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ORIGINAL ARTICLE

Non-biased lineup instructions do matter – a problem for older witnesses

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Abstract

From the limited literature on older witnesses' identification performance it is known that they are less accurate on lineups compared to younger witnesses. What is less certain is why they show this age deficit and what can be done to aid their performance. Witnesses forgot being given non-biased lineup instructions informing witnesses that the perpetrator may or may not be present. More older witnesses than younger witnesses forgot and witnesses who failed to report remembering these instructions were significantly less accurate on the lineups. In addition, the current study investigated the use of sequential lineup presentation and stringent decision criteria to aid the performance of older witnesses. Sequential presentation was beneficial to both younger and older adults when the lineup was target absent (TA) but was detrimental when the lineup was target present (TP). Stringent decision criteria had no significant beneficial effect. Future directions for aiding older witnesses' performance are discussed.

Keywords: *Older witnesses, identification, lineup instructions*

Introduction

The small amount of previous research conducted with older witnesses (over 60 years) has revealed that they are not as accurate as younger witnesses on identification lineups (Adams-Price, 1992; Searcy, Bartlett, & Memon, 1999; Yarmey & Kent, 1980; Yarmey, 2000). Although this finding of an age deficit in identification performance is of interest from both an applied and theoretical perspective, there have been very few investigations of why the age deficit occurs and how it may be possible to improve the performance of older adults on identification lineups. The current study examines the role that memory for non-biased lineup instructions plays regarding older witnesses' accuracy and, for half the sample, uses sequential lineup presentation and stringent decision criteria at the time of choosing to investigate whether these techniques can improve older witnesses' accuracy.

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Non-biased lineup instructions

Malpass and Devine (1981) were the first to demonstrate the importance of non-biased lineup instructions (i.e. informing witnesses the perpetrator may or may not be present in the lineup). They found that failure to warn witnesses that the culprit may or may not be in the lineup resulted in 78% of witnesses making identifications from a target absent (TA) lineup, whilst maintaining a high level of hits in the target present (TP) lineup. With the warning that the perpetrator may not be in the TA lineup the false identification rate fell to 33%. The findings of this study were taken note of and informing the witness that the perpetrator may or may not be present in the lineup has been required of police forces in England and Wales since 1986 (Zander, 1990). Since that time a number of other studies have been conducted and Steblay (1997) conducted a meta-analysis of 18 studies (focusing solely on young adult witnesses) which confirms that after witnesses receive biased lineup instructions (i.e. not informing witnesses the perpetrator may or may not be in the lineup) a higher level of choosing ensues. This finding was moderated by lineup type, with decreased accuracy on TA lineups following biased lineup instructions, whilst accuracy on TP lineups was less affected. Nowadays the importance of giving witnesses non-biased lineup instructions is recognized in some other countries including more recently, a recommendation by the Attorney General in the USA (Wells et al., 2000).

It is good news that the criminal justice system has taken note of the importance of such instructions but at least one question remains: Can we be sure that witnesses remember the non-biased lineup instructions? It is possible that older witnesses may not actually remember being given such instructions prior to them making a lineup decision. The literature on ageing and changes in memory offers a number of explanations as to why older adults may be less likely to remember such instructions (see Balota, Dolan, & Duchek, 2000). There may be problems at encoding; due to older adults' reduced attentional resources they may be less likely to engage in elaborate encoding of lineup instructions which would aid subsequent retrieval. There may also be problems at recall due to the lack of environmental support for the free recall task of remembering the instructions. If such support is absent then it is likely that an age deficit will occur (Craik, 1986). Furthermore, concentrating on the actual lineup may reduce the processing resources available to freely recall the lineup instructions. Thus far, only one unpublished study seems to have investigated memory for lineup instructions in relation to older witness performance (Hope & Memon, submitted). They found older adults were less likely than younger adults to report recalling the instructions. However, evidence from Rose, Bull, and Vrij (2003) indicates that the problem may be more severe than the results from Hope and Memon (submitted) suggest. Younger and older participants were asked post lineup if they remembered the instructions given to them before they viewed the lineups that the perpetrator may or may not be present in the lineup. There was a significant effect of age group on reported memory for these instructions in that while 91% of younger adults indicated that they remembered the non-biased instructions only 75% of the older adults did so. These results were based on a "yes/no" question which may suggest to participants, particularly older participants, that they should comply and respond "yes". However, we know from research on interviewing that asking such closed questions can cause compliance (Milne & Bull, 1999). In the current study participants are asked an open question asking them to recall as much as they can about the instructions given to them prior to the lineups. On the basis of previous research it is expected older witnesses will have poorer recall of the non-biased lineup instructions compared to young participants. Furthermore, it is expected that those who fail to remember such instructions will be less accurate on the lineups.

The sequential lineup versus the simultaneous lineup

Older witnesses make false identifications. Lindsay and Wells (1985) found for young adults that a sequential lineup led to fewer false identifications than a simultaneous lineup. Furthermore, the sequential lineup maintained a similar rate of correct identifications in comparison to the simultaneous lineup. Lately there has been a spate of papers questioning whether the sequential lineup is in fact beneficial under all conditions (e.g. Ebbesen & Flowe, 2003). The current paper investigates whether the “beneficial” effects of the sequential lineup also apply to older adults. Few studies have so far looked at this; Searcy et al. (1999) found no effect of the sequential lineup with either young or old adults. However, they used a rather unusual design whereby participants had previously been exposed to two simultaneous lineups, and then viewed a third lineup that was presented sequentially on videotape. A further investigation by Searcy, Bartlett, and Memon (2000) found that a sequential lineup did in fact reduce choosing in both young and old adults. The most recently published investigation of lineup presentation produced yet another different outcome in that Memon and Gabbert (2003) found the sequential lineup to be beneficial for both young and old adults when the lineup was TA, however, when the lineup was TP the sequential lineup was detrimental. These latter findings are in accordance with Steblay, Dysart, Fulero, and Lindsay (2001) who conducted a meta-analysis of 23 articles (almost exclusively involving young adult witnesses) which suggests that correct rejections are more frequent for sequential lineups than for simultaneous lineups. (However, correct identification of a perpetrator occurs more frequently for simultaneous lineups than for sequential lineups.) Steblay et al. noted that the effect of target presence was less likely to exist if real world conditions were adopted (e.g. non-biased lineup instructions and single perpetrator lineups as are used in the current study). It is clear that further investigation of the effect of sequential versus simultaneous presentation on lineup performance is needed, especially involving older adults.

Stringent decision criteria

One factor that may explain why the sequential lineup is often successful is that sequential presentation encourages people to set a higher criterion for a match between their recollection of the culprit and the pictures being shown to them (Ebbesen & Flowe, 2003). The current study took this one step further by instructing half of the participants to use stringent decision criteria when making a lineup choice. Koutstaal, Schacter, Galluccio, and Stofer (1999) found that on a categorized picture paradigm task (participants were shown either large or small numbers of pictures of related objects and were later asked to recognize the same pictures from larger but related sets) older adults made considerably fewer false recognitions if they adopted stringent decision criteria by classifying items as old and identical, or new but related, or new and unrelated. Thus far no research seems to have investigated whether the beneficial effect of stringent decision criteria for false alarms (when recognizing pictures) applies to lineups.

Maass (1996) suggests that decision criteria relate to the amount of perceived similarity between a witness's memory of the perpetrator and persons in the lineup. Older adults, because they may be unable comprehensively to recall the perceptual details, may operate on looser decision criteria which could lead to higher rates of false identifications. The present study investigated the use of applying stringent decision criteria before participants made a final decision on the lineups.

Own-age bias

The current study used an older and a younger perpetrator to investigate the possible existence of an own-age accuracy bias. List (1986) and Wright and Stroud (2002) found older and younger adults to be more accurate when identifying people of their own age group. However, other studies have found that while young adults exhibit such an own-age bias, older adults do not (Bäckman, 1991; Fulton & Bartlett, 1991). Thus far the eyewitness studies that have investigated own-age bias have mostly used middle-aged participants as the older group. In the most recent eyewitness investigation of the own-age bias, Memon, Bartlett, Rose, and Gray (2003) used older participants (60–82 years) and they found no own-age accuracy bias for either age group. The present study also uses an older age group and given this, it was expected that no own-age bias would exist for older participants. The current study used a realistic crime event similar to those used by List (1986) and Wright and Stroud (2002) and therefore it is expected that an own-age bias would exist for younger participants

The three main hypotheses were: (1) old participants will demonstrate poorer performance compared to young participants; (2) old participants will be less likely to remember correctly the non-biased lineup instructions compared to young participants; and (3) participants who fail to remember the non-biased lineup instructions will demonstrate poorer performance compared to those who remember the instructions. Additional hypotheses were (4) the effect of sequential versus simultaneous presentation will depend on target presence/absence; (5) stringent decision criteria will have a beneficial effect on lineup performance; and (6) an own-age bias will exist for young participants only.

Method*Participants*

The participants consisted of 48 university students aged between 18 and 32 years ($M=20.81$ $SD=3.14$) and 48 people aged between 55 and 85 years ($M=70.67$ $SD=7.65$) recruited from retirement organizations.¹ All older participants completed the Mini Mental Status Examination (MMSE) Test (Folstein, Folstein, & McHugh, 1975) to screen out any older participants with dementia. Participants (young and old) completed the Geriatric Depression Scale (GDS) (Yesavage, Brink, Rose, & Lum, 1983) because it is known that depression can have an adverse effect on memory. All participants completed the National Adult Reading Test (NART) (Nelson, 1982) to check for differences between the two age groups in IQ. Table I shows participants' mean scores on these screening

Table I. Mean scores on the MMSE (older participants only), the GDS, and the NART (standard deviations are shown in parentheses).

	Young participants	Old participants
MMSE*	N/A	29.65 (0.84)
GDS	6.13 (4.06)	6.75 (3.74)
NART	122.02 (2.90)	123.70 (2.63)*

*There was a significant difference between the two age groups with older participants demonstrating better performance compared to younger participants ($t(91)=2.91$, $p<0.01$).

measures. No participants showed worse than 20.30 vision and none reported serious health problems.

Design

Age group (young or old), lineup presentation (sequential or simultaneous), and decision criteria (stringent or control) were between participant factors. Within participant factors were lineup type (target present (TP) or target absent (TA)) and age of perpetrator (all participants viewed a simulated crime involving a young perpetrator (18 years) and an old perpetrator (54 years)). The dependent variables were memory for non-biased lineup instructions and lineup performance (hits, false alarms, and incorrect rejections for the TP lineup, and correct rejections and false alarms for the TA lineup).

Event

The to-be-remembered event consisted of a 2-minute long coloured video clip (no sound) of a simulated crime involving two perpetrators and of an uninvolved bystander.² The young and old perpetrator were chosen by the experimenter to be visually similar (i.e. similar build, hair, and eye colour) in all other respects other than their ages. The reason for choosing men who were visually similar was so that any differences in accuracy or identification of the two men should be attributable to their difference in age and not due to their being encoded differently because, for example, one had a more distinctive appearance than the other. Full exposure of each man's face was for 11 seconds. The older man went upstairs in the house while the younger man remained downstairs. This meant that when participants were asked to examine the lineups the two men could each be specified by something other than age. The upstairs and downstairs of the house were similar with no distinctive objects in either. The order in which the young and old perpetrators were shown on the video to participants was alternated. (It was possible to edit the video so for one tape the young man in the downstairs room was seen first and the older man in the upstairs room was seen second, and vice versa.)

Lineups

There were four lineups altogether, a TP and TA lineup for each of the young perpetrator and the old perpetrator. Young and old participants were shown a young lineup that was either TP or TA and an old lineup that was either TP or TA lineup (i.e. if they saw a young TP lineup they would then see an old TA lineup) the order of which was counterbalanced. The lineups were presented in the same order as the perpetrators had been viewed on the video recording.

The TP lineups contained the perpetrator and five foils. The TA lineups contained a target replacement and five foils. (The young TP and TA lineup contained the young innocent bystander who matched the modal witness description (see below) on all but one aspect.) The lineup photos comprised six 20 cm by 25 cm coloured head shots of the face. The perpetrator and target replacement were randomly placed in all positions in the lineup array. Participants were also provided with the option not to choose a face in the lineup in that there was an extra box on the lineup decision sheet which said "none of them" which they could tick. Development of the lineups was based on the "match to description of culprit" method of constructing lineups (see Tunnicliff & Clark, 2000). It was too impractical to construct lineups individually for each witness as Luus and Wells (1991)

suggest. Therefore, for the purposes of the present study, a procedure based on that used by Lindsay, Martin, and Webber (1994) was adopted. Ten older persons (64–85 years) and 10 younger persons (18–22 years) were asked to watch the video event and describe the older and younger perpetrator. The descriptions given were analysed to give a “modal” description for each perpetrator. The modal description contained details relating to age, build, facial hair, hair colour, and hair length. For young and old faces separately, six other older persons and six other younger persons were asked to rank in order a pool of 12 photographs regarding best fit to the modal description. Kendall’s coefficient of concordance was performed to check that there was significant agreement between the rankers. Those with the best fit were used in the lineups.

Lineup presentation

The simultaneous lineup involved a simultaneous three by two array.

The sequential lineup involved showing each member of the lineup one at a time. As recommended by Lindsay, Lea, and Fulford (1991) participants saw each lineup member only once and they were not aware of the number of faces that were in the lineup. (Photos were concealed from participants in a folder.) These participants were told:

“Please look at each face I show you and tell me ‘yes’ or ‘no’ if that is the younger/older man who broke into the house. You will only be able to see each photograph once.”

Once the participants chose a face the sequential lineup was stopped and they did not see any of the remaining lineup members.

Decision criteria

Participants in the stringent decision criteria condition, after receiving the standard lineup instructions, were asked three questions based on the stringent decision criteria instructions used by Koutstaal et al. (1999). Before these participants made a decision on the lineup they were asked:

“(i) Is this person (point to each photo) exactly the same as the younger/older person you saw breaking into the house, or (ii) similar to the younger/older person you saw breaking into the house, or (iii) different from the younger/older person you saw breaking into the house?”

Participants in the control decision criteria condition, after receiving the standard lineup instructions, were simply asked to look at the lineup and make a decision.

Procedure

Participants within their age groups were randomly assigned to the four experimental conditions. On arrival the individual participants were directed to sit in view of the television screen, were asked if they could see the television screen clearly, and were then instructed to watch the video clip of the break in. After watching the video clip participants were asked to fill in a sheet with their personal details. At this point all the participants were asked to complete the GDS, and have their eyes tested. Before having a break to allow 30 minutes to elapse since seeing the video clip, all participants completed the IQ test and

all older participants completed the MMSE. (The younger participants had a slightly longer break than the older participants because it would have been inappropriate for them to have filled in the MMSE.)

After the delay of 30 minutes from the time participants viewed the video recording, all participants were given standard non-biased lineup instructions informing them that the perpetrator may or may not be present in the lineups. Participants either viewed sequential lineups or simultaneous lineups depending upon which lineup presentation condition they were in. As participants viewed the lineups they were either given stringent decision criteria instructions or they simply viewed the lineup without such instructions. After viewing both lineups participants were asked "Please tell me as much as you can remember about the lineup instructions I gave you prior to the lineups."

Results

Effect of age group on total lineup performance

Each participant viewed two lineups, thus for total lineup performance each participant was given a score of either 0 (both lineups incorrect), 1 (one lineup correct), or 2 (both lineups correct). Table II reveals that older participants demonstrated poorer performance than younger participants. A chi-square test revealed this effect to be significant ($\chi^2(2, N=96) = 8.39, p < 0.01$). Hypothesis 1 (old participants will demonstrate poorer performance compared to young participants) was therefore supported.

Non-biased lineup instructions

Participants were classified as recalling accurately the non-biased lineup instructions if they mentioned that the perpetrator may or may not be there or words to that effect. Sixty-eight per cent of young participants indicated accurately remembered such lineup instructions (and 32% did not) whereas only 46% of older participants did so (and 54% did not). A chi-square analysis revealed a significant effect of age group on reported memory for lineup instructions ($\chi^2(1, n=95) = 4.79, p < 0.05$; effect size, $\phi_c = 0.23, p = 0.029$). Hypothesis 2 (old participants will be less likely to remember correctly the non-biased lineup instructions compared to young participants) was therefore supported.

Furthermore, participants who failed to report remembering the lineup instructions were less accurate on the lineups. For the young lineup 61% of participants who remembered the lineup instructions were correct but only 34% of those who did not remember them were correct. Similarly for the old lineup, 65% of participants who remembered the lineup instructions were correct compared to only 39% who did not remember the lineup instructions. Chi-square tests revealed there was a significant effect of lineup instruction on young lineup accuracy ($\chi^2(1, n=95) = 6.78, p < 0.05$; effect size, $\phi_c = 0.27, p = 0.009$) and on old lineup accuracy ($\chi^2(1, n=95) = 6.23, p < 0.05$; effect size, $\phi_c = 0.26, p = 0.013$).

Table II. Performance overall on both lineups. Data are shown in proportions of responses (frequency data are shown in parentheses).

	Young participants	Old participants
Both lineups correct	0.44 (21)	0.21 (10)
One lineup correct	0.40 (19)	0.40 (19)
Both lineups incorrect	0.17 (8)	0.40 (19)

Thus, Hypothesis 3 (participants who fail to remember the non-biased lineup instructions will demonstrate poorer performance compared to those who remember the instructions) was supported.

Hierarchical log-linear analysis (HILOG)

HILOG were conducted for the four lineups (i.e. young TA, old TA, young TP, old TP) to examine the effects of age group, lineup presentation, and decision criteria on lineup performance (correct/incorrect). Since TA performance is especially poor in older witnesses this will be examined first.

Performance on TA lineups

The data for the young and old TA lineups are presented in Table III in proportions of participants making correct rejections or false identifications. For the old TA lineup the final model included age group and lineup presentation ($\chi^2(10, n=48)=4.69, p=0.911$). There were significant effects of age group and of lineup presentation on lineup performance, respectively, ($\chi^2(1, n=48)=5.17, p<0.05$) ($\chi^2(1, n=48)=8.11, p<0.01$). Follow-up chi-square analyses revealed that older participants made more false identifications and fewer correct rejections compared to younger participants ($\chi^2(1, n=48)=4.27, p<0.05$). Sequential lineup presentation led to significantly fewer false identifications and more correct rejections (see Table IV) than simultaneous lineup presentation ($\chi^2(1, n=48)=7.06, p<0.01$) and when this effect was investigated for each age group separately it remained significant for both young participants and old participants respectively ($\chi^2(1, n=24)=4.20, p<0.05$) (for a one-tailed test), ($\chi^2(1, n=24)=4.19, p<0.05$). There was no significant effect of stringent decision criteria on lineup performance.

For the young TA lineup the final HILOG model also included age group and lineup presentation ($\chi^2(10, n=48)=2.02, p=0.996$). However, neither age group nor lineup presentation had a significant effect on lineup performance ($\chi^2(1, n=48)=2.10, p=0.147$) ($\chi^2(1, n=48)=2.10, p=0.147$), respectively. Again, there was no significant effect of stringent decision criteria on lineup performance.

Performance on TP lineups

Turning now to the data for the TP lineups (see Table V), for the old TP lineup the final model again included age group and lineup presentation ($\chi^2(10, n=48)=7.64, p=0.664$). There was a significant effect of age group and of lineup presentation on lineup performance, respectively, ($\chi^2(1, n=48)=8.28, p<0.01$) ($\chi^2(1, n=48)=8.28, p<0.01$).

Table III. Performance on the TA young and old lineup. Data are shown in proportions of participants making either false identifications or correct rejections. (Frequency data are shown in parentheses.)

		Young participants	Old participants
Young lineup	Correct rejection	0.58 (14)	0.37 (9)
	False alarm	0.42 (10)	0.63 (15)
Old lineup	Correct rejection	0.75 (18)	0.54 (13)
	False alarm	0.25 (6)	0.46 (11)

Table IV. Performance on sequential versus simultaneous TA young and old lineups. Data are shown in proportions of participants making either false identifications or incorrect rejections or hits. (Frequency data are shown in parentheses.)

		Sequential	Simultaneous
Young lineup	Correct rejection	0.37 (9)	0.58 (14)
	False alarm	0.63 (15)	0.42 (10)
Old lineup	Correct rejection	0.79 (19)	0.42 (10)
	False alarm	0.21 (5)	0.58 (14)

Follow up chi-square analyses revealed that older participants made more false identifications and fewer hits compared to younger participants ($\chi^2(2, n=48) = 6.94, p < 0.05$). In terms of lineup presentation (see Table VI) participants who viewed the simultaneous TP lineup were more likely to make correct identifications of the perpetrator than participants who viewed the sequential lineup ($\chi^2(2, n=48) = 6.94, p < 0.05$). When this effect was examined for each age group independently the effect remained only for young participants ($\chi^2(2, n=24) = 7.05, p < 0.05$). There was no significant effect of stringent decision criteria on lineup performance.

On the young TP lineup the final HILOG model included lineup presentation and decision criteria ($\chi^2(10, n=48) = 4.72, p = 0.909$). However, neither lineup presentation nor stringent decision criteria had a significant effect on lineup performance ($\chi^2(1, n=48) = 0.77, p = 0.382$) ($\chi^2(1, n=48) = 0.77, p = 0.382$), respectively. There was no significant effect of age group on lineup performance.

Own-age bias

The McNemar change test allows examination of differences in the performance of young/old participants (correct/incorrect) as a function of lineup age. There was a significant effect of lineup age for young participants ($\chi^2(1, n=48) = 3.37, p < 0.05$). However, in this instance younger participants were more likely to be correct on the old lineup rather than the young lineup, thus not reflecting an own-age bias. For older participants there was no significant effect of age of lineup ($\chi^2(1, n=48) = 0.21, p > 0.05$). This suggests that no own-age bias exists for either age group.

Discussion

The findings from the current study support the existing literature in that older witnesses were less accurate on identification lineups than younger witnesses. Total lineup

Table V. Performance on the TP young and old lineup. Data are shown in proportions of participants making either false identifications or incorrect rejections or hits. (Frequency data are shown in parentheses.)

		Young participants	Old participants
Young lineup	Hits	0.54 (13)	0.50 (12)
	False alarms	0.25 (6)	0.38 (9)
	Incorrect rejections	0.21 (5)	0.12 (3)
Old lineup	Hits	0.67 (16)	0.29 (7)
	False alarms	0.13 (3)	0.33 (8)
	Incorrect rejections	0.20 (5)	0.38 (9)

Table VI. Performance on sequential versus simultaneous TP young and old lineups. Data are shown in proportions of participants making either false identifications or incorrect rejections or hits. (Frequency data are shown in parentheses.)

		Sequential	Simultaneous
Young lineup	Hits	0.46 (11)	0.58 (14)
	False alarms	0.25 (6)	0.38 (9)
	Incorrect rejections	0.29 (7)	0.04 (1)
Old lineup	Hits	0.29 (7)	0.67 (16)
	False alarms	0.33 (8)	0.13 (3)
	Incorrect rejections	0.38 (9)	0.21 (5)

performance (i.e. performance on one TP lineup and one TA lineup, one being “old” and one being “young”) revealed a significant effect of age group with older participants performing more poorly compared to younger participants. For the old lineups a significant effect of age group remained. However, for the young lineups, though older participants demonstrated poorer performance this effect was not significant. Thus Hypothesis 1 (older witnesses would show poorer performance than younger witnesses) was supported for total lineup performance and for the old lineup.

Non-biased lineup instructions

After the lineups participants were asked what they could remember about the instructions given to them prior to the lineups.³ Older participants were significantly poorer compared to younger participants at remembering the non-biased instructions. As stated in the introduction, the importance of giving non-biased lineup instructions is now recognized in many countries. However, it would appear that some older witnesses may well not remember the non-biased instructions given to them and this may contribute to the age deficit shown by older adults when viewing identification lineups. We know from the literature on memory and ageing (see Balota et al., 2000) that older adults may be more likely to forget instructions and the present study extends this into the applied forensic setting. Further research should concentrate on enhancing non-biased lineup instructions in order for them to be more salient for older witnesses.

Lineup presentation

Hypothesis 4 (the effect of sequential versus simultaneous presentation will depend on target presence/absence) was supported. For the old lineup sequential presentation was only beneficial when the lineup was TA. When the old lineup was TP sequential presentation was detrimental to performance. These findings support Steblay et al.’s (2001) meta-analysis. However, Steblay et al. (2001) suggested that the moderating effect of TP/TA on the beneficial effect of sequential presentation was less likely to exist when real world conditions are adopted, e.g. cautionary instructions and single perpetrator lineups. In the present study both of these “real world” conditions were included, but still the effect of target presence/absence moderated the effectiveness of sequential lineup presentation. It is widely accepted that the sequential lineup reduces the rate of false identifications by reducing the choosing rate overall. This is beneficial when the lineup is TA, however, if the lineup is TP the reduction in choosing translates to a reduction in correct identifications of the perpetrator. On the basis of these results and those found by others (e.g. Ebbesen &

Flowe, 2003) it is likely that sequential presentation will have a differential effect for TP and TA lineups.

In terms of possibly using the sequential lineup for older adults, the findings from the current study support Memon and Gabbert (2003) in that while the sequential lineup was beneficial when the lineup was TA, it was detrimental when the lineup was TP. Thus it would appear that the current debate over the utility of the sequential lineup is justified and also extends to older adults.

Stringent decision criteria

Hypothesis 5 (stringent decision criteria will have a beneficial effect on lineup performance) was not supported for the young or old lineup. However, there have been problems with assessing the effects of stringent decision criteria (Memon, Hope, Bartlett, & Bull, 2002). Multhaup (1995) found a positive effect of manipulating decision criteria but the results of that study could be interpreted differently because manipulating decision criteria was confounded by older adults' memory for the instructions (given as part of the stringent decision criteria). In the present study the stringent decision criteria were not effective. For the simultaneous lineups participants given the stringent decision criteria could still view all the photos together and make a decision. Therefore they may not have had their decision criteria raised sufficiently. For the sequential lineups, some participants said (made a comment to the experimenter after the lineups) that a face (which was the target's) appeared similar but not identical so the lineup continued, but then when they got to the end they wished they had chosen the "similar" face. Such participants' decision criteria may have been raised too much. Clearly it is important that any purported aid for older witness performance does not prevent correct identifications of the perpetrator or correct rejections of a TA lineup. This together with moderating effects of lineup presentation would need to be considered in any future investigation of decision criteria as a means of aiding the performance of older witnesses.

Own-age bias

No own-age bias existed for either age group. The fact that an own-age bias did not exist for older adults is not too surprising. Participants in the older age group were an older age group than those used in studies that have reported an own-age bias for older participants (e.g. Wright & Stroud, 2002). Possibly any beneficial effects of an own-age bias for older participants of this age are outweighed by the detrimental effects of cognitive ageing. The fact that younger participants did not demonstrate an own-age bias supports the findings of Memon et al. (2003). In fact younger participants demonstrated better performance on the older lineup. Possibly the older faces, having aged, were more distinctive to them because of physical differences such as age lines and scars. Such differences are less likely to be present in young faces possibly making them a more homogeneous set.

Conclusion

Older participants demonstrated poorer performance on the identification lineups. We tried to aid their performance by the use of stringent decision criteria but these were not successful. Sequential lineup presentation aided older participants' performance when lineups were TA by reducing the rate of false identifications but there is some evidence to suggest that sequential presentation also reduces correct identifications of the perpetrator

from a TP lineup. The importance of using non-biased lineup instructions was clearly demonstrated. However, it would appear that older adults have difficulty in remembering them. Future research should concentrate on enhancing these instructions. The mean age of the population in many countries is rising. One consequence of this is an increase in the number of older witnesses viewing identification parades. We know that identification evidence carries a lot of weight in court and we also now know that older witnesses are more likely to make false identifications. What we do not yet know, is how we can reliably improve the accuracy of older witnesses. One possibility may be for police to be able to ensure that older witnesses are explicitly made aware that not all lineups contain the actual perpetrator of the crime. Psychological research needs to find out how this can be achieved.

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Notes

- 1 Three of our older participants were between 55 and 59 years. They were recruited from a "Help The Aged" Day Care Centre under the direction of the Centre Manager who advised that though they had a younger chronological age they were similar to the over 60 age group in every other respect. Ageing is subject to massive individual differences (Woodruff-Pak, 1997). These three participants were screened as described and their results were in line with the rest of the older participants.
- 2 The bystander was a young man with similar looks to the young perpetrator and was included in the young lineup. However, there was no difference in older participants' performance between the young and old lineup and another foil was identified more frequently than the bystander. These two findings would suggest that the presence of the bystander had little or no effect on older witnesses' performance. Though the young participants demonstrated poorer performance on the young lineup, the bystander was not identified at above chance level, and therefore it was felt that presence of the bystander did not significantly contribute to the results. For these reasons, presence of the bystander will not be discussed further.
- 3 Though participants received more than one set of instructions, we are sure that the question asking participants about the content of the lineup instructions was understood by participants to relate to such instructions (i.e. that the perpetrator may or may not be present) for two reasons. Firstly, because it asked them about instructions given to them prior to the lineups and other instructions were given to them as they viewed the lineups. Secondly, when examining the raw data no participants recalled any of the other instructions.

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