

Research Proposal

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### Abstract

The paper is a research proposal. Chapter 1 introduces the reader to the field of the study and the problem within it, which is the faulty testimony of the eyewitnesses, which results in false conviction. Therefore, in Chapter 2, the reviews of history of the topic investigation and the current literature review are given. Chapter 3 gives an overview of the research methodology. The research is designed to show how misinformation affects the eyewitness testimony and how the intentional attempts to forget some crime details affect the eyewitness memory.

## Зміст

|   |           |
|---|-----------|
| <b>Chapter 1: Statement of the Problem.....</b> | <b>4</b>  |
| Area of Study.....                              | 4         |
| Definition of Terms.....                        | 5         |
| Paradigm and Assumptions.....                   | 5         |
| <b>Chapter 2: Review of the literature.....</b> | <b>6</b>  |
| History.....                                    | 6         |
| Current Literature.....                         | 7         |
| Research Problem.....                           | 10        |
| <b>Chapter 3: Methodology .....</b>             | <b>11</b> |
| Research Questions and Hypothesis.....          | 11        |
| Research Design.....                            | 12        |
| Sample.....                                     | 12        |
| Measures.....                                   | 13        |
| Data Collection Procedures.....                 | 13        |
| Pilot Testing .....                             | 14        |
| Data Analysis Procedures.....                   | 14        |
| Limitations of the Study.....                   | 15        |
| Time-Lines.....                                 | 15        |
| References.....                                 | 16        |

## Research Proposal

### Chapter 1: Problem Statement

#### Area of Study

Making offenders and criminals face an appropriate legal responsibility is one of the core tasks of criminology. Nevertheless, the increasing availability of scientific testing, DNA testing in particular, has revealed hundreds of cases of false conviction, which took place in the recent decades (Gould, Hatten, & Stickels, 2010). The actual rate of wrongful convictions are difficult to attain, as it demands thorough reconsideration of all evidence. Gross, O'Brien, Hu, and Kennedy (2014) point out it is considered "not merely unknown but unknowable" (7230). Still, even in relation to death sentences, the documentation of which is very detailed and consistent, researchers estimate 4,1 percent to be based on false conviction (Gross, O'Brien, Hu, & Kennedy, 2014). This means that one in 25 will actually be exonerated. Though false convictions are the result of various factors, the most common factor is a faulty or mistaken eyewitness testimony (Gould, Hatten, & Stickels, 2010), which, thus, triggered close attention of researchers and the general public.

In fact, faulty eyewitness identification took place in 75 percent of cases overturned by DNA testing (Nicholson, Yarbrough, & Penrod, 2014). An important factor is that eyewitness testimony has a great effect on the judgment of the juries who perceive confidence of witnesses as the proof of their credibility. It has been studied that even traditional safeguards, cross-examination of witnesses in particular, have little effect on jurors' ability to distinguish between accurate and inaccurate eyewitness testimony (Nicholson, Yarbrough, & Penrod, 2014). Therefore, despite the proven unreliability, eyewitness testimony remains extremely influential.

At the same time, misidentification and false testimony of the victims, which result in the conviction of an innocent person, may be hazardous for victims themselves. The research

conducted by ICF International showed that the victims perceived wrongful conviction as comparable to or even worse than their original victimization (Siegel, 2016). In particular, the victims perceived themselves offenders, had difficulties standing media attention and anger directed at them, and were afraid of the revenge of the exonerated on them or their children (Siegel, 2016). This gives grounds to question the very reliability of witness memory and research what promotes witnesses' false memories so as to suggest the ways to mitigate false memories and inaccurate testimony in the court.

### **Definition of Terms**

*A wrongful conviction.* Conviction can be considered wrongful in two cases. In the first case, the convicted person is innocent. In the second case, the conviction is considered wrongful due to the violation of procedural norms, which infringed on the convict's rights (Roman, Walsh, Lachman, & Yahner, 2012). The current study focuses on the wrongful conviction of the innocent person due to the faulty eyewitness identification or testimony.

*An eyewitness identification.* Eyewitness's selection of an alleged perpetrator from a police lineup. It usually occurs short after the crime event.

*An eyewitness testimony.* The eyewitness's identification of a convict as a perpetrator and presentation of information related to the crime during the court proceeding under the oath. The testimony may take place several years after the crime event.

*True and false memory.* True memory is person's memory of what has really happened. False memory is the person's recollection of events and images not in the way they existed in reality, but in the way they were portrayed, retold, or imagined (Zhu et al., 2012).

### **Paradigm and Assumptions**

The research will be based on the positivist rationalistic paradigm and will employ a preordained, quantitative design. This means that the collection of data and development of actual research tools will be guided by the preliminary formulated, *preordained*, research

questions (Research methods, 2000). The choice of the paradigm and methodology can be explained by its ability to help researchers “understand, in broadest possible terms, not the product of scientific inquiry but the process itself” (Research methods, 2000, p.45). Namely, for the current study, it is important to observe how various factors affect the witnesses’ memory. A special experimental design and longitudinal character of the research will be able to identify variables, which could have been not identified in the other studies, and, thus, contribute to the understanding of factors promoting false memories.

## **Chapter 2: Literature Review**

### **History**

Eyewitness misidentification and faulty testimony has been known for several centuries now (Sporer, Koehnken, & Malpass, 2009). One of the most famous cases, which is cited in many books on witness credibility, is that of the Sergeant Joseph Lesurques. He later pleaded guilty and was executed at the decision of one of the five courts following a robbery of a postal coach, which took place in 1796 (Sporer, Koehnken, & Malpass, 2009). A remarkable feature of a case was that there were many witnesses able to identify the robbers: the robbers did not mask their appearance, were witnessed on multiple occasions on the road and directly interacted with many people that day. Following the courts, ten individuals were identified as robbers and seven were executed, even though the witnesses and the victims stated there were only five robbers overall (Sporer, Koehnken, & Malpass, 2009). This case has served as a remarkable proof of the unreliability of witness testimony and promoted the eyewitness research.

Eyewitness research has been largely related to the study of witness memory (Yuille & Tollestrup, 2014). In particular, numerous studies have been dedicated to the investigation of how the witness memory may be affected by various variables such as the time lapse, emotional arousal, level of involvement, introduction of misleading information, biased

questions, wish to forget the unpleasant event, etc. (Sporer, Koehnken, & Malpass, 2009; Yuille & Tollestrub, 2014). On the other hand, researchers have investigated the factors, which affect jury's and experts' judgments concerning the credibility of individual's memory and their general level of knowledge about the memory studies (Nicholson, Yarbrough, & Penrod, 2014). Despite a large number of case studies in the framework of eyewitness research, many professionals question their generalizability (Yuille & Tollestrub, 2014). The major reason for disagreement about generalizability lies in the fact that the laboratory tests presuppose that a witness is an uninvolved bystander, which is rarely the case in the real circumstances. Namely, the archival study showed that for the directly witnessed crimes, 71% involved victim as the only witness (Yuille & Tollestrub, 2014). When other witnesses are present, they are usually acquaintances of either a victim or an offender, which makes them emotionally engaged, too. Even for a bystander, a real life event, which involves the use of weapon or poses threat to his life, presupposes that the event produces a great impact, not comparable to that of a video-taped or staged crime presented in the laboratory premises (Yuille & Tollestrub, 2014). This criticism should be considered when developing a methodology for a current study.

### **Current Literature**

When investigating the reliability of eyewitness memory, it is important to consider various variables affecting it. Such variables as introduction of misinformation, intention and wish to forget, and emotional arousal and stress have been investigated in several recent studies.

Zhu et al. (2012) have studied the impact of misinformation on memory of the criminal event. The major benefit of the study is that it is longitudinal, that is it tests the memory retained more than a year after the event, which is important considering that the testimony in the court takes place years after the occurrence. Two tests were conducted in course of the study. During

the first test, participants were shown 50 digital slides showing the chronological development of the story. Then, they read a narration of 50 sentences, each describing a story, in which the information of 12 critical slides was distorted. Eventually, the participants had to answer the questions about the critical slides and state why they chose those answers. In particular, they had to indicate whether they chose the variant because they saw it on the picture, read it in the narration, both saw and read it and the information was/was not conflicting, or they simply guessed (Zhu et al., 2012). In the second test conducted 1.5 years after the first one, the participants were presented the slides in the chronological order again. However, instead of every critical slide, there was a question on the information it presented, which the participants had to answer basing on what they saw on the slides shown a year and a half earlier (Zhu et al., 2012). The results of the tests showed that exposure to misinformation made 31% of respondents choose a wrong answer and 13% of respondents did not notice misinformation at all (Zhu et al., 2012). What is more, the choices made in the first test were consistent with those made in the first one (Zhu et al., 2012). This means that once the misinformation is acted upon, the resultant false memory as powerful and lasting as true memory. Though the study by Zhu et al. (2012) demonstrates the great potential for misinformation to create a lasting false memory, the laboratory based, emotion free content of the test is not able to respond to the criticism about generalizability. Another drawback of the study is that the respondents were presented multiple-choice answers as the presence of misinformation item could strengthen the effect of misinformation.

The study by Benoit and Anderson (2012) focused on the neurocognitive mechanism behind the voluntary forgetting of unwanted memories. Although the study is not directly focused on eyewitness testimony, its results are valuable for this field of study as victims of crime, which are often also the witnesses giving testimony in the court, might be willing to forget the crime. The scholars employed two memory suppression tasks to test two distinct

mechanisms of forgetting: direct suppression and thought substitution (Benoit & Anderson, 2012). In course of the tests, participants were suggested pairs of associations, e.g. “beach-Africa”, and substitute memories for the initial reminders, e.g. “beach-snorkel”. Then, the participants of the first group were asked to intentionally avoid thinking about the initial association (“Africa”) and the participants of the second group were instructed to think about its substitute (snorkel) when they saw a reminder (“beach”). The follow-up of the tests, which consisted in checking the retention of the suppressed memories, demonstrated that the suppressed memories rate were below the recall rate for baseline items (associations, which participants were not encouraged to suppress). What is more, the effect remained when the participants were suggested the initial reminders (“beach”) and even when there was a cue in the form of a category and a first letter (“continent-A”) (Benoit & Anderson, 2012). This way, the scholars showed that the mechanisms of forgetting do not simply mean unlearning, which can be reversed with the help of reminding, but actually weaken the traces of the memories. The study results have important implications as they presuppose that the victims who try to avoid painful memories and engage in suppression procedures will unlikely recall the crime details truthfully even when presented some clues. At the same time, the absence of emotional involvement and low impact of the event again questions the validity of the study.

A study, which overcame the limitation of laboratory setting while investigating the impact of stress and misinformation on witness testimony, is the one conducted by Peters (2009). At the same time, the experiment targeted children; therefore, the results cannot be generalized to the general population. The experiment ran as follows. Two groups of children were engaged in an interesting activity while their blood and pressure indicators were checked. Suddenly, a fire alarm set was off (1 group) or a radio switched on (2 group) promoting high and low arousal respectively. During the signal and the radio were on (60 seconds), a young individual came into the room. In the first case, she was worried, asked whether anyone smelled

the smoke, looked out of the window to see if other people were leaving the building. In the second case, she only asked about the children's mood and looked out of the window to see some car. In both cases, she dropped the keys. After the blood and pressure tests were conducted again, children answered questions about the visitor's appearance and actions. Part of students in each group received biased questions containing misinformation, e.g. "Did the woman wearing yellow sweater (she had worn a white sweater) have brown hair?" (Peters, 2009, p.354). Then, children had to identify the target individual in a line-up (they were notified the target individual may be not present in the line-up) and assess the level of their confidence. Test results demonstrated that fire alarm caused a substantial level of arousal (Peters, 2009). The differences between the free recall testimonies of the children of two groups were not significant. However, the no-fire-alarm group gave more correct answers (67% vs 52%) and more correct answers were given when the questions were not biased (73,2% vs 46,6%). Emotional arousal had a significant effect on facial recognition, too (65% vs 44% of correct identification) (Peters, 2009). Such results clearly speak in favor of including emotional arousal as a factor in eyewitness testimony research.

### **Research Problem**

The major problem this research faces is development of the experiment where the participants will be not passive bystanders, but will experience certain crime-related stress. Care should be taken to make the participated involved in the dangerous situation while assuring no physical or psychological harm is inflicted on them. To avoid legal consequences, there is obviously a need to notify the participants that they can face dangerous situation and, thus, receive their written consent to participate in the experiment. Nevertheless, it is not clear whether such notification will affect the test results.

### Chapter 3: Methodology

#### Research Questions and Hypotheses

The research will have a complex design attempting to combine various factors affecting eyewitness testimony. The major question of the study are:

Q1: *How does misinformation affect the eyewitness testimony?*

Q2: *How does the intentional attempts to forget some crime details affect the eyewitness memory?*

Each question will have two sub questions:

Q1a: *How does misinformation introduced right after the event affect the eyewitness testimony following the event?*

Q1b: *How does misinformation introduced right after the event affect the eyewitness testimony given a year after the event?*

Q2a: *How does the intentional attempts to forget using the mechanism of direct suppression affect the eyewitness memory?*

Q2b: *How does the intentional attempts to forget using the mechanism of substitution affect the eyewitness memory?*

It is a deliberate choice to use the word “testimony” not “memory” in the first research question, as it may be hypothesized that a person may have true memories, but decide to ‘adjust’ one’s testimony to the testimony of other participants, even if they are false.

The preliminary hypotheses are:

H1: *Misinformation will affect the testimony of the witnesses.*

H2: *Those participants that will not change their testimony after hearing a misinformation, will repeat the true variant after a year too. The testimony, which will be affected by misinformation, will remain faulty after a lapse of time too.*

H3: *The intentional attempts to forget the crime details will lead to the reduced eyewitness memory.*

### **Research Design**

The research will have a true experimental or “the pretest-post-test control group” design (Cohen, Manion, & Morrison, 2005, p.213) and will be longitudinal. On the first stage of the study, all the participants will endure the same stressful experience. Further, they will be divided into 4 groups. The first group will be exposed to misinformation. Namely, participants of this group will be asked to give oral unguided testimony. In their group, there will be several “staged” participants who will tell distorted facts (these people will be present during the experiment with all the rest, but will not belong to the sample). After that, the participants will complete a test and an identification exercise. The second and third groups will pass a test and conduct identification, after what they will be instructed to directly suppress certain details of the event (second group) or try to forget certain details of the event using substitution (third group). The fourth group will be a control group. Therefore, after a year, all the participants will be asked to pass a test on the event details and complete identification again. The analysis of the testimony of the first group against the fourth will allow to answer Q1 (Q1a and Q1b), and the analysis of the second and third group testimony against the fourth will allow to answer Q2a and Q2b correspondingly.

### **Sample**

The sample should represent the whole population. As children testimony is studied separately from an adult people testimony, the sample should comprise and, thus, represent adult population. Having in mind that a large sample triggers additional cost, time and resources, it is better to have the smallest sample size that will produce a valid research. For experimental methodologies, the minimum sample size is fifteen cases for each subgroup of the study (Cohen, Manion, & Morrison, 2005, p.93). Therefore, the minimum sample size for

the current study is 60 people. Considering that such number of people may distract participants and undermine their ability to notice particular details, it is better to split the sample and conduct two staged events, assigning equal parts of participants to all four subgroups each time. The sample should have equal proportions of men and women participants. This will assure that gender is not a variable in the study, that is that the witness testimony is affected by misinformation or attempts to forget and not gender. Participants will be selected according to simple random sampling. Any adult individual will be able to sign up for the participation in the study.

### **Measures**

The variables of the study are the scores on the tests and identification exercise of each group at each stage of the study. The data will be analyzed using the correlational analysis, which will detect the effect of the investigated factors on the eyewitness memory and testimony. To attain reliability and validity, experimental design should impose “control over conditions that would otherwise cloud the true effects of the independent variables upon the dependent variables” (Cohen, Manion, & Morrison, 2005, p.126). Therefore, it will be important to make sure the test results are not affected by such variables as question bias (for all groups) and misinformation (for second, third, and fourth group). It is also necessary to make the participants indicate what level of stress the event inflicted. If participants give comparable results, the variable will not affect the study results. However, if people perceived the event differently, the stress may become a variable, which has to be controlled for.

### **Data Collection Procedures**

Data will be collected from the tests and identification exercises completed by the participants in the laboratory settings on two occasions: after the event and a year after the event. What is more, groups that will be instructed to make efforts to forget the event details will have to make diary notes indicating that they really used the memory suppression

techniques. Participants that will not use the suppression techniques as instructed should be excluded from the second stage of the study.

### **Pilot Testing**

Pilot testing checked the possible scenario for the research. Under the scenario for the pilot study, fifteen people received the instructions to shop for particular products in a small supermarket. Then, a staged robbery took place – a robber came up to the cashier as if holding a gun in his pocket and asked him to give the money. After the cashier gave the money, the offender left the shop. The results of the study revealed important drawbacks of the experiment. Since supermarkets have tall stalls, some of the participants did not see the robber and some did not even know there was a robbery. Moreover, the features of robber who was standing face to face with a cashier, his back turned to the rest of the people, were identified by only a small percentage of participants. Therefore, it is advisable that the staged event for the current research takes place in a shop with low stalls. Likewise, the robber should circulate the shop before coming up to the cashier, so that more people can see him among the others; he should look around when talking to the cashier; the cashier may possibly switch on an alarm, which will attract the attention of all people.

### **Data Analysis Procedures**

In statistical analysis, it is necessary to analyze the significance of the effect of manipulation (disinformation or memory suppression). Therefore, alpha level ( $p$  level) identification will show if the effect is statistically significant. T-test will be conducted to assess whether the groups are statistically different from each other. Data, received from tests on event details and identification will be operated using Spearman rank correlation test. This will show associations between paired variables. For the purpose of the study, the correlation of the following variables is of interest: test of the first group vs control group, first test of the first group vs its second test, first test of the second and third group vs their second tests, and

second test of the second and third group vs the second test of the control group. ANOVA test may be used as a validation method.

### **Limitations of the Study**

Limitation lies in the inability to fully control the application of memory suppression techniques by the participants of the second and third groups. The limitation may be mitigated by the demand to send electronic confirmation at the defined intervals of time. These confirmations will themselves serve the reminder about the event; therefore, participants will be more likely to try to suppress some memories as instructed.

### **Time-Lines**

Instrument selected and developed – October 2016,

Pilot test conducted – October 2016,

Attraction of participants – November 2016

Staging of the experiments, completion of tests and identification exercises following the event – depending on the sample and chosen premises will take place on two or three occasions in February 2017

Instruction session on memory suppression for the second and third groups – February 2017

Analysis of data of the first stage of the study – March-May 2017

The second stage of the study – passing of tests and identification exercises – in February 2018, a year after the staged event.

Analysis of data of the second stage of the study and its correlation with the data from the first stage. Drawing conclusions from the study results – March-May 2018.

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