>
</tr>
<tr>
<td>4</td>
<td>JOHNSON, PAULA (WF 03/17/1972)</td>
</tr>
<tr>
<td>5</td>
<td>KING, PATRICIA (WF 02/18/1969)</td>
</tr>
<tr>
<td>6</td>
<td>JONES, WENDY (WF 02/02/1970)</td>
</tr>
</tbody>
</table>
Statement of Crime (Question Presented to the Victim/Witness During Image Viewing):

Does This Person Look Familiar To You?

Image Responses:

Image 1) (1) NO
Image 2) (1) NO
Image 3) (1) YES (Related To Crime)
Image 4) (1) NOT SURE
Image 5) (1) NO
Image 6) (1) NO

Viewing Durations:

Image 1) (1) 0 Min. 33 Sec.
Image 2) (1) 0 Min. 8 Sec.
Image 3) (1) 0 Min. 31 Sec.
Image 4) (1) 0 Min. 17 Sec.
Image Responses:

Image 1) (1) NO
Image 2) (1) NO
Image 3) (1) YES (Related To Crime)
Image 4) (1) NOT SURE
Image 5) (1) NO
Image 6) (1) NO

Viewing Durations:

Image 1) (1) 0 Min. 33 Sec.
Image 2) (1) 0 Min. 8 Sec.
Image 3) (1) 0 Min. 31 Sec.
Image 4) (1) 0 Min. 17 Sec.
Image 5) (1) 0 Min. 7 Sec.
Image 6) (1) 0 Min. 6 Sec.
Does This Person Look Familiar To You?
Main Results
Percentages of Witnesses Identifying the Suspect, a Filler, or Making No Identification for the Simultaneous and Sequential Procedures [N = 497]
Percentages of Suspect and Filler Identifications
Among Those Who Made an Identification

Identifications of Suspects
- Simultaneous: 58.4%
- Sequential: 69.1%

Identifications of Fillers
- Simultaneous: 41.6%
- Sequential: 30.9%
Percentages of "Not Sure" Responses versus Lineup Rejection Responses
Among Those Making No Identification

Not Sure
- Simultaneous: 19.2%
- Sequential: 46.5%

Reject
- Simultaneous: 80.8%
- Sequential: 53.5%
Giving a second lap for those who requested it mattered (a little)
Summary of Results

Sequential produced a lower rate identifying known-innocent fillers. Sequential was as effective as simultaneous in the rate of identifying the suspect. Outright rejections of the lineup were considerably more common for the simultaneous than for the sequential.
Implications
To the extent that filler identifications are a good proxy for assessing risk for innocent suspects, the sequential is safer for an innocent suspect.

Filler identifications are a problem in any case because the identification of a filler “spoils” the witness for any later attempt to view a lineup.
FAQs

How many fewer identifications of innocent suspects (as opposed to fillers) with sequential?

• No way to know *quantity* from these data - only the direction (fewer)

• Estimated # of ID cases in U.S. – not definitively known

• One estimate says > 75,000 ID cases estimated by survey of prosecutors. If only 25% of ID attempts are ID of the suspect, then 300,000 lineups?

  This, if true, would mean 18,000 fewer filler IDs
FAQs

*If* the “rate ratios” of filler picks for the sequential/simultaneous also holds for innocent suspect pick rates, then:

\[
12.2\% \div 18.1\% = .674
\]

i.e., the sequential rate of mistaken identification would be 67.4% of the rate of the simultaneous
A Commonsense Reason to Favor the Sequential

If the eyewitness has a credible memory, why should it matter whether the lineup is done sequentially or simultaneously?

Can I see the rest before I make a decision on this one?