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Comparing the 48-person Lineup with the Sequential Lineup

Levi AM*

Department of Israeli Police, Ierusalim, Israel

***Corresponding Author:** Levi AM, Department of Israeli Police, Ierusalim, Israel, Tel: +972508613448, E-mail: avmlevi@bezeqint.net

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Abstract

The sequential lineup has witnesses see one person at a time, and must make a decision as to whether the person is the culprit or not before seeing the rest of the people in the lineup, compared to the simultaneous lineup where the witness sees all the lineup members simultaneously. The sequential lineup decreases mistaken identifications, at the expense of some identifications. The 48-person lineup consists of 4 screens of 12 people each. Witnesses can go back and for the between the screens before deciding. This study compared the two lineups.

At least an hour after viewing a two - minute video, 200 volunteers were shown a sequential six-person target-present lineup or absent one, or a 48-person target- present or absent one. The presentation of the four lineups was random. No difference was found in either identifications between the two target-present lineups or mistaken choices in the target-absent ones. Since the chance of a mistaken identification with a mistaken choice in the six-person sequential lineup is 1/6=0.17, while the chance in the 48-person lineup is 1/48 =0.02, the 48-person lineup should replace the sequential one.

Keywords: *Sequential lineup; 48-person lineup; identifications; mistaken choices; mistaken identifications*

Introduction

The lineup is the safest eyewitness identification procedure, because the foils provide some protection to an innocent suspect. However, witnesses often choose someone who is not the culprit [1-4]. When that person is not the suspect, the police know that they have erred. However, in a fair simultaneous lineup by chance these witnesses who choose "identify" a suspect who is innocent 1/N times, where N is the lineup size. With the American lineup size of six, this will happen 1/6=0.167, or almost 17% of the time.

There is a second error that witnesses make undetected by the police: witnesses fail to identify guilty suspects [5]. While a number of lineup procedures have been developed to reduce mistaken identifications [6-9], there are few procedures available to increase correct ones that do not simultaneously increase mistaken ones. Witnesses often have imperfect memory [10] and can then only increase correct identifications if they choose someone in the lineup more often. Doing this increases mistaken ones.

Lindsay and Wells [11] introduced the sequential lineup. In that lineup witnesses view the lineup members one at a time, only once, and the lineup ends when the witness chooses someone. However, while this lineup does indeed decrease mistaken identifications, the cost is actually some decrease in correct ones [12]. With only 36% choices when the target is absent the innocent suspect will be chosen 36/6=6% of the time in the six-person American lineup. This remains too large a danger for an innocent suspect [13].

There is clearly a need for a new lineup which reduces mistaken identifications much more than any that is presently being used, without causing much of a reduction in correct ones. Levi and Lindsay, [14] proposed exploring large lineups that could reduce false identifications if the rate by which witnesses chose someone in target-absent lineups increased less than the increased lineup size. Thus, if a 40-person lineup had the same rate of mistaken choices as the six-person lineup, the number of false identifications would be 57/40=1.04%. This is clearly a very big improvement.

Levi [15-17] has been experimenting with very large lineups, the largest consisting of 120 members. Each lineup consists of 12 photos per screen, such that a 48-person lineup has four screens, a 120-person lineup having ten. The

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two consistent findings have been that both the number of correct identifications and the amount of choosing when the target is absent (mistaken choices) remains constant and comparable to small lineups even as the lineup grows from 24 to 120 members. The result has been a very large reduction in mistaken identifications at no cost to correct ones. For example, with a typical rate of 50% mistaken choices in the traditional six-person target –absent simultaneous lineup, if the lineup is fair the expected rate of mistaken identifications is 50/6=8.3%. With a large lineup of 48, the same percentage of mistaken choices leads to 50/48=1% mistaken identifications. This rate is also much smaller than achieved with the sequential lineup.

In a further experiment Levi [18] posited another advantage of large lineups. He suggested the possibility that in small simultaneous lineups witnesses were able to use partial memory of the target to discount some of the lineup members. Then, simply by guessing between the remaining ones, they increased their chances greatly of picking the target. He noted that this would not be a true identification of the target, only an educated guess. On the other hand, in a large lineup, even after discounting some lineup members many more would be left. An educated guess would still be between a fairly large numbers of lineup members. Thus, when witnesses chose the target, there would be a far greater chance that they actually had identified him than in a small lineup.

Levi [19] asked witnesses who viewed either a six-person simultaneous or 48-person lineup to count the number of lineup members that they could discount, and found indeed that the remaining ones were a lot less in the six-person lineup. Levi then tentatively concluded that an additional advantage of the 48-person lineup was that we could be a lot more certain that when the target was picked the witness truly identified him, and had not made an educated guess.

A popular rival theory explaining why witnesses choose the target more often in simultaneous lineups than in sequential lineups is the notion of relative judgment [20]. According to this idea witnesses with imperfect memory compare between the lineup members and pick the person who seems most similar to their memory of the target. This conceptualization seems to have been disproven by Levi [21]. In that experiment Levi used an eye tracker [22] for witnesses viewing target-present and target-absent lineups. The conceptualization predicts that witnesses unable to identify the target (who ended up choosing a foil in a target-present lineup, or could not identify him in a target absent lineup because he was absent) would spend a lot of time looking at the all the lineup members as they compared between them. This did not happen. They quickly focused their attention, contrary to the conceptualization and Levi's prediction, on a single lineup member.

The sequential lineup has yet to be directly compared which the 48-person lineup. The advantage of both lineups has been with target-absent lineups, the sequential because witnesses choose less than they do in simultaneous ones, the 48-person lineup because the chance of choosing the innocent suspect is reduced because of the larger lineup size. Given the surprising results that Levi has often found with the 48-person lineup [23,24], when omitting the warning that the target may not be in the lineup did not increase identifications in target-present lineups we should not take for granted that the larger lineup size of the 48-pertson lineup will trump the decreased mistaken choices of the sequential one.

A question arises also regarding target-present lineups. Both have been shown to result in less identifications than six-person simultaneous ones, but which lineup results in more identifications?

Method

Participants

The 200 participants in this experiment were graduate students at Tel Aviv University, Tel Aviv, Israel, who were engaged in research a variety of physical sciences, who agreed to participate in a short and interesting experiment to take place in their lab. Their average age was 31, with 115 female and 85 male. They were older than many graduate students in other countries because that had spent two or three years completing their compulsory military service.

Design

A 2x2 between- subjects design was employed the factors being lineup type (48-person and six-person sequential) and presence of target, present or absent. The dependent variable was the lineup decision, correct identification of the target in the target- present lineups, mistaken choice or correct no choice in target-absent lineups.

Recruitment and Eyewitness Event

The author visited labs at the university. He introduced himself, and asked the occupants whether they would participate in an interesting experiment in their lab that involved viewing a 2-minute video immediately, and participating at a

later time in the experiment that would last about five minutes. If a person agreed, he showed the video in their office in which the target was seen for 37 seconds, another young-looking male for 22 seconds. Two women also appeared in the video, along with a baby who was being diapered, and other items. He arranged a mutual acceptable time for the experiment, at least an hour later. The video and the lineup were shown on a 10- inch tablet.

The Lineups

Six photos for the sequential lineup were taken of students near the entrance of the Mt Scopus campus of the Hebrew University of Jerusalem, Israel a similar photo of the target was taken. Additional photos were available.

The photos for the 48-person lineup were chosen from Levi [25] and photos of the students taken for the sequential lineup. The 48 photos were organized in four screens of 12 photos each, in two lines of six. For the screen in which the target appeared, he was placed in the lower line in the fifth place. For the target-absent condition, an additional photo was chosen at random to replace the target.

All lineup members were young adult males who had dark and short hair, dark eyes, no beard or moustache, and were of medium build. The target also fit this description. The photos and videos were thus chosen to fit the match-to-description criterion [26] and there is thus no danger that any of them could be discounted because they did not fit that description.

Procedure

Witnesses were told: "I am now going to conduct a lineup. You are to find the person who moved from one room to another in the video-clip. He may not be in the lineup". Witnesses shown the sequential lineups were now told: "I will now show photos one after the other. For each person you must decide whether he is that person, before you see the next person. You will not see that person again. Once you choose someone, the lineup will end, and you will not be shown any more photos". There were more than six photos available on the tablet, and witnesses were not told that the lineup would consist of only six persons (The target plus five others for the target-present lineup, or six photos without the target for the target-absent absent lineup). Witnesses shown the 48-person lineups were told: "I will show you four screens of photos, all of different people. You can go back and forth between the screens before making your decision".

Results

	TARGET-PRESENT	TARGET-ABSENT
SEQUENTIAL ID	19 (37%)	21 (38%)
SEQUENTIAL NO ID	32 (63%)	34 (62%)
48 ID	14 (26%)	10 (24%)
48 NO ID	39 (74%)	31 (76%)

Table 1: Table 1 presents the results of the experiment

Neither of the differences between the sequential and 48-person lineup, target-present and target- absent are significant. By the test for the difference between two proportions (27), z=0.106 for the target-present lineup, z=1.437 for the target-absent lineup.

Discussion

Neither lineup has an advantage over the other in identifications of culprits. On the other hand, the 48-person lineup has a very large advantage over the sequential in less mistaken identifications of innocent suspects. If we take the average number of mistaken choices in the two lineups, (38%+24%)/2=31%, the percent of mistaken identifications in the sequential lineup is 31%/6=5%, while in the 48-person lineup the percent is 31%/48=0.6%.

Conclusion

Clearly, the 48-person lineup has a great advantage over the sequential lineup in reducing mistaken identifications. Up until now, the sequential lineup is used by some police forces, while the 48-person lineup is used by none. The 48-person lineup should replace the sequential one, and perhaps even the simultaneous one.

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