

## **Asymmetries in prior conviction reasoning: truth suppression effects in child protection contexts**

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In three empirical studies we examined how people reason about prior convictions in child abuse cases. We tested whether the disclosure of similar prior convictions prompts a mental representation or an additive probative value (Criminal Justice Act, 2003). Asymmetrical use of similar priors were observed in three studies. A pilot study showed that disclosure of a second prior did not contribute a weight equivalent to that of the first disclosure. Study 1 showed jurors did not see lefthanded evidence (i.e. matching victim bruising) as more indicative of guilt than right-handedness unless a prior conviction was present, and the presence of priors suppressed the generation of alternative possibilities indicative of innocence. Study 2 showed that disclosure did not decrease community ratings of reoffending propensity and dangerousness as much as a similar prior conviction increased them. We consider the results in the context of a new psychological theory of prior conviction bias and the consequences for the implementation of Section 100 of the Criminal Justice Act (2003).

*Keywords:* similar prior convictions; mental representation; additive probative value; Criminal Justice Act (2003); truth suppression

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## **Introduction**

The disclosure of prior convictions, and the manner of this disclosure, is a hotly contended issue in contemporary law. The UK has made changes to evidence law to allow the disclosure of a prior conviction when the prior offence resembles present misconduct (Criminal Justice Act, 2003; Ch. 1, part 11). Criminal cases of child abuse are one context in which prior conviction use may become apparent (e.g. Sedlak et al., 2006). Consider the exemplar case of Megan Kanka in the USA who was killed by a released child offender who, undisclosed to her community, lived nearby. A public outcry led to emergency legislation. Every child sex offender with a prior conviction became subject to a mandatory community notification system. Within several years the remaining 49 states adopted Megan's Law. This legislation was intended to protect potential future victims, and to redress a perceived trend of protecting offenders at the public's expense (Pawson, 2006).

Changes to evidence law in the UK allowing the disclosure of a similar prior conviction could be seen to have the same aim (Criminal Justice Act, 2003; Part 11), even though the legal psychological literature demonstrates that prior convictions can bias jurors at the expense of objectivity (e.g. Greene & Dodge, 1995). But the empirical literature has been inconsistent, sometimes showing prior convictions to affect guilt verdicts (e.g. Doob & Kirshenbaum, 1972; Hans & Doob, 1976; Kalven & Zeisel, 1966), and sometimes not (Fein, McCloskey, & Tomlinson, 1997; Wissler & Saks, 1985). This paper aims to investigate if the disclosure of similar prior convictions in child abuse cases can preserve the delicate balance between securing prosecutions of defendants who are guilty, and ensure that defendants who have a similar prior conviction are acquitted. To this end we examine the inconsistencies in the empirical literature on prior conviction reasoning. We adapt a powerful cognitive theoretical framework to explain the findings, develop predictions about how the new inclusion criteria may work in practice, and empirically test whether the disclosure of similar prior convictions affect objectivity in child abuse cases. Before turning to the empirical work we outline the legal context for the new admissibility rules (Criminal Justice Act, 2003).

### ***The legal context***

The Criminal Justice Act outlines law governing prior conviction disclosure under the rubric of bad character evidence (2003, Ch. 1, part 11, sections 98-113). Recently, amendments were made to Section 6 of the Criminal Procedure Act (1865) and section 1(3) of the Criminal Evidence Act (1898). Prior conviction disclosure is allowed when it resembles the present offence (Criminal Justice Act, 2003; Ch. 1, part 11, section 100(3c)). How the criteria need to be met are detailed in Section 100(3), and the criterion of interest concerns evidence that has probative value 'by reason of similarity' between the conduct of the present offence and other alleged misconduct (Section 11(3c)(ii)).

Evidence of prior convictions was traditionally excluded because of concerns about biasing jurors (Keane, 2008). The prosecution were not allowed to use prior convictions, nor were they to indirectly elicit such evidence in cross-examination. Should evidence of prior convictions be inadvertently disclosed a jury could be dismissed.

The recent review of the criminal courts of England and Wales recommended that criminal evidence law should move away from a clinical use of technical rules of admissibility<sup>1</sup> and move towards trusting lay fact finders. Disclosed evidence of bad character should only relate to the central set of facts of a case, otherwise it should not be disclosed<sup>2</sup>.

Moreover, the court must not admit priors if they are intended to strengthen a case which is already considered to be weak, and the judge is to direct the jury not to conclude that a defendant is guilty only on prior conviction evidence. Propensity is intended to be seen as one factor, and jurors should evaluate it in terms of all the evidence in the case (Keane, 2008). A prior may demonstrate a propensity, but the fact of a prior conviction should not be taken to mean that a defendant committed the offence.

The criteria allow admissibility if a prior has 'substantive probative value by similarity', but there is an ambiguity as to how this new law imagines this probative value to be processed by jurors. The statement appears to conflate whether a prior conviction is evidence to be simply added to the evidence set, or added in terms of a propensity only. The indicated additive process does not discriminate a mental process of adding the weight of the prior independently to the evidence set from the process of adding the prior to each piece of evidence. It is possible that the prior has the saliency to prompt jurors to think of how the defendant is guilty, and of how evidence confirms guilt rather than innocence. Thus can we trust lay fact finders, such as jurors to use this evidence as intended, even in difficult circumstances such as child protection cases?

To evaluate this proposition this paper conducts a detailed and precise empirical examination of the mental processes prompted by disclosure of similar prior convictions in child abuse cases. A contemporary and powerful cognitive theory of human reasoning, the Mental Model Theory (Johnson-Laird, 2006), will be drawn upon to theoretically illuminate why inconsistencies occurred in the past literature, and to generate predictions for the empirical work reported here. We next outline the empirical inconsistencies in the prior conviction literature, and then present the cognitive theoretical framework in an accessible format for psychologists, criminologists and lawyers alike.

### ***Prior conviction bias***

The first study investigating how prior convictions affect juror verdicts examined the discourses of real cases, and found that guilty verdicts were returned more often (about 27% more often), especially when the other evidence was ambiguous and did not clearly indicate a defendant's guilt (Kalven & Zeisel, 1966).

The introduction of limiting instructions was the first effort to reduce prior conviction bias but they have not generally prevented the diffusion of the biasing effects of disclosure to guilty verdicts (Greene & Dodge, 1995; Bottoms & Goodman, 1994). For example, when judge's limiting instructions were given directing mock jurors to use the prior conviction to assess credibility but not guilt, tape recordings of jurors' deliberations showed that they spent an equivalent amount of time discussing the defendant's credibility whether a prior conviction was disclosed or not (Doob & Kirschenbaum, 1972).

Likewise research examining how the group process limits prior conviction bias has shown that groups sometimes alleviate the effects of the prior conviction and sometimes not. Groups reasoned towards guilt verdicts more often following disclosure, either individually or in groups of four people (Doob & Kirschenbaum, 1972). But studies examining the effects of inadmissible evidence more generally, of which prior conviction disclosure would be a subset, have shown that jurors reached a guilty verdict more often before they deliberated with a group of jurors (Carretta & Moreland, 1983). Moreover, in child abuse mock trials, in which a defendant was accused of assaulting an 8-year-old child, jurors reached more guilty verdicts predeliberation than post-deliberation, when the prior conviction was disclosed but deemed inadmissible. Perhaps the group of jurors may remind one another not to use the prior conviction inappropriately by communicating more alternative possibilities about what has happened, than a juror operating from their individual perspective, thus decreasing the impact of a prior conviction (McCoy, Nunez, & Dammeyer, 1999).

But discourse analysis has shown that groups of jurors do refer to the prior conviction in relation to guilt, ruling out deliberation as a universal possible means to avert the diffusion of prior conviction to verdicts (Hans & Doob, 1976). Jurors may pay greater attention to evidence once it has been ruled inadmissible to remind them not to use it, but this attention may inadvertently lead to the evidence having a greater saliency in how they represent it in their mind, which in fact increases its impact on guilt ratings (Cox & Tanford, 1989; Pickel, 1995).

But are all prior convictions equal, or does the similarity of the prior conviction count? Wissler and Saks (1985) examined how similar and dissimilar prior convictions affected guilt verdicts. Jurors convicted less often in murder trials when a dissimilar prior conviction, such as autotheft was disclosed (35% of the time), than when no prior conviction was disclosed (50%), or when a similar prior for murder was disclosed (70%). But a dissimilar prior conviction of murder did not suppress guilt

verdicts in an autotheft trial (70%). Properties of the prior conviction's dissimilarity may suppress verdicts of guilt when they are admissible, but only when the prior conviction is dissimilar and for a lesser offence (Wissler & Saks, 1985). It is possible that jurors may think that prosecutors are trying to unfairly prejudice them against the defendant as raising suspicion about the underlying motive behind prior conviction disclosure has been shown to help reduce its effect on guilty verdicts when it is inadmissible (Fein et al., 1997).

The Criminal Justice Act (2003) allows the admission of similar prior convictions, but the literature shows that in some circumstances jurors can control the influence of prior convictions and sometimes they cannot. To evaluate the new provisions this paper draws together the threads of these empirical inconsistencies and applies a cognitive theory to explain how the inclusion criteria may affect juror reasoning across dissimilar evidence contexts.

### ***Asymmetries in prior conviction bias: lenses of evidence***

The Mental Model Theory predicts that people reason about evidence by representing models in mind corresponding to possible states of affair in the world (Johnson-Laird, 2006). When prior conviction evidence is disclosed it may prompt a mental representation reflective of guilt, which may sometimes act as a lens by which other evidence is evaluated. In other words a mental model representing guilt may prompt a line of thinking in which all other evidence is interpreted only in terms of how it confirms a guilty verdict; evidence that confirms guilt may be attended to more so and more deeply than evidence that disconfirms guilt. Critically, the application of a mental model theory to prior conviction reasoning predicts that some sorts of evidence in the criminal justice system, in this case prior convictions, are more likely to prompt consideration of a guilt representation than a probative value indicative of guilt. This mental representation of guilt not only primes the readiness with which corroborative evidence is considered, even if it is weak evidence, but it suppresses the generation of alternative possible explanations indicative of innocence, and the necessary consideration of disconfirming evidence when present. Whereas a guilt value presupposes that alternative thoughts of guilt and innocence are simultaneously accessible on a continuum to the juror mind, a guilt representation may in fact suppress considerations of alternative evidence possibilities indicative of innocence.

Mental representations are generated according to a small set of principles that govern human reasoning more generally (Johnson-Laird, 2006). One principle is the principle of truth. The theory predicts that jurors represent the possibility that they think to be true, and when a similar prior is disclosed (pc), they may think the possibility that the defendant is guilty (g) to be true (If pc, then g). This inference, known as the Modus Ponens (MP) inference in propositional logic, contains an antecedent corresponding to the prior (pc), and a consequent that corresponds to guilt (g). There are three other inferences including: Modus Tollens (MT), for which

the antecedent corresponds to the consequent when there is neither a prior ( $\neg pc$ ) nor guilt ( $\neg g$ )<sup>3</sup>; the Affirmation of the Consequent (AC), for which the consequent does not correspond to the antecedent in which there is guilt ( $g$ ) in the absence of a prior ( $\neg pc$ ); and the Denial of the Antecedent (DA), for which the antecedent in which there is a prior ( $pc$ ) does not correspond to the consequent of not guilt ( $\neg g$ ). In accordance with the principle of truth, people find it more difficult to represent the possibilities they consider to be false and which contain negation ( $\neg$ ). When prior convictions are to be used to inform defendant propensity rather than guilt, the Denial of the Antecedent (DA) inference, that a defendant is not guilty if they have a prior conviction, is required for consideration (If  $pc$ , then  $\neg g$ ). But extensive empirical work on human deduction has shown that people tend to find this inference one of the most difficult of the four deductive inferences to infer in propositional logic, while the Modus Ponens (MP) inference that a defendant is guilty given a prior conviction (If  $pc$ , then  $g$ ) is the easiest to infer (Johnson-Laird, 2006; Johnson-Laird & Byrne, 1991).

We conceptualize initial prior conviction reasoning by reference to how these inferences are prompted by prior conviction evidence. This paper differs from past studies in one respect, participants are not presented with laboratory premises from which they should then reason (e.g. If  $\square$  then  $\Delta$ ... If there is a square, then there is a triangle. There is a square. What if anything follows...). The premises from which we expect jurors to reason are prompted from their own knowledge about people who have prior convictions. In effect we are making predictions about what premises are prompted. We predict that people may think about further evidence possibilities corresponding to how consistent the evidence is with this mental representation of guilt (MP), because they tend not to think of how a prior conviction corresponds to innocence (DA).

The principle of consistency predicts that evidence that is consistent with the possibility that the juror currently represents, will be interpreted in light of this possibility. Thus if a juror represents the defendant as guilty given the prior conviction, then evidence that corroborates guilt, or can be ambiguously interpreted as corroborating guilt, will be considered more readily, and considered to be more important than evidence not indicative of guilt. Inconsistent refuting evidence implying negation (i.e. 'not' guilty), has been found difficult in reasoning more generally (e.g. Cowley & Byrne, 2005; Legrenzi, Girotto, & Johnson-Laird, 2003; Wason, 1960).

Taken together the principles of truth and consistency suggest that people will find it difficult to represent the possibility of innocence when a prior is disclosed (DA), and they will find it difficult to represent the two alternative possibilities of guilt and innocence simultaneously (If  $pc$ , then  $g$  & If  $pc$ , then  $\neg g$ ). Not only because one represents what they reason to be true and the other what they reason to be false, but because the principle of parsimony predicts that jurors will explicitly represent the

least number of possibilities to conserve their reasoning resources (Baddeley, 2007; Johnson-Laird, 2006). Thus jurors may focus on the first possibility that is consistent with the evidence they have already heard, namely a prior conviction and its correspondence with guilt (MP), and attend to subsequent confirming evidence more readily.

In short, we predict that jurors evaluate evidence according to the possibility that they consider to be true, and represent most saliently in their mind. The possibility of guilt or innocence will then act as a lens by which each piece of evidence is evaluated. For accessible interdisciplinary purposes, we outline the main predictions about how jurors may reason about priors in accordance with the criteria in Table 1, and we refer to these predictions throughout the results and discussion.

Next we turn to the studies to examine: how priors impact upon guilt ratings, if they lead jurors to consider the prior's contribution independently of other evidence, and if their disclosure can be counterbalanced by an explicit reference to a history of 'no prior convictions'.

### **Pilot study**

This pilot study aimed to test prior conviction pilot questions in criminal cases of child abuse. We tested for the impact of priors on guilty verdicts when one and two similar priors for child abuse was disclosed. We examined if we could rule out a ceiling effect for guilty verdicts should a prior conviction for a similar offence be disclosed for this sensitive issue.

### **Method**

#### *Participants*

Fifty-four people took part. There were eight men and 46 women. Their mean age was 20.5 years and their ages ranged from 19 to 33 years. They took part on a voluntary basis and were recruited from the University of Southampton campus.

<insert Table 1 here>

#### *Materials*

A short scenario was adapted from a real-life case of an 18-month-old girl who was killed by a man with two similar prior convictions. Identities were protected by changing names. The consent and debriefing underwent meticulous ethical reviewing. The sensitivity of the study was flagged in the initial person-to-person description and on the consent form. Options to withdraw were clearly stated. The debriefing contained hand-out information with contact details of the principal investigator and relevant organizations. Participants were asked to consider the following scenario:

*On January 2nd 2006, David Baxter had been arrested. He had been accused of killing eighteen month old Joanna Connolly. Joanna's skull had been fractured when she received a physical blow to the head. Joanna was the daughter of Susan Connolly, the woman David Baxter had been seeing.*

### *Design and procedure*

A 31 between-subjects design was used. We simply examined the effects of considering prior convictions as evidence. The three conditions included: a control condition in which no evidence of prior convictions was given to participants and two experimental conditions in which evidence of one prior conviction was given in the first and evidence of two prior convictions was given in the second.

Participants were randomly assigned to conditions and they first read the above scenario. In the experimental conditions participants were given evidence of prior convictions in the following format (in the control condition they did not receive this sentence and in the experimental condition with two prior convictions they received an identical crime with an earlier date): 'David Baxter had previously served a three year sentence for being physically abusive towards an ex-girlfriend's three year old in 2002'.

Participants then answered two questions and were given an option of recording their reasons for choice for each. The first question required a categorical response of either 'guilty' 'not guilty' or 'cannot decide'. The second question required a rating response on a Likert scale of 010 (where 0 represented 'not guilty' and 10 represented 'guilty').

Reasons for choice responses were coded qualitatively (Appendix I) and subjected to non-parametric tests. They were transcribed and segmented into individual components mentioning evidence (see Appendix I). The number of each sort of evidence statement was calculated per participant.

The evidence statements corresponded to respondents' thinking about the possibilities of guilt and innocence including: positive ('...[the prior] indicates he could be guilty'), negative ('...[the prior] is not sufficient') and neutral ('this is a neutral choice for me'). A counterevidence category enabled the inclusion of negative evidence statements related to evidence other than the prior conviction such as reasoning about evidence of intent (e.g. 'there is no intent to kill Joanna'), and alternative possible explanations representing innocence (e.g. 'Joanna could have fallen awkwardly by herself'). A category was created to examine the use of alternative possibilities that were either explicit ('any left-handed person could have killed Joanna') or not explicit ('either guilty or not')<sup>4</sup>.

## **Results**



Participants chose 'cannot decide' (89%) significantly more often than 'guilty' (9%) or 'not guilty' (2%) regardless of how many prior convictions were considered ( $\chi^2 = 75.44(2)$ ,  $p < 0.0005$ ). In the absence of other evidence, jurors do not systematically choose 'guilty' verdicts for defendants accused of child abuse, even if two similar priors are disclosed. The priors instead impacted the underlying mean rating of guilt which was higher when a prior conviction was present (mean rank = 5.86 and mean rank = 6.33, for one and two prior convictions, respectively), than when absent (mean rank = 3.35, KruskalWallis  $\chi^2 = 16.162(2)$ ,  $p < 0.0005$ ).

The second disclosure did not affect underlying ratings of guilt to the same degree as the first. The result suggests that a prior conviction could be sufficient to prompt a juror to think of the possibility that the defendant is guilty, and that this possibility could be taking form as a mental representation rather than a value of guilt. This result highlights the difficulty with an assumption that each prior conviction adds a uniform weight, as imagined by the idea of additional probative weight to add to an evidence set (Criminal Justice Act, 2003).

### ***Reasons for choice***

Overall, 141 evidence statements were generated. The number of evidence statements were similar when no prior (34%) one prior (28%) and two priors were disclosed (38%,  $\chi^2 = 17.526(12)$ ,  $p > 0.05$ ). Unexpectedly more evidence statements referred to negative evidence (71%, i.e. how evidence does not support a guilty verdict), than positive (25%, i.e. how evidence does support a guilty verdict) or neutral evidence (4%,  $\chi^2 = 40.145(5)$ ,  $p < 0.0005$ ). But this negative evidence somewhat tended to be generated when no prior conviction was disclosed (46%) than when one (23%) or two prior convictions (31%) were disclosed ( $\chi^2 = 18.026(12)$ ,  $p = 0.057$ ). Jurors tended to see prior convictions as evidence corroborating guilt; they generated more positive evidence statements when two prior convictions were disclosed (52%), than when one (34%) or no prior convictions were disclosed (14%,  $\chi^2 = 12.284(6)$ ,  $p < 0.05$ ), as the principle of consistency predicted.

Overall, 30 alternatives indicative of innocence were generated. More nonexplicit alternative possibilities (67%) were generated than explicit alternative possibilities (33%, binomial,  $p < 0.05$ ), corroborating the prediction that jurors find it generally difficult to generate alternative possibilities, and to make them explicit, in opposition to the mental representation they hold to be true (i.e. that the defendant is guilty). Overall alternative possibilities were not significantly generated less often when one prior conviction (17%) and when two prior convictions (23%) were disclosed, than when no prior convictions were disclosed (60%,  $\chi^2 = 9.410(6)$ ,  $p = 0.076$ )<sup>5</sup>.

The pilot study indicated that prior conviction disclosure affected how jurors mentally represent a defendant's guilt. Underlying ratings of guilt verdicts showed that prior conviction disclosure affected how guilty jurors thought a defendant was, but in the

absence of additional evidence prior convictions tended not to lead to 'guilty' verdicts. Next we examine what happens when further evidence is introduced.

## **Study 1**

This study investigates how the disclosure of prior conviction evidence affects how jurors think about other evidence relevant to a case.

### ***Method***

#### ***Participants***

Seventy-two people took part. There were 24 men and 48 women. Their mean age was 22.4 years and their ages ranged from 18 to 53. Participants were given the choice of accepting £4 for taking part, and they were recruited from the University of Southampton campus and the general public.

#### ***Materials***

The Joanna Connolly scenario and the information about David Baxter's prior conviction from Study 1 were used in this study. The debriefing again contained hand-out information with contact details of the principal investigator and relevant organizations.

#### ***Design and procedure***

A 32 between-subjects condition was employed. The first between-subjects variable was presence of a prior conviction (evidence of one prior conviction or no prior conviction). The second between-subjects variable was forensic evidence related to handedness of the defendant (evidence that the defendant was right-handed, or left-handed, or no evidence of handedness). Prior conviction and handedness evidence was counterbalanced to rule out ordering effects. Handedness presents a reasonably objective measure to compare people's weighted contribution towards guilt (left-handedness occurs in approximately 10% of the population and right-handedness occurs in approximately 90% of the population). Twelve people were assigned to each condition to aid potential comparisons with a jury. In the forensic conditions people were given a sentence related to handedness in one of the following formats: 'Forensic evidence showed that the blow was delivered by a left-handed person. David Baxter is left-handed', or 'Forensic evidence showed that the blow was delivered by a right-handed person. David Baxter is right-handed'. Participants answered the same categorical, Likert scale, and reason for choice questions as in the pilot study.

### ***Results and discussion***

Participants returned the verdict 'cannot decide' (78%) significantly more often than 'guilty' (16%) or 'not guilty' (6%,  $\chi^2 = 65.333(2)$ ,  $p < 0.0005$ ), as Figure 1 shows. The pattern of verdicts tended towards guilty (75%) when prior convictions were present than when absent (25%,  $\chi^2 = 5.143(2)$ ,  $p < 0.05$ ).

<insert fig 1 here>

Jurors chose 'cannot decide' significantly more often than 'guilty' or 'not guilty' in every case except when they consider evidence of a prior conviction and lefthandedness, as Figure 2 shows. When jurors were presented with no evidence in the control condition they chose 'cannot decide' (84%) more often than 'guilty' (8%) or 'not guilty' (8%,  $\chi^2 = 13.5(2)$ ,  $p < 0.001$ ). When jurors consider evidence of righthandedness or left-handedness, in the absence of a prior conviction, they endorse 'cannot decide' more often than 'guilty' and 'not guilty' to the same degree (92% 'cannot decide' and 8% 'guilty', respectively) ( $\chi^2 = 8.33(1)$ ,  $p < 0.005$ ). In the absence of a prior, left-handedness and right-handedness led to symmetric guilt verdicts even though left-handedness is better evidence of guilt than right-handedness.

When there is only prior conviction evidence 'cannot decide' (67%) is chosen significantly more often than 'guilty' (25%) and 'not guilty' (8%,  $\chi^2 = 6.5(2)$ ,  $p < 0.05$ ). When one prior conviction and right-handedness are considered 'cannot decide' (75%) is endorsed significantly more often than 'guilty' (8%) and not guilty (17%,  $\chi^2 = 9.5(2)$ ,  $p < 0.01$ ). But when jurors consider one prior conviction and lefthandedness, they begin to endorse 'guilty' (42%) almost as often as 'cannot decide' (58%), and they tend to ignore the 'not guilty' conclusion (0%,  $\chi^2 = 0.333(1)$ ,  $p > 0.05$ ). This result suggests that additional confirming evidence, in this case lefthandedness, is asymmetrically weighted as heavier when prior conviction evidence is present, than when it is absent. Moreover, left-handedness and right-handedness do not lead to symmetric patterns of guilt once a prior conviction is present. The addition of right-handedness to a prior conviction led to a slight increase in 'not guilty' verdicts. Thus the prior may prompt a mental representation of guilt more readily leading to the processing of corroborative evidence, even if the left-handed evidence does not directly lead to guilt.

<insert fig 2 here>

Jurors' mean underlying ratings of guilt were higher when a prior conviction was present (mean rank = 43.83) than not (mean rank = 29.17, MannWhitney  $U = 384_{(36,36)}$ ,  $p < 0.005$ ). Mean underlying ratings of guilt were lowest when no evidence was given (mean rank = 14.33), and somewhat higher when right-handedness evidence was present (mean rank = 20.42) and when left-handedness evidence was present (mean rank = 20.75), but not significantly so (KruskalWallis  $\chi^2 = 3.002(2)$ ,  $p > 0.05$ ). Mean underlying ratings of guilt did not differ significantly from one another when a prior conviction was present without handedness evidence (mean rank = 19.92), with right-handedness (mean rank = 16.46) and with lefthandedness evidence (mean rank = 19.12, KruskalWallis  $\chi^2 = 0.743(2)$ ,  $p > 0.05$ ). Thus similar prior convictions may not clearly add a quantifiable value that can be generalized across dissimilar evidence sets.

### **Reasons for choice**

A total of 220 evidence statements were generated. The number of evidence statements did not differ from one another significantly across the six conditions (control: 11%, LH: 16%, RH: 14%, PC: 20%, PCLH: 19%, PCRH: 20%,  $\chi^2 = 27.957(25)$ ,  $p > 0.05$ ). More negative evidence statements were generated (61%) than positive (36%) or neutral ones (3%,  $\chi^2 = 22.347(5)$ ,  $p < 0.0005$ ). More positive evidence statements tended to be generated when a similar prior was disclosed (27.5%), and right-handedness (19%) and left-handedness were also disclosed (24%), than when no evidence (6%), or right-handedness (11%) and lefthandedness alone were disclosed (12.5%,  $\chi^2 = 33.708(20)$ ,  $p < 0.02$ ).

A similar number of negative evidence statements were generated when there was no evidence (12%), when there was evidence of left-handedness (18%) or righthandedness only (16%), and also when there was a prior conviction (16%) with righthandedness (21%) or left-handedness (17%,  $\chi^2 = 21.497(25)$ ,  $p > 0.05$ ).

The number of counterevidence statements (including statements referring to intent and alternative possibilities indicating that the defendant is not guilty) did not differ when there was no evidence (15%), evidence of left-handedness (20%) or righthandedness (17%), and when there was a prior conviction (13%) with left-handedness (16%) or right-handedness (19%,  $\chi^2 = 25.583(30)$ ,  $p > 0.05$ ).

Overall 43 alternatives indicative of innocence were generated. More were generated when no similar prior conviction was disclosed, that is, when there was no evidence (25%), when there was evidence of left-handedness (23%) and when there was evidence of right-handedness (21%), compared to when a similar prior conviction was disclosed (7%), with left-handedness (12%) or with right-handedness (12%,  $\chi^2 = 24.385(15)$ ,  $p > 0.05$ ), as Figure 2 shows.

Overall alternatives indicative of innocence were suppressed when a prior conviction was disclosed (30%) than not (70%,  $n=43$ , binomial  $p < 0.02$ ). Overall less explicit alternative possibilities were generated when a prior conviction was disclosed (26%) than not (74%,  $n=23$ , binomial  $p < 0.05$ ). Overall less non-explicit alternative possibilities were generated when a prior conviction was disclosed (35%) than not (65%), but not significantly so ( $n=20$ , binomial  $p > 0.05$ ). The results corroborate the prediction that the guilt representation prompted by prior conviction disclosure suppresses the generation of alternative possibilities indicative of innocence.

### **Study 2**

This study intended to investigate if information about the presence or absence of prior convictions could be extended to understand their impact on attitudes in a future potential community. We tested how disclosing information to a community about an offender who had been released from prison for a child abuse conviction,

and who also had a further similar prior conviction, would be received compared to an offender being released who had an explicitly negated prior conviction ('no similar prior conviction').

## **Method**

### *Participants*

Forty-eight (15 men and 33 women) took part. Their mean age was 34 years and their ages ranged from 19 to 86 years. Their participation was voluntary and they were recruited from the public and the University of Southampton campus.

### *Design and procedure*

A questionnaire format booklet was assigned to respondents in one of three conditions. They were randomly presented with one of three envelopes at the midpoint of the questionnaire. The first read a short scenario which was created based on a real-life case<sup>6</sup> : 'A man who is a convicted paedophile has made positive progress in prison. He has completed a strict, structured rehabilitation programme which focuses on the prevention of re-offending'.

Then each respondent completed the first half of the questionnaire which asked: 'Do you think that this man will re-offend?'; 'Do you think that this man will pose a danger to the community?' and 'Do you think it is important to be informed if this man was to be located to your community?', and they responded to each question categorically (i.e. yes/no/cannot decide) and on a Likert scale (where 0 represented strongly disagree and 10 represented strongly agree).

Then they received one of three envelopes. In the control group they were simply told that the man was about to be released. The first experimental group was informed that the man for release had 'one similar prior conviction' and the second group was informed that the man for release had 'no similar prior conviction'.

Respondents then answered the same questions as before once they received the new piece of evidence. They were not allowed to change their responses for the first half of the questionnaire. Two further questions asked whether they thought the additional evidence was beneficial, and if they thought their attitude towards the offender had changed given the additional evidence. The questions were asked in the same categorical and Likert scale format as previous questions.

## **Results and discussion**

We carried out within-subject comparisons to precisely identify the impact of disclosure on the initial attitude specific to when told the offender had one prior, no prior, or was simply about to be released<sup>7</sup>.

### *Disclosure of 'one similar prior conviction'*

Regarding re-offending, the response 'cannot decide' (75%) was endorsed significantly more often than the response 'yes' (19%) or 'no' (6%,  $\chi^2 = 12.875(2)$ ,  $p < 0.005$ ), before the disclosure of one prior. After disclosure respondents now significantly endorsed the response 'yes' (81%) more often than 'no' (6%) or 'cannot decide' (13%,  $\chi^2 = 16.625(2)$ ,  $p < 0.0005$ ). Ratings of how much respondents thought the man likely to re-offend were higher when the prior conviction was disclosed ( $M = 6.81$ ) than before ( $M = 5.19$ , Wilcoxon's  $Z = -2.461$ ,  $n = 16$ ,  $n = 16$ ,  $p < 0.05$ ).

Regarding dangerousness, the response 'cannot decide' (62%) was endorsed significantly more often than the response 'yes' (38%) or 'no' (0%,  $\chi^2 = 1.000(2)$ ,  $p < 0.05$ ), before disclosure. After disclosure respondents now significantly endorsed the response 'yes' (81%) more often than the response 'cannot decide' (19%) or 'no' (0%,  $\chi^2 = 6.250(2)$ ,  $p < 0.05$ ). Ratings of how dangerous they thought the man would be for the community was higher after disclosure ( $M = 7.31$ ) than before ( $M = 5.25$ , Wilcoxon's  $Z = -3.443$ ,  $n = 16$ ,  $n = 16$ ,  $p < 0.005$ ).

<insert fig 3 here>

Regarding identity disclosure, the response 'yes' (56%) was endorsed more often than 'no' (19%) and 'cannot decide' (25%) before disclosure, but this pattern was not significant ( $\chi^2 = 3.875(2)$ ,  $p > 0.05$ ). After disclosure respondents now significantly endorsed the response 'yes' (62%) more than no (19%) and 'cannot decide' (19%,  $\chi^2 = 6.125(2)$ ,  $p < 0.05$ ). Ratings of whether they thought the man's identity should be revealed to them was the same after disclosure ( $M = 6.63$ ) than before ( $M = 6.63$ , Wilcoxon's  $Z = -2.818$ ,  $n = 16$ ,  $n = 16$ ,  $p < 0.005$ ). The results show that prior conviction disclosure increases negative attitudes towards offender dangerousness and re-offending upon release.

#### *Disclosure of 'no similar prior conviction'*

Regarding re-offending, the group designated to receive the envelope with 'no similar prior conviction' chose the response 'cannot decide' (50%) as often as 'yes' (44%) and 'no' (6%,  $\chi^2 = 5.375(2)$ ,  $p > 0.05$ ), before disclosure. After the disclosure of evidence about 'no similar prior conviction', respondents endorsed the response 'cannot decide' (56%) significantly more often than 'yes' (38%) or 'no' (6%,  $\chi^2 = 6.125(2)$ ,  $p < 0.05$ ). Ratings of whether they thought the man would re-offend were slightly, but not significantly less, after the disclosure ( $M = 6.00$ ) than before ( $M = 6.19$ , Wilcoxon's  $Z = -0.378$ ,  $n = 16$ ,  $n = 16$ ,  $p > 0.05$ ).

Regarding dangerousness, the response 'yes' (56%) was endorsed significantly more often than 'no' (6%) or 'cannot decide' (38%,  $\chi^2 = 6.125(2)$ ,  $p < 0.05$ ) before disclosure. Respondents tended to think the man not to pose as much of a danger after the disclosure 'no similar prior conviction' with half choosing 'cannot decide' (50%) and 'yes' (44%) compared to 'no' (6%,  $\chi^2 = 5.375(2)$ ,  $p > 0.05$ ). Ratings of

dangerousness did not differ after disclosure (M=6.00) from before (M=6.63, Wilcoxon's  $Z = -1.710$ ,  $n=16$ ,  $n=16$ ,  $p>0.05$ ).

Regarding identity disclosure, they chose 'cannot decide' (38%) as often 'no' (31%) or 'yes' (31%,  $\chi^2 = 0.125(2)$ ,  $p>0.05$ ) before disclosure. After disclosure they chose 'yes' (38%) as often as 'no' (31%) or cannot decide (31%,  $\chi^2 = 0.125$ ,  $p>0.05$ ). The result that the majority of respondents (62%) did not deem it necessary to reveal an offender's identity in light of no similar prior convictions was unexpected given that the offender had been in prison for sexually offending against a child. Ratings of identity disclosure did not differ after disclosure (M=4.56) than before (M=5.56, Wilcoxon's  $Z = -2.818$ ,  $n=16$ ,  $n=16$ ,  $p>0.05$ ).

There is an asymmetry in the impact that an explicit positive instance and an explicit negative instance has; explicit positive instances more readily affect thoughts of dangerousness and re-offending than explicit negative instances, as Figure 3 shows.

#### *Control group*

There were no changes in the control group before and after envelope disclosure. 'Yes' (56%) was endorsed more often than 'no' (13%) and 'cannot decide' (31%,  $\chi^2 = 4.625(2)$ ,  $p>0.05$ ). After disclosure, 'yes' (50%) remained the most frequent endorsed response (6% 'no' and 44% 'cannot decide',  $\chi^2 = 5.375(2)$ ,  $p>0.05$ ). Scale responses did not differ either (Wilcoxon's  $Z = -0.677$ ,  $n=16$ ,  $p>0.05$ ).

Regarding dangerousness, 'yes' (75%) was endorsed more often than the responses of 'no' (6%) and 'cannot decide' (19%) ( $\chi^2 = 12.875(2)$ ,  $p<0.005$ ), and this result was replicated when told of impending release. Differences between response ratings were also equivalent (M=7.31 vs 7.06, Wilcoxon's  $Z = -0.791$ ,  $n=16$ ,  $n=16$ ,  $p>0.05$ ).

Regarding identify disclosure, 'yes' (56%) was endorsed more often than 'no' (25%) and 'cannot decide' (19%), and this pattern was not significant ( $\chi^2 = 3.875(2)$ ,  $p>0.05$ ). After disclosure the response 'yes' (62%) was also chosen more often than 'no' (25%) or 'cannot decide' (13%), and this pattern was marginally significant ( $\chi^2 = 6.5(2)$ ,  $p<0.05$ ). Scale responses did not differ regarding disclosure (Wilcoxon's  $Z = -1.732$ ,  $n=16$ ,  $p>0.05$ ).

#### *Thoughts on how beneficial it would be to disclose*

Respondents thought that information about 'one similar prior conviction' was beneficial (69%) more than not (12%) or cannot decide (19%,  $\chi^2 = 9.125(2)$ ,  $p<0.01$ ). But they were unable to decide if 'no similar prior conviction' was beneficial (38%) or not (31%), or they could not decide (31%,  $\chi^2 = 0.125(2)$ ,  $p>0.05$ ). There was no change in the control group who thought disclosure as beneficial (50%) as often as they could not decide (50%,  $\chi^2 = 3.5(2)$ ,  $p>0.05$ ). Those who received evidence of a similar prior conviction thought it somewhat more beneficial (M=7.63) than those who

received no evidence (M=6.00) or 'no similar prior conviction' (M=5.38), but this trend was not significant (KruskalWallis  $\chi^2 = 3.914(2)$ ,  $p > 0.05$ ).

#### *Respondents' own estimation of the impact of prior conviction disclosure*

Respondents (63%) estimated that a similar prior conviction changed their responses but many could not decide or thought it had no effect (37%,  $\chi^2 = 1.000(1)$ ,  $p > 0.05$ ). Respondents could not decide if no similar prior conviction changed their response; many chose 'cannot decide' and 'no' (94%) significantly more than 'yes' (6%,  $\chi^2 = 12.250(1)$ ,  $p < 0.005$ ). The control group tended to chose 'cannot decide' plus 'no' (75%) significantly more often than yes (25%,  $\chi^2 = 4.000(1)$ ,  $p < 0.05$ ). Overall disclosure of a similar prior conviction was held to affect responses significantly more (M=5.13) than disclosure of no similar prior conviction (M=1.63) or non-disclosure of any prior conviction evidence (M=0.13, KruskalWallis  $\chi^2 = 24.138(2)$ ,  $p < 0.0005$ ). Thus respondents were aware of how similar prior convictions and no similar prior convictions affected their reasoning. We now turn to a discussion of the results.

### **Discussion**

The results highlight asymmetric use of similar prior convictions. These asymmetries may present difficulties for the implementation of the new law provisions for similar priors in the way that they are presently intended (Criminal Justice Act, 2003). Similar priors were not found to contribute equivalent probative force across dissimilar evidence sets, in each of the reported studies. One psychological explanation for these asymmetries is that similar priors may prompt jurors to generate a mental representation of guilt (If pc, then g) rather than not guilty (If pc, then g), and that this thought of guiltiness takes form as a mental model rather than an independent probative value (Johnson-Laird, 2006).

The pilot showed that a second child abuse prior did not affect jurors' mean underlying ratings of guilt equivalently to the first. According to the principle of truth a prior may prompt an explicit model indicative of guilt, to which a second similar prior adds little. If priors prompt jurors to represent models rather than evidence values, then one model is cognitively sufficient, in accordance with the principle of parsimony (see also Macrae, Milne, & Bodenhausen, 1994). Moreover, if the juror represents a model of guilt then this model will suppress the generation of contradictory alternative models indicative of the opposite, namely the defendant's innocence (see also Byrne, 1989), and the pilot showed that less explicit than nonexplicit alternatives indicative of innocence were generated when a similar prior was disclosed.

Study 1 found that when inconclusive evidence additional to the prior, in this case when a left-handedness match between the defendant's handedness and victim bruising, was present almost half of a group of 12 potential jurors chose the 'guilty' verdict. A left-handed match presents weak evidence of guilt given the 10%



incidence rate in the general population (McManus, 2002), but the prior adds significant strength to this already weak case (see also Greene & Dodge, 1995).

But not just any weak evidence will do. Evidence of a right-handed match in addition to a prior did not lead to more guilt verdicts than when a prior was absent. Indeed a small but insignificant increase was observed in 'not guilty' verdicts when there was both a similar prior and a right-handedness match compared to when there was evidence of right-handedness only. The notion that a prior could, in some circumstances, reduce guilt verdicts is not new given the finding that priors for autotheft can decrease guilt verdicts for murder charges (Wissler & Saks, 1985). But such findings do highlight the difficulties with assuming that similar priors contribute 'additive' probative value.

The asymmetric pattern of guilt verdicts for left- and right-handedness matches only occurred when there was a prior conviction. The pattern of verdicts was symmetrically distributed across verdicts for right-handedness and left-handedness in the absence of a prior (even though left-handedness is a better indicator of guilt than right-handedness). This result suggests that the disclosure of a similar prior conviction can prompt a model which can act as a lens affecting how other evidence is processed in relation to guilt (Johnson-Laird, 1983, 2006; pace Oaksford & Chater, 2007). The prior need not be presented first to have this effect, given that we counterbalanced presentation order of priors and handedness

Less alternatives indicative of innocence were generated in the reasons for choice responses when a prior was present than when absent, corroborating the prediction that priors prompt models of guilt which suppress the innocent alternative. The arbitrariness of the right-handed match may in fact prompt jurors to consider alternatives indicating how a defendant may be innocent, and representing explicit models indicative of innocence could somewhat suppress the effects of a similar prior.

Study 2 investigated if an explicit statement about an offender, who was about to be released into the community, having 'no similar prior convictions', would suppress primed thoughts about the offender's dangerousness and re-offending, to the same extent as the disclosure of a similar prior conviction prompts such thoughts. In accordance with the principle of truth the results showed that the prior asymmetrically increased ratings of dangerousness and thoughts of re-offending, but more so than the introduction of an explicit statement about 'no similar prior' decreased them. The offender who is about to be released already has one prior, given that he is about to be released from prison, so in effect having 'no similar priors' previous to this offence may be a less convincing negation than an acquittal. And having a defendant accused of child abuse and explicitly stating that they have 'no similar priors' during their first trial might have a different effect than when they have already been found guilty.

However, each of the three studies provided results supportive of jurors' ability to reason cautiously about priors even if they were subsequently found not to follow through on their initial cautious thinking. The pilot showed that jurors' were reluctant to return guilt verdicts when prior conviction evidence was not corroborated by evidence relevant to the present case; they tended to choose 'cannot decide' even when there were two similar child abuse priors (pace Meloy, 2005; West, 2000).

Study 1 showed that even though jurors arrived at guilt verdicts more readily when reasoning about a prior and left-handedness, and their thoughts of alternatives indicative of guilt were suppressed in the presence of a prior, they generated more negative than positive or neutral evidence statements, and the proportion of negative statements did not differ across prior and no prior conditions. If the prior prompted the representation of a model of guilt, then these negative statements would not be easily accommodated unless explicit alternatives indicative of innocence are already being considered (Cowley, 2006; Cowley & Byrne, in press; Wason & Johnson-Laird, 1972). The pilot study and Study 1 showed that where alternatives were generated, it was the alternatives explicitly indicative of innocence that were suppressed by priors. That they think of how the evidence may not indicate guilt, and then not use it to return 'not guilty' verdicts indicates a caution of reasoning. But jurors also generate more positive evidence statements consistent with a mental representation of guilt when a similar prior is disclosed, and this consistent evidence may be more readily processed in accordance with the principle of consistency (see also Darley & Gross, 1983; Legrenzi et al., 2003)

Study 2 provided some evidence for the conjecture that different jurors may be influenced by possible life experience views on the issue of prior convictions and identity disclosure in terms of community placement. Most participants assigned to the group receiving knowledge that the offender had 'no similar prior convictions' indicated that the identity either should not be disclosed, or they could not decide. The explicit negation did not change their thinking, because their thoughts about identity disclosure were the same before as after disclosure. Participants in the group that received knowledge that the offender had 'a similar prior conviction' presented more responses favourable to disclosure before and more so after disclosure (see also Pratto & John, 1991). Regarding identity disclosure, there may be subsets of the population who are more conservative than we have previously been aware of (pace West, 2000).

Encouragingly, respondents receiving information about a prior were aware that the disclosure of a prior conviction impacted on their ratings. Knowing that such evidence affects their thinking supports the notion of trusting the evidence to lay fact finders (i.e. Review of the Criminal Courts of England and Wales, HMSO, 2001), but knowing that is different to knowing how. Consider the jurors who decided that David Baxter was guilty given the evidence of left-handedness and a similar prior

conviction in study 2. They would know that the prior conviction would affect their responses, but not know how it may have become a lens by which they evaluated the remaining evidence in the evidence set. Thus they accorded left-handedness more importance than their counterparts who received evidence of left-handedness alone, and their ability to generate alternative possibilities indicative of guilt was suppressed.

It is possible that reasoning about similar priors from a juror's individual perspective may suppress the consideration of alternatives by which evidence may be evaluated (see London & Nunez, 2000). A group deliberation process may succeed in prompting alternative possibilities consistent with innocence and guilt simultaneously (e.g. Carretta & Moreland, 1983), and indeed the collective reasoning process may expand cognitive resources to deal with many alternative explanations, or what discourse based theories have termed stories explaining the evidence (Pennington & Hastie, 1986). Future studies have been planned using these materials in conjunction with a larger set of evidence. For example, studies including refuting evidence, and examining reasoning within group contexts, will provide additional enriched analysis of these asymmetries in light of the new inclusive law provisions

### ***Legal implications***

The results begin to demonstrate that there are difficulties in making assumptions about a similar prior conviction having a uniform probative force across dissimilar evidence contexts (Criminal Justice Act, 2003). Substantial probative value may not be easily quantified by the court because the disclosure may prompt a mental representation of guilt rather than an evidence value of guilt. Thus it may be difficult to assume that a similar prior will be used independently as added propensity, given that its association with guilt may diffuse to other evidence which only mildly corroborates a guilty verdict.

Under the present proscriptions (Section 100(3)) the result highlights a somewhat inconsistent logic in which a prior conviction is not to be introduced to trial proceedings to strengthen a weak case (see Roberts & Zuckerman, 2004 for a review). Yet when a case is considered to be strong, what then would the need be to include the prior conviction? In particular we need to know more about the explicit conditions under which the evidence is strong, but for which a similar prior conviction would then become useful. For example, if a defendant's character has been attacked, would the defamer's similar prior conviction for defamation add useful probative value? Would access to similar prior convictions be better used to eliminate the number of suspects in the investigative stages of a crime, than to contribute to a case at trial? Even with the new provisions allowing similar prior inclusion, a backfire effect could result in the appeals process, with prior conviction inclusion providing a ready hook on which the defence could claim an unsafe conviction. Apart from prolonging the suffering of true victims, who may then feel that hard fought justice may be overturned, there is also the danger that defendants who

have a similar prior conviction, but who may be innocent, will be more readily prosecuted.

Perhaps there has been more emphasis in the consideration of the new law provisions in terms of what jurors ought to do, while paying little attention to what jurors actually do, when presented with similar prior convictions as evidence. We need to gain an increasingly good understanding of the psychological bases of prior conviction reasoning to evaluate the successfulness of these new inclusive provisions appropriately.

To this end this paper has presented a detailed empirical analysis on prior conviction reasoning, using the Mental Model theoretical analysis, which is at the forefront of cognitive research. But there is still much we do not know about how priors impact on reasoning. We have applied a deductive framework to predict which premises are prompted by jurors' own expectations from their knowledge of those who have priors. This framework has limitations because it is most often used within the constraints of simple propositional logic tasks (Johnson-Laird, 2006). With increasing amounts of evidence in complex cases, and explanations about how jurors deal with many propositions within an evidence set, a better understanding of the switch between deductive and inductive processing will be needed (see also Cowley & Byrne, in press; Klahr & Dunbar, 1988). In sum, it is challenging to evaluate law changes from a psychological perspective, because there is presently no complete theory of how the juror mind mentally represents evidence in a complex trial. That we are beginning to shed some light on how priors may prompt models of guilt rather than guilt values is a significant step not only to such a legal theory's development, but to the debate on the horizon between reasoning theories that place predominant importance on evidence values (Oaksford & Chater, 2007) versus those who give primary place to mental models of evidence (Johnson-Laird, 2006).

## Notes

1. Review of the Criminal Courts of England and Wales (HMSO, 2001).
2. The Law Commission report Evidence of Bad Character in Criminal Proceedings (Law Commission, No. 273, cm 5257, 2001)
3. The symbol  $\neg$  denotes negation, i.e. 'not'.
4. An informal measure of inter-rater reliability was carried out by a non-psychologist (BL) on a subset of the transcribed responses (5%) to ensure that the coding scheme corresponded to the coding used in the analysis. There was a 90% correspondence rate.
5. The chi-squares for the pattern of explicit and non-explicit alternatives did not yield statistically significant patterns because of the small number of alternatives generated in this pilot study.
6. This case was based on a real-life conviction in which a child died. The child's name was not disclosed. Respondents were aware of their right to withdraw participation at any stage and were given a verbal and written debriefing. Contact details for the supervising researcher and relevant organizations were made available to all jurors.

7. Note that random sampling does not allow the study to control the initial attitudes people have towards re-offending and within effects are appropriate. Attitudes were milder to start out with in the condition in which disclosure of a prior conviction was allocated than for the two remaining conditions making it essential to map the change within-subjects across conditions.

## **Table 1.**

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### ***Key predictions of the lenses of evidence framework.***

*Prediction 1* One prior conviction will prompt a mental representation of guilt (MP: If pc, then g). Two prior convictions will not prompt two guilt representations; one suffices (principle of parsimony). Nor will a second add the same amount of weight as the first; prior convictions prompt mental representations more so than additive weight (i.e. a mental model).

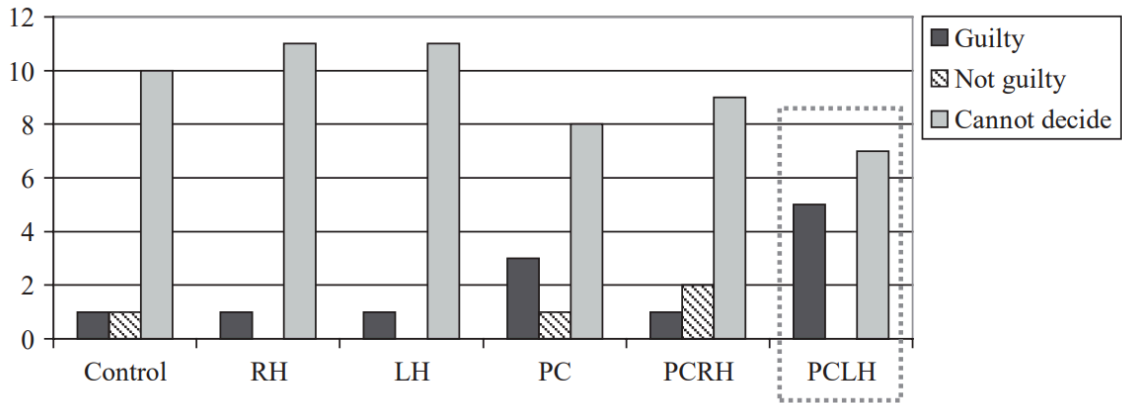
*Prediction 2* Evidence consistent with a mental model of guilt will be deemed more significant in the presence of a prior conviction than in the absence of one (principle of consistency).

*Prediction 3* The representation of a model of guilt suppresses the generation of alternatives (principle of parsimony) indicative of innocence (DA: If pc, then g). Thus counterevidence is more difficult to process in the absence of alternative possibilities (principle of truth).

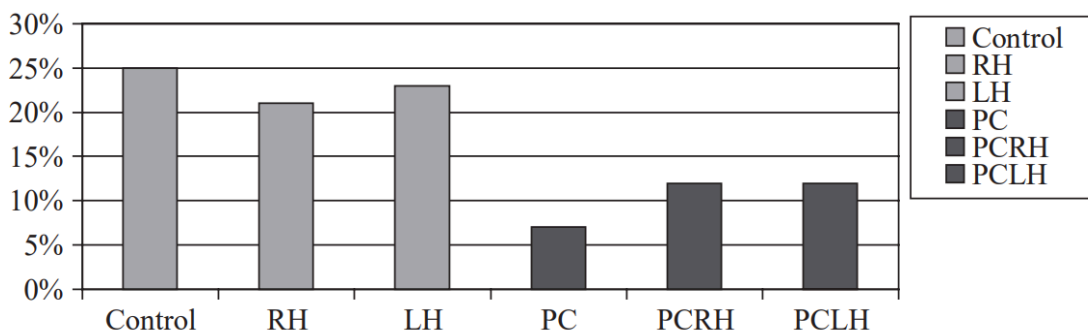
*Prediction 4* Prior convictions prompt mental models of guilt, which in turn prompt auxiliary stereotypical assumptions consistent with a criminal representation, including perceptions of increased dangerousness and the propensity to re-offend (principle of consistency).

*Prediction 5* 'No prior convictions' will not prompt a mental model of non-guilt in the same way as a prior conviction prompts a mental model of guilt. The negative form no will be more difficult to process than the positive opposite 'a prior conviction' (principle of truth).

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*Figure 1.* The number of jurors from a jury (n=12) who chose 'guilty', 'not guilty', or 'cannot decide'. RH, right-handed evidence only; LH, left-handed evidence only; PC, prior conviction evidence only; PCRH, prior conviction and right-handed evidence; PCLH, prior conviction and left-handed evidence with encapsulated emphasis.



*Figure 2.* The proportion of alternative possibilities indicative of innocence generated in the absence and presence of a similar prior conviction. RH, right-handed evidence only; LH, lefthanded evidence only; PC, prior conviction evidence only; PCRH, prior conviction and righthanded evidence; PCLH, prior conviction and left-handed evidence.

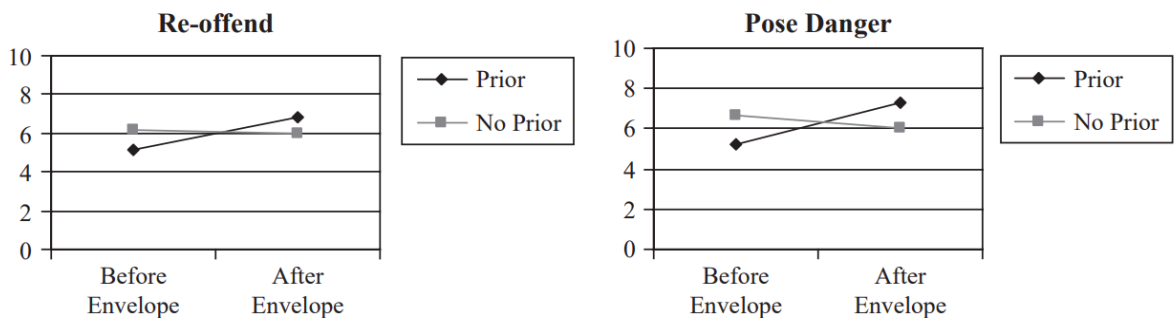


Figure 3. How likely the offender is thought to re-offend and pose a danger to the community

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**Appendix I. Examples of each sort of code in the content analysis coding scheme from Study 1. Coder's shorthand is in parentheses.**

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**Evidence Statements**

It does point quite firmly in his direction (+ E)	{exp2, s13, c1, q2}
With present evidence he is (+ E)	{exp2, s24, c2, q1}
There is no evidence (- E)	{exp2, s5, c1, q2}

There is insufficient evidence (- E) {exp2, s2, c1, q1}  
I would say it is a neutral choice (= E) {exp2, s35, c3, q2}

### **Alternative possibilities**

Any left-handed person could have killed Joanna (Alt ex) {exp2, s19, c2, q2}  
Someone trying to frame him by delivering a blow with  
his left hand (Alt ex) {exp2, s22, c2, q1}  
Or not guilty (Alt  $\neg$  ex) {exp2, s14, c2, q2}  
Either way (Alt  $\neg$  ex) {exp2, s17, c2, q1}

### **Motive**

No motive ( $\neg$  intent) {exp2, s4, c1, q1}  
Maybe it was an accident ( $\neg$  intent)  
But maybe it wasn't (+ intent) {exp2, s10, c1, q1}  
That he was jealous of the attention the baby got (+ intent) {exp2, s13, c1, q2}  
Maybe a coincidence (co-in) {exp2, s15, c2, q2}  
Unlikely it's just a coincidence ( $\neg$  co-in) {exp2, s22, c2, q2}

### **Counter Evidence [( E)(AltexAltnonex)(intent)(co-in)]**

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Key: (+), positive; (-), negative; (=), neutral; (Alt), alternative; (ex), explicit; ( $\neg$ ), not; (co-in), coincidence. {s} subject; {c} condition; {q} question.