This is a pre-publication final draft of the paper: Murray, J., Thomson, M. E., Cooke, D. J., & Charles, K. E. (2011). Influencing expert judgment: Attributions of crime causality. *Legal and Criminological Psychology*, **16(1)**, 126-143.

Running Head: ATTRIBUTION IN CLINICAL JUDGMENT

Title: Influencing Expert Judgment: Attributions of Crime Causality

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Abstract

Purpose: The present research aimed to investigate the effects of attribution on expert clinical judgment in comparison to semi-experts and lay-people. Two research questions were addressed. Firstly, would experts be less subject to attributional manipulations, in terms of their perceived ratings of dangerousness, than would semi-experts or lay-people? Second, would experts be less subject to attributional manipulations, in terms of their assessments of offender responsibility, than would semi-experts or lay-people?

Method: A 3x3x2 mixed groups design was implemented. Participants read nine crime scenarios that had been internally or externally manipulated. For each scenario, participants were asked to rate offender dangerousness, offender responsibility and the seriousness of the crime and to suggest a suitable sentence length. Targeted recruitment was employed, yielding 12 experts, 21 semi-experts and 22 lay-people.

Results: Offenders were considered to be more responsible for their actions and more dangerous to others in the internal manipulations than in the external ones across all crime types and by all levels of expertise. Findings indicate that semi-experts are less subject to the influence of attributional manipulations than both experts and lay-people. Marked similarities in the pattern of expert and lay-person judgments can be observed from the present analyses.

Conclusions: The current findings lend support to previous research in the area in that similarities between expert and lay-person judgment were observed. However, through

expanding and clarifying the levels of expertise investigated, the current findings highlight the need for greater research into the distinct 'semi-expert' group.

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Influencing Expert Judgment: Attributions of Crime Causality

Introduction

Violence risk assessment is a task of critical importance to psychiatrists, clinical psychologists, legislators, social workers and various others concerned with the accurate assessment and management of violent behaviour. The clinical approach to violence risk assessment, which relies entirely on human judgment, is the most commonly used method in practice (Cooke, Michie & Ryan, 2001; De Vogel & De Ruiter, 2004). Despite its real-world prevalence, considerable academic scepticism has been expressed in relation to this approach (e.g., Monahan, 1984; Quinsey, Harris, Rice & Cormier, 1998), with Monahan (1984) claiming that two out of three predictions of long term violence made by clinicians are incorrect. While this claim is frequently cited as evidence that clinical judgment is poor, Litwack (2001) suggested that there is little empirical support for the statement, and that there has been a rush to negatively judge clinicians' capabilities in this context without a fair review of the clinical enterprise. In fact, various studies have found clinicians to perform significantly above chance (e.g., Bonta, Law & Hanson, 1998; Gardner, Lidz, Mulvey, & Shaw, 1996; McMillan, Hastings & Coldwell, 2004).

Other factors contributing to the perceived inadequacy of clinical judgment include claims that it is inferior to lay assessments (e.g., Quinsey *et al.*, 1998). However, most studies cited as evidence that clinical judgments are no more accurate than those of lay persons are not only very old but tend to concern judgments other than violence risk assessments (e.g., Goldberg, 1959; Chapman & Chapman, 1967).

One study that did concern violence risk assessment was conducted by Quinsey and Cyr (1986). This study investigated the possibility of clinical judgment being subject to attribution error in a manner similar to that of lay-people. Specifically, the authors hypothesised that, in relation to crime scenarios, an internal attribution condition would be more associated with higher ratings of dangerousness and offender responsibility than would an external condition. As expected, little difference between a group of clinicians and a group of lay-people in their ratings of dangerousness and perceived responsibility was found; and these findings were proposed as further evidence that clinicians have no special expertise in this violence risk assessment context. However, this claim is dubious owing to potential problems with the sample used in the study. For instance, of the 24 clinicians who took part in this study, only 16 had previous clinical experience with offenders. Furthermore, in relation to the 16 subjects with offender experience, the authors did not state the precise nature of or length of time of this experience. In addition, the sample contained 3 psychiatrists and 21 psychologists but only 14 of the latter possessed doctorates. Therefore, the findings may have been confounded by a lack of *real* expertise on the part of the clinicians and, perhaps, some of the expert sample might have been more fairly described as *semi-experts*. Without these potential sampling limitations, might the clinicians have demonstrated specific evidence of their expertise? To shed light upon this issue, it may be useful to draw on some of the literature that has focused on the quality of judgment in different domains of expertise.

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Indeed, any examination of expert judgment should consider the concept of expertise itself (Thomson, Onkal, Avcioglu, & Goodwin, 2004). Generally, experts are considered to have particular qualities that permit them to outperform non-experts on relevant tasks. We depend upon experts to influence and shape important policies that affect our lives; and in the context of violence risk assessment this reliance is of paramount importance. Nevertheless, as discussed by Rowe and Wright (2001, p.342), "…it may be that the title of "expert" is conferred on those who hold particular roles rather than the basis of the known accuracy of their judgments." Clearly, for the label of "expert" to be justified, it is vital that those who possess it can outperform those who do not on a relevant task. Unfortunately, it is not always practically possible to assess the quality of performance objectively.

According to Bolger and Wright (1994), practitioners are likely to perform well when both *ecological validity* (i.e., when the task is relevant to the expertise of the subjects) and *learnability* (i.e., when adequate and usable feedback is available in the domain under examination) are high. But if either one of these constructs is low, performance is predicted to be poor. It would therefore be foolish to anticipate performance differences between practitioners and those with no experience in the task domain when both of the constructs are low (Bolger & Wright, 1994).

In order to generate ecological validity, the experimental task must closely resemble the actual one executed by professionals in the workplace. It is possible for an experimenter, therefore, to establish high ecological validity via careful design of the study. Bolger and Wright (1994) suggested, however, that the level of the second construct, *learnability*, is dependent on the type

of performance feedback that is available in the domain under consideration. These authors found that expert performance is typically good in domains where rapid and unambiguous feedback is available (e.g., horse racing) but is often poor in domains where such feedback is lacking (e.g., stock price forecasting and indeed risk assessment, where there are rarely mechanisms in place to allow this). This would imply that in some domains it is practically impossible for practitioners to perform well.

However, Thomson *et al.* (2004) have argued that in instances of rare events that occur at irregular intervals (such as someone committing murder after being released from a mental institution), learnability can be facilitated in other ways. The authors argued that experts can learn from detailed investigations of such events and the publication of the results of these investigations. In this manner the causes of events will be fed back to the population of experts, who, in turn, are likely to increase their levels of expertise over time with the experience of more investigations.

It is known that expert and novice reasoning strategies differ from one another (Shanteau, 1988). Dreyfus and Dreyfus (1986) proposed a five-stage model of developing expertise, which outlined the levels of expertise: novice, advanced beginner, competent, proficient, and expert. At the novice stage the individual does not use intuitive judgment, but instead adheres to taught rules. The advanced beginner, on the other hand, uses rules involving both situational and taught context-free ones. Their situational perception is, however, limited at this stage. In addition, attributes and aspects of a situation are considered separately and are equally weighted. The

competent individual is able to recognize many context-free and situational aspects, but is likely to become overwhelmed. As such, the individual uses standardized, hierarchical planning to overcome the task. In doing so, however, only a limited amount of information is considered at any one time. The proficient individual no longer sees aspects, but can consider the situation as a whole and identify its most important features. While intuitive decision making is used for the majority of the time, a return to deliberative, analytical thinking occurs when particular aspects become apparent as particularly important to a situation. At the final stage, the expert no longer relies on rules or guidelines, but instead performs intuitively based on experience and deep understanding. Analytic thinking only returns when a novel situation or problem arises. This framework has been explicitly applied clinical judgment within the nursing discipline (Benner, 2004), and less explicit examples can be found within the psychodiagnostic literature. For example, Witteman and van den Bercken (2007) investigated psychodiagnostic accuracy across three levels of expertise: novices, intermediates (akin to the competent stage) and experts. The researchers found the intermediate group to be distinct from both the experts and novices in their sample, performing both faster and poorer in the task, and labeled this the intermediate effect. In addition, Groenier, Pieters, Hulshof, Wilhelm, and Witteman (2008) found that deviations from theoretical psychodiagnostic models were related to clinical experience, and suggested that this change in reasoning strategy is brought about in order to cope with the increasing pressures of time associated with increasing clinical experience (and consequently, increasing role pressure), with clinicians approaching cases in a more flexible manner as experience increases as compared to novices.

In line with Witteman and van den Bercken's (2007) group selections, the present research directly compared the responses of experts, semi-experts and lay-people to crime scenarios with internal and external conditions. To avoid the potential sampling problems discussed above, careful attention was given to the allocation of participants to particular categories of expertise, as detailed later. The present study also attempted to ensure ecological validity by basing the scenarios on actual cases and by having two independent clinicians judge their contents in terms of the type of information practitioners typically receive to formulate their assessments.

As there is little agreement within the literature to support or deny the accuracy of clinician judgment in violence risk assessment, predictions of experimental outcome were deemed unsuitable and therefore the following research questions were formulated based on the findings of Quinsey and Cyr (1986):

1) Would experts be less subject to attributional manipulations, in terms of their ratings of dangerousness, than would semi-experts or lay-people?

2) Would experts be less subject to attributional manipulations, in terms of their assessments of offender responsibility, than would semi-experts or lay-people?

The present study also aimed to examine an interesting notion put forward by Quinsey and Cyr (1986) that a relationship between levels of incarceration and the internal attribution of violent behaviour may exist. These authors suggested that internal attribution may be positively related to incarceration: individuals whose behaviour is considered to be internal are generally viewed as

being responsible for their actions and are, therefore, held as morally accountable for their actions (Schultz & Wright, 1985). Quinsey and Cyr (1986) further asserted that offenders who are seen as responsible for their actions would be incarcerated in accordance with the legal system. Given these suggestions, the present research further aimed to investigate whether or not a relationship would exist between the attributional information and recommendations of sentence length. In addition to the above research questions, the current research aimed to explore the possible effects of internally and externally manipulated information on a number of additional factors across and between the three levels of expertise, including the effects of the attributional manipulations on judgments of seriousness of crime, the likelihood that the offender would benefit from psychological help, whether the offender was likely to re-offend, whether a full risk assessment was necessary, and the suitability of particular types of treatment.

Methodology

Design

A 3x3x2 mixed groups design was employed, with the variables: expertise (experts, semi-experts, lay-people), crime type (murder, assault, armed robbery) and scenario manipulation (internal and external attribution). The independent variables were the participants' level of clinical expertise and the internal/external scenario manipulations. The dependent variable was the participants' responses on the questionnaires given. Post-hoc power analysis for the ANOVAs used in the analyses (using G*Power 3; Faul, Erdfelder, Lang & Buchner, 2007) measuring for large effect size (0.4, following Cohen's conventions), with α set at 0.05

(following the norm) indicated 1-β to be 0.73. Post-hoc power analyses that were conducted for the chi-square investigations, measuring for large effect size (0.5, following Cohen's conventions), with α set at 0.05 (following the norm) indicated 1- β to be 0.86. It was therefore concluded that the study was adequately powered.

Participants

55 individuals participated in the study. The lay-person group consisted of 22 individuals (7M; 15F) aged 18-62 years (mean 33.5). The mean time spent in education within this group was 15.3 years. None of the participants within this group had received any training in psychiatry or psychology, or were involved in legal practice, correctional or health related occupations.

The semi-expert group consisted of 21 individuals (3M; 18F) aged 21-48 years (mean 28.4). Eleven were undertaking a Masters level degree in forensic psychology, eight were working as trainee psychologists and eight were working as assistant psychologists. The mean time spent in education within this group was 17.7 years. Twenty of these participants were currently involved in correctional or health related occupations. None of these participants were involved in legal practice but all had basic experience of violence risk assessment. The participants in this group had some, though relatively limited, experience in conducting violence risk assessments.

The expert group consisted of 12 individuals (5M; 7F) aged 28-61 years (mean 41.8), eight of whom were clinical/forensic psychologists, two were psychiatrists and two were forensic practitioners - the latter two participants had extensive practical experience in the process of

conducting violence risk assessment in practice, despite not having a doctorate qualification. All participants within this group had at least five years of clinical experience and were highly familiar with the task of conducting violence risk assessments. The mean time spent in education within this group was 20.2 years.

Apparatus

Nine one-page crime scenarios were developed based on actual case notes and interviews and were supplemented with information on specific offender characteristics (see Grant, Won Kim & Brown, 2001; Normandeau, 1972; Quinsey & Cyr, 1986). An internal and external manipulation of each of the scenarios was created. Based on Quinsey and Cyr (1986), three specific types of violent crimes were chosen for use in the present study: murder, assault and armed robbery. Previous acts within the internal manipulations were designed to be similar to those described in the external ones in order to maintain consistency between the internal and external versions of scenarios. Scenarios were assigned to participants using a random number generator program (Haahr, 2008). Participants received one version of each scenario, either the external or internal version. Each scenario began with a descriptive paragraph of the stimulus individual's pre-offense history and background. Typically included were: previous offences, work-related history, family history, economic background, current relationship status, age and gender. All stimulus individuals were male. For each crime type, a scenario was written involving stimulus individuals aged 18, 30 and 52 years. This section was followed by one detailing the current crime and outcome to the victim. In accordance with Quinsey and Cyr (1986), participants were asked to give their recommendations on the type of treatment that would be most appropriate for

each scenario, whether they felt the offender should be incarcerated and for how long, whether they believed the offender would re-offend and also for their opinion on whether or not a full risk assessment on the target individual was necessary. This final question acted to disguise the decision making and judgment focus of the present investigation from participants, therefore preventing responses from being biased to what 'should be said'. As such, this variable is not included in the analyses. In addition, five five-point rating scales were given that measured seriousness of crime, dangerousness to others and to self, the probability that the offender would benefit from psychological/psychiatric help and the offenders' level of responsibility for the crime.

McAuley, Duncan and Russell's (1992) Revised Causal Dimension Scale (CDSII) was employed after each scenario and questionnaire in order to assess the effectiveness of the attributional manipulations. The items within the CDSII yield four causal dimensions: locus of causality, external control, stability and personal control.

Procedure

Participants were given a pack consisting of an information sheet, consent form, participant instructions, nine crime scenarios and nine corresponding questionnaires. These questionnaires were placed after each crime scenario and the contents of the questionnaires remained constant for each scenario. Participants were asked within the instructions to treat scenarios as individual cases, and answer the corresponding questionnaire before moving onto the next scenario.

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Results

The effectiveness of the attributional manipulations were analysed by means of a 3x2 unrelated analysis of variance for each of the CDSII dimensions, with the independent variables of expertise and scenario manipulation. Significant differences between the internal and external manipulations were demonstrated across all four dimensions, indicating successful scenario manipulation. As expected following the logical internal-external design of the scenarios, Locus of Control ($F=118.46$, $df=1, 462$, $p<0.001$), Stability ($F=42.39$, $df=1,455$, $p<0.001$) and Personal Control ($F=9.23$, $df=1, 462$, $p=0.003$) were rated higher in the internal scenario manipulations than in the external ones and External Control was rated higher in the external manipulations than in the internal ones ($F=36.98$, $df=1,453$, $p<0.001$). These findings indicate that individuals depicted in the internally manipulated scenarios were considered to be more in control of their situation and more stable than those depicted in the external manipulations.

In order to investigate Quinsey and Cyr's (1986) assertion that a relationship between levels of incarceration and consequent sentencing and the internal attribution of violent behavior may exist, a bivariate crosstabulation using the chi-square statistic was carried out on participant responses to whether or not the target offenders should be incarcerated (see Table 1).

Table 1 about here

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Table 1 clearly shows a relationship between the proportion of participants recommending incarceration and the attributional scenario manipulations. From the column percentages, it can be ascertained that while the majority of participants chose to recommend incarceration for the offenders in both the internal and the external versions of the scenarios, fewer participants recommended incarceration in the external manipulations than in the internal ones. The chi-square analysis ($\chi^2(1, N = 485)=27.75$, $p<0.001$) indicates that this relationship in the data is significant, thus supporting Quinsey and Cyr's (1986) assertion that a relationship between levels of incarceration and the internal attribution of violent behavior may exist. This analysis was followed by a 3x3x2 unrelated analysis of variance investigating the consequent sentence length recommendations measured across the internal/external attributional scenario manipulations, the three levels of expertise and the three crime types (see Table 2).

Table 2 about here

A significant main effect of crime type was present ($F=21.80$, $df=2, 316$, $p<0.001$). As would be expected, higher sentence lengths were recommended for murder than for both assault and armed robbery (Table 2). No significant main effects of expertise or scenario manipulation were present, nor were any interaction effects. Thus, Quinsey and Cyr's (1986) assertion that a relationship may exist between sentencing recommendations and the internal attribution of violent behaviour was not supported by the present findings.

In order to guard against Type 1 error, a multivariate analysis of variance using the Pillais Trace criteria was conducted, with two fixed factor independent variables (level of expertise and attributional scenario manipulation) and five dependant variables, including seriousness of crime, dangerousness of the offender to others and to self, the probability that the offender would benefit from psychological help, and the offenders level of responsibility for the crime, with the following significant finding: Pillias Trace=0.042, F(10, 920)=1.96, p=0.035. Follow up multivariate comparisons found significant associations between level of expertise and seriousness of the offence (F=3.03, df=2, 463, p=0.049), dangerousness of the offender to others (F=3.20, df=2, 463, p=0.42),the probability that the offender would benefit from psychological help (F=6.40, df=2, 463, p=0.002) and the offenders level of responsibility for the crime (F=3.53, df=2, 463, p=0.03), and between the attributional manipulations and seriousness of the offence (F=7.64, df=1, 463, p=0.006),dangerousness of the offender to others (F=66.41, df=1, 463, p<0.001) and level of responsibility (F=30.93, df=1, 463, p<0.001). To aid interpretation of these findings, the mean values and standard deviations for these five variables are shown in Table 3.

Table 3 about here

Significant interactions between level of expertise and the attributional manipulations were found only in the ratings for offender dangerousness to others (F=4.13, df=2, 463, p=0.017) and offender responsibility (F=6.23, df=2, 463, p=0.002). These significant interactions were investigated further by means of a 3x3x2 unrelated ANOVA, with the independent variables:

expertise, scenario manipulation and crime type. In all cases the conditions of ANOVA were met (i.e., data were normally distributed and variances were homogenous). As such, Tukey's Honestly Significant Different tests were employed following the interactions reported below.

A significant main effect of crime type was found in the ratings for both offender dangerousness to others and level of responsibility, with individuals committing armed robbery rated as more responsible for their actions than was the case in the assault and murder scenarios ($F=12.79$, $df=2, 465$, $p<0.001$), and being deemed to be more dangerous to others than those committing assault or murder ($F=6.65$, $df=2, 470$, $p=0.001$).

A significant main effect of scenario manipulation was present in both dangerousness of the offender to others ($F=85.85$, $df=1, 470$, $p<0.001$) and offender level of responsibility ($F=33.72$, $df=1, 465$, $p<0.001$), with higher ratings given in the internal manipulations. These findings indicate that individuals depicted within the internal manipulations were considered to be more responsible for their offence and of more danger to others than those depicted in the external manipulations.

A significant main effect of expertise was present in the ratings of offender responsibility ($F=4.75$, $df=2, 465$, $p=0.009$) Those participants in the expert and semi-expert groups rated offender responsibility at approximately equal levels, with lay-people providing the highest assertions of offender responsibility, as illustrated in Table 3.

Significant interactions were found to exist both in the judgments of offender responsibility and the extent to which the offender was judged as dangerous to others. In the judgments relating to offender responsibility for the crime, a significant interaction between level of expertise and scenario manipulation was present ($F=5.86$, $df=2, 465$, $p=0.003$), indicating that the responses given by experts, semi-experts and lay-people were not equal across the internal/external scenario manipulations. In addition, a significant interaction between crime type and the internal/external scenario manipulations was present ($F=8.99$, $df=2, 465$, $p<0.001$) indicating that the judgments made in relation to the three crime types differed across the internal/external scenario manipulations. These interactions are illustrated in Figure 1.

Figure 1 about here

Offenders were seen to be more responsible in the internal manipulations than the external across all crime types and by all levels of expertise. However, this difference was most apparent in the murder scenarios. Post hoc Tukey's HSD comparisons indicate that the mean ratings of offender responsibility differed significantly between the internal ($M=4.26$, $SD=0.083$) and external ($M=3.32$, $SD=1.21$) attributional manipulations for the crime type murder only ($p<0.001$), with offenders being considered as more responsible for their crime in the internal manipulations. In addition, it was found that in the external manipulations, the ratings of responsibility in the murder scenarios were significantly lower than in the case of both assault ($M=3.92$, $SD=0.89$; $p=0.001$) and armed robbery ($M=4.32$, $SD=0.73$; $p<0.001$). Of particular interest is the interaction between the level of expertise and the scenario manipulations: while it can be seen

that both experts and lay-people rated the offender as more responsible in the internal scenario manipulations than in the external manipulations, with this difference being of approximately equal measure, the semi-experts presented only a very slight difference in judgments of offender responsibility across these manipulations. Tukey's HSD comparisons revealed that in the internal manipulations, significant differences existed between the semi-experts (M=4.03, SD=1) and lay-people (M=4.57, SD=0.72) only, with lay-people considering the offender to be significantly more responsible for their crime than semi-experts (p=0.002). Significant differences between the internal and external manipulations were present for both the expert participants (internal M=4.36, SD=0.69; external M=3.61, SD=1.08; p=0.002) and the lay-person participants (internal M=4.57, SD=0.72; external M=3.88, SD=1.1; p<0.001). Significant differences between the ratings of responsibility were not found between the internal and external manipulations for the semi-expert participants.

As with ratings of offender responsibility, significant interactions between level of expertise and scenario manipulation (F=3.49, df=2, 470, p=0.031), and between crime type and the internal/external scenario manipulations (F=11.09, df=2, 470, p<0.001) were present in the judgments of offender dangerousness to others, as shown in Figure 2.

Figure 2 about here

Offenders were judged to be more dangerous to others in the internal manipulations than in the external, across all crime types and by all levels of expertise. This difference was again most

apparent in the murder scenarios. Tukey's HSD comparisons revealed that in the case of the external manipulations, individuals depicted in the murder scenarios (M=2.17, SD=1.2) were considered to be less dangerous than those depicted in both the assault (M=3.11, SD=1.23; $p<0.001$) and the armed robbery scenarios (M=3.29, SD=1.26; $p<0.001$) scenarios. In addition, significant differences in the ratings of dangerousness to others were found between the internal and external manipulations for all three crime types ($p<0.05$), with the individuals depicted in the internal versions of the assault (M=3.7, SD=1.05), armed robbery (M=3.8, SD=0.85), and murder (M=3.7, SD=1.05) scenarios being considered as more dangerous than those in the external versions. As with the judgments of offender responsibility, it can once again be seen that both experts and lay-people rated the offender as more dangerous to others in the internal manipulations than in the external ones, to a similar degree. Tukey's HSD tests revealed significant differences between the internal and external manipulations for all three levels of expertise. As before, the differences between the semi-expert's judgments of dangerousness across the two scenario manipulations are much less than those of the other two groups, with Tukey's HDSD comparisons revealing that semi-expert ratings of dangerousness (M=3.12, SD=1.23) were significantly higher than those of experts (M=2.51, SD=1.26) in the external manipulations only ($p=0.032$).

In order to investigate the relationship between the internal and external attributional manipulations and the type of treatments recommended, while controlling for level of expertise, a multivariate crosstabulation using the chi-square statistic was carried out. The findings are shown in Table 4. A significant association between the treatment recommendation made and

the attributional manipulation was found only in the case of lay people ($\chi^2(4, N=198)=18.09$, $p=0.001$). No significant associations were found between the treatment recommendations and attributional manipulations for semi-experts ($\chi^2(4, N=186)=4.96$, $p=0.292$) or experts $\chi^2(4, N=80)=3.68$, $p=0.451$). Thus the strength of the association between treatment type recommendations and attributional manipulation is greatest in the lay-person group.

Table 4 about here

As shown in Table 4, a significant difference in the proportion of recommendations for psychotherapy and for CBT with medication between the internal and external attributional manipulations is present within the lay-person group. In the case of psychotherapy, recommendations are almost double in the external manipulation than in the internal manipulation. In the case of CBT with medication, 21.7% more lay-participants recommended this treatment in the internal manipulations than in the external. No other significant differences between recommendations made in the internal and external manipulations were observed.

A final multivariate crosstabulation using the chi-square statistic was carried out in order to investigate the relationship between the attributional manipulations and the participant's predictions of re-offending behaviour, when controlling for level of expertise. A significant association between predictions of re-offending behaviour and the attributional manipulations were found for experts ($\chi^2(1, N=95)=16.08$, $p<0.001$), semi-experts ($\chi^2(1, N=189)=9.41$, $p<0.001$) and lay-people ($\chi^2(1, N=196)=34.58$, $p<0.001$), indicating that a significant association

between predictions of re-offending behaviour and attributional manipulation exists, even after controlling for level of expertise.

Table 5 about here

As shown in Table 5, participants across all three levels of expertise were more likely to predict re-offending behaviour in those individuals depicted in the internal scenario manipulations than in those depicted in the external manipulations. When scrutinizing the chi-square statistic, it becomes apparent that the strength of this association is greatest in the lay-person group than for both the expert and semi-expert groups.

Discussion

The present study investigated the effects of internal and external manipulations of crime causality on clinical judgment across three levels of expertise. A clear and transparent criterion for inclusion in expert, semi-expert and lay-person categories was followed. In adhering to specific and strict group categorization, the present research addressed the sampling issues of the Quinsey and Cyr (1986) study, as discussed earlier. By introducing a semi-expert category, the present research has highlighted an interesting pattern of findings that indicate the distinctness in judgments made by semi-experts in comparison to experts and lay-people.

Of key concern in the current research was the effect of attributional manipulation on the judgments made by experts, semi-experts and lay-people. The present research found that offenders were considered to be more dangerous to others and more responsible for their crime in the internally manipulated scenarios than in the externally manipulated ones across all levels of expertise. However, smaller differences in judgments of dangerousness and level of responsibility between the internal/external manipulations were produced by the semi-expert group than was the case with the experts and lay-people; both experts and lay-people demonstrated similar patterns of judgment in assessing offender dangerousness and responsibility.

These findings support those of Quinsey and Cyr (1986) in that they demonstrate marked similarities in expert and lay-person judgment. Such similarities are not uncommon, with little or no differences being found between experts and lay-people/novices in numerous earlier studies (e.g., Levy & Ulman, 1967; Oskamp 1962; Meehl, 1959; Quinsey & Cyr, 1986; Waiters, White, & Green, 1988; Wiggins & Hoffman, 1968). Ganzach (1997) argued that these expert/lay-person similarities were largely found due to 'noisy parameters', such as measures of accuracy and focusing on linear models that did not represent 'true' differences between experts and novices. Indeed, Ganzach's (1997) findings were in support of this theory, as when investigating the linear weighting of expert/novice MMPI scoring and when assessing accuracy, little differences between the two groups were found. The researcher explained these similarities in terms of judgment strategies, suggesting that when the relationship between the criterion for a judgment and the cues on which it is based is weak, that the judgment strategies used would have

a weak impact on judgment accuracy. However, with both the present research and that of Witteman and van den Bercken (2007) finding few differences between expert and lay judgments, but finding such a distinct difference in those of intermediates or semi-experts, one must question this explanation, and consider that it is the level of expertise honed and the decision making style that is important when considering differences in judgments across expertise.

The most surprising result relates to the observation that the semi-expert group produced judgments distinctly less affected by the manipulated information. The question is: how can one account for this unexpected finding in terms of the existing expertise literature? According to the concept of learnability (Bolger & Wright, 1994), expert judgment is likely to be poor and should not necessarily be expected to be better than that of lay-people when there is inadequate and infrequent feedback in domain of expertise. Unless learnability is facilitated in other ways, such as through detailed investigations constantly being fed back to the expert population (Thomson *et al.*, 2004), then expert judgment is likely to be poor. In the present study, the semi-expert group, who were still in relevant education or had more recently been in education, were more likely to have had their judgment facilitated in this manner. Conversely, even though they have more direct experience, clinicians working under pressure may lack the time and/or the motivation to continually and carefully read detailed reports of other clinicians' cases, especially when such cases are not in their specific area of concern. This possibility suggests that the running of regular training sessions, designed to actively consider previous investigations and

the lessons that can be learned from these investigations, may be of more practical use to clinicians than, say, their attendance at academic conferences.

The findings therefore highlight the importance of adhering to strict group classification when investigating the role of expertise in judgments of violence risk assessment, having uncovered a distinct level of expertise in terms of judgments made (i.e., the semi-expert group) in comparison to traditional expert/lay-person comparisons. This finding may indeed hold important clues for improving expert judgment in violence risk assessment practice: by identifying what is distinct about the semi-expert group in comparison to experts and lay-people, it may be possible to decrease attribution error in expert judgment. For example, Chen, Froehle and Morran (1997) found that trainee counselors who participated in training sessions designed to instruct in attribution processes they blamed the cause of presenting problems less on internal factors than those within a control condition. These findings in conjunction with those of the present research indicate that ongoing training focusing on attributional awareness may be the key to de-biasing judgments in violence risk assessment.

Risk assessment, as previously discussed, is a notoriously difficult task (Doctor, 2004), with clinicians having to make judgments and decisions under pressures of time and workload and under conditions of relative uncertainty (Dixon & Oyebody, 2007). The use of heuristics and causal attributions in judgment and decision making is an evolved system, designed to reduce cognitive load while minimizing error. Thus, it must be noted that attribution is not necessarily a negative process in this context. Indeed, it may be the case that the expert and lay person groups

are performing in a more effective way than the semi-experts, in that their assessments of offender characteristics are taking into account the internal and external differences. That is, although the semi-expert group may appear less biased in their judgments, are these judgments actually poorer due to the possibility of missed cues relating to the internal versus external factors associated with the offender in the attributionally manipulated scenarios. As discussed previously, individuals who are seen to be more in control of their behaviour are considered to be more responsible for their actions than, say someone whose behaviour was attributed to an external cause (Schultz & Wright, 1985). Thus, an individual whose violent behaviour was deemed to be caused by an enduring internal trait will be considered as more morally responsible for their behaviour than had that individual acted violently in order to defend themselves. It is this type of internal/external distinction in behavioural causality that is of the utmost importance when considering the implications and findings of attributional research.

However, while the use of cognitive shortcuts usually produces adequate solutions to everyday problems, a number of errors can arise through their use, thus impeding judgment. The present research highlights this issue: in presenting intentionally manipulated information, with static factors (e.g., gender, age, race) maintained across both the internal and external manipulations of each scenario, the researchers were able to elicit distinct differences in judgments of offender dangerousness and the offender's level of responsibility for the crime.

In discussing the internal versus external perceptions of behavioural cause, there are clear implications for the field of violence risk assessment. In order for effective treatment planning

and risk management to occur, the causal factors driving the individual's problem(s) must be identified. If these factors are identified as internal, or controllable, a different reaction to the individual may be evoked than if the factors were seen as external. For example, Plous (1993) discussed the impact of attribution on the treatment recommendations made by psychotherapists, suggesting that where a clinician attributes the cause of behavior to be due to situational factors or to the individuals own disposition, treatment recommendations may differ. Plous (1993) suggested that when a clinician ascribes situational (external) causality, that greater effort is made to alter an individual's circumstances. However, where an individual's disposition (internal) is judged to be the cause of behaviour, greater effort is placed on altering aspects of the client. This may, of course, be suited to the particular treatment/risk management plan being developed. However, should internal/external causality be prematurely or incorrectly placed, this would have clear and perhaps serious implications for the individual. While such attributional error is of clear concern, Murray and Thomson (2009) argued that attribution may be useful in a clinical context: should the clinician identify not only their client's underlying causal attributions, but also the way in which they themselves attribute causality to their clients behavior, then the clinician will be better equipped to make an unbiased assessment and to identify more effective interventions for their client.

While the current findings may suggest that experts are no different than lay-people in terms of judgments made relating to violence risk assessment, as has been the previous assertion in the literature, they may instead indicate that while experts in violence risk assessment may be making what would appear to be biased judgments, they may in fact be making assessments

based on dynamic risk factors (i.e., those factors affecting risk of violence that are changeable over time). Recent research has indicated that these dynamic factors are just as important as the more classically considered static risk factors (Elbogen, Van Dorn, Swanson, Swartz & Monahan, 2006). Thus, the current findings may be indicative of the different processes occurring in the different levels of expertise. That is, the use of 'untrained' cognitive shortcuts at the lay person stage, the reduction in the reliance on heuristic decision making co-occurring with ongoing training at the semi-expert level, and the apparent return to the use of cognitive shortcuts in judgment at the expert level. This return to the use of cognitive shortcuts may indeed only be 'apparent', with the individual having honed such a level of intuitive expertise in the area to identify and weigh the risk of violence based on not only the more commonly identified static factors (as would perhaps be the main factors assessed at the semi-expert level), but also on the dynamic factors associated with risk of violence.

As with the findings of Witteman and van den Bercken (2007), a clear difference particularly in the 'intermediate' semi-expert level of expertise can be ascertained from the current findings, lending some support for the intermediate effect being present. However, considering Dreyfus and Dreyfus' (1986) framework of expertise, and taking into account the proposed alterations in judgment formations discussed above, it may be considered that the present findings present support for the Dreyfus and Dreyfus' (1986) framework: i.e., the lay-person group in the present research may represent the 'novice' group proposed in the framework; the semi-expert group in the current research may represent the 'competent' level of expertise in the framework, having stopped using intuitive decision making and instead using a structured, hierarchical method of

assessment; and the expert group of the current research, as could be expected, represent the expert group in the framework.

As discussed previously, Quinsey and Cyr (1986) proposed that a relationship would exist between levels of incarceration and the internal attribution of violent behaviour. As could be expected, higher sentence lengths were recommended in scenarios depicting murder than in the armed robbery and assault scenarios. No effects of attributional manipulation were present, nor were there differences across the three levels of expertise. These findings do not support the notion put forth by Quinsey and Cyr (1986), and therefore no distinguishable relationship was established between internal versus external attributions of violent behaviour and length of incarceration based on the current data. However, some support was provided in terms of recommendations for incarceration: significantly more participants recommended incarcerating those depicted in the internal scenarios than in the external ones.

The current findings highlight the complexity of the decision making processes involved in violence risk assessment and lend some support to Quinsey and Cyr's (1986) original findings relating to causal attributions in clinical judgment. However, through expanding and clarifying the levels of expertise investigated, the current findings have highlighted an important and distinct difference in the effects of causal attributions on varying levels of expertise, in line with Witteman and van den Bercken's (2007) findings. These findings emphasize the need for greater research into not only expert and lay-person judgments, but also into the distinct semi-expert group, in order to further our understanding of violence risk assessment across the varying stages

of clinical expertise. As it is unclear from the current and previous findings whether or not attribution effects on clinical judgment have a positive or negative influence, it is therefore recommended that more research specific to attribution effects in violence risk assessment be conducted prior to applying de-biasing techniques, such as those suggested by Chen *et al.* (1997), to violence risk assessment practice. However, a tentative recommendation of training sessions promoting awareness of attributional influences on both the clinicians' judgments and those of their clients would appear to be relevant based on the current findings and on the recommendations made in previous papers (e.g., Chen *et al.*, 1997; Murray & Thomson, 2009).

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Table 1.

Table 1: Proportion of participant responses relating to whether or not the offender should be incarcerated, measured across attributional manipulation.

Incarcerated	Internal	External
	N (%)	N (%)
Yes	198 (83.9)	156 (62.7)
No	38 (16.1)	93 (37.3)

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Table 2.

Table 2: Descriptive statistics for the main effect of crime type in relation to recommended sentence length.

Crime Type	*Mean (years)*	*SD*	*Minimum (years)*	*Maximum (years)*	*N*
Assault	4.70	6.27	0.08	60	106
Murder	10.28	8.27	0.30	60	115
Armed Robbery	3.77	5.92	0.02	60	113
Total	6.31	7.49	0.02	60	334

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Table 3.

Table 3: Descriptive statistics relating to the effect of expertise on: seriousness, responsibility, dangerousness, and the belief that the offender would benefit from psychological help.

Variable	Level of Expertise	Mean	SD	Minimum	Maximum	N
Seriousness of Crime	*Expert*	4.18	0.85	2	5	103
	Semi-Expert	4.08	0.81	2	5	189
	Lay-person	3.87	1.09	1	5	198
Offender Responsibility	*Expert*	4.00	0.97	1	5	96
	Semi-Expert	3.98	0.98	1	5	189
	Lay-person	4.22	1.00	1	5	198
Benefit from Psychological Help	*Expert*	3.39	1.09	1	5	102
	Semi-Expert	3.75	1.15	1	5	188
	Lay-person	3.89	1.28	1	5	198
Offender Dangerousness to Self	*Expert*	2.51	1.35	1	5	87
	Semi-Expert	2.51	1.08	1	5	189
	Lay-person	2.68	1.30	1	5	198
Offender Dangerousness	*Expert*	3.07	1.27	1	5	101
	Semi-Expert	3.40	1.16	1	5	189

to Others	*Lay-person*	3.31	1.34	1	5	198

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Table 4.

Table 4: Proportion of responses to the treatment options: no treatment, psychotherapy, CBT with medication, CBT without medication and other, as recommended by experts, semi-experts and lay-people.

	None		Psychotherapy		CBT with Medication		CBT without Medication		Other	
	N (%)		N (%)		N (%)		N (%)		N (%)	
	Internal	External	Internal	External	Internal	External	Internal	External	Internal	External

Expert	3 (7.5)	8 (20.0)	14 (35.0)	14 (35.0)	7 (17.5)	6 (15.0)	15 (37.5)	12 (30.0)	1 (2.5)	0 (0)
Semi-Expert	13 (14.9)	28 (15.2)	18 (20.7)	27 (27.3)	17 (19.5)	10 (10.1)	38 (43.7)	47 (47.5)	1 (1.1)	0 (0)
Lay-Person	11 (11.5)	21 (20.6)	23* (24.0)	43* (42.2)	34* (35.4)	14* (13.7)	26 (27.1)	21 (20.6)	2 (2.1)	3 (2.9)

*Adjusted residuals for psychotherapy (2.7) and CBT with medication (3.6) exceed the critical value of 1.96.

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Table 5.

Table 5: Proportion of participants who predicted re-offending behaviour, measured across level of expertise and attributional manipulation.

Re-Offend		Expert	Semi-Expert	Lay-Person
		N (%)	N (%)	N (%)
Yes	Internal	36 (75.0)*	60 (66.7)*	76 (80.0)*
	External	16 (34.0)*	44 (44.4)*	39 (38.6)*
No	Internal	12 (25.0)*	30 (33.3)*	19 (20.0)*
	External	31 (66.0)*	55 (55.6)*	62 (61.4)*

*All adjusted residuals were found to be greater than the critical value of 1.96.

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Figure Captions:

Figure 1: Mean ratings for offender responsibility (measured on a 5-point scale) as a function of internal/external manipulation across crime type and level of expertise.

Figure 2: Mean ratings for offender dangerousness to others (measured on a 5-point scale) as a function of internal/external manipulation across crime type and level of expertise.

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Figure 1.

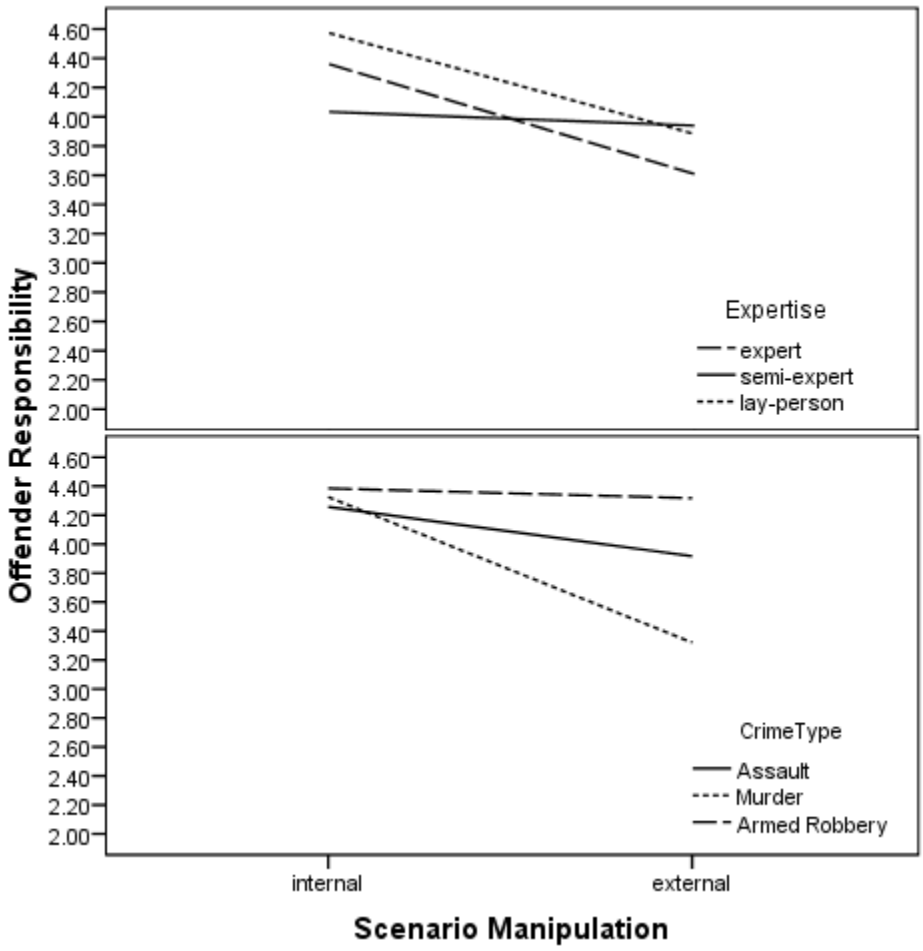

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Figure 2.