A Field Experiment on Eyewitness Report

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abstract

The aim of the present study was to use field research to measure two independent variables; duration of exposure and gender. The dependent variable was accuracy of recall. Participants consisted of two groups. The first group were the eight confederates and experimenters with an age range of 19-33, (M=22.38, SD= 5.71) and a male: female sex ratio of 7:1. Group two were 32 participants with an age range of 17-66 (M=27.88, SD= 12.51) and a male: female sex ratio of 16:16. The data were collected using two bogus questionnaires to establish the long and short duration conditions and an eight-point eyewitness questionnaire to test accuracy of recall. The data were analysed using two independent t-tests. Hypothesis one, which stated that there would be a significant difference in the accuracy of eyewitness report between long and short duration conditions was not supported, t(30)= -.0261, p > .025. Hypothesis two, which stated that there would be a significant gender difference in terms of accuracy of eyewitness reports was not supported, t(30)= .261, p > .025. Results were discussed in terms of methodological strengths (being a field study), weaknesses (gender imbalance), practical applications (coaching in sports) and future research (assessing importance of age).

Introduction

Memory is essential to everyday life and is used in many ways, for example remembering appointments or conversations had with friends (Schacter, 2001). However, memory isn’t always reliable and we often forget and distort the past. Schacter (2001) outlines problems with memory including the weakening or loss of memories over time. Other issues with memory include assigning memories to the wrong sources or memories being implanted because of leading questions or comments that may distort a past experience. These problems can cause
particular difficulty in the legal system and have been known to cause disquiet in courtrooms in relation to eyewitness memory (Schacter, 2001). This issue has become a major concern as eyewitness testimony is relied on hugely by the criminal justice system in prosecuting crimes. Many innocent people have been exonerated due to DNA evidence with incorrect eyewitness testimony being named the largest culprit in the conviction of these innocent people (Wells & Olsen, 2003).

Applied research in the field of eyewitness testimony has the potential to positively contribute to the criminal justice system. Two areas of this applied research are noted by Wells (1978) as research into system variables and estimator variables. System variables are those that could be under the control of the criminal justice system, for example the structure of a line-up. System variables have the potential to reduce the inaccuracy of the eyewitness (Wells, 1978). Estimator variables are those that are not under the control of the criminal justice system. There are four types of estimator variables which are outlined by Wells & Olsen (2003) as characteristics of the event (for example, exposure time), characteristics of the witness (for example, sex), characteristics of the testimony (was it a false or accurate testimony?) and finally the juror’s ability to discriminate between an accurate or inaccurate eyewitness testimony.

To discuss the characteristics of the event in more detail it is useful to look to previous research in the area. An event that is stressful in nature can affect the ability of the eyewitness to recall the event. Deffenbacher, Bornstein, Penrod and McGorty (2004) note that stress negatively effects eyewitness identification in areas including perpetrator characteristics, crime scene details and actions of central characters. Maas and Kohnken (1989) concluded from their study that the presence of a syringe in a staged crime reduced line-up recognition for eyewitnesses. They stated that this could be due to the witnesses focus on the weapon or possible escape routes instead of on the perpetrator itself. In relation to event exposure, a study by Memon, Hope and Bull (2003) suggested that increased exposure to an event increased to the accuracy of the eyewitness report. However opposing research argues that there is no significant interaction between exposure time and the report of the witness (Greenberg, Westcott & Bailey, 1998). Kassin and Barndollar (1992) also found that in a survey of both students and adults, some of whom had previously been jurors, few believed that eyewitness reports were influenced by exposure time.

Another important area to be discussed is the characteristics of the witness. Valentine, Pickering and Darling (2003) concluded that witnesses under 30 were more accurate at identifying suspects. Also, Roebers and Schneider (2001) found
that, for children, intelligence positively influenced the accuracy of identification and children who were deemed shy by their teachers were less accurate in identification. An interesting study by Ericson and Isaacs (2003) found that adults with intellectual disabilities made as many correct identifications as the other adults, however they were also more likely to make false identifications and were more prone to guessing. The racial identity of the witness has also been shown to influence the identification of perpetrators. Meissner and Brigham (2001) is one of many studies showing the effect of the own-race bias where faces are more easily identified if they are from the same race as the person identifying them. Finally, the gender of the witness is an important characteristic. A study by Horgan et al (2004) concluded that when told what is to be remembered, females seemed to have a slight but perhaps irrelevant advantage over males. They also found that both males and females were more accurate when recalling a female face. They also found that neither gender had an advantage when recalling a member of the same gender.

The methodology of a study is important as it can affect the results obtained. Previous research exerts favour towards field research rather than lab settings. Woolnough and MacLeod (2001) suggest that victims of actual fraud show better performance in suspect identification than those in lab settings. These results are supported by Behrman and Davey (2001) who also concluded that suspect identification was better for field settings compared to photographic line-ups. Furthermore, Maas and Kohnken (1989) present findings showing that lab research has limitations in that generalizations to real crimes are difficult because the witness would never actually be threatened in lab settings. Thus, field research seems to be more accurate and efficient.

The present study. The present study uses a field design which has been seen to show greater external validity than other methods. The two independent variables that will be measured are duration of exposure and gender. A direction will not be specified in either case due to previous inconsistent findings. Accuracy of recall will be the dependent variable.

Hypothesis 1: That there will be a significant difference in the accuracy of eyewitness report between the long duration condition and the short duration condition.

Hypothesis 2: That there will be a significant gender difference in terms of the accuracy of eyewitness reports.

Method

Participants: Participants consisted of two groups.

Group 1 (confederates and experime-
Group 1 (participants): This group consisted of eight second year psychology students. There was an age range of 19-33 (M = 22.38, SD = 5.71). There was a male: female sex ratio of 7:1.

Group 2 (Participants): This group was a convenience sample of 32 staff and students gathered from the UCD Belfield campus. There was an age range of 17-66 (M = 27.88, SD = 12.51). There was an equal male: female sex ratio of 16:16.

Materials: Three questionnaires were created by students at the pre-experimental briefing. The first was an eight-point eyewitness questionnaire, the second was a one-point bogus questionnaire (for the short duration condition) and the final one was a five-point bogus questionnaire (for the long duration condition).

Procedure: Firstly, students created an eight point eyewitness questionnaire at the pre-experimental briefing, this was used to test eyewitness recall. Students then created a one-point bogus questionnaire (a simple question) to create the short duration condition and a five-point bogus questionnaire to create the long duration condition. After this stage was complete, the students were split into pairs. One student acted as the experimenter and the other acted as the confederate in each of the pairs. Each pair then collected data from four witnesses of each gender (2 females in the short duration condition and 2 males in the long duration condition and 2 males in the short duration condition and 2 males in the long duration condition).

Next, each pair was assigned to a different location on campus. The confederate approached strangers in both the long and short duration conditions and asked them either the one-point or the five-point bogus questionnaire. The confederate then moved out of sight. After this, the experimenter approached the witness and informed them of the true nature of the study; that it was to test the accuracy of eyewitness reports. They then asked them if it would be possible for them to cooperate for a few minutes longer and to complete the eight-point questionnaire. If the witness did not wish to offer further cooperation they were politely thanked for their time.

Results

The data consisted of accuracy scores for the long and short duration conditions for both male and females (see Table 1). This data were collected by the experimenter and confederate group. The independent variables were duration of exposure (long versus short) and gender (male versus female). Accuracy of eyewitness recall was the dependent variable. The data were analysed using two independent t-tests.

Hypothesis one, which stated that
there would be a significant difference in the accuracy of eyewitness report between the long duration condition and the short duration condition was not supported, \( t(30) = -0.261, p > 0.025 \).

Hypothesis two, which stated that there would be a significant gender difference in terms of the accuracy of eyewitness report’s was not supported, \( t(30) = 0.261, p > 0.025 \).

Table 1: Male and female accuracy scores across the long and short duration conditions.

<table>
<thead>
<tr>
<th>Pair ID</th>
<th>Duration</th>
<th>Male</th>
<th>Male</th>
<th>Female</th>
<th>Female</th>
</tr>
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<tr>
<td>1</td>
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<td>8</td>
<td>6</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Short</td>
<td>4</td>
<td>4</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>2</td>
<td>Long</td>
<td>6</td>
<td>5</td>
<td>6</td>
<td>4</td>
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<tr>
<td></td>
<td>Short</td>
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<td>3</td>
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</table>

**Discussion**

The present study used a field design, which has been seen to be more appropriate for yielding results with greater external validity to measure two independent variables which were, duration of exposure and gender. A direction was not specified in either case due to previous inconclusive findings. Accuracy of recall was the dependent variable. Hypothesis one, which stated that there would be a significant difference in the accuracy of eyewitness report between the long duration condition and the short duration condition was not supported. This result suggests that the duration of exposure to an event, whether long or short does not have an effect on the ability of the witness to accurately recall information. Hypothesis two, which stated that there would be a significant gender difference in terms of the accuracy of eyewitness report’s, was not supported. This result proposes that the gender of the witness does not affect their accuracy of recall and that neither males nor females have an advantage over the other.

Neither hypothesis were supported in the study, therefore there was no support for the possible advantage of certain levels of exposure or gender in improving the accuracy of eyewitness recall. Previous research by Memon, Hope and Bull (2003) argued in favour of longer exposure for more confident and correct identification of suspects. The present study did not support these findings, however there is support for the findings of the present study in the work of Greenberg, Westcott and Bailey (1998) whose study yielded results that found that exposure time did not have an effect on the witness in recalling accurate information. In relation to hypothesis two, the gender argument has led to inconclusive findings. The results of the present
study are supported by Shaw and Skolnick (1994) whose study suggested that there are no gender differences in eyewitness accuracy. However, due to the inconclusiveness of the gender argument, other studies have proposed the possibility that women have a slight advantage over men in the area of eyewitness accuracy. Such results can be seen in the work of Horgan, Mast, Hall and Carter (2004) who concluded that women were more accurate at remembering the appearance of their social targets because they are more interdependent and relationship orientated than men.

The present study contained several methodological weaknesses. Firstly, the one-point bogus questionnaire required the witness to give a set of directions and this could have taken longer than the time to answer the five-point bogus questionnaire. The time difference for the long and short duration condition was never properly measured and this could have affected the accuracy of the eyewitness report. Secondly, the gender of the confederates was not balanced. Therefore the results of the study could have been affected by the own-gender bias which, as Shaw and Skolnick (1974) suggest allows males to be better at identifying males and females better at identifying females. Finally, the appearance of the confederates was not controlled for, with issues surrounding the constraints of putting any such methodological control in place. However it could be suggested that witnesses could be attracted to the features of some confederates more than others, thus leading to better results in certain witnesses.

The present study also contained methodological strengths. The five-point bogus questionnaire was topical and relevant as it was based on transport to and from the college. Therefore suspicion of a fake questionnaire was unlikely to arise and this made participants more likely to engage and answer the questions. A second strength of the study was that it required both visual and auditory recall. This made the study more diverse and required the witness to recall more engaging information about the confederate. The most important strength of the study was that it used a field design. Research has suggested that field studies acquire more valid results than lab settings as the witnesses are in their natural environment and as outlined Kohnken and Maas (1988), subjects in real life situations use a stricter decision criterion and are less susceptible to instructional bias than subjects in lab settings.

Eyewitness recall has a wide range of practical applications. The obvious first application is its importance in the criminal justice system. Eyewitness identification is relied on heavily by the criminal justice system for the investigation and prosecution of crimes (Wells and Olsen, 2003). Memon and Bull (1991) suggest further practical applications of eyewitness recall
in the areas of the clinical and advertising worlds. Their work suggests that eyewitness recall would be useful in clinical assessment interviews to recall past experiences and also in advertising to assess attitudes and opinions of customers when they are encouraged to recall advertisement they have seen. Furthermore, Laird and Waters (2008) offer a very interesting practical application of eyewitness recall in their study which assessed the ability of experienced, qualified football coaches to recollect accurately, critical events that occurred during particular games.

Future research can be aimed to address the methodological weaknesses mentioned previously for the present study. The study contained a weakness in the fact that the way the witness was questioned for the long and short duration conditions was not controlled. This could be addressed by using a different method of questioning, such as the cognitive interview. Memon and Bull (1991) suggest that cognitive interview techniques are improving and these more advanced interviews could be better for eliciting correct information from witnesses. Also, in the area of future research, Deffenbacher, Bornstein, Penrod and McGorty (2004) have suggested that line-up type and formation can be improved in order to moderate the stress effects on eyewitnesses which can negatively influence the accuracy of recall. Finally, the present study only tested for the effects of duration exposure and gender on the accuracy of recall, however, research by Valentine, Pickering and Darling (2003) has proposed that age can play a role in the accuracy of recall. The results of their study showed that witnesses under the age of 30 were more likely to correctly identify a suspect compared to those over 40. Thus, future research could test more variables that may be influencing accuracy of recall and therefore try to find ways to improve it.

References


