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**Running Head:** OFFENCE SERIOUSNESS

**In press:** *Psychiatry, Psychology and Law*

**A Re-examination of the Acquittal Biasing Effect of Offence Seriousness**

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## **Abstract**

The justice system should operate free of any bias, and jurors' judgments of a defendant's guilt should be based on evidential factors alone. However, research suggests that this does not always occur. We aimed to investigate the biasing effect of offence seriousness, a case-related, extra-legal factor, on juror decision-making. In an experiment, we examined the effect of this extra-legal factor on 118 members of the jury eligible public's interpretations of Beyond Reasonable Doubt (BRD), probability of commission, verdict, and confidence in verdict.

We found that defendants charged with more serious offences were judged to be less likely to have committed the crime. However, offence seriousness did not have a significant effect on interpretations of BRD or verdict. The present findings suggest a need to instruct jurors on the application of legal (probative) factors alone.

**Keywords:** Juror decision-making, offence seriousness, extra-legal factors, beyond reasonable doubt, verdict, acquittal, probability of commission

## Introduction

Jurors are responsible for reaching verdicts in criminal cases that are based on the evidence admitted in court. Although some research suggests that jurors do indeed focus on legal factors in a case (e.g. Bornstein & Greene, 2011; Devine, Buddenbaum, Houp, Studebaker, & Stolle, 2009), other research demonstrates that jurors also rely on extra-legal factors (see Devine, Clayton, Dunford, Seying & Pryce, 2001 for a review). For the most part, past research on this topic has focused on the effect of person-related, extra-legal factors (see Devine & Caughlin, 2014). This has revealed factors leading to acquittal bias such as defendant attractiveness and those resulting in conviction bias such as jurors' authoritarian attitudes. In addition to person-related factors, research has also suggested that *case-related*, extra-legal factors can have a biasing effect on juror decision-making (e.g., Ruva & McEvoy, 2008; Terrance, Matheson & Spanos, 2000).

One case-related, extra-evidential factor that has attracted research attention is the seriousness of the offence a defendant is charged with (e.g., Kerr, 1978; Koch & Devine, 1999; Vidmar, 1972). This factor suggests that the juror may be unduly biased by thoughts of "what may happen to the defendant" if convicted of a serious crime that carries a severe penalty. In arriving at a judgment of guilt or innocence, however, jurors should not consider the seriousness of the charge associated with an offence.

In this article, we report the results of an experiment examining the effects of offence seriousness on juror decision-making. The systematic study of the effect of extra-legal factors on jurors' decisions can help improve our theoretical understanding of their decision-making. In addition, and following in a tradition of past psycho-legal research, it may inform legal policies

and procedures that aim to improve the process of jury decision-making, trial outcomes, and perceptions of the justice system (Bornstein & Greene, 2011).

### **Offence Seriousness**

Offence seriousness could bias jurors towards acquittal or conviction. The seriousness of an offence may have a direct effect on juror's evaluations of how likely a defendant is to have committed the crime, their interpretation of beyond reasonable doubt (BRD) and/or their verdict. With one exception (de Keijser, de Lange, and van Wilsem (2014), past research suggests that this case-related, extra-evidential factor either has no effect on juror decision-making (Freedman, Krismer, MacDonald & Cunningham, 1994; Rind, Jaeger, & Strohmets, 1995; Simon, Snow & Read, 2004) or leads to an *acquittal* bias ( Goodman-Delahunty, Martschuk, & Ockenden, 2016; Kaplan & Simon, 1972; Kerr, 1978; Koch & Devine, 1999; Martin & Schum, 1987; McComas & Noll, 1974; Vidmar, 1972).

Only study has found a conviction biasing effect of offence seriousness. De Keijser, de Lange, and van Wilsem (2014) examined the effect of offence seriousness (i.e., shoplifting, burglary and rape) on people's attitudes towards a measure of the Blackstone ratio<sup>1</sup>, which is a proxy for BRD. They found that the Blackstone ratio decreased when the seriousness of the offence increased, with a lower standard of proof required in a case involving a more serious crime and so a greater likelihood of conviction.

However, several studies have reported an opposite i.e., acquittal-biasing effect of offense seriousness. These studies have used different (and sometimes multiple) measures. Vidmar (1972) demonstrated acquittal bias in a study where mock jurors were provided with a combination of two, three or four offence alternatives made up of first degree murder, second

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<sup>1</sup> In this study, the Blackstone ratio was measured by the open question, 'how many guilty people in similar cases should be acquitted in order to prevent one innocent person from wrongful conviction?'

degree murder, manslaughter and not guilty. He found that given at least a moderate offence severity option, jurors seldom voted not guilty whereas given only a serious offence severity option, more than half of jurors voted not guilty. Similarly, Goodman-Delahunty, Martschuk, & Ockenden (2016) found that mock-jurors were significantly less likely to convict a defendant charged as a terrorist than a defendant charged with attempted murder. This suggests that mock jurors may have perceived a terrorism charge as more serious than a non-terrorism charge, biasing judgments regarding the defendant's guilt.

Martin and Schum (1987) gave mock jurors a list of ten criminal offences (e.g., aggravated assault; murder, petty theft, narcotics peddling) together with possible penalties. They found that mock jurors raised their BRD threshold in response to the murder charge, thus making them more likely to acquit. Koch and Devine (1999) varied the definition of BRD in addition to varying offence seriousness. They found that juries with the option to convict on a lesser charge (i.e., voluntary manslaughter v. murder), produced more overall convictions than juries receiving only the primary charge, therefore demonstrating an acquittal bias. However, this effect was limited to the condition where BRD was undefined.

Kerr (1978) varied offence seriousness (i.e., first and second degree murder and manslaughter) and found an acquittal biasing effect whereby the more serious the offence, the lower the rating of the defendant's guilt and the lower the likelihood of conviction. Similarly, McComas and Noll (1974) manipulated offence seriousness (i.e., first and second degree murder, and manslaughter) and found an acquittal biasing effect of offence seriousness on jurors' probabilities of guilt and their verdicts. One study has examined the acquittal biasing effect of offence seriousness in the context of evidence evaluation. Kaplan and Simon (1972) found that,

even when evidence for guilt was high or mixed, the more serious the charge, the greater the likelihood of jurors acquitting the defendant.

As mentioned, a number of studies have found no conviction or acquittal biasing effect of offence seriousness on juror/jury decision-making. Simon, Snow and Read (2004) reported that offence seriousness (i.e., simple theft versus theft resulting in an individual's death) had no effect on jurors' conviction rates. Freedman, Krismer, MacDonald and Cunningham (1994) conducted a series of seven separate experiments in which they manipulated seriousness of charge (e.g., robbery and murder, robbery and assault, robbery and aggravated assault). In all experiments, Freedman et al., (1994) found no effect of offence seriousness on probability of commission, verdict or verdict confidence. Finally, in a study examining the effect of offence seriousness on jurors' use of inadmissible evidence, Rind, Jaeger, and Strohmets (1995) found no evidence for a direct effect of offence seriousness on juror decision-making.

In sum, research findings on the effects of offence seriousness on juror decision-making are mixed. Specifically, while some studies demonstrate an acquittal-biasing effect of offence seriousness, one finds a conviction-biasing effect, and others find no effect. It is unclear to what extent this is due to differences in the measures used.

### **The Present Study**

The present study aims to contribute to the above body of research in two main ways. First, it aims to further explore the potential biasing effect of offence seriousness on interpretations of BRD, which to-date has only been studied twice previously (i.e., Kerr, 1978; Martin and Schum, 1987). Kerr (1978) found that interpretations of BRD were significantly higher when the offence was more severe. Compatible with this, Martin and Schum (1987) found that interpretations of BRD were significantly higher for murder than any other offence.

Second, the present study aims to examine a wide range of juror behaviour that may be affected by offence seriousness. In addition to verdict, we measured probability of commission, interpretations of BRD, and confidence in verdict. This will contribute to a better understanding of any biasing effect of offence seriousness on the *process* of juror decision-making. For example, does the acquittal biasing effect emerge at the stage when jurors' are judging the probability of commission, and before they decide on a verdict?

The specific objectives of the present study were to investigate the effect of offence seriousness on: (1) jurors' interpretations of BRD, (2) their judgments of the probability that the defendant committed the crime, (3) their verdicts, and (4) their confidence in verdicts. Although there is some evidence to suggest an acquittal biasing effect, it is difficult for us to make strong a priori predictions because some past research has found no such effect, and one study has found the opposite (i.e., conviction biasing) effect. In addition, a number of the studies only measure verdict and so have little to offer in terms of predictions about the effect of offence seriousness on other aspects of the juror decision-making process.

## **Method**

### **Participants**

One hundred and eighteen members of the jury eligible public were recruited from a large company in the United Kingdom that has a multi-building site and employs over 700 people in a wide range of roles from packers through clerical staff to medics. They volunteered to participate in return for a £10 payment. Seventy percent of participants were female. On average, participants were aged 33.37 years ( $SD = 1.69$ ; ranging from 18 to 62). Ninety-two percent described themselves as Caucasian. Seventy-one percent had a university degree and 53.0% were employed at a professional level. Five percent said they had served on a jury before.

## **Design**

We employed a between-subjects experimental design. Offence seriousness was the independent variable with two levels (i.e., more and less serious). The more serious offence was ‘attempted murder’ and the less serious was ‘common assault.’

## **Stimuli and Measures**

Participants were asked to imagine that they were serving on a jury in a criminal trial. They read a short trial summary of an adult male charged with a violent offence and were told that the defendant faced a charge of either common assault or attempted murder (see Appendix). The case was designed to be equivocal with regards to the evidence so that it would result in some variance in verdicts. A pilot test ( $n = 20$ ) confirmed this (i.e., 54.8% of the participants in the pilot test voted guilty; none of the pilot participants were included in the present study). In the present study, 57.1% of participants found the defendant guilty.

After reading the case and legal arguments, participants read the judge’s instruction on the presumption of innocence, burden of proof, and standard of proof i.e., that “the defendant is presumed innocent unless the prosecution has proved guilt beyond reasonable doubt”. Participants then provided their interpretations of BRD. They then rated the probability that the defendant had committed the crime as charged, rendered a verdict, and rated their confidence in the verdict. The measurement scales for these variables are described below.

Interpretations of BRD were measured using the Membership Function method (MF; Dhimi, 2008; Dhimi, Lundrigan & Mueller-Johnson, 2015; Dhimi & Wallsten, 2005; Lundrigan, Dhimi & Mueller-Johnson, 2016; Mueller-Johnson, Dhimi & Lundrigan, 2018) and Direct Rating method (DR; Horowitz & Kirkpatrick, 1996; Kagehiro, 1990; Kerr, Atkin, Stasser, Meek, Holt, & Davis, 1976; Montgomery, 1998). The DR method required participants to rate

the minimum threshold at which they would be prepared to convict the defendant from 0 to 100% (in 5% increments). This provides a point interpretation of BRD. As Figure 1 shows, the MF method involved presenting participants with the phrase ‘beyond reasonable doubt’ along with 11 21-point scales anchored at each end from ‘not at all’ to ‘absolutely’. Each scale corresponds to one of 11 percentage points ordered from 0% to 100% (in 5% increments). Participants responded to the question “to what extent would each of these values substitute for the phrase ‘beyond reasonable doubt’?” by marking a point along each scale from ‘not at all’ to ‘absolutely.’ The MF provides a ‘peak’ interpretation of BRD (i.e., the percentage value at which the participant provides a rating of ‘absolute’), as well as a minimum interpretation (i.e., the first value that has a more than ‘not at all’ rating), and range of interpretations (i.e., the difference between the minimum value and the maximum value). Both the DR and MF method have been shown to reliably capture mock jurors’ interpretations of BRD and predict their verdicts (e.g., Dhimi, 2008; Dhimi, Lundrigan & Mueller-Johnson, 2015; Lundrigan, Dhimi & Mueller-Johnson, 2016).

#### INSERT FIGURE 1 HERE

Participants’ judgments of the probability that the defendant committed the crime were measured on a 0-100% scale marked at 5% increments. Verdict options were either ‘not guilty’ or ‘guilty’. Confidence in verdict was measured on a 0-100% scale marked at 10% increments.

Finally, a manipulation check question was also included. This asked participants to rate how serious the charge was against the defendant, on an 11-point scale ranging from ‘not at all’ to ‘extremely’.

#### **Procedure**

Recruitment posters were placed across the multi-building site and emails asking for volunteers were sent out to all employees. Participants were randomly assigned to one of the two experimental conditions. The data was collected individually, using paper-pencil at the recruitment site. The experiment took approximately 15-20 minutes. Demographic data was also collected on participants (i.e., gender, age, ethnicity, education level, employment, and jury experience).

## Results<sup>2</sup>

An independent samples *t*-test demonstrated that our manipulation of offence seriousness was successful. The attempted murder case was perceived to be significantly more serious ( $M = 8.17$ ,  $SD = 1.97$ ) than the common assault case ( $M = 5.33$ ,  $SD = 2.02$ ),  $t(107) = -7.41$ ,  $p < .001$ . The effect size for this analysis,  $d = 1.43$ , 95% CI [1.01, 1.84], exceeds Cohen's (1988) convention for a large effect (.80).

We measured participants' interpretations of BRD using the MF and DR methods. The mean 'peak' interpretation of BRD according to the MF method was 97.76% ( $SD = 4.79$ ) for participants in the attempted murder condition compared to 96.96% ( $SD = 7.23$ ) for those in the common assault condition. For the DR method, participants in the attempted murder condition had a mean interpretation of 82.13% for BRD ( $SD = 13.62$ ) whereas those in the common assault condition interpreted BRD as 82.32% ( $SD = 12.90$ ). The mean differences between the two conditions for both measures of BRD were non-significant,  $p = .537$   $d = .12$ , 95% CI [-0.26, 0.50] and  $p = .940$   $d = .01$ , 95% CI [-0.36, 0.39] respectively. There was no significant difference between the attempted murder and the common assault condition for either the mean minimum

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<sup>2</sup> In addition to the independent samples *t*-tests reported in the Results section, we also computed one MANOVA which included all of the dependent measures. The results of this MANOVA replicated those of the *t*-tests reported here.

MF interpretation,  $p = .377$ ,  $d = .17$ , 95% CI [-0.21, 0.55] or mean MF range,  $p = .377$   $d = .17$  95% CI [-0.21, 0.55].

Offence seriousness had a significant effect on probability of commission judgments,  $t [108] = 2.77$ ,  $p = .007$ ,  $d = .53$ , 95% CI [0.15, 0.91]. On average, participants in the attempted murder condition considered the defendant to be significantly less likely to have committed the crime ( $M = 65.37$ ,  $SD = 20.75$ ) than did those in the common assault condition ( $M = 75.26$ ,  $SD = 16.59$ ).

Fifty-two percent of participants in the attempted murder condition rendered a guilty verdict compared to 62.0% in the common assault condition. However, a Chi-square test indicated that offence seriousness was not significantly associated with verdict, ( $\chi^2 [1,112] = 1.19$ ,  $p = .275$ , OR = .658).

Offence seriousness had no significant effect on participants' confidence in their verdicts,  $t [109] = 1.81$ ,  $p = .073$ ,  $d = .03$ , 95% CI [-0.03, 0.72]. The mean confidence ratings of participants in the attempted murder condition was 61.91 ( $SD = 22.50$ ) compared to 69.12 ( $SD = 19.39$ ) for those in the common assault condition.

## Discussion

A number of studies have demonstrated that extra-legal factors may lead to an acquittal bias (e.g., Mazzella & Feingold, 1994; Schvey, Puhl, Levandoski & Brownell, 2013). In the present study, we investigated the possible biasing effect of one case-related, extra-evidential factor i.e., offence seriousness, on aspects of the juror decision-making process. We measured not only verdicts but interpretations of BRD, probability of commission, and confidence in verdict. Past research has tended to focus on verdict as a measure of juror decision-making and there are no studies that examine the range of measures included here. It is important to consider

multiple stages along the decision-making process in juror research in order to capture different effects at different stages of the process rather than viewing juror decision-making as one single judgmental process similarly affected (Bellin, 2010). Furthermore, different measures may be more or less sensitive to experimental effects (e.g., Dhimi, 2008).

We found a significant effect of offence seriousness on judgments of the probability that the defendant committed the crime. This is consistent with McComas and Noll (1974) and Kerr (1978) but inconsistent with Freedman et al. (1994). In their study, Freedman et al. (1994) used cases where the amount of evidence needed to prove guilt was equal for all the charges under examination, whereas McComas and Noll (1974) and Kerr (1978) did not. If the probability of commission scale reflects participants' perception of the apparent weight of evidence against a defendant, then this might explain the lack of effect found by Freedman et al. (1994).

However, the effect of offence seriousness did not carry over to verdicts. Past research on the effect of offence seriousness on verdict is mixed. Our findings are consistent with some previous studies (i.e., Freedman et al., 1994; Rind et al., 1995; Simon et al., 2004) but inconsistent with others (i.e., Kaplan & Simon, 1972; Kerr, 1978; McComas & Noll, 1974; Vidmar, 1972). Each of the past studies that found an effect of offence seriousness on verdict used homicide as the offence of interest with three levels of seriousness (i.e. 1<sup>st</sup> degree murder, 2<sup>nd</sup> degree murder, manslaughter). Associated with the most serious of these offences is a penalty of life imprisonment or death, which may account for the observed effect of seriousness on verdict in these past studies. By contrast, studies that found no effect of offence seriousness on verdicts, including ours, typically considered offences with less severe penalties attached (i.e., no death penalty).

At present, it is unclear why the effect of offence seriousness on probability of commission did not carry over to verdict, but future research may examine the extent to which interpretations of BRD diminish such an effect. Indeed, in relation to the effects of offence seriousness on interpretations of BRD, we found no acquittal biasing effect. Two previous studies have reported such an effect (i.e., Kerr, 1978; Martin & Schum, 1987), however, they suffer from some methodological limitations. Martin and Schum (1987) measured interpretations of BRD across different crime types including petty theft, tax evasion and murder, finding an effect whereby interpretations of BRD for the murder charge were significantly higher than all other charges. Kerr (1978) found that interpretations of BRD were significantly higher when the potential penalty was severe than when it was mild and that this effect was most pronounced for first-degree murder and manslaughter. Both studies used a very different method for measuring interpretations of BRD than we did. Rather than measure interpretations of BRD directly, as we did, they used an indirect measure of interpretations of BRD.

The fact that we found no significant effect of offence seriousness on interpretations of BRD, measured using the direct rating or MF methods, suggests that the influence of this extra-evidential factor arises at the stage of a trial when a juror is considering the evidence rather than at later stages when they are applying the standard of proof. Future research could be designed to see if other extra-legal variables such as the consequences of a potential custodial sentence for a defendant affect the juror decision-making process in similar ways.

The most common mechanism put forward to account for an acquittal biasing effect of offence seriousness on juror decision-making focuses on the magnitude of potential 'costs' associated with more serious offences (e.g. Freedman et al., 1994; Kerr, 1978). As offence seriousness increases, jurors' may be less willing to risk type I errors (i.e. convicting an innocent

person) over type II errors (releasing a guilty person) because of the potential consequences of conviction. By considering the potential consequences of their verdicts, jurors' may modify their decision-making and be less likely to convict. This can be done by either reducing the probability of commission, changing the verdict or increasing the standard or proof. We found that, while offence seriousness demonstrated an effect early on in the decision process (i.e., probability of commission), this effect did not carry over to verdict or interpretations of BRD. This may be because extra-legal factors such as offence seriousness differentially impact stages of the decision-making process or perhaps that some stages of the decision-making process are more robust to such influence.

### **Limitations and Implications**

It could be argued that the external validity of the present findings is limited because mock jurors were used rather than real jurors; that verdicts were examined in the context of a written hypothetical case that diverges from the detailed oral and visual representations available at a real trial; and that verdicts were only collected at a pre-deliberation stage. The present study used the methodological procedures typical of research on jury decision-making, and as we describe below, efforts were made to minimize these limitations, although further research examining deliberating juries may be of value.

First, it would be difficult to study real juries in real trial situations. The 1981 Contempt of Court Act in the UK currently prohibits the study of real jurors. Unlike much other juror decision-making research, the present research did not utilize a student sample. The mock jurors in the present research were jury eligible, and 5% had in fact been called for jury service in the past. Some studies have also shown few differences between mock and real jurors (e.g. Bornstein, 1999; MacCoun & Kerr 1988).

Second, while the trial summary was presented in a written format, effort was made to make the summary as clear and plausible as possible. Additionally, Bornstein (1999) has concluded that there is little negative impact on the validity of jury studies using written presentations of trial material.

Finally, there is evidence that pre-deliberation distribution of verdicts predicts post-deliberation verdicts (e.g. Kalven & Zeisel 1966; Newkirk, 1981; Sandys & Dillehay, 1995), and that interpretations of BRD differ very little from pre- to post-deliberation (Dane, 1985; Horowitz & Kirkpatrick, 1996).

From a pragmatic standpoint, the fact that jurors may be influenced by extra-evidential factors such as offence seriousness underscores the need to instruct them on the application of legal (probative) factors alone, irrespective of the potential ‘cost’ to the defendant. The extra-legal factor studied here is legally relevant at other stages in criminal proceedings (i.e., bail and sentencing) but should not inform the decisions made by jurors. Ultimately however, the subconscious level at which extra-legal influences may operate can limit the effectiveness of such instructions which are delivered at a conscious level.

**Declaration of interest**

The authors report no conflicts of interest.

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## List of Figures

*Figure 1: The Membership Function method*



## Appendix

### Case materials

*Charge:* Paul S is charged with the **attempted murder/assault** of Roy T on Friday December 15<sup>th</sup> 2008 at 11.30pm.

*Background:*

On the evening of Friday December 15<sup>th</sup> Paul S, aged 27, was out for Christmas drinks with his friend Chris N, aged 30 in central Cambridge. They spent the evening drinking in a number of pubs before leaving at approximately 11.30pm to walk the mile back to their homes. As they walked across a park, they encountered Roy T, a man who they alleged had had an affair with both of their wives in the past. Chris had since reconciled with his wife but Paul had separated from his wife and lost custody of their two children. The three men got into a verbal argument and a fight broke out. Roy was struck twice in the face and broke his nose. A pair of hands then grasped his throat from behind and someone began to strangle him. The fight was interrupted by the arrival of the police who had been called by two witnesses.

The prosecution presents a witness who claims that a week earlier he overheard Paul and Chris in a pub discussing how they would like to get revenge on Roy. They then present two further witnesses who claim to have seen Paul strangling Roy. The defence argue that it was not Paul who strangled Roy and challenge the reliability of all three witnesses arguing that there is some evidence that they may have both been heavily intoxicated at the time.