Journal of European Psychology Students, 2013,
First Work in Progress Special Edition, 1-8

efpsa journal of european psychology students

The role of self-construal in eyewitness memories: Susceptibility to different sources of misinformation

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Received: 05.10.2013 | Accepted: 07.08.2013

abstract

Eyewitness memories are malleable and can be influenced by many factors. This study focuses on how construal of the self can influence the memory and create the post-event misinformation effect. It is hypothesised that individuals with interdependent self-construal are more influenced by an authoritative source than individuals with independent self-construal. After watching a short clip showing a theft, participants were presented with a co-witness testimony including some misinformation, which came either from a police officer off-duty or an anonymous passer-by. Participants, aged 18-35, were recruited in Belgium, Germany, Norway, Slovakia, Switzerland and the UK. They were evaluated regarding their independence/interdependence with the Self-Construal Scale.

Keywords: post-event misinformation effect, Self-construal Scale, authority, co-witness

Legal justice systems rely heavily on eyewitness reports, which often provide the only evidence during trials (Connors, Lundregan, Miller, & McEwen, 1996; Wells & Olson, 2003). However, an extensive body of research has shown that memory can be easily influenced and is prone to distortion (Loftus, 1992, 2005; Magnussen, 2004), for instance when one is confronted with new information that contradicts the original memory (Wells & Olson, 2003). This is commonly referred to as the post-event misinformation effect (PME; Loftus & Palmer, 1974). The new information can come from various

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sources, such as a co-witness (Skagerberg & Wright, 2009), a media report or suggestive questioning (Wright, Memon, Skagerberg, & Gabbert, 2009). In this case, the perceived expertise of the communicator plays a role. A low credible co-witness, for instance a child, is less likely to affect the testimony as compared to a co-witness with high credibility (Skagerberg & Wright, 2009). Similarly, Roper, and Shewan (2002) suggest that when the communicator of misinformation is perceived as an authority, this influences the responses of eyewitnesses.

Eyewitnesses adjust their responses due to three different ways of influence (Wright et al., 2009): normative – occurring usually when being correct is not essential and a person agrees with others because the cost of being wrong is lower than the cost of disagreeing; actual memory distortion - when information suggested by a co-witness becomes a part of the witnesses' own episodic memory over time; informational – in situations when a co-witness's memory is inconsistent with another co-witness memory and the witness weighs the relative likelihood of the other person being correct versus him/her being correct (Wright et al., 2009). The person who appears to have more confidence, better cognitive abilities or is thought to be more reliable is often trusted more (Skagerberg & Wright, 2009).

According to Triandis (1989), culture plays an important role in the processing and evaluation of information, thus culture might be important when contradicting information coming from another source is processed. One well-recognised dimension of cultural variation is independence and interdependence (Markus & Kitayama, 1991), along which further self-construal dimensions were created (Singelis, 1994). Markus and Kitayama (1991) argued that the individual construal of the self is one of the critical variables that mediate how culture influences the way we think. For instance, self-definitions referring to autonomous features are usually seen among individualistic societies and are differentiated from interdependent features stressing one's social roles and connectedness, usually among collectivist cultures. Thus, although self-construal is only one of the variables, Levine et al. (2003) argue that it is "a common way of predicting and explaining cultural differences in cognition, emotion, motivation, and communication" (p. 211). Individuals with high independent self-construal scores strongly believe in their own memory (Markus & Kitayama, 1991), which could potentially influence their beliefs of what is true. On the other hand, interdependent individuals place greater value on information received from others (Markus & Kitayama, 1991) and therefore might be more likely to incorporate others' information into their own memory. Recently, Petterson, and Paterson (2012) found a negative relation between independence and memory conformity and no relation between interdependence and memory conformity. This finding suggests the individual difference in self-construal plays a role in memory conformity. However, the sample mostly consisted of individuals with a relatively equal level of independence and interdependence; hence, different results might be found in a sample with higher cultural variance. In order to increase self-construal variability and also due to our primary interest in the cross-cultural differences in memory, the present study aims to assess people living in six European countries, including many emigrants who are originally from distinct non-European cultures.

As mentioned above, several studies show that participants witnessing a crime are highly susceptible to information from a co-witness (e.g., Paterson & Kemp, 2006; Shaw, Garven & Wood, 1997; Wright & Davies, 1999; Wright, Self, & Justice, 2000). As the concept of self-construal is important in relations with other people, this paper focuses on memory distortion through receiving post-event misinformation from a co-witness, who is either a high authority person (e.g., a police officer) or who has low or no level of authority (e.g., an anonymous passer-by).

We suggest there will be an interaction effect between the level of authority of the co-witness reports and the degree of personal independence-interdependence on the prediction of memory distortion: participants with high

interdependent self-construal scores should be more susceptible to misinformation when it comes from an authoritative source rather than from a neutral source. Furthermore, we predict no significant difference between sources (i.e. authoritarian vs. neutral) in participants scoring high on the independent self-construal scale. We also expect that participants with a high interdependent score will be more susceptible to misinformation compared to participants with a high independent score, regardless of misinformation source.

Method

Participants

A total of 237 participants (aged 18-35) living in Belgium, Germany, Norway, Slovakia, Switzerland, and the UK took part in the study. In order to increase the variability in self-construal scores, participants with minority backgrounds were recruited. The sample consisted of Pakistani and other ethnic minorities in Norway, Turks in Germany, Chinese, Turks and French-speaking Swiss (and various cultural backgrounds) in Switzerland and participants from various cultural backgrounds in the UK. Participants were recruited at university campuses, high schools and among acquaintances, using online advertisements, flyers and word-of-mouth.

Design and Procedure

Participants were randomly assigned to either the passer-by vs. policeman group. Independence and interdependence was measured using the Self-Construal Scale (SCS; Singelis, 1994). A misinformation paradigm consisting of three phases was employed (see Figure 1). Participants witnessed a mock crime, received misinformation and were then tested on their memory of the original event using a recognition test. Participants were tested alone or in groups of up to five participants. The experiment had an average duration of 50 minutes.

First phase. Participants were told that the objective of the study was to compare perception of written versus visually presented material. This cover story was used in order to avoid compliance effects. Participants watched a silent mock crime video of a cell phone theft. They were told to pay attention throughout the video and were then asked to engage in a filler task of Sudoku, a logic-based number-placement puzzle, for 15 minutes. The task was used to increase their cognitive load and prevent them from rehearsing information.

Second phase. Participants were presented with a written co-witness testimony of the theft they had previously watched. Each participant received one of the two versions of the testimony (i.e. from a passer-by or a policeman). After reading the testimony once, they were asked to engage in Sudoku for the next 15 minutes.

Third phase. Participants were asked to fill out a recognition test and the SCS. Lastly, they also completed a short demographics form.

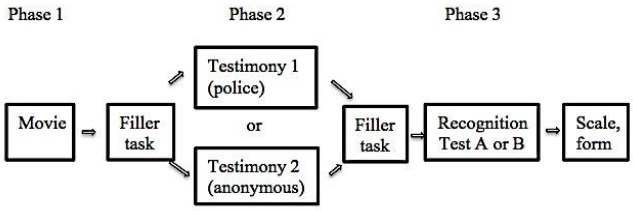

Figure 1. Illustration of the experimental procedure.

Materials

Materials, if not stated otherwise, were translated into the language of the countries where the study was conducted by the researchers.

Video. It was a silent film clip that lasted just over 3 minutes. The clip showed a thief stealing a victim's cell

phone while asking for directions. There were four critical items in the video.

Testimony. It was a short description of what happened in the video. It contained misinformation on four critical items among other correct information. There were two versions of the testimony. Although the content was identical in the testimonies, the source of the testimony differed. The testimony had a caption saying that it was written either by a passer-by or a policeman off-duty. This difference served as the manipulation of authority. Each participant read only one testimony, attributed randomly between the two.

Recognition test. The test was a forced-choice questionnaire consisting of 21 questions with four answer options (a-d). It contained questions on all four of the misinformed items from the written testimony. Participants were specifically asked to check the correct answer based on the video they watched earlier. If participants were not able to answer a question, they were asked to guess. They received one point for each of the critical question when the misinformation was chosen over the original information. The misinformation scores varied from 0 to 4 with 4 indicating higher susceptibility. In order to counterbalance the order effect of the questions, two versions of the test were prepared. Participants received one of the versions randomly.

Self-Construal Scale (SCS). The scale, developed by Singelis (1994), measured the degree of independence/interdependence. The scale consists of 24 statements, such as "I respect people who are modest about themselves" or "I act the same way no matter who I am with." Participants gave their answers through a 7-point Likert scale that best matched their agreement or disagreement. The answers were calculated into two distinct subscale scores: independent and interdependent scores. The following translations of the SCS were used: Norwegian version by Kolstad and Horpestad (2009), Dutch version by Rutten (E. A. P. Rutten, personal communication, November 2, 2012), German version by Freund et al. (2012). The Slovak version of the SCS was translated by the researchers in this study.

Demographic questionnaire. It contained several questions regarding gender, age, background and religion. The questions were asked in order to compare the cultural background with levels of independence/interdependence.

Analysis

The total misinformation score, the dependent variable of our study, was calculated after completing the recognition test, which corresponded to the number of misleading items. The SCS score was calculated by subtracting the interdependence from the independence subscore, following Pöhlmann, Carranza, Hannover, and Iyengar's method (2007). Consecutively, this continuous variable was converted into a binary, categorical variable consisting of two groups: the upper quartile (independent individuals) and lower quartile (interdependent individuals). The second and third quartiles were excluded. A 2 x 2 ANOVA analysis was conducted with the condition (police or anonymous testimony) and SCS score as independent variables.

Ethics

Formal ethical approval was requested from and granted by the ethical committee of two European universities (KU Leuven and University of St Andrews). First, a standard ethical approval application was submitted to the School Ethics Committees (SECs). The approval application included reasons why the study is conducted and detailed information on how the participants would be recruited, when we planned to test them and what exactly the participants would be asked to do. Collaborators needed to think of potential risks of running the study and they were required to list all other collaborators that would use the data. Also, they needed to find a supervisor at their institution, usually an expert in the field, to sign their application form. Once the study was approved by SEC, it was given an identification

number, which could be used by other collaborators who did not seek any ethical approval should any external body seek such an approval after the experiment commenced. All collaborators in the group held to the same ethical rules and formal procedures for data collection. All participants were informed about the nature of the study, asked to sign a consent form prior to participation, and were debriefed at the end of the experimental session.

Overall, the ethical approval application processes varied among the countries. The process took up to 8 weeks with amendments. Hence collaborators had to be aware of the specific constraints at their universities and had to take the varying duration of these applications into account.

It is important to note that the ethical guidelines might be stricter in certain countries. For instance, ethical committees in the UK require stronger support for asking participants about their mental health, medication or religious affiliation, which is not the case in other countries.

Practical

Commissioning of the project formed one intensive week in which we formulated our hypotheses and designed the experiment. We set a timetable for the upcoming year and decided on the division of roles. However, further work turned out to be more comprehensive and time consuming than expected, thus we were not able to commit to the initial timetable.

For instance, the division of report writing among seven people was difficult. We realised that working in a group slows down the writing process. After several attempts, we decided that report writing should be done by one group member at a time, and subsequently reviewed by others. We used different tools such as Google documents and Groupspaces to share the work. However, it was sometimes difficult to track changes.

Furthermore, all materials had to be translated into the representative six languages. The SCS was available in most of the languages; however we created and translated the narratives and the recognition questionnaire ourselves. Consequently, materials may differ between the countries, although there were attempts to prevent this by translating every word and sentence as meticulously as possible.

During the data collection we faced major challenges. First of all, lack of funding made it difficult to recruit participants in general. Secondly, one of the aims was to recruit collectivistic participants with high interdependent self-construal, but since they constitute a minority in our countries it was a challenging endeavour. To overcome this problem, we employed also the snowball sampling: we recruited participants among our acquaintances and among their acquaintances.

Current Status of the Project

We started with a literature review in September 2012. When deciding on an experimental design, we consulted several experts in the field of forensic psychology. Following their advice, we introduced a few changes, for instance: we focused just on the authority effect and eliminated the expertise effect and replaced the initial Self-monitoring Scale (Snyder, 1974) with the SCS. We translated all materials into Dutch, German, Norwegian and Slovak. A pilot study, encompassing 22 participants, was conducted in November 2012. In December 2012, the experimental design and materials were adjusted based on the pilot data analysis. Consequently, the introduction and methods section were written. Ethical approval was granted by ethics committees at two universities (KU Leuven, St Andrews) in January 2013. Data collection started in all six countries in February 2013 and finished in June 2013.

Preliminary Discussion

The underlying question of the project is whether self-construal influences vulnerability to memory distortion. We expect those who score higher on the interdependence scale to be more influenced by information coming from a source with high authority than those who score lower. Significant results in the present study would suggest that self-construal plays a role how testimonies of eyewitnesses can be influenced by another person. Such results could provide useful information when assessing eyewitness credibility in courts. Our aim is to highlight trends in memory distortion among individuals of different self-construals. Preliminary analysis does not yet allow us to draw final conclusions; however, we expect full disclosure of the project by the end of the year 2013.

This manuscript is part of the Work in Progress special edition of JEPS and was developed under a research project of EFPSA's Junior Researcher Programme cohort of 2012-2013.

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