Numerous studies have shown a significant relationship between inadmissible evidence and the decisions that juries make (see Steblay, Hosch, Culhane, and McWethy, 2006, for a review of the literature). Much of the research on the effects of inadmissible evidence involves a phenomenon called the backfire effect. Under current legal guidelines, if jurors hear inadmissible evidence in the courtroom, the judge may instruct the jurors to disregard that evidence. However, previous research suggests that jurors are unable to disregard this evidence during their decision-making process. To the contrary, the presence of inadmissible evidence causes jurors to convict more often than if the same evidence is admitted in the trial as admissible evidence (Brewer & Williams, 2005).

Inadmissible evidence is evidence that a judge determines is unreliable or irrelevant, or the potential of the evidence to prejudice the jurors outweighs its evidentiary value (Brewer & Williams, 2005). For example, a judge may not allow a suspect’s prior convictions into a trial because the jurors would be greatly prejudiced by that information, which has little evidentiary value for the current case. In other words, a judge may rule a piece of testimony inadmissible because the jurors may not appropriately regard the evidentiary value of that evidence.

Pickel (1995), Sommers and Kassin (2001), and Wissler and Saks (1985) demonstrated the in-trial biasing effects of inadmissible evidence. Although the judge may deem evidence inadmissible before the trial, eyewitnesses or attorneys may still present it in trial as a matter of strategy or by mistake. Pickel (1995) and Sommers and Kassin (2001) presented prior convictions as inadmissible evidence to mock jurors and then instructed them to disregard the evidence for determining their verdict. The results demonstrated that mock jurors cannot disregard the inadmissible evidence. In a similar study, Wissler and Saks (1985) presented prior convictions as inadmissible evidence. The mock jurors in their study also exhibited higher conviction rates when the judge instructed them to ignore the inadmissible evidence. In both studies, the mock jurors exhibited the backfire effect because the jurors who heard the inadmissible evidence followed by an admonishment demonstrated higher conviction rates than jurors who were presented with the evidence and not instructed to disregard it.

Lee, Kraus, and Lieberman (2005) focused their study on hearsay inadmissible evidence and also found the backfire effect. Hearsay evidence is deemed inadmissible in courts because it is a statement from a speaker who is not in the court. The validity of the hearsay statement cannot be determined during the trial. This study also confirmed the presence of the backfire effect in civil trials, whereas most of the previous research focused on the backfire effect in criminal

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trials. Other studies also demonstrated the backfire effect with various types of evidence and various types of cases (Cook, Arndt, & Lieberman, 2004; Fein, McCloskey, & Tomlinson, 1997; Kassin & Sommers, 1997; Kassin & Sukel, 1997; Lee, Kraus, & Lieberman, 2005). Therefore, the backfire effect occurs with many different kinds of inadmissible evidence and there is little difference between the backfire effect in civil and criminal cases (Kassin & Sukel, 1997; London & Nunez, 2000; Pickel, 1995).

There are also numerous proposed explanations and solutions for the backfire effect. Reactance theory (Brehm, 1966) is one popular explanation of the backfire effect. Reactance theory explains the backfire effect as jurors feeling that their freedom is restricted when they receive instructions that certain evidence is inadmissible, and they should disregard it. Thus, jurors are more likely to use the inadmissible evidence in determining their verdict because their freedom is very important to them. Pickel (1995) successfully demonstrated reactance theory. In that study, the judge admonished jurors more harshly in one experimental condition than the other. The results yielded greater backfire effects in the condition in which the judge admonished the jurors more harshly. Though this theory is plausible and grounded in research, it paints a negative picture of human behavior. This theory simply states that the jurors want to counteract or rebel against the authority of the judge. The major weakness of reactance theory is that it does not take into account whether the jurors believe the evidence is reliable. It could be that these studies found greater backfire effects with stronger admonitions because the jurors simply believed the evidence was more important when the judge admonished them strongly and felt determined to do justice despite the justice system.

The pursuit of justice theory does take into account the jurors’ feelings about the admissibility of the evidence. According to this theory, the backfire effect occurs because jurors believe that what they deem to be important information should be considered in their determination of guilt, regardless of the judge’s admonitions. In other words, the jurors feel that it is their duty to decide which evidence should be admitted and that they are obligated by an inherent pursuit of justice to make their own determinations about the relevance of evidence (Fein, McCloskey, & Tomlinson, 1997; Kassin & Sommers, 1997; Sommers & Kassin, 2001). According to this theory, the backfire effect increases significantly if technical legal reasoning and not the substantive unreliability of the evidence is the reason for the exclusion of the evidence from the trial. The jurors demonstrate a certain level of skepticism about the fairness of the justice system and attempt to reach the most just verdict on their own.

Another closely related theory explaining the backfire effect is that jurors discount the evidence only if the evidence seems suspicious to them. Otherwise, if they think the evidence is reliable, they disregard the admonition of the judge (Fein, McCloskey, & Tomlinson, 1997). This theory is known as the discounting and suspicion theory. In testing this theory, researchers made the jurors aware of the reasons for the inadmissibility of the evidence. One group was told that the information was unreliable, a substantive reason for denying admission of the evidence, and the other was told that it was obtained illegally, a technical legal reason. The mock jurors were more likely to disregard evidence when they believed it was inadmissible because it was unreliable. The jurors were also more likely to disregard evidence when they were made suspicious of the reliability of the evidence before it was presented.

Courts have tried at times to reduce the backfire effect, mostly through admonishment of the evidence after its presentation, but studies continue to show that these attempts are ineffective. Some attorneys have even been accused of using the backfire effect to their advantage because of the courts’ ineffective methods of nullifying it. The legal system’s method of nullifying the effects of inadmissible evidence changed little as a result of psychological research, as is demonstrated by the U.S. Supreme Court’s decision in Arizona v. Fulminante. In this case, an inadmissible coerced confession was accidentally admitted into the trial evidence. The court ruled that this was a “harmless error” (Kassin & Sukel, 1997). Kassin and Sukel tested the Supreme Court’s claim empirically and found that, even when the jurors know the confession is coerced, they still are unable to ignore it. Thus, the admission of inadmissible evidence into the Fulminante case was likely not a harmless error as the court decided. This is just one example of the court system’s failure to make changes in procedure based on psychological research.

According to past research, explaining to jurors why the evidence is unreliable and giving a substantive rather than technical reason for disregarding the evidence can reduce the backfire effect experimentally. Warning the jurors before the trial that inadmissible evidence may be presented and that they should disregard it also reduces the backfire effect. Therefore, the hypothesis of the current research was that combining these methods from past research should create overcompensation in reducing the backfire effect and lead to lower than normal conviction rates of the defendant. This research combined the approaches used by Fein, McCloskey, and Tomlinson (1997) and Kassin and Sukel (1997). In the first condition, mock jurors read a trial transcript omitting any inadmissible evidence. In
the second condition, the mock jurors read that some wiretap evidence is inadmissible because it is unreliable. The third experimental condition remained largely the same as the second except, based on the findings of Schul (1993), jurors read a warning about the unreliability of inadmissible evidence before they read the trial transcript. In the fourth condition, participants read the transcript including the inadmissible evidence, with no indication that it was inadmissible. Thus, in the fourth condition the mock jurors read the inadmissible evidence as admissible evidence.

The first hypothesis of the current study was that warning jurors and giving a substantive reason for the inadmissibility of the evidence would not only correct for the backfire effect, but also would cause jurors to overcompensate and demonstrate lower conviction rates than in the control condition (which did not include the presentation of inadmissible evidence). That is, the mock jurors would exhibit the reverse of backfire effect. Secondly, I expected convictions in all cases to be lower than in the fourth condition when the mock jurors read the inadmissible wiretap evidence as admissible evidence. Another hypothesis was that the participants’ level of confidence in their verdicts would be highest when the mock jurors read the inadmissible wiretap evidence as if it were admissible and lowest in the control condition with no wiretap evidence. The last hypothesis was that no difference would be found between the confidence levels of the two conditions in which the mock jurors read inadmissible evidence.

Method

Participants

Ninety-two students enrolled in courses at a small midwestern university participated in the study. Those students enrolled in introductory psychology courses received credit toward their introductory psychology class requirements for participation in the study. The researcher followed the APA code of ethics (American Psychological Association, 2002).

Materials

The participants read the experiment through Media Lab computer software (Emperisoft, New York). The present research used a trial transcript adapted from previous studies in the field (Fein, McCloskey, & Tomlinson, 1997; Kassin & Sukel 1997). The participants read the trial transcript entirely unaltered for the first condition (control condition). However, the trial transcript differed in a number of ways for the remaining conditions. For the other three conditions, jurors read inadmissible evidence added to the transcript, as used in previous research (Kassin & Sommers 1997). This involved the addition of a wiretap conversation into the evidence presented (see Appendix). In the second condition (inadmissible no-warning condition), jurors read instructions to disregard the inadmissible wiretap evidence only after the presentation of the inadmissible evidence and they read no warning prior to the beginning of the transcript. The third condition (inadmissible warning condition) included a warning that inadmissible evidence could be in the trial and should be disregarded. This condition also included an admonition to disregard the inadmissible evidence following its presentation. In the fourth condition (admissible condition), the jurors read the transcript with the inadmissible wiretap evidence included, but it appeared to them as admissible evidence.

Procedure

A computer program determined the random assignment of participants to one of the four conditions: control, inadmissible no-warning, inadmissible warning, or admissible. The participants first read a screen instructing them that continuing in the experiment constituted their consent to participate. They then read instructions telling them to be as attentive as possible during the presentation of the trial transcript. In the warning condition, the jurors then read a warning at the beginning of the trial transcript:

THE COURT: I would like to forewarn the jury that there may be evidence presented here today that has been deemed inadmissible by the court, because it was unreliable. If this should occur I will instruct you to disregard the evidence and it should have no effect on your verdict.

In both the inadmissible no-warning and the inadmissible warning conditions the judge in the transcript admonished the jurors, following the presentation of the inadmissible evidence, to disregard it. Following an objection by the defense attorney to the inadmissible wiretap evidence the participants in the warning condition also saw a statement that read:

THE COURT: Sustained. I would ask the jury to disregard the tape conversation as the evidence has been deemed inadmissible. It is inadmissible because the tape was barely audible and it was too difficult to determine what was said. As I stated in the opening instructions inadmissible evidence is to be completely disregarded by the jury, because this evidence has been determined to be unreliable.

The participants in the inadmissible condition did not read the warning at the beginning of the trial and saw the same statement after the presentation of
the evidence without the last sentence referencing the warning at the beginning of the trial. Participants in the admissible condition read the wiretap evidence with no objection from the defense. Participants in the control condition did not read the wiretap evidence.

The computer program presented the trial transcript in sections ranging from 413-480 words. Each section remained on the screen for 1.5 min. After the allotted time, the participants could advance to the next screen by pressing a key when they finished reading that section of the transcript. After the participants read the transcript, they indicated whether they would find the defendant not guilty or guilty and rated their confidence in their verdict. After indicating their verdict, participants responded to several questions about the trial. They rated how well the prosecution and the defense presented their cases and the strength of the evidence for each side. They also rated the ethicality of the prosecution and the defense during the trial and the influence of various pieces of evidence on their verdict. The presentation of these questions was in a different random order for each participant and all responses were rated on a scale of 1 (not at all confident) to 7 (very confident).

**Results**

**Verdict Measures**

A chi-square test revealed that the type of transcript the participants read did not affect the probability of participants’ verdicts being guilty or not guilty (see Table 1 for the percentage of guilty and not guilty verdicts in each condition).

A 2 (verdict: guilty or not guilty) x 4 (transcript type: control, inadmissible no-warning, inadmissible warning, and admissible) between subjects ANOVA was conducted to examine reported confidence levels. The confidence in the verdict rating was on a 1 (not at all confident) to 7 (very confident) scale. The means and standard deviations for confidence level as a function of the two factors appear in Table 2. There was no main effect for transcript type, no main effect for the verdict, and there was no significant interaction between the factors.

**Case Influences**

The jurors answered two questions about cases presented by the prosecution and defense. Jurors assessed the quality of the presentation of the case for both the prosecution and the defense on a 7-point scale (ranging from not well to well), and the strength of the evidence in

<table>
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<th>TABLE 1</th>
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<td><strong>Verdict Counts by Condition</strong></td>
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<tr>
<td>Conditions</td>
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<tr>
<td></td>
</tr>
<tr>
<td>Verdict</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>Guilty</td>
</tr>
<tr>
<td>Not Guilty</td>
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<th>TABLE 2</th>
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<tr>
<td><strong>Means and Standard Deviations of Confidence in Verdict</strong></td>
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<tr>
<td>Conditions</td>
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<td>---</td>
</tr>
<tr>
<td>Guilty</td>
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<tr>
<td>5.17</td>
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<tr>
<td>Not Guilty</td>
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<td>Total</td>
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the case for both the prosecution and the defense on a separate 7-point scale (ranging from not strong to strong). The sum of these indicators demonstrated an overall opinion of the case presented by each side. Then, the subtraction of the rating of the case presented by the defense from the rating of the case presented by the prosecution measured which case the jurors found more convincing. Two internal consistency estimates of reliability determined the reliability of the defense and prosecution questions. Values for the coefficient alpha were both satisfactory at .85 for the prosecution responses and .76 for the defense responses. A one-way ANOVA was conducted on the cumulative scores, which did not differ among the four conditions. The means and standard deviations for the cumulative scores as a function of the condition appear in Table 3.

Next, a test of consistency analyzed the jurors’ ratings of the cases presented with their verdicts. An independent samples t test analyzed the totals from this measure of defense minus the prosecution case strength responses across the verdicts. Those giving a guilty verdict reported the prosecution had a stronger case ($M = -2.73$, $SD = 3.15$) and those giving a not guilty verdict reported the defense had a stronger case ($M = 1.98$, $SD = 2.24$), $t(90) = 8.01$, $p < .001$. This test verifies that the participants were considering the case evidence when giving their verdict.

A one-way ANOVA examined the difference between the prosecution’s ethicality score and that of the defense across the four experimental conditions.

### TABLE 3

<table>
<thead>
<tr>
<th>Conditions</th>
<th>Effectiveness of Defense Minus Effectiveness of Prosecution</th>
<th>Ethicality of Defense Minus Ethicality of Prosecution</th>
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</thead>
<tbody>
<tr>
<td>Control</td>
<td>$.54$</td>
<td>$-.29$</td>
</tr>
<tr>
<td>Inadmissible No-Warning</td>
<td>$-1.18$</td>
<td>$.32$</td>
</tr>
<tr>
<td>Inadmissible Warning</td>
<td>$.91$</td>
<td>$-.96$</td>
</tr>
<tr>
<td>Admissible</td>
<td>$.54$</td>
<td>$-1.52$</td>
</tr>
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</table>

The results yielded a significant difference $F(3, 88) = 2.73$, $p = .049$. The means and standard deviations for the ethicality score as a function of the condition appear in Table 3. The jurors found the prosecution less ethical than the defense in the warning condition compared to the admissible condition. None of the other differences were significant.

### Discussion

Contrary to the stated hypotheses, there were no significant differences in the verdicts of the jurors among the four conditions. This finding suggests that the jurors were able to successfully disregard the inadmissible evidence, although it appears they also disregarded the evidence when it was admissible. Thus, these conditions failed to find the expected backfire effect or any effect of the inadmissible evidence. The findings are slightly disconcerting due to the fact that the admissible evidence condition did not yield higher conviction rates than the control condition. In this condition, the jurors read uncontradicted wiretap evidence of a confession to the crime, yet they did not convict in significantly higher numbers than the control. The result may be an indication of a couple of variables that affected the results of the experiment. The first is that despite the design of the experiment the participants simply did not read the transcript presented to them. This is a possibility, but the data showing that the jurors rated the defense’s case stronger when they acquitted the defendant and the prosecution’s case stronger when they convicted the defendants suggest that the participants were attentive to the trial transcript and the questions they answered about their impressions of the trial.

There may also be an explanation more consistent with theories of the backfire effect. First, these findings indicate that jurors do not trust wiretap evidence because of some larger societal distrust of this type of evidence and the way it may be obtained. This finding would accord with the discounting and suspicion theory. The jurors may have found the wiretap evidence inherently suspicious. The evidence may be so strong that the participants may have presumed unethical police tactics in obtaining the evidence. Even though the introduction of a warning made no difference in the verdicts, the findings of this experiment are not contrary to Schul (1993). There seemed to be a high suspicion of the wiretap evidence in all the conditions and the jurors disregarded that evidence in all conditions. Thus, the experiment may have been insufficient to test Schul’s hypothesis.

However, the findings of this study may also support the pursuit of justice theory. It could be that the jurors in their own pursuit of justice did not believe the wiretap evidence to be reliable. Again, this could be because...
the evidence was so strong that they thought there was no possible way it could be reliable. It is possible that jurors may pursue justice despite the evidence.

The inadmissible evidence did not affect the confidence of the participants in their verdict. The inadmissible evidence could have affected the confidence level in that the participants would have thought the prosecution to be less ethical when presenting inadmissible evidence, making them more uncertain about the validity of the other evidence and less confident in their verdict. However, no differences were found between most of the conditions in the measures of ethicality, in which participants rated how ethical they thought the defense and prosecution were during the trial on a 1 to 7 scale, or in the confidence level measurement. This suggests that the jurors completely disregarded the inadmissible evidence. The only difference among the conditions in ethicality showed that the jurors found the prosecution to be less ethical in the warning condition and the defense to be less ethical in the admissible condition. This finding shows that the judge’s admonition combined with warnings may have played a role in reducing guilty verdicts by making the jurors suspicious of the prosecution and the prosecution’s evidence, but the experiment’s low number of participants may have hindered a finding of statistical significance.

The use of a capital case for a trial transcript may have affected the results of the experiment. During a capital case jurors are discharged if they are not willing to impose the death penalty during the voir dire process, which involves questioning of the jurors for biases at the beginning of the trial. The dismissal of participants against the penalty in line with practice in capital cases did not occur, which could slightly skew the results. Jurors against the death penalty are more likely to acquit in a capital case. These jurors may also be more likely to disregard the inadmissible evidence. Including these jurors in the experiment made the jury inherently less likely to convict and could partially account for the lower conviction rates.

Another limitation of the current research is that it may only apply to inadmissible evidence that is actually unreliable. The admonishment by the judge states that the evidence was deemed inadmissible specifically because it is unreliable. If the evidence was deemed inadmissible because it was illegally obtained then the jurors may not have disregarded it. Sommers and Kassin (2001) demonstrated this result in previous research.

This study has some implications for psychology and law. It may add to the body of research that suggests inadmissible evidence can be disregarded by jurors completely if the proper procedures are implemented. In summary, this study neither confirms nor denies the pursuit of justice theory or discounting and suspicion theory as an effective solution to the problem of the backfire effect. The backfire effect permeates and corrupts the integrity of our court system, but more experimentation is needed to find the actual cause and the most effective remedy.

References


APPENDIX

The following includes the additional evidence and instructions presented in the experimental conditions.

Inadmissible Condition

Wire Tap

MR KERNING: Was any evidence obtained in the investigation following the murders?

MR HEFFLING: Yes, the defendant placed a phone call minutes after leaving the scene of the crime to a friend whose phone was wire tapped due to an unrelated case. According to the transcript of that conversation the defendant can be heard saying, “I killed Marylou and some bastard she was with. God, I don’t… yeah, I ditched the blade”.

MR EVANS: Objection.

THE COURT: Sustained. I would ask the jury to disregard the tape conversation as the evidence has been deemed inadmissible. It is inadmissible because the tape was barely audible and it was too difficult to determine what was said.

Warning Condition

Extra Instructions

THE COURT: I would like to forewarn the jury that there may be evidence presented here today that has been deemed inadmissible by the court, because it was unreliable. If this should occur I will instruct you to disregard the evidence and it should have no effect on your verdict.

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