Attribution of Crime Motives biases Eyewitnesses' Memory and Sentencing Decisions

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WORD COUNT: 7,050

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Acknowledgements

We are indebted to Lina-Maraike Nitz and Pia-Renée Kobusch for their assistance in data collection and coding. We also thank two anonymous reviewers and Jens H. Hellmann for valuable comments on earlier versions of this manuscript.

Abstract

In court, the basic expectation is that eyewitness accounts are solely based on what the witness saw. Research on post-event influences has shown that this is not always the case and memory distortions are quite common. However, potential effects of an eyewitness' attributions regarding a perpetrator's crime motives have been widely neglected in this domain. In this paper, we present two experiments (N = 209) in which eyewitnesses were led to conclude that a perpetrator's motives for a crime were either dispositional or situational. As expected, misinformation consistent with an eyewitness' attribution of crime motives was typically falsely recognised as true whereas inconsistent misinformation was correctly rejected. Furthermore, a dispositional *vs.* situational attribution of crime motives resulted in more severe (mock) sentencing supporting previous research. The findings are discussed in the context of schema-consistent biases and the effect of attributions about character in a legal setting.

[146 words]

Keywords: misinformation effect, eyewitness memory, attribution, crime motives, sentencing, mock-jurors

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Expectations can bias memory of an observed event (e.g., Kleider, Pezdek, Goldinger, & Kirk, 2008; Roediger, Meade, & Bergman, 2001) as well as eyewitness identifications (e.g., Charman, Gregory, & Carlucci, 2009; also see Kassin, Dror, & Kukucka, 2013). In the present research, we demonstrate that an individual's attributions of a perpetrator's crime motives can influence memory of a witnessed crime as well as sentencing decisions.

The misinformation effect (i.e., impairment in the memory of a witnessed event following subsequently presented misinformation; Loftus, 1979) is well-established (see Frenda, Nichols, & Loftus, 2011; Loftus, 2005). In studies on the misinformation effect, participants receive some original information (encoding phase), keep it in their memories for a certain time (retention phase) and are finally asked to recall it (retrieval phase). In each phase, the originally encoded information is susceptible to outside influences (e.g., talking about the observed event; Gabbert, Memon, Allan, & Wright, 2004; Wang, Paterson, & Kemp, 2014) as well as inner distortions (e.g., expectations; Brewer & Treyens, 1981; Kleider et al., 2008).

Although the misinformation effect has been demonstrated under varying conditions and in different domains, the moderating role of eyewitnesses' *attribution of crime motives* has not yet been considered. Attributions strongly relate to individuals' cognitive schemata, which determine expectations, direct attention, and influence memory (e.g., Brewer & Treyens, 1981). Thus, misinformation confirming an eyewitness' attributions of a perpetrator's crime motives could bias eyewitness accounts of an observed event. Moreover, memory errors and consequently biased eyewitness reports are more likely to occur for negative events eliciting negative emotions (Porter, Bellhouse, McDougall, Ten Brinke, & Wilson, 2010). On this basis, we anticipate that attributions of crime motives for violent crimes are especially likely to influence eyewitness reports.

Attribution of Crime Motives and Memory Distortion

Research on attribution theory examines how individuals explain their own as well as others' behaviour and what information they use for making causal attributions (see Harvey & Weary, 1984; Malle, 2011). Weiner (1986) developed a taxonomy, according to which attributions are depicted on the dimensions locus, stability, and controllability. In the present research, we focus on the dimension *locus*: Causes of behaviour are attributed either to the person or to the situation. Explaining an observed behaviour based on the actor's personality is a dispositional attribution, whereas explaining the same observation through the surrounding situational circumstances is a situational attribution (see e.g., Wetmore, Neuschatz, & Gronlund, 2014). Imagine somebody arrives late for an appointment. A situational explanation could be a traffic jam because of an accident, whereas a dispositional attribution could be that the person does not care about punctuality. A well-known example of an attributional bias is the "fundamental attribution error" (i.e., a general tendency to underestimate the influence of situational factors and to overestimate the influence of dispositional factors; Ross, 1977).

Some evidence suggests that attributions are triggered when (positive) expectations are violated and consequently a search for explanations is prompted (e.g., Bohner, Bless, Schwarz, & Strack, 1988; Gendolla & Koller, 2001). Thus, being exposed to information that does not comply with a cognitive schema can initiate attributions. Individuals are better able to remember schema-consistent information than inconsistent information and make more use of the former (e.g., Judd & Kulik, 1980; Sentis & Burnstein, 1979). As a result, an activated schema can falsify perceptions retrospectively and cause a selective search for schema-consistent information (e.g., Kleider et al., 2008; Roediger et al., 2001). Prior research has studied the relationship between attributions and biased information processing. For instance, evaluating negative behaviour can lead to "blame-validation" which in turn results in a biased

search for information that confirms the ascribed blame (Alicke, 2000). According to Alicke (2000, p. 568), this confirmation bias is "encouraged by the tendency to view people rather than the environment as the prepotent controlling forces behind harmful events".

In a related vein, Pizarro, Laney, Morris, and Loftus (2006) found that attributions of responsibility affected individuals' memories. They presented participants with a story describing an individual showing immoral behaviour. Some participants learned that the negative act was intentional and the person actually enjoyed it, other participants learned that it was not intentional. When recalling information about the event, participants in the former group remembered the behaviour as more immoral than originally reported (also see Remijn & Crombag, 2007).

In line with this reasoning, we argue that an individual's assumptions regarding a perpetrator's reasons for committing a crime influences their memories of the observed event: If eyewitnesses believed that a crime had been committed for purely selfish motives (e.g., greed, hate) that specifically hint at the perpetrator's personality, a specific cognitive schema is activated. This schema in turn distorts the processing of information related to the crime and the perpetrator's actions resulting in a biased representation of the observed event.

Attribution of Crime Motives and Sentencing

Attribution of crime motives can also impact sentencing decisions. The same incident is assessed differently depending on perceivers' attributions. For example, the degree to which aggressive behaviour is judged as morally reprehensible depends on the motives seen to underlie it (Reeder, Kuma, Hesson-McInnis, & Trafimov, 2002). Malle (2006) showed that morally reprehensible incidents are more likely to be considered as intentional. These, in turn, can influence attributions of blame and responsibility (e.g., Gebotys & Dasgupta, 1987; Walster, 1966). The less socially desirable a behaviour and the lower the external pressure on the actor, the more certain observers ascribe intentionality. In a series of experiments,

Woolfolk, Doris, and Darley (2006) manipulated the situational pressure under which aggressive behaviour was perceived. They found that less responsibility and blame were attributed to an aggressor exposed to high external pressure than to an aggressor who was exposed to little or no pressure.

These findings are of practical relevance in legal settings. For example, § 46, I in the German Penal Code and Section 143 in the UK Criminal Justice Act 2003 require that the extent of guilt should determine the length of the prison sentence for a criminal act. However, a biased assessment of the intention of an action can disadvantage a defendant in court. Research has shown, for instance, that mock-jurors and judges give more severe sentences if they attributed behavioural causes to the personality of the perpetrator (dispositional attribution) compared to situational constraints (situational attribution; e.g., Carroll & Payne, 1976; Cochran, Boots, & Heide, 2003; Hawkins, 1981).

In the present study, we attempt to replicate the finding that a dispositional attribution of crime motives leads to more severe sentencing than a situational attribution of crime motives. While prior studies have focussed on male perpetrators committing minor moral or legal transgressions (e.g., Gebotys & Dasgupta, 1987; Malle, 2006; Reeder et al., 2002; cf. Hawkins, 1981), our perpetrator is a woman who commits several homicides.

The Present Research

We predict that attributions of crime motives can bias eyewitnesses' memories of an observed event as follows: Misinformation that corresponds to eyewitnesses' attributions of crime motives is accepted as true and integrated into the memory of the observed event, even if the information is objectively false. In contrast, misinformation that contradicts eyewitnesses' attributions of crime motives is more likely to be correctly rejected as false. To test this hypothesis, we reverted to Weiner's attribution dimension locus in two experiments. We predict that eyewitnesses led to adopt a dispositional attribution of crime motives (e.g.,

hate) will falsely remember misinformation consistent with a dispositional attribution and correctly reject misinformation corresponding to a situational attribution. Concurrently, eyewitnesses with a situational attribution of crime motives (e.g., self-defence) will falsely remember misinformation consistent with a situational attribution and will correctly reject misinformation that corresponds to a dispositional attribution. Additionally, we tested a second hypothesis that a dispositional *vs*. situational attribution of crime motives leads to more severe sentencing.

Experiment 1

Method

Participants

Participants were $N = 130$ undergraduate students from different University departments (110 male, 19 female, one person did not indicate her/his gender) with a mean age of $M = 23.35$ years ($SD = 2.69$). In both studies, participants received adequate compensation for their participation and were carefully debriefed.[1] Experiment 1 consisted of a 3 (attribution: dispositional *vs.* situational *vs.* control group; *between-subjects*) X 2 (distractor type: dispositional *vs.* situational; *within-subjects*) mixed factorial design.

Materials and Procedure

Participants were informed that the study aimed at identifying associations between certain personality traits and processing of violence in movies. Thus, they first worked on several personality measures in order to ensure the credibility of this cover story. Next, participants saw a film sequence of about six minutes without sound. The film was compiled from scenes of the movie "Monster", where a female protagonist kills four men for no obvious reason. Between the killings, neutral scenes are displayed (e.g., the protagonist

[1] Fourteen participants already knew the movie we had chosen for the experimental manipulation (see *Materials and Procedure*) or correctly guessed the purpose of the experiment in a post-experimental suspicion check. Their data were not included in the analyses, resulting in the sample described above. Excluded datasets were equally distributed to the experimental conditions, $\chi^2(2, N = 144) = 0.118$, $p = .943$.

smoking a cigarette) as well as ambiguous scenes (e.g., an argument between the protagonist and another person).

After watching the film compilation, participants in the two experimental conditions were instructed that they would read a film review of the complete film. Supposedly, a student from the "University of Television and Film Studies" in Munich had written this film review. We made reference to this university to increase the credibility of our cover story and ensure participants' compliance. In the film review, the complete content and several details of the film sequence were mentioned. Additionally, more information on the presumed background of the film and the protagonist's motives were given. With this background information, the experimental conditions of the independent variable *attribution* were varied. Participants in the *dispositional attribution condition* (DisA condition) learned that the protagonist's motives for the killings included base motives caused by her personality (e.g., hate, cold-bloodedness). The text in this condition explicitly emphasised the ferocity of the killings. By subtly providing information on the (ostensible) reasons and the further factual circumstances of the homicides, participants in the DisA condition were led to conclude that the perpetrator acted out of dispositional crime motives, directly linked to the perpetrator's personality.

In contrast, participants in the *situational attribution condition* (SitA condition) were made to believe that the protagonist mostly acted out of situational constraints (e.g., self-defence, despair). Here, the text explicitly emphasised the protagonist's predicament that made her act like she did (e.g., "… She feels cornered and her attack rather seems to be a defence."). Providing such (ostensible) reasons and further factual circumstances of the homicides that alluded to situational circumstances should lead participants to conclude that the perpetrator acted out of situational crime motives that were not directly linked to her personality.

Furthermore, an exploratory *neutral control group* was implemented: Participants in the control group received no additional background information on the protagonist's supposed crime motives in the form of a film review. They were thus not subjected to any kind of misinformation and had to rely on their own explanations for the perpetrator's behaviour. If a memory bias occurs in the control group, it should be due either to unsystematic bias in memory or to a memory bias caused by the individual crime motive attribution. According to research in the domain of the fundamental attribution error (e.g., Ross, 1977), participants in the control group should typically perceive the perpetrator's crime motives as dispositionally caused.

Dependent Variables

In order to gain a measure of sentencing, participants were asked to indicate a prison sentence for the perpetrator ("If you were to set the length of a prison sentence for the perpetrator from the movie: For how many years should she be imprisoned in your opinion?"). Participants could tick one of 40 boxes (*0 years* to *> 39 years*). If the box *> 39 years* was ticked, data were coded with *40 years*. Additionally, participants were asked to decide whether they judged the death penalty to be appropriate in the case at hand (*yes* or *no*). An open-ended question on participants' attribution of the perpetrator's crime motives ("What do you think, why did the perpetrator kill the men?") served as a manipulation check for the independent variable.

Next, participants worked on a recognition test with 40 items on the film compilation they had been shown (see Appendix A). They were asked to indicate whether they had seen or had not seen each item. The recognition test included 33 target items, four distractor items matching a dispositional attribution of crime motives (dispositional distractors), and three distractor items matching a situational attribution of crime motives (situational distractors).[2]

[2] All distractor items of Experiments 1 and 2 were tested regarding their suitability with a separate sample of

Importantly, the distractor items referred to information that had neither been shown in the film, nor been mentioned in the film review (misinformation), whereas target items referred to information that had been shown in the film and additionally been mentioned in the film review (original information). Thus, in the recognition test target items should correctly be identified as original information from the film and distractor items should correctly be rejected as misinformation that had not been shown in the film.

The target hit rate (i.e., proportion of correctly identified true information) is a measure of general memory performance and thus serves as a baseline. In order to ascertain an accurate measure of participants' susceptibility to misinformation, the rates of dispositional and situational distractors that participants falsely identified as correct ("false alarms") were each adjusted for participants' overall memory performance in terms of their target hit rates (Stangor & McMillan, 1992). Adjusted false alarms consisted of the residuals of a regression analysis with false alarm rates as criterion and target hit rates as predictors (i.e., individuals' false alarm rates were corrected for participants' general ability to correctly identify true information).

N = 25 participants who were familiar with the basics of attribution theory. They first read one of the film reviews used in the main experiments implying a situational (*n* = 12) *vs*. dispositional (*n* = 13) attribution of crime motives. Next, they rated each distractor item with respect to Weiner's (1986) attribution dimensions *stability* ("To what extent do you evaluate this statement as something that is variable or stable with respect to time?"; *1 = variable* to *9 = stable*), *controllability* ("To what extent do you evaluate this statement as something that is uncontrollable or controllable?"; *1 = uncontrollable* to *9 = controllable*), and *locus* ("To what extent do you evaluate this statement as something that is due to the respective situation or the person?"; *1 = situation* to *9 = person*). Additionally, each item was rated regarding its valence ("To what extent do you evaluate this statement as something negative or positive?"; *1 = negative* to *9 = positive*). The distractor items were presented in randomised order. Four separate 2 (attribution: dispositional *vs.* situational; *between-subjects*) X 2 (distractor type: dispositional *vs.* situational; *within-subjects*) mixed factorial MANOVAs were conducted. As intended, dispositional distractors were attributed more to the person (*M* = 6.06, *SD* = 1.28) and situational distractors were attributed more to the situation (*M* = 4.64, *SD* = 1.38), $F(1, 23) = 9.80$, $p = .005$, $\eta_p^2 = .30$. Concurrently, there was no main effect of attribution condition, $F(1, 23) < 1$, and no interaction between attribution condition and distractor type, $F(1, 23) = 1.00$, $p = .327$. Furthermore, no main effects and no interactions were detected with respect to the other attributions dimensions, all $F(1, 23) < 4.11$, all *p*s > .05. However, dispositional distractors were regarded as more negative (*M* = 2.76, *SD* = 1.24) than situational distractors (*M* = 4.98, *SD* = 1.12), $F(1, 23) = 41.81$, $p < .001$, $\eta_p^2 = .65$. No effect of attribution condition, $F(1, 23) = 2.84$, $p = .106$, and no interaction, $F(1, 23) < 1$, revealed. Potential limitations of the chosen distractor items are addressed in the "General Discussion" section.

Results and Discussion

Manipulation Check

Following Cochran et al. (2003), two independent judges categorised each mentioned motive as dispositional (e.g., "hate") or situational (e.g., "self-defence"). To display participant's attribution of the perpetrator's crime motives, we calculated the difference of the sum of the dispositional and the sum of the situational motive ratings for each judge (inter-judge agreement: $r = .85$) and averaged the ratings.

The manipulation of crime motives had a significant influence on presumed crime motives, $F(2, 127) = 11.48$, $p < .001$, $\eta_p^2 = .15$. To test the specific influence of the manipulation, we conducted a contrast analysis (DisA: $\lambda = -1$, SitA: $\lambda = 1$, control group: $\lambda = 0$). As expected, participants in the DisA condition attributed the perpetrator's crime motives as highly dispositional ($M = -1.01$, $SD = 1.61$), whereas participants in the SitA condition attributed the perpetrator's crime motives as situationally caused ($M = 0.58$, $SD = 1.49$), $t(127) = 4.68$, $p < .001$. Thus, the manipulation of crime motive attribution had the intended effect. Participants in the control group attributed the perpetrator's crime motives to dispositional causes ($M = -0.51$, $SD = 1.65$), their judgments did not differ from DisA condition participants' judgments (DisA: $\lambda = -1$, SitA: $\lambda = 0$, control group: $\lambda = 1$), $t(127) = 1.46$, $p = .146$. This is in line with research on the fundamental attribution error. Since no further information on the perpetrator's crime motives was available, participants perceived the observed actions as caused by the perpetrator's dispositional characteristics.

Recognition Test

Overall, the target hit rate was 0.74 (i.e., on average participants identified 74% of all target items correctly as true information) and did not depend on the factor attribution, $F(2, 127) < 1$. Thus, attribution of crime motives did not influence participants' ability to correctly identify true information of the observed event. On average participants falsely identified 6%

of all distractor items as true. The overall rate of false alarms was also independent of experimental condition, $F(2, 127) = 1.57$, $p = .213$.

Next, we conducted a 3 (DisA *vs.* SitA *vs.* control group) X 2 (dispositional *vs.* situational distractor) mixed factorial MANOVA to test our main hypothesis that participants in the DisA (SitA) condition more often falsely identify dispositional (situational) distractors *vs.* situational (dispositional) distractors as true. As described above, we used the rate of false alarms adjusted for individuals' target hit rate as a measure of participants' susceptibility to misinformation. The analysis yielded no main effect of crime motive attribution on the overall adjusted rate of false alarms, $F(2, 127) = 1.91$, $p = .153$, and no main effect of distractor type, $F(1, 127) < 1$.

In line with our hypothesis, a significant interaction emerged, $F(2, 127) = 4.21$, $p = .017$, $\eta_p^2 = .06$ (see Figure 1): Participants were more likely to falsely identify distractors consistent with their crime motive attribution than attribution-inconsistent distractors. Contrast analyses indicated that participants in the DisA condition showed higher rates of adjusted false alarms regarding dispositional distractors than participants in the SitA condition and the control group, $t(127) = 2.30$, $p = .023$ (DisA: $\lambda = 1$, SitA: $\lambda = -0.5$, control group: $\lambda = -0.5$). Additionally, participants in the SitA condition showed higher rates of adjusted false alarms regarding situational distractors than participants in the DisA condition and the control group, $t(127) = 2.45$, $p = .016$ (DisA: $\lambda = -0.5$, SitA: $\lambda = 1$, control group: $\lambda = -0.5$). Furthermore, participants in the SitA condition more often falsely identified situational *vs.* dispositional distractors as true, $F(1, 43) = 4.09$, $p = .049$, $\eta_p^2 = .09$. However, participants in the DisA condition did not show significantly higher adjusted false alarms regarding dispositional (*vs.* situational) distractors, $F(1, 42) = 2.72$, $p = .107$.

In sum, the results support our hypothesis: Misinformation consistent with individuals' attribution of crime motives was more likely to be falsely recognised as true than

misinformation that contradicted their attribution of crime motives. In the subgroup of participants who were led to believe that the perpetrator acted out of dispositional motives, the direct comparison did not reach statistical significance (the descriptive statistics pointed at the predicted direction). This might possibly be due to a ceiling effect of false alarms relating to the dispositional distractor items. Hence, we aimed at optimising our materials in Experiment 2.

Sentencing

The experimentally varied attribution of crime motives tended to affect participants' demands for the perpetrator's imprisonment, $F(2, 123) = 2.83$, $p = .063$, $\eta_p^2 = .04$ (see Table 1). As expected, participants in the DisA condition claimed a harsher sentence for the perpetrator than participants in the SitA condition (DisA: $\lambda = 1$, SitA: $\lambda = -1$, control group: $\lambda = 0$), $t(123) = 2.37$, $p = .019$. Again, the judgments of participants in the control group did not differ from the DisA condition participants' judgments (DisA: $\lambda = 1$, SitA: $\lambda = 0$, control group: $\lambda = -1$), $t(123) = 1.03$, $p = .306$.

The results on support of the death penalty in the case at hand were consistent with the findings on imprisonment, $\chi^2(2, N = 129) = 6.81$, $p = .033$, Cramér's V = .23 (see Figure 2): DisA condition participants were more in favour of the death penalty in the present case than SitA condition participants. Attitudes of participants in the control group were similar to those of the DisA condition participants (see Figure 2). Bonferroni-adjusted comparisons revealed that only SitA condition participants' judgments differed significantly from the other groups, $p < .050$. In sum, the findings on imprisonment and support for the death penalty are in line with other research in this domain (Carroll & Payne, 1976; Cochran et al., 2003; Hawkins, 1981) and confirm our hypothesis that sentencing is influenced by individuals' attribution of crime motives.

Experiment 2

In Experiment 1, we demonstrated that an individual's assumption about why a perpetrator committed heinous acts biases memory of the observed event. Participants accepted misinformation that matched their attribution of the perpetrator's crime motives as true. To our best knowledge, this effect has not been shown before. We thus conceptually replicated these findings in Experiment 2 with the following refinements to the study design.

First, we added a third type of distractor in order to be able to implement an even more precise measure of memory distortion. In their meta-analysis, Stangor and McMillan (1992) highlighted the need for recognition tests adjustments. These authors found that "recognition measures that are not corrected for response tendencies showed a strong bias toward expectancy-congruent information" (p. 55). To provide an even more conservative test of our main hypothesis, we applied an additional adjustment of individuals' rate of false alarms using a neutral distractor item. In doing so, we were able to not only correct the rates of false alarms for an individual's overall ability to correctly identify originally encoded information (as in Experiment 1), but over and above we were able to adjust the rates of false alarms for participants' *general ability to correctly reject neutral misinformation* (for further details see the "Dependent Variables" paragraph of Experiment 2).

Second, we omitted the control group. Participants in the control group of Experiment 1 mostly attributed the perpetrator's crime motives as dispositionally caused because they did not have any background information. Overall their answers were not significantly different from those of participants in the DisA condition.

Third, an examination of the raw data of Experiment 1 revealed that there was one dispositional distractor item ("Did you see how the perpetrator stole the gun?") that literally no participant falsely identified as true. As a consequence, this distractor item was replaced in Experiment 2. Additionally, another situational distractor (in addition to the neutral distractor)

was added to the recognition test in order to improve the materials (for further details see the "Dependent Variables" paragraph of Experiment 2 as well as the Appendix B).

Fourth, we used a different cover story and informed participants that the study was set in the domain of sentencing in order to explore whether legislative changes might be due. Thus, in contrast to Experiment 1 we refrained from assessing any personality measures.

Method

Participants

N = 79 undergraduate students (68 male, 11 female) from different University departments were recruited as participants (M_{age} = 22.89, SD = 1.83).[3] Experiment 2 consisted of a 2 (attribution: dispositional *vs.* situational; *between-subjects*) X 2 (distractor type: dispositional *vs.* situational; *within-subjects*) mixed factorial design.

Materials and Procedure

If participants consented to take part in the study, they saw the same film as in Experiment 1. Afterwards, participants in the dispositional attribution (DisA) condition and the situational attribution (SitA) condition each were instructed to read the same film review of the complete film as in Experiment 1.

Dependent Variables

The measures on imprisonment, support of the death penalty and the manipulation check were identical to those of Experiment 1. However, regarding the recognition test, which followed next, some changes were made. First, we reduced the number of targets to 18 (see Appendix B). Second, we changed one dispositional distractor item that had not led to any false alarms in Experiment 1 and added another item to the set of situational distractors. Hence, in Experiment 2 four dispositional and four situational distractor items were used.

[3] Data of eight participants who already knew the movie "Monster" that was central to our experimental manipulation, or who held reasonable suspicions regarding the cover story of the experiment were excluded. Excluded datasets were equally distributed to the experimental conditions, $\chi^2(1, N = 87) = 0.255$, $p = .614$.

Third, we added a neutral distractor to the recognition test that served as an additional baseline for neutral memory errors. The false alarm rates for dispositional and situational distractors were each adjusted for participants' overall ability to correctly identify true information (see Experiment 1). Additionally, participants' false alarm rates were adjusted for their ability to correctly reject neutral misinformation. Consequently, adjusted false alarms consisted of the residuals of two regression analysis with false alarm rates regarding dispositional or situational distractors as criterion and target hit rates as well as neutral false alarm rates as predictors in each case.

Results and Discussion

Manipulation Check

As in Experiment 1, participants' judgments of the perpetrator's crime motives were categorised by two independent judges and averaged (inter-judge agreement: r = .83) to gain a measure of crime motive attribution. The manipulation of crime motives had the intended effect on participants' attributions, $t(77) = 4.02$, $p < .001$, $d = 0.92$. Participants in the DisA condition rated the perpetrator's crime motives as highly dispositional (M = -0.92, SD = 1.79), whereas participants in the SitA condition attributed the perpetrator's crime motives to situational factors (M = 0.49, SD = 1.30).

Recognition Test

On average, participants correctly identified 76% of all target items as true. As in Experiment 1, the target hit rate did not depend on the factor attribution, $t(77) < 1$. Hence, the manipulated attribution of crime motives did not affect participants' overall ability to correctly identify original information. Overall, participants falsely identified 6% of all distractor items as true. Again, the rate of false alarms did not depend on the manipulation of crime motive attribution, $t(77) < 1$.

Next, we conducted a 2 (DisA *vs.* SitA) X 2 (dispositional *vs.* situational distractor)

mixed factorial MANOVA using the adjusted false alarm rates as dependent variable (i.e., participants false alarm rates adjusted for their individual target hit rate and neutral false alarm rate). As expected, no main effects of attribution condition and distractor type was found, *F*s < 1. In line with our main hypothesis, we found a significant interaction between attribution condition and distractor type, $F(1, 77) = 14.24$, $p < .001$, $\eta_p^2 = .16$ (see Figure 3). Misinformation consistent with participants' attribution of crime motives was more likely to be falsely recognised as true than misinformation inconsistent with participants' attribution of crime motives. More specifically, participants in the DisA condition showed higher rates of adjusted false alarms regarding dispositional distractors than participants in the SitA condition, $t(77) = 2.73$, $p = .008$, $d = 0.62$, whereas participants in the SitA condition showed higher rates of adjusted false alarms regarding situational distractors than participants in the DisA condition, $t(77) = 2.27$, $p = .026$, $d = 0.52$.

Furthermore, participants in the DisA condition showed higher rates of adjusted false alarms for dispositional *vs.* situational distractors, $F(1, 36) = 5.79$, $p = .021$, $\eta_p^2 = .14$, while participants in the SitA condition showed higher rates of adjusted false alarms for situational *vs.* dispositional distractors, $F(1, 41) = 9.15$, $p = .004$, $\eta_p^2 = .18$.

These results support our main hypothesis. Participants led to believe that the perpetrator acted out of selfish motives were more likely to falsely remember misinformation that was in line with their attributions and to correctly reject misinformation that was not. The same applied for participants who were made to believe that the perpetrator's crime motives were due to situational constraints.

Sentencing

Replicating the results from Experiment 1, participants in the DisA condition demanded a more severe prison sentence for the perpetrator than participants in the SitA condition, $t(77) = 3.16$, $p = .002$, $d = 0.72$ (see Table 1). Furthermore, participants in the DisA

condition were more often in favour of the death penalty in the present case compared to participants in the SitA condition, $\chi^2(1, N = 79) = 10.54$, $p = .001$, $\varphi = .37$ (see Figure 2). Taken together, the results on sentencing confirm our hypothesis that a dispositional *vs.* situational attribution of crime motives results in more severe sentencing. These findings are in line with the results of Experiment 1 as well as with comparable research in this domain (Carroll & Payne, 1976; Cochran et al., 2003; Hawkins, 1981).

General Discussion

Numerous studies have shown how eyewitness memory for details can be altered by exposure to misinformation. However, eyewitnesses' attributions of crime motives and their impact on eyewitness memory have been neglected despite its importance in decisions in real life cases. Both studies reported here show that attributions of crime motives affect individuals' memory reports as well as their sentencing decisions.

Our results demonstrate that participants' memory reports of a witnessed crime were consistent with the misinformation we provided regarding dispositional or situational causes of the perpetrator's behaviour. Following Stangor and McMillan's (1992) meta-analysis, we carefully adjusted our memory measure: We not only partialled out participants' overall memory performance in terms of their ability to correctly identify true information in a recognition test (Experiments 1 and 2), but also adjusted for their ability to correctly reject neutral misinformation (Experiment 2). Importantly, although we considered the necessary corrections for expectancy-congruent response biases, individuals were still strongly biased towards misinformation consistent with their attribution of crime motives.

Our findings are in line with those of other studies examining the effects of cognitive schemata on memory accuracy. Brewer and Treyens (1981), for instance, found a strong association between participants' expectations based on place schemata and recognition errors regarding schema-consistent objects. Similarly, Roediger et al. (2001) reported an especially

strong "social contagion effect" for schema-consistent information (cf. Nemeth & Belli, 2006).

Causal attributions can be perceived as cognitive schemata (e.g., Gawronski, 2003; Kelley, 1972) and essentially operate in the same manner as other cognitive schemata and scripts (i.e., direct attention and information processing; Brewer & Treyens, 1981). The research of Pizarro et al. (2006), for example, supports this line of reasoning: Participants' attributions of blame affected their memory of the original event following a delay of one week. Additionally, the amount of attributed blame was associated with the observed degree of memory distortion (also see Remijn & Crombag, 2007). However, these authors did not consider individuals' assumptions about whether the person of interest acted out of dispositional reasons or due to situational constraints applying Weiner's (1986) dimension locus as we did here. A study of alternative variations of crime motive attribution, for instance Weiner's dimensions stability and controllability, could yield interesting insights regarding factors governing sentencing decisions. In line with the aforementioned reasoning, stable *vs.* unstable as well as controllable *vs.* uncontrollable attributions of crime motives should entail more severe sentencing demands. For example, if a perpetrator's violent behaviour is regarded as stable (e.g., because s/he has already shown the same criminal behaviour before), individuals may demand a more severe sentence as compared to individuals who regard the perpetrator's behaviour as unstable (e.g., because s/he has not shown violent or other criminal behaviour before). Furthermore, the same recognition bias as in the present experiments should emerge if participants receive misinformation consistent with a stable *vs.* unstable or controllable *vs.* uncontrollable attribution of crime motives. We will return to this point later when we consider the law with respect to evidence of prior character or past misconduct.

With respect to our materials, our manipulation of a situational attribution of crime motives has a shortcoming, namely the fact that the perpetrator in question had *killed four*

persons on different occasions. However, the results of both manipulation checks demonstrate that the chosen manipulation of the independent variable had the desired effects on participants' attribution. Thus, *despite* the fact that the perpetrator had killed four persons, we were able to evoke a more situational (or less dispositional) crime motive attribution in the situational *vs.* dispositional attribution condition by providing specific background information implying the dominance of situational factors that led to the crime. Nevertheless, in future research the use of a single violent incident, for example, would provide a clearer test of the situational (*vs*. dispositional) hypothesis.

Another limitation regarding our materials pertains to the distractor items. Although these items varied as intended only with respect to Weiner's (1986) attribution dimension locus and not with respect to their evaluated controllability or stability, dispositional distractors were judged as more negative than situational distractors (see Footnote 2). In sum, the dispositional distractor items are consistent with the representation of a perpetrator acting out of "bad" dispositional motives, whereas the situational distractor items are consistent with the representation of a perpetrator acting out of "good" (or rather less bad) situational motives. Since our pilot tests and the manipulation checks revealed the desired differences regarding the dispositional *vs.* situational attribution, our results undoubtedly contribute to the domain of schema-consistent memory effects in eyewitness research. The extent to which the effect of valence may moderate the effect of attribution remains to be addressed in future research.

However, our results regarding "attribution-consistency" may also be interpreted more broadly. The mean evaluation of the dispositional distractor items on the dimension locus significantly differs from the scale midpoint in the expected direction ($p < .001$), whereas the respective result for the situational items is not significant ($p = .204$) – although descriptively as intended and significantly differing from the evaluation of the dispositional items (see

Footnote 2). Thus, regarding dispositional attributions of crime motives, the conclusion of attribution-consistent memory reports is clearly substantiated by the present results. However, regarding situational attribution it is less clear whether we observed effects of "lesser" dispositional attribution or actual situational attribution. Thus, further studies will have to confirm whether or not the attribution-consistency interpretation has widespread applicability in the case of situational attribution of crime motives.

In line with the studies reported here, Tuckey and Brewer (2003) described an overall memory advantage for information that was relevant to a crime schema as compared to schema-irrelevant information. However, according to these authors, participants' crime schemata influenced their interpretation and memory of ambiguous stimuli in that participants showed more schema-consistent memory intrusions (also see Greenberg, Westcott, & Bailey, 1998). Additionally, Neuschatz, Lampinen, Preston, Hawkins, and Toglia (2002) found higher memory accuracy for schema-consistent items as compared to schema-inconsistent items, especially after an increased time interval. Charman et al. (2009) presented related results in the domain of face recognition: Mock-investigators' as well as mock-jurors' guilt attributions strongly biased their judgements of whether a suspect resembled a facial composite of a perpetrator (see also Kleider, Cavrak, & Knuycky, 2012, regarding stereotype-consistent recognition errors). Similarly, a presumption of guilt can lead forensic investigators to be biased in their matching of a fingerprint to a suspect (Kassin et al., 2013).

Research has repeatedly shown that post-event misinformation does not only alter specific details in memory reports of an observed event, but moreover completely new details can be implemented into eyewitnesses' testimonies (see Loftus, 2005). In the experiments at hand, the consequences of post-event information on false memories were clearly apparent. For example, in the present studies a knife was neither shown in the originally encoded information, nor was it mentioned as post-event misinformation. Yet, participants indicated

that the perpetrator had herself been threatened with a knife by one of the victims (confirming a situational attribution in terms of self-defence) or that the perpetrator had even threatened her girlfriend with a knife (confirming a dispositional attribution in terms of general aggressiveness). However, at present we cannot say if this bias is due to actually distorted eyewitness *memory* or merely constitutes evidence of a bias in eyewitnesses' *reports* (e.g., memory conformity; Gabbert, Memon, & Allan, 2003). We do not know whether participants only *believed* that, for instance, the perpetrator was threatened by one of the victims, or if they actually *remembered* the respective situation. Kleider et al. (2008) observed that stereotype-consistent memory errors grew stronger after a two-day delay (also see Neuschatz et al., 2002). They interpreted this increase over time to the following: "original memories presumably fade, and source errors are increasingly experienced as 'true memories'" (p. 16). Similarly and in line with the misinformation effect literature, our results suggest distortions in eyewitness memory as compared to mere distortions in eyewitness reports. We urge researchers to address this important question in more detail (e.g., by implementing a *remember/know procedure*; Tulving, 1985).

In the present research, we were able to show that individuals' beliefs about a perpetrator's reasons for committing a crime influence their decision making in terms of sentencing. Confirming previous research, student participants as mock-jurors demanded a more severe sentence in terms of imprisonment and support for the death penalty if they attributed the perpetrator's behaviour to dispositional motives as compared to situational constraints. Carroll and Payne (1976), for example, found that students (but not expert parole decision makers) in the role of mock-jurors demanded more severe punishment following dispositional attributions as compared to situational attributions. However, in this study, the attribution dimensions stability and locus were not independently varied between-subjects. Cochran et al. (2003) reported that individuals with a dispositional attribution style recruited

through jury-pool surveys were more likely to recommend a death sentence than individuals with situational attribution styles. In a similar study, Hawkins (1981) observed that a dispositional attribution of crime motives led to a more severe punishment compared to a situational attribution. However, in his study attribution of crime motives was not varied directly. The present findings add to the existing literature in that the relevant attribution dimensions were manipulated directly and between-subjects and thus constitute convincing evidence of the influence of crime motive attributions on individual decision making. Additionally, we extended the applicability of the findings to a female perpetrator committing serious crimes.

Numerous factors can impact jurors' decision making. Ruva and Gagnon (2013), for instance, found that pretrial publicity affected mock-jurors' decision making in terms of guilt verdicts. According to Wetmore et al. (2014), secondary confessions lead to higher conviction rates in mock-jurors. Antonio (2006) reported that jurors were more likely to seek a death sentence than a lifetime imprisonment when the defendant appeared bored during the trial. Jones and Kaplan (2003) described a stereotypical race bias that affected mock-jurors' attributions and punishment and thus provided "first evidence that attributional processes underlie the race-congruency effect" (p. 9). Importantly, in the Jones and Kaplan study a dispositional crime motive attribution was the strongest predictor of guilty verdicts. Moreover, the effect of race-crime congruence on verdict-confidence was mediated by dispositional attributions. Conducting similar analyses in the present research revealed no such effects: Neither in Experiment 1, nor in Experiment 2 did attribution-consistent memory distortions mediate the effect of crime motive attribution on sentencing. Since attribution-consistent memory distortions were not associated with sentencing, it seems that participants based their sentencing decisions primarily on their attribution of crime motives – independently of their recollections of the witnessed crime. A likely reason is that participants

were making their judgements based on a simulated event (a movie). Future research should address the broader question of the psychological processes underlying crime motive attributions' effects on sentencing.

As Smith and Studebaker (1996) have pointed out, individuals' prior knowledge (and thus their expectations) influences information processing in terms of fact-finding as well as sentencing (e.g., Smith, 1993), which is in turn of practical relevance: "If jurors fill gaps in the available evidence with typical information, then the resulting representation of the event may be perceived as more typical of the crime" (Smith & Studebaker, 1996, p. 530). This also applies to eyewitnesses. As eyewitness reports often serve as basis for judges' and juries' verdicts (e.g., Bell & Loftus, 1989), the problem of biased eyewitness reports has already been acknowledged (e.g., by implementing the cognitive interview; Centofanti & Reece, 2006; Memon, Meissner, & Fraser, 2010). Schema theory suggests that under difficult retrieval conditions, individuals likely rely on their cognitive schemata (e.g., Brewer & Treyens, 1981). However, in the present studies we did not include a filler task between encoding and retention phase, participants knew in advance that they would be questioned regarding the observed event, and the encoding situation was nearly optimal. Thus, it is even more noteworthy that attribution-consistent memory distortions were observed.

Pizarro et al. (2006, p. 554) hinted at the fact that memory distortions in eyewitnesses could place a suspect "in a position of disadvantage". Legal systems have already acknowledged the biasing potential of introducing evidence of a defendant's character to some extent. In the UK, for instance, evidence of the defendant's "bad character" is only permissible under certain conditions (Sections 98 to 113 in the Criminal Justice Act 2003) and presumably is in place to prevent stable attribution of crime motives. Our research with college students may limit the generalisability of our findings, but it shows that even educated lay persons use the inferences they make about a suspect's character in their decision making.

References

Alicke, M. D. (2000). Culpable control and the psychology of blame. *Psychological Bulletin, 126,* 556–574.

Antonio, M. E. (2006). Arbitrariness and the death penalty: How the defendant's appearance during trial influences capital jurors' punishment decision. *Behavioral Sciences and the Law, 24,* 215–234.

Bell, B. E., & Loftus, E. F. (1989). Trivial persuasion in the courtroom: The power of (a few) minor details. *Journal of Personality and Social Psychology, 56,* 669–679.

Brewer, W. F., & Treyens, J. C. (1981). Role of schemata in memory for places. *Cognitive Psychology, 13,* 207–230.

Bohner, G., Bless, H., Schwarz, N., & Strack, F. (1988). What triggers causal attributions? The impact of valence and subjective probability. *European Journal of Social Psychology, 18,* 335–345.

Carroll, J. S., & Payne, J. W. (1977). Crime seriousness, recidivism risk, and causal attributions in judgments of prison term by students and experts. *Journal of Applied Psychology, 62,* 595–602.

Centofanti, A. T., & Reece, J. (2006). The cognitive interview and its effect on misleading postevent information. *Psychology, Crime & Law, 12,* 669–683.

Charman, S. D., Gregory, A. H., & Carlucci, M. (2009). Exploring the diagnostic utility of facial composites: Beliefs of guilt can bias perceived similarity between composite and suspect. *Journal of Experimental Psychology: Applied, 15,* 76–90.

Cochran, J. K., Boots, D. P., & Heide, K. M. (2003). Attribution styles and attitudes toward capital punishment for juveniles, the mentally incompetent, and the mentally retarded. *Justice Quarterly, 20,* 65–93.

Frenda, S. J., Nichols, R. M., & Loftus, E. F. (2011). Current issues and advances in misinformation research. *Current Directions in Psychological Science, 20,* 20–23.

Gabbert, F., Memon, A., & Allan, K. (2003). Memory conformity: Can eyewitnesses influence each other's memories for an event? *Applied Cognitive Psychology, 17,* 533–543.

Gabbert, F., Memon, A., Allan, K., & Wright, D. B. (2004). Say it to my face: Examining the effects of socially encountered misinformation. *Legal and Criminological Psychology, 9,* 215–227.

Gawronski, B. (2003). Implicational schemata and the correspondence bias: On the diagnostic value of situationally constrained behavior. *Journal of Personal and Social Psychology, 84,* 1154–1171.

Gebotys, R. J., & Dasgupta, B. (1987). Attribution of responsibility and crime seriousness. *The Journal of Psychology, 121,* 607–613.

Gendolla, G. H. E., & Koller, M. (2001). Surprise and motivation of causal search: How are they affected by outcome valence and importance? *Motivation and Emotion, 25,* 327–348.

Greenberg, M. S., Westcott, D. R., & Bailey, S. E. (1998). When believing is seeing: The effect of scripts on eyewitness memory. *Law and Human Behavior, 22,* 685–694.

Harvey, J. H., & Weary, G. (1984). Current issues in attribution theory and research. *Annual Review of Psychology, 35,* 427–459.

Hawkins, D. F. (1981). Causal attribution and punishment for crime. *Deviant Behavior, 2,* 207–230.

Jones, C. S., & Kaplan, M. F. (2003). The effects of racially stereotypical crimes on juror decision-making and information-processing strategies. *Basic and Applied Social Psychology, 25,* 1–13.

Judd, C. M., & Kulik, J. A. (1980). Schematic effects of social attitudes on information processing and recall. *Journal of Personality and Social Psychology*, *38*, 569–578.

Kassin, S. M., Dror, I. E., & Kukucka, J. (2013). The forensic confirmation bias: Problems, perspectives, and proposed solutions. *Journal of Applied Research in Memory and Cognition*, *2*, 42–52.

Kelley, H. H. (1972). *Causal schemata and the attribution process.* New York, NY: General Learning Press.

Kleider, H. M., Cavrak, S. E., & Knuycky, L. R. (2012). Looking like a criminal: Stereotypical black facial features promote face source memory error. *Memory and Cognition*, *40*, 1200–1213.

Kleider, H. M., Pezdek, K., Goldinger, S. D., & Kirk, A. (2008). Schema-driven source misattribution errors: Remembering the expected from a witnessed event. *Applied Cognitive Psychology*, *22*, 1–20.

Loftus, E. F. (1979). *Eyewitness testimony*. Cambridge, MA: Harvard University Press.

Loftus, E. F. (2005). Planting misinformation in the human mind: A 30-year investigation of the malleability of memory. *Learning and Memory*, *12*, 361–366.

Malle, B. F. (2006). Intentionality, morality, and their relationship in human judgment. *Journal of Cognition and Culture*, *6*, 87–113.

Malle, B. F. (2011). Time to give up the dogmas of attribution: An alternative theory of behavior explanation. In J. M. Olson, & M. P. Zanna (Eds.), *Advances in Experimental Social Psychology* (Vol. 44, pp. 297–352). Burlington: Academic Press.

Memon, A., Meissner, C. A., & Fraser, J. (2010). The Cognitive Interview: A meta-analytic review and study space analysis of the past 25 years. *Psychology, Public Policy, and Law*, *16*, 340–372.

Nemeth, R. J., & Belli, R. F. (2006). The influence of schematic knowledge on contradictory versus additive misinformation: False memory for typical and atypical items. *Applied Cognitive Psychology*, *20*, 563–573.

Neuschatz, J. S., Lampinen, J. M., Preston, E. L., Hawkins, E. R., & Toglia, M. P. (2002). The effect of memory schemata on memory and the phenomenological experience of naturalistic situations. *Applied Cognitive Psychology*, *16*, 687–708.

Pizarro, D. A., Laney, C., Morris, E. K., & Loftus, E. F. (2006). Ripple effects in memory: Judgments of moral blame can distort memory for events. *Memory and Cognition*, *34*, 550–555.

Porter, S., Bellhouse, S., McDougall, A., Ten Brinke, L., & Wilson, K. (2010). A prospective investigation of the vulnerability of memory for positive and negative emotional scenes to the misinformation effect. *Canadian Journal of Behavioural Science*, *42*, 55–61.

Reeder, G. D., Kumar, S., Hesson-McInnis, M. S., & Trafimow, D. (2002). Inferences about the morality of an aggressor: The role of perceived motive. *Journal of Personality and Social Psychology*, *83*, 769–803.

Remijn, C. A. C., & Crombag, H. F. M. (2007). Heuristics in casual reasoning and their influence on eyewitness testimony. *Psychology, Crime & Law*, *13*, 201–211.

Roediger, H. L., Meade, M. L., & Bergman, E. T. (2001). Social contagion of memory. *Psychonomic Bulletin and Review*, *8*, 365–371.

Ross, L. (1977). The intuitive psychologist and his shortcomings: Distortions in the attribution process. In L. Berkowitz (Ed.), *Advances in Experimental Social Psychology* (Vol. 10, pp. 173–220). New York, NY: Academic Press.

Ruva, C. L., & Gagnon, E. M. (2013). Pretrial publicity and juror age affect juror decision making. *Psychology, Crime & Law*, *19*, 179–202.

Sentis, K. P., & Burnstein, E. (1979). Remembering schema-consistent information: Effects of a balance schema on recognition memory. *Journal of Personality and Social Psychology*, *37*, 2200–2211.

Smith, V. L. (1993). When prior knowledge and law collide: Helping jurors use the law. *Law and Human Behavior*, *17*, 507–536.

Smith, V. L., & Studebaker, C. A. (1996). What do you expect? The influence of people's prior knowledge of crime categories on fact-finding. *Law and Human Behavior*, *20*, 517–532.

Stangor, C., & McMillan, D. (1992). Memory for expectancy-congruent and expectancy-incongruent information: A review of the social and social developmental literatures. *Psychological Bulletin*, *111*, 42–61.

Tuckey, M. R., & Brewer, N. (2003). The influence of schemas, stimulus ambiguity, and interview schedule on eyewitness memory over time. *Journal of Experimental Psychology: Applied*, *9*, 101–118.

Tulving, E. (1985). Memory and consciousness. *Canadian Psychologist*, *26*, 1–12.

Walster, E. (1966). Assignment of responsibility for an accident. *Journal of Personality and Social Psychology*, *3*, 73–79.

Wang, E., Paterson, H., & Kemp, R. (2014). The effects of immediate recall on eyewitness accuracy and susceptibility to misinformation. *Psychology, Crime & Law*, *20*, 619–634.

Weiner, B. (1986). *An attributional theory of motivation and emotion*. New York, NY: Springer.

Wetmore, S. A., Neuschatz, J. S., & Gronlund, S. D. (2014). On the power of secondary confession evidence. *Psychology, Crime & Law*, *20*, 339–357.

Woolfolk, R. L., Doris, J. M., & Darley, J. M. (2006). Identification, situational constraint, and social cognition: Studies in the attribution of moral responsibility. *Cognition*, *100*, 283–301.

Appendix A

Target Items in Experiment 1

The perpetrator had brown eyes.

Did you see that the perpetrator sat in a restaurant with her girlfriend?

The perpetrator's girlfriend wore a black pullover in the restaurant.

When the perpetrator drove the first victim's car, she was wearing gloves.

The perpetrator shot all of her victims.

The perpetrator walked down the deserted road in the dark.

Did you see the restaurant manager's glasses?

Did you see that the perpetrator walked through the wood with one of her victims?

The purse with the picture was black.

Did you see that the perpetrator threatened her last victim with a gun in the car?

Did you see that the perpetrator talked to one of her victims?

Regarding the argument between the perpetrator and the manager in the restaurant, two kitchen assistants came to his aid.

The perpetrator forced one of her victims to drive onto a meadow.

As the perpetrator loaded the gun, one could see her piggybank.

Did you see that the perpetrator aimed at her mirror image with the gun?

In one scene, the perpetrator wore a leather jacket.

The perpetrator's girlfriend had dark hair.

Did you see the perpetrator smoking a cigarette?

The picture in the victim's purse showed the man with his wife.

The perpetrator had blonde hair.

The perpetrator got changed after the first murder.

The perpetrator and her girlfriend met at a hotel room.

Did you see that the perpetrator cried after the second murder?

In one scene, the perpetrator looked at her naked body in the mirror.

Did you see that the perpetrator beat her first victim after she had shot at the man?

Did you see that the perpetrator threw money at her girlfriend in the hotel room?

The manager wanted to detain the women from smoking in the restaurant.

Did you see that the perpetrator threw anything out of the window while driving?

The perpetrator killed her second victim in the car.

The perpetrator lit he girlfriend's cigarette with a zippo.

Did you see that the TV in the hotel room was on?

In one scene, the perpetrator wore a cap.

The perpetrator shoved the manager against a table.

Dispositional Distractor Items in Experiment 1

Did you see the gun lying on the bed when the perpetrator entered the hotel room?

Did you see that the perpetrator threatened her girlfriend with a knife?

The perpetrator had a skull tattoo on her arm.

Did you see how the perpetrator stole the gun?

Situational Distractor Items in Experiment 1

Did you see that the perpetrator gave her girlfriend a packet of cigarettes as a present?

One of the men threatened the perpetrator with a knife.

Did you see the teddy bear lying on the bed in the hotel room?

Appendix B

Target Items in Experiment 2

The perpetrator was about 30 years old.

Did you see that the perpetrator sat in a restaurant with her girlfriend?

The perpetrator's girlfriend wore a black pullover in the restaurant.

When the perpetrator drove the first victim's car, she was wearing gloves.

The perpetrator shot all of her victims.

The purse with the picture was black.

Did you see the restaurant manager's glasses?

Did you see that the perpetrator walked through the wood with one of her victims?

Did you see that the perpetrator threatened her last victim with a gun in the car?

Did you see that the perpetrator talked to one of her victims?

Regarding the argument between the perpetrator and the manager in the restaurant, two kitchen assistants came to his aid.

The perpetrator had brown eyes.

Did you see that the perpetrator threw money at her girlfriend in the hotel room?

Did you see that the perpetrator aimed at her mirror image with the gun?

The perpetrator's girlfriend had dark hair.

Did you see the perpetrator smoking a cigarette?

Did you see that the perpetrator beat her first victim after she had shot at the man?

The perpetrator had blonde hair.

Dispositional Distractor Items in Experiment 2

The perpetrator kicked one victim's dog.

Did you see the gun lying on the bed when the perpetrator entered the hotel room?

Did you see that the perpetrator threatened her girlfriend with a knife?

The perpetrator had a skull tattoo on her arm.

Situational Distractor Items in Experiment 2

Did you see that the perpetrator gave her girlfriend a packet of cigarettes as a present?

Did you see that the perpetrator petted the dog of the victim?

On the bed in the hotel room lay a teddy bear.

One of the men threatened the perpetrator with a knife.

Neutral Distractor Item in Experiment 2

Did you see the bathrobe hanging at the bathroom door?

Table 1

Participants' demanded imprisonment of the perpetrator (means and standard deviations in years) depending on attribution condition in Experiment 1 and Experiment 2

	Dispositional Attribution Condition	Situational Attribution Condition	Control Group	Overall
Exp. 1	35.49 (7.65)	30.14 (11.03)	33.19 (11.58)	32.92 (10.42)
Exp. 2	36.84 (7.03)	30.74 (9.73)	-	33.59 (9.05)

Figure Captions

Figure 1. Rate of adjusted false alarms (adjusted for individual target hit rate) as a function of attribution condition (DisA *vs.* SitA *vs.* control group) and distractor type (dispositional *vs.* situational) in Experiment 1.

Note. Higher numbers indicate higher rates of adjusted false alarms.

Figure 2. Proportions of participants in support of and against the death penalty in the case at hand depending on attribution condition in Experiment 1 and Experiment 2.

Figure 3. Rate of false alarms (adjusted for individual target hit rate and neutral false alarms) as a function of attribution condition (DisA *vs.* SitA) and distractor type (dispositional *vs.* situational) in Experiment 2.

Note. Higher numbers indicate higher rates of adjusted false alarms.

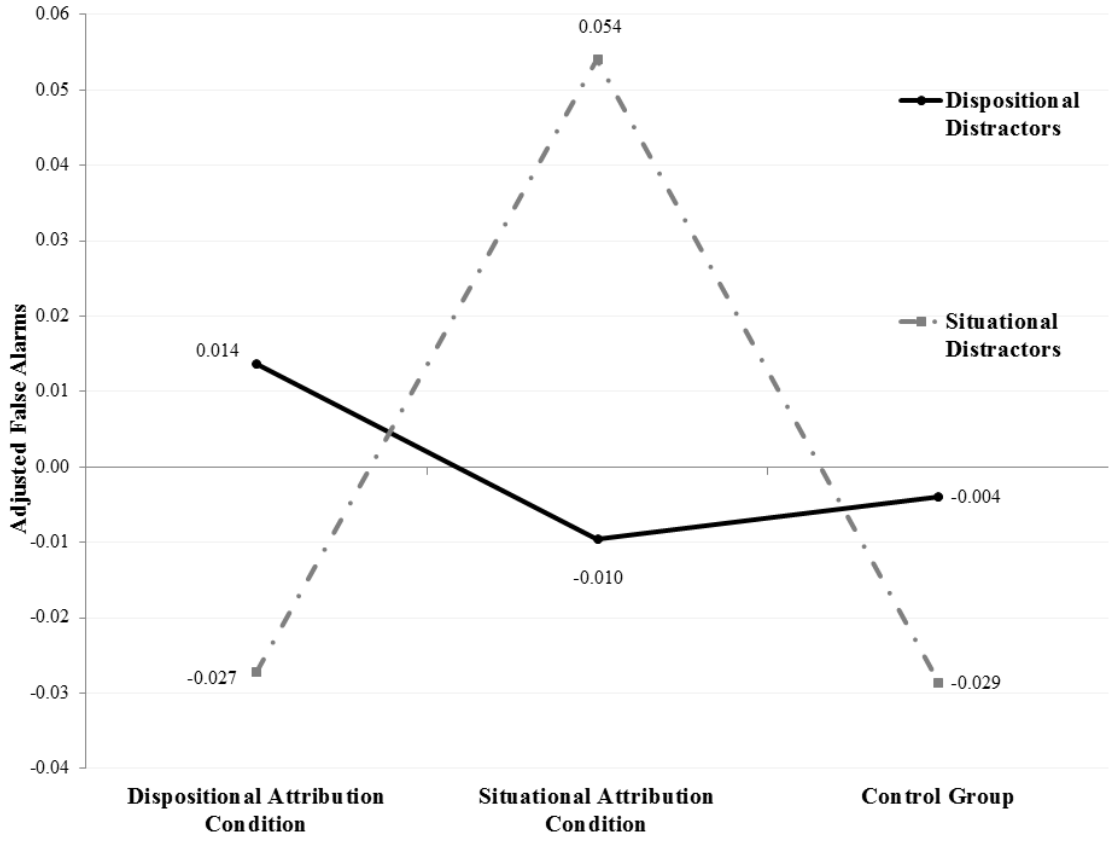

Figure 1. Rate of adjusted false alarms (adjusted for individual target hit rate) as a function of attribution condition (DisA *vs.* SitA *vs.* control group) and distractor type (dispositional *vs.* situational) in Experiment 1.

Note. Higher numbers indicate higher rates of adjusted false alarms.

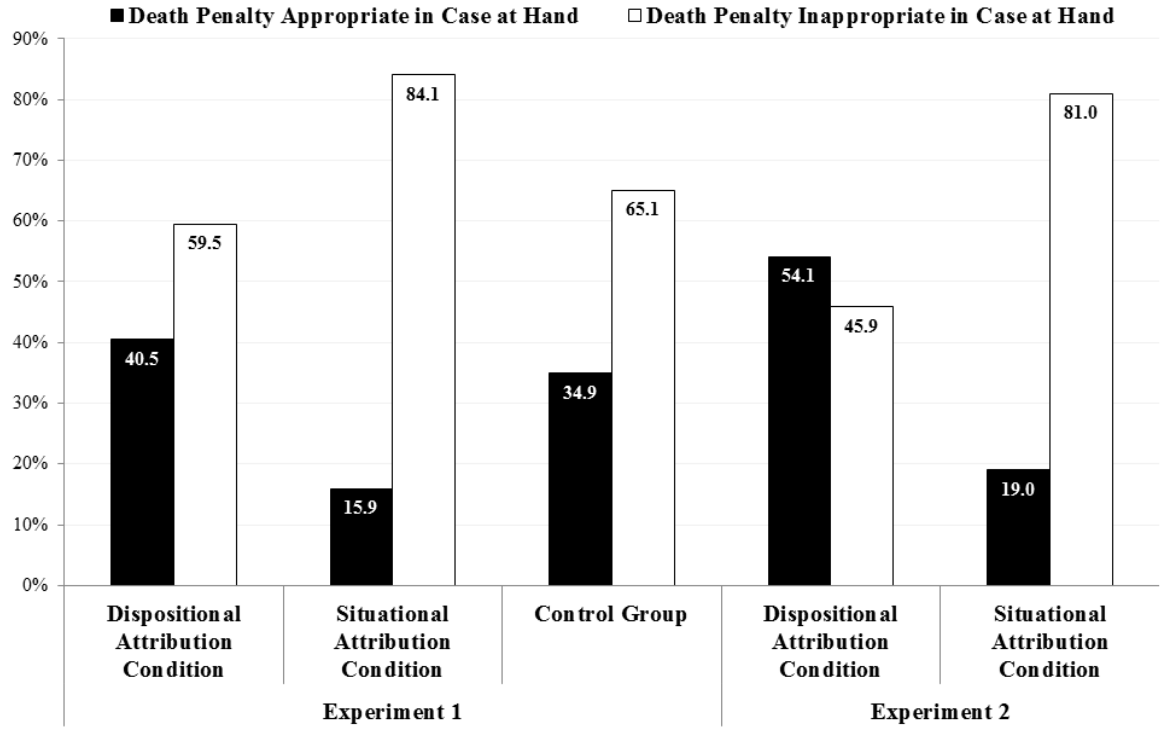

Figure 2. Proportions of participants in support of and against the death penalty in the case at hand depending on attribution condition in Experiment 1 and Experiment 2.

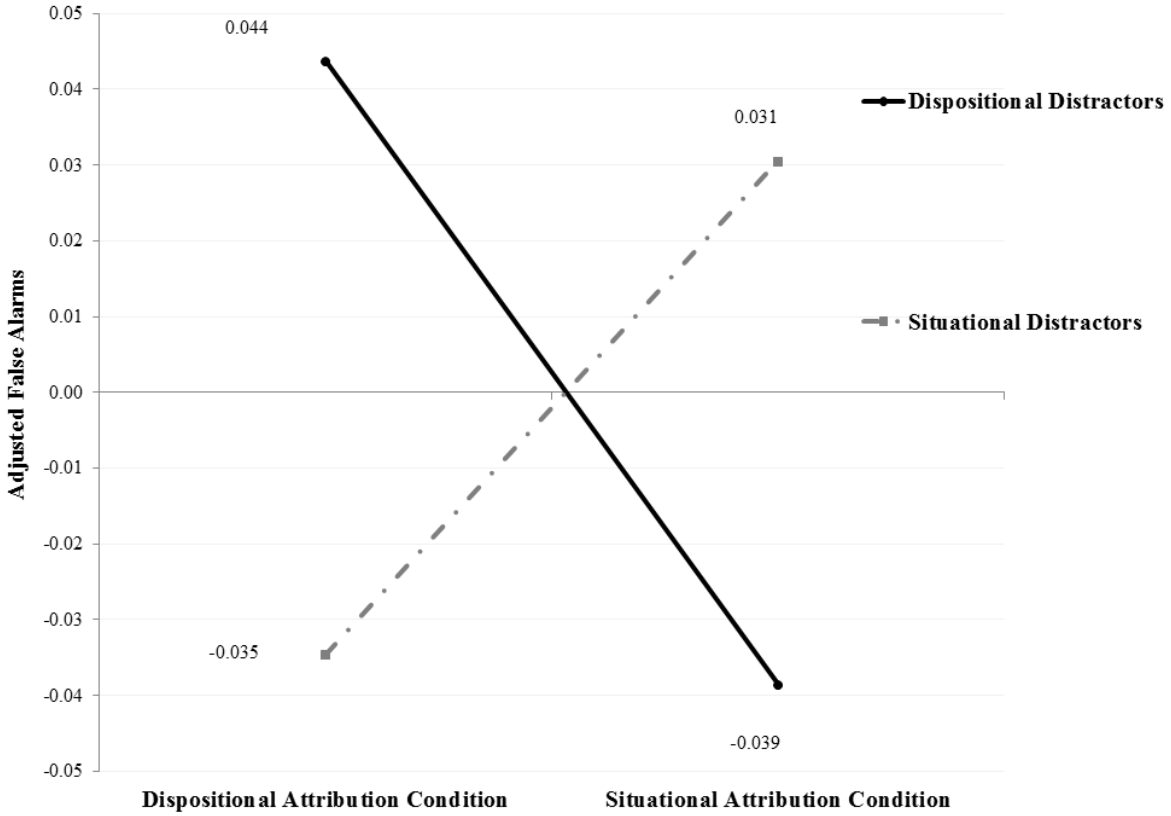

Figure 3. Rate of false alarms (adjusted for individual target hit rate and neutral false alarms) as a function of attribution condition (DisA *vs.* SitA) and distractor type (dispositional *vs.* situational) in Experiment 2.

Note. Higher numbers indicate higher rates of adjusted false alarms.