IGOR AREH, PETER UMEK

# PERSONAL CHARACTERISTICS AND VALIDITY OF EYEWITNESS TESTIMONY

***If criminal investigators do not find any firm evidence and relevant witness of a crime exists, a question about reliability of a witness is brought forward. Is it possible to successfully assess a subject and predict the validity of an eyewitness testimony? In an effort to come close to an answer we have been working on a research project in which we try to explain connection between specific personal characteristics and memory recall. We assume that it is possible to develop a model which will help criminal investigators (psychologists) to predict, with some fair certainty, suitability of an eyewitness.***

***Personal characteristics were measured by Eysenck's test of personality EPQ, with which we searched for a correlation among personal traits and the validity of witness memory recall.***

***Persons high on extroversion and low on neuroticism are more reliable witnesses. Extrovert ones are oriented toward other people and more empathetic. Accuracy of memory recall also depends on personal emotional stability. Thus subjects with high neuroticism produce less accurate recall (higher proportion of added and false details). Similar performance by subjects with high psychoticism was found. They are less empathetic, less social and they care less about collaboration with investigators and performance in the experiment. They also showed a weak response or low quantity of recalled data.***

## INTRODUCTION

A criminal justice system relies heavily on eyewitness reports for investigating and prosecuting crimes. An incorrect or a completely false eyewitness testimony can have negative or even fatal consequences, especially if it is the only piece of evidence available. Psychologists and other scientists are trying to investigate various factors related to the accuracy of eyewitness testimony. These factors include characteristics of the eyewitness, of the witnessed event, of the testimony etc.

Research began in the 1970s and the findings were quite important. In spite of that, it was not until 1990s that criminal justice personnel began to take these research results seriously. This change in the attitude was partly due to the putting of DNA tests into force. The research in the USA showed that among one hundred people who were convicted prior to the advent of forensic DNA tests, approximately 75 % were victims of mistaken eyewitness identification (Wells, 1998). Those results are not only a consequence of memory imperfection. It is obvious that a behaviour expressed by a witness has an important influence on police officers, investigators, members of a jury, judges etc. (Ebbesen, 2000). Due to the fact that in most cases crimes do not include DNA-rich biological traces, our reliance on eyewitness testimony has not been weakened.

Today's knowledge about problems connected with eyewitness testimony derives form two sources: from the simulations made in the laboratory conditions and from real-world observations. If we wish to understand the quality and quantity of eyewitness testimony, we need to investigate real-world situations (Schacter, 1996). Nevertheless, in these situations it is often difficult to gather objective knowledge of the

events as they occurred - objective records of the real-world events are rarely made. To avoid this problem, eyewitness researchers often present simulated events (on videotape or staged) that can later be recalled. In a well considered simulation, it is not hard to be in necessary control of most relevant variables. Irrespective of the quality of the simulation, we get the research results whose ecological validity is limited. In the artificial environment, some key factors are missing, among them surprise, life-threatening circumstances, high emotions…

A few years ago Peter Umek began a systematic research on eyewitness testimony. He carried out several experiments in which he wanted to verify theoretical and experimental findings that came from Western Europe and especially from the USA. These experiments included eyewitness line-up and photo spread identification, eyewitness suggestibility and memory distortions. The results of his research done in different social contexts are in accordance with the findings of other researchers.

Recently we began a research project in which we are trying to build up a model of a witness assessment. Our efforts are focused on the search for a connection among personal characteristics and accuracy of her/his testimony. The hypothesis we are trying to confirm is that the accuracy of testimony is possible to predict if specific personal characteristics are known. We intend to use several well known personality tests which are standardized in Slovenia and examine the connection among personal traits and accuracy of eyewitness testimony.

## METHOD

### PARTICIPANTS

Hundred persons aged about twenty participated in the experiment, approximately 50 % of each gender, all of them freshmen at the Faculty of Criminal Justice. None of them had any prior knowledge about eyewitness testimony. They participated voluntarily.

### APPARATUS

We used Eysenck's questionnaire of personality EPQ witch is standardized for the use with the Slovenian population. The questionnaire measures three dimensions of personality:

1. **introversion – extraversion** (extraversion refers to a tendency to be sociable and willing to take risks. These subjects are open to the experience coming from the environment. Introversion stands for the opposite characteristics). Because of their characteristics we assumed that extraverts would produce better eyewitness testimony.
2. **Psychoticism – impulse control** (people high on psychoticism are aggressive, egocentric, impulsive, antisocial. Those who are low in psychoticism are empathic and able to control their impulses). We assumed that low psychoticism helped in eyewitness testimony.
3. **Neuroticism – emotional stability** (persons high on neuroticism report feeling anxious, guilty, tense, moody and they tend to have low self-esteem). Again, we expected a high correlation between emotional stability and quality of eyewitness testimony.

We also found the lie scale very interesting (L). It shows person's tendency to give answers that are socially more desirable or, in other words, answers that are expected to please the experimenter. We hypothesize that people with a high lie score would show less accurate memory recall.

Beside Eysenck's questionnaire a short film about physical attack which ends with a robbery was shown. The robbery starts with a man bumping into a woman going downstairs from her apartment. He starts to beg for a small amount of money. She refuses him and gradually his behaviour becomes more violent until he physically attacks her and finally grabs her bag and runs away. To be more realistic, the film simulated a recording made by the safety camera.

Characteristics of memory recall were checked with a special form (half structured interview). The form had four pages and it contained several check points which helped participants in recalling details of the event and details of both persons involved.

### DESIGN

A relationship among variables was established on the basis of Pearson's correlation coefficient. As a dependant variable accuracy of memory recall was used. As independent or predicting variable Eysenck's three dimensions and the lie scale (L) were used.

In the effort to predict the quality or validity of an eyewitness, we used the regression method. As predicting variables we entered the personal dimensions from the personal questionnaire, besides we entered the value of the participants self-estimated self- confidence.

### PROCEDURE

After filling in the personal questionnaire the short film presenting a robbery was shown to the participants. Before the film was shown the participants were told that the event actually happened a few weeks ago and that they are asked to help criminal investigators in their effort to confirm some hypotheses regarding the robbery. Seven days later the quality and quantity of memory recall were tested.

## RESULTS

The regression analysis produced the results that were a bit disappointing. Based on the gathered data it is impossible to make a good prediction of a testimony validity. Regression calculations show that, with the set of the predictors mentioned above, it is possible to explain only 26 % of total variance on witness accuracy. Among all the predictors there is only one that entered the regression equation – participants' or witnesses' confidence. In other words, we can not make a valid witness assessment with Eysenck's personal questionnaire EPQ. At least not in the way we tried it.

However, we have obtained some other interesting results. Among women we found that:

**1. The correlation between confidence and extraversion** is 0.44 (significant at the 0.01 level). People high on extraversion are prone to take risks. In this case, a feeling of confidence may be unjustified. However, we also found positive correlation between extraversion and a sum of recalled true details (up to 0.27) and positive correlation between extraversion and quantity of memory recall (up to 0.31). Considering these findings we can assume that extraverts give better testimony – in terms of quality and quantity.

**2. The correlation between neuroticism and confidence** is -0.3 (at the 0.05 level). This result is expected – high neuroticism is connected with anxiety, which reduces self- confidence.

**3. The correlation between accuracy of memory recall and confidence** is 0.52 ($p < 0.01$). Compared to the results of other authors (their correlation coefficients extends up to 0.4 (Wells, Olson & Charman, 2002)), this correlation is among the highest. We also found correlation between quantity and confidence to be quite similar: 0.54 ($p < 0.01$).
**4. The correlation between lie scale and accuracy of recall** is almost zero (0.05). But we found a very weak correlation between lie scale and confidence (it comes to 0.16). The result is not statistically important at the 0.05 level but if this correlation really exists the connection between accuracy and confidence should be reconsidered.

Unfortunately, the results we got while calculating men's answers are unclear. The correlation coefficients show a tendency similar to that of women, but all of coefficients are smaller and statistically non-significant at the 0.05 level. The problem probably occurred because of the small number of participants (we only had 44 male participants) and heterogeneity of the sample (diversity in the age of the participants).

## DISCUSSION

Our main intention was to investigate the possibility of using a personal questionnaire EPQ as a basis for an assessment of witness accuracy. Unfortunately, with the use of Eysenck's personal traits as predicting variables, we can explain only 26 % of total variance on witness accuracy. Because a false witness assessment can have fatal consequences, this amount of explainable variance is far too small and does not allow us to rely on such a model.

The connection between extraversion and accuracy of memory recall is in accordance with the results of some other researches (e.g.: Lieberman, 2000; Ward & Loftus, 1985). The reason for existence of positive correlation is not clear yet, but it seems that this finding is correct – high extraversion goes along with more reliable memory recall.

Similar stands for ascertained positive correlation between accuracy of memory recall and confidence – generally, our finding are in agreement with prior findings, but the question is why the coefficient we got is so high? This fact might be accounted for by the participants' motivation – they believed that the event actually occurred. From their perspective molestation and a physical attack on a woman of their age was seen.

At the end, we would like to emphasize that these research results represent only the beginning of the search for a model of witness evaluation. We believe that it is possible to build up a model of that kind and we do hope that in the near future we will be able to predict the validity of eyewitness testimony with reliable certainty.

## ABOUT THE AUTHORS

**Igor Areh,** MA, is assistant in psychology at the Faculty of Criminal Justice, University of Maribor, Slovenia.
**Peter Umek,** PhD, is Professor of criminal/forensic psychology at the Faculty of Criminal Justice, University of Maribor, Slovenia.

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