Can Serial Rapists be distinguished from One-Off Rapists?

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ABSTRACT

There are investigative advantages to being able to determine early in a police investigation whether a rape has been committed by a serial or one-off rapist. Previous research has found some differences in the crime-scene behaviours of serial and one-off rapists, however, this research suffers from the limitation of utilising a sample of rapes within which there was a mixture of victim-offender relationships. To address this limitation, this study sampled 38 serial (two or more convictions) and 50 one-off (one conviction) *stranger* rapists and compared their crime scene behaviour across four domains (control, sex, escape and style behaviours). Serial and one-off rapists differed in some control and sexual behaviours; in particular, in the type of victim targeted, the offence locations, methods of control and the sexual acts forced upon the victim. However, the results did not indicate a striking difference in the offending behaviour of the two groups. The implications of these findings for criminal investigations are discussed.

Keywords: serial, singleton, single, rape, crime scene behaviour

Can Serial Rapists be distinguished from One-Off Rapists?

In a recent Government report entitled *Forging the links: Rape investigation and prosecution,* Her Majesty's Inspectorate of Constabulary (HMIC) and Her Majesty's Inspectorate of the Crown Prosecution Service (HMICPS) (2012) reported on their investigation of current police procedures and results in England and Wales. One of the main recommendations of their investigations was to improve the collection of intelligence, specifically with regard to serial rapists. The report noted confusion within police forces regarding what constituted a serial rapist and adopted the definition commonly used in academic research (Beauregard, Rossmo, & Proulx, 2007; Grubin, Kelly, & Brunsdon, 2001; LeBeau, 1987; Park, Schlesinger, Pinizzotto, & Davis, 2008; Santtila, Junkkila, & Sandnabba, 2005) and also used in the current article: Serial rapists are those who commit more than two offences against different victims. A key recommendation of this publication was that police forces in England and Wales should treat every stranger rape that is reported to them as part of a potential series. This is a potentially costly recommendation to implement, in terms of both time and resources (Rainbow, in press).

In responding to such a recommendation in a cost-effective way, it would be beneficial for police forces to be able to differentiate at the early stages of an investigation whether they are indeed dealing with a serial rapist or a "one off" rapist. One way of achieving this has been suggested by previous authors (Grubin et al., 2001) and involves attempting to use crime scene behaviour (as reported by the victim) to predict whether a rapist is likely to be a serial rapist or a one-off rapist. In such a scenario, when a rape is reported to police, a crime analyst could analyse the behaviour of the offender (as reported by the victim) to identify any key features, established by

empirical research, that would suggest the offence was part of a series. Where such indicators are found, they could then be communicated to the investigative team. This may result, for example, in the analyst being tasked to try and identify other crimes that form part of the same series based on behavioural similarity (a practice termed crime linkage). Crime linkage is not the focus of this article; therefore, interested parties are referred to Bennell, Mugford, Ellingwood and Woodhams (in press) for a summary of the research to date.

Differentiating one-off from serial offenders

To be able to accurately differentiate the crimes of serial versus one-off offenders, and therefore avoid providing the police with erroneous recommendations, there must be differences in behaviour that are consistently observed between these two groups. In the scenario described above, a crime analyst presented with a given crime would not know whether it was the work of a one-off offender, or, if the work of a serial offender, at what stage in a series the crime was committed. In an ideal world, the behaviour of one-off offenders would differ from all the crimes committed by a serial offender. This would require consistency in the crime scene behaviour of serial offenders, as well as all serial offenders differing from one-off offenders in the same way. Research of crime linkage, which is concerned with the relative consistency and distinctiveness of the behaviour of serial offenders, indicates that this ideal scenario does not exist. In fact, it has been shown that while some serial offenders do show a high degree of consistency in behaviour, not all do (e.g., see Woodhams & Labuschagne, 2012). In addition, this research shows that different serial offenders behave in different ways (Sorochinski & Salfati, 2010). Therefore, the ideal scenario whereby only serial offenders (and not one-off offenders) show behaviour X and that

behaviour X is consistently observed within crime series, thereby enabling perfect prediction of whether a crime is the work of a serial or one-off offender, will not be realised. This does not, however, mean that the search for behaviours that might be more suggestive of a serial offender is doomed. It is possible that the variability in behaviour seen within series in the crime linkage literature reflects evolution of crime scene behaviour and there may be some behaviours that are more likely to be produced by serial offenders at the end of their series. Indeed there has been some evidence of this (Grubin et al., 2001). Such behaviours could still be utilised to suggest the presence (or not) of a serial offender but there will likely be a degree of error associated with such predictions.

Several studies have tried to identify means of differentiating between serial and one-off offenders. These studies have tended to focus on homicide offenders or rapists. For example, Kraemer, Lord and Heilbrun (2004) studied a sample of homicide offenders gathered from Federal Bureau of Investigation records. Their sample consisted of 195 single (one-off) offenders (who accounted for 133 victims), and compared them to the first offence of 147 serial offenders (who accounted for 133 victims). Using a chi squared analysis they looked at victim and offender characteristics, intent, relationship between victim and offender, approach, locations, body disposal, and different evidence types. Their three most significant findings were that serial offenders were more often strangers to their victims, more likely to strangle their victims, and more likely to leave the victim's body in a remote location. Using a Discriminant Function Analysis based on the crime scene variables they were able to correctly classify the offences as either a single or serial homicide for 72.2% to 76% of

the cases (depending on the number of variables included), and when focusing on female victims only the percentage increased to 78.6%.

Salfati and Bateman (2005) also investigated single and serial homicides. They compared a sample of 23 serial murderers from the USA to a sample of 247 single murderers from the UK from a previous study (Salfati, 2003). They examined 61 crime scene behaviours and 33 offender characteristics. They found that serial murderers were more likely to display behaviours that reflected a higher degree of planning and control, compared to the single murderers whose crimes were more impulsive and emotional. The serial offenders' behaviours appeared to be more frequently motivated by delaying detection, controlling the victim, theft of property and engaging in sexual acts with the victim. The most common behaviours displayed by the single offenders were related directly with the killing. Salfati and Bateman suggested single (one-off) murderers are focused on the actual murder whereas serial murderers are influenced more by other motives.

With regards to differentiating serial from one-off *rapists*, only three studies have investigated ways of doing this. In 1987, LeBeau investigated the offending patterns of serial rapists compared to "open" cases of rape (rapes where the identity of the suspect remained unknown) and one-off rapists. The sample was comprised of all 612 incidences of rape perpetrated by a lone offender in San Diego, California, from 1971-1975; separated into 194 open cases, 80 single, and 151 serial offences. Using chi square analyses, the relationship between the rapist and the victim, the approach, and the number of scenes involved in the offence were compared across groups. Similar to Kraemer et al.'s findings for serial murderers, LeBeau found that the serial rapists were significantly more likely to be strangers to their victims. The serial offenders were also

more likely to use a blitz style approach and not move their victims very far. LeBeau speculated that several behaviours commonly displayed by the serial rapists were related to avoiding or delaying their apprehension. The serial rapists, therefore, were similar in this respect to the cases that remained unsolved (the open cases) allowing the serial offender to commit multiple offences before being apprehended.

It was not until 2001 that Grubin and colleagues conducted the next study to investigate differences between serial and singleton (one-off) offences of serious sexual assaults. From a UK database of sexual assaults they sampled the crimes of 129 one-off offenders and 81 serial offenders who had committed 339 attacks. They arranged 30 crime scene behaviours present in their sample into four different domains and used cluster analysis to develop distinct types within each domain. The four domains were termed control (behaviours focused on gaining control of the victim), sex (behaviours that are part of the sexual component of the attack), escape (behaviours associated with leaving the crime scene or avoiding detection), and style (behaviours that are not necessary for the attack that reflect the offender's personality or style). Having grouped the crime scene behaviours in this way, Grubin et al. initially conducted a cluster analysis to determine whether "singleton" offences would cluster differently to serial offenders' "first", "second", etc. offences. From this analysis, a cluster was identified that contained 61% of the singleton cases and first offences in the series, however it also contained 42% of the subsequent crimes in the series meaning any differences between this cluster and others would be of limited practical value.

The most recent research into serial and one-off rapists was conducted by Park et al. (2008). The behaviours of 22 serial rapists from the USA were compared to 22 one-off rapists using chi-square analyses. For the serial rapists, two offences from each

series were randomly selected for comparison to the one-off rapists' offences. Twenty-eight different behavioural variables were studied which were divided into three themes: violence, interpersonal involvement, and criminal sophistication. The violence theme contained 11 variables that represented the nature of the offender's violence towards the victim (e.g., blitz-style attack, weapon use, vaginal penetration). The one-off rapists were more likely to display these types of behaviours; specifically threatening the victim and engaging in manual hitting and kicking, as well as vaginal and/or oral penetration. The interpersonal involvement theme comprised seven variables which described the type of interaction between the victim and offender (e.g., using a confidence approach, making sexual comments, extending time with the victim). One-off offenders were more likely to force the victim to participate in the sexual assault and more often made sexual comments (e.g., "Do you like it?") than the serial offenders. The criminal sophistication theme consisted of 10 variables that focused on assisting the offender in the commission of the offence (e.g., having forensic awareness, planning, gagging the victim). Here the serial offenders were more likely to display forensic awareness, deter the victim's resistance, gag the victim, use a surprise attack, ask the victim questions, and complete the act of rape.

Rationale

As can be seen above, the existing literature on whether there are differences in crime scene behaviour between serial and one-off offenders is very limited, meaning there is little guidance at present that the police could utilise in trying to determine early in an investigation if they are dealing with a serial or a one-off offender. With regards to the recommendations from the *Forging the links* report, there are only three existing studies of serial versus one-off rapists that could give any indication as to what crime

scene behaviour might suggest a rape was committed by a serial offender, rather than a one-off rapist. In addition, all three studies with rapists cited above suffer from the same methodological flaw, that they have analysed samples of rapists who have a mixture of relationship types with their victims, i.e., their samples contain offenders who were acquainted with their victims as well as those who were strangers to their victims. The relationship between offenders and victims will likely impact the behaviours displayed during the offence, such as the approach style utilised or the means used to control the victim. For example, associations between victim age and victim-offender relationship have been reported in studies of rape with older victims more likely assaulted by strangers (Muram, Hostetler, Jones, & Speck, 1995), as well as differences between stranger and acquaintance rapes in terms of approach location, violent acts, weapon use, sexual acts, use of intoxicants and post-rape offender behaviour (Bownes, O'Gorman, & Sayers, 1991; Koss, Dinero, Seibel, & Cox, 1988). Previous findings of differences in the offence behaviour displayed by serial versus one-off rapists could therefore be a product of differences in the proportions of victim-offender relationships in the two subsamples.

In addition, previous studies comparing the behaviour of one-off and serial offenders have failed to include cross-validation of their findings of differences between the two. Further, it has been common practice to compare the offences of one-off offenders to a randomly-selected crime from each series of the serial offenders. The difficulty with this approach is that, as alluded to above, the behaviour of serial offenders is not always consistent from crime-to-crime. The current study aimed to develop the literature in this area by overcoming this fundamental limitation and not only comparing the behaviour of one-off rapists to that displayed in a randomly selected

rapes committed by each serial rapists, but by also making comparisons to the behaviour displayed in the first (known) rape in each series and the last (known) rape in each series. This allowed for assessment of whether apparent differences in behaviour between the two groups of rapist would generalise across these three subsets of offences and therefore whether they were robust.

METHOD

Sample

A non-random national sample of rapes was obtained from the Serious Crime Analysis Section (SCAS), of the Serious Organised Crime Agency, UK. SCAS is an analytical unit with national responsibility to carry out analytical work on behalf of all police forces. SCAS collates and analyses information on serious crimes that fulfil its criteria, predominately stranger murders, and serious sexual assaults and/or rapes. SCAS hold a database called the Violent Crime Linkage Analysis System (ViCLAS) which contains information about the location of sexual crimes that meet their criteria and the behaviours displayed during each offence by the offender. They hold the most comprehensive dataset of stranger rapes in the UK.

A sample of rapes and attempted rapes committed by serial and one-off adult male, sexual offenders was requested from SCAS. The rapes all met the definition of rape as stated in the Sexual Offences Act of 2003. This defines rape as where "A person commits an offence if he intentionally penetrates the vagina, anus or mouth of another person with his penis" and that person does not consent (Sexual Offences Act, 2003, p. 1). A sample of 38 serial and 50 one-off rapists and their offence behaviours were provided for analysis. The cases only included those with a lone, female victim

and a lone, stranger, male offender. All crimes included in the sample were from cases that were closed with the offender having been convicted of the offence.

Serial Rapists

The sample of serial rapists represented 38 males with a mean age at the time of the offence of 31.4 years (range 18-57 years). Seventy-four per cent of the offenders (*n*=28) were of White European ethnicity, 8% (*n*=3) were Dark European, 13% (*n*=5) were African or Caribbean, and 5% (*n*=2) identified as Other.

The serial offenders committed a combined 147 known sexual offences, of which 120 were rapes or attempted rapes. Only the latter 120 offences were utilised within the analysis comparing serial versus one-off rapists to ensure consistency in the offence types under comparison. The offenders' series ranged from two to 10 offences, and the mean series length was four offences (the mode was three offences per offender).

One-Off Rapists

The one-off rapists had a mean age at the time of the offence of 30.9 years (range 18-55 years). All offenders were male. Seventy per cent of the offenders (*n*=35) were of White European ethnicity, 2% (*n*=1) were Dark European, 12% (*n*=6) were African or Caribbean, 10% (*n*=5) were Asian, 4% (*n*=2) were Arabic, and 2% (*n*=1) were identified as Other. Of the 50 offences they had committed, 10 were attempted rapes, while 40 were completed rapes.

Serial Rapists' Victims

All 38 of the victims, from the studied sample, were female, and their mean age at the time of the offence was 30.0 years (range 18-76 years). Seventy-six per cent

(*n*=29) of the victims were of White European ethnicity, 3% (*n*=1) were Dark European, 3% (*n*=1) were Arabic, and for 18% (*n*=7) their ethnicity was not recorded on the police database.

One-Off Rapists' Victims

All the victims were female, with a mean age at the time of the offence of 28.2 years (range 18-59 years). Eighty-four per cent (*n*=42) of the victims were of White European ethnicity, 2% (*n*=1) were African or Caribbean, 4% (*n*=2) identified as Other, and for 10% (*n*=5) their ethnicity was not recorded.

Procedure

Based on the victim's account of the crime, SCAS codes each offence that comes to their attention in a standard manner onto their ViCLAS database. The data regarding the offenders' behaviours during the offence were provided to the authors as a spreadsheet of numerical codes representing this standardised coding. In total, 217 different behaviours were included in this spreadsheet ranging from the type of location at which the offence was committed, to forms of violence used against the victim to forensic precautions and sexual acts. All the variables had been coded dichotomously, where 1 represented the presence of an action or behaviour during the offence, while 0 represented an absence or unknown data for a given behaviour.

Inter-rater reliability assessments of this coding were not possible as the data were already coded when it was provided to the authors. However, all data inputted onto the SCAS database is completed by a team of highly trained individuals, and is done in-house in a controlled environment. Prior to employment, applicants are tested for their attention to detail and ability to identify relevant information. Upon recruitment, staff undergo a rigorous and lengthy training programme, which requires them to evidence a

clear understanding of behavioural vagaries, as well as detailed knowledge of the system. From recruitment to working unsupported takes several months, in order to ensure accuracy and knowledge. Initial training is not undertaken on a live database, and staff will not begin working on the live database until they have evidenced their capability to complete inputs accurately. A 'Quality Control Guide' is utilised by everyone inputting data on the database, which ensures consistency in decision making in relation to difficult issues. Where an unusual aspect is encountered, for which no precedent has been set, a dedicated, experienced team meets to review the situation and make a decision. This decision is then recorded for future reference to ensure future consistency. In addition to having undertaken the above, each inputted case goes through a detailed quality assurance process prior to any analysis taking place. This involves a review of the inputted information in comparison to case details, by an analyst from within the team and anomalies or errors are fed back to the inputter and amended on the database.

No information that could be used to identify the offender, victim, or location was present within the spreadsheet given to the authors thereby protecting the identity of all parties. In accordance with previous research on the behaviour of serial rapists (Santtila et al., 2005), behaviours that did not occur in at least five per cent of the total offences were not included in the analysis. These behaviours were determined to be too uncommon to be of pragmatic use to the police. This resulted in a total of 80 offence behaviours for comparison across serial and one-off rapists.

As noted above, the number of offences committed by each serial rapist varied from two to 10. In order to prevent the more prolific of the serial offenders from unnecessarily biasing the results, only one crime from each offender was included in

any analysis. It is standard practice in research on serial criminals to control for potential bias in this way (Bennell & Canter, 2002; Park et al., 2008). Several different methods have been used to select such cases from a larger pool including using the last known offences committed (e.g., Woodhams & Toye, 2007), or randomly selecting one offence from each series (e.g., Park et al., 2008). While the random selection method has been used in studies comparing one-off versus serial rapists in the past (Park et al., 2008), three sampling methods were used to create three serial subsets for comparison with the one-off rapes; a) randomly sampling one offence per series, b) selecting the first offence from each series, and c) selecting the last offence from each series. In each analysis there were 38 serial rapes/attempted rapes and 50 one-off rapes/attempted rapes. Of the 38 serial offences randomly chosen, six were attempted rapes, while the other 32 were completed rapes, and for the 50 one-off offences, 10 were attempted rapes, while the other 40 were completed rapes. In the first serial offences vs. one-off offences sample, five of the serial offences were attempted rapes while the other 33 were completed rapes, and in the last serial offence vs. one-off offences sample, six of the serial offences were attempted rapes with the other 32 being completed rapes.

RESULTS

Comparisons were made between the frequencies of behaviours exhibited by serial vs. one-off offenders for the 80 offence behaviours. For ease of presentation, these behaviours have been grouped into four behavioural domains (control, sex, escape, and style behaviours) commonly used to describe sexual offending behaviour (e.g., Grubin et al., 2001; Woodhams, Grant, & Price, 2007).

For each behaviour, the relative frequency of occurrence in the offences of serial vs. one-off offenders was assessed using chi-square analyses. Significant associations

are highlighted in bold in Tables 1-4 and effect sizes (phi) are reported for all comparisons. A Phi coefficient between .2 and .3 is considered a small effect size, .3 and .5 is a medium effect size, and a value great than .5 is considered a large effect size (Field, 2009). Each table also displays the frequencies of behaviours for all three subsets of the serial rapes alongside the frequencies for the one-off rapes. In addition, for each subset the frequency of each behaviour in the serial and one-off rapes combined is reported.

When multiple chi-square analyses are run it is generally advisable to calculate a correction to adjust for possible statistical errors. While a Bonferroni correction can be used to reduce Type 1 errors (Pallant, 2007), it is argued to be too conservative, resulting in Type 2 errors (Hochberg & Benjamini, 1990). The Benjamini-Hochberg has been shown to have greater statistical power than the Bonferroni (Williams, Jones, & Tukey, 1999) and is less conservative, therefore the Benjamini-Hochberg correction (1995) was used to correct for Type 1 errors. The findings pre- and post-correction are reported below.

Control Domain

The Control domain contained any behaviour that is deemed "necessary to create and maintain an environment in which the crime can take place" (Grubin et al., 2001, p. 14). This includes actions such as where the offence occurred (e.g., Alleyway), how the offender approached the victim (e.g., Asked Victim for Help), and how the offender kept the victim incapacitated (e.g., Gagged Victim).

A number of significant associations were found as well as several small and a medium effect sizes (see Table 1). Three associations were significant across all three subsets: serial rapists were significantly more likely to use solicitation as a method to

procure a victim (31.58% - 34.21%) than one-off rapists (2.00%) across all three subsets. This finding remained after Benjamini-Hochberg correction and had an associated medium sized effect. In contrast, across all three subsets, the serial rapists were significantly less likely (5.26% - 7.89%) to obtain a victim by engaging them in conversation than the one-off rapists (24.00%) representing a small effect size. The third consistent, significant association was between the victim being bound and the rapists being a serial offender, again representing a small effect size. Serial rapists were significantly more likely to bind their victims (10.53% - 13.16%) than one-off rapists (0.00%). The latter two findings did not remain following a Benjamini-Hochberg correction.

In addition to these more consistent findings, there were other significant associations within one or two subsets. The serial rapists were significantly more likely than one-off rapists to commit the offence in a retail area (63.16 or 65.79% vs. 42.00%), a parking area (21.05 or 23.68% vs. 6.00%), a street (68.42% or 76.32% vs. 46.00%) or a wooded area (13.16% vs. 2.00%); however, the effect sizes for these associations were small. In terms of other control behaviours used within the offence itself, serial rapists were significantly more likely to gag their victims in the last offence subset than one-off rapists (15.79% vs. 2.00%) but, again, only representing a small effect size. None of these findings were significant following Benjamini-Hochberg correction.

Sex Domain

The Sexual behaviour domain contains the sexual acts that were part of the offence, including physical acts and verbalisations about sexual acts (Woodhams, Grant et al., 2007). For example, located within this domain are behaviours such as forms of penetration (e.g. Offender Used Penis to Penetrate Vagina), levels of undress (e.g.,

Victim was Naked), who undressed whom (e.g., Offender Disrobed Victim), and sexual comments made by the offender (e.g., Offender Discussed Sex Acts).

As can be seen from Table 2, the only behaviour consistent across all three offence subsets was the finding that serial rapists more often forced their victims to masturbate them than the one-off rapists (13.16 - 18.42% vs. 2.00%), however, this represented a small effect size. This finding did not remain after statistical correction.

There were, again, some significant associations that were present in either one or two subsets: serial offenders were more likely to fondle their victims (52.63% vs. 30.00%) and discuss the sex acts that they wanted the victim to perform (55.26% in both the random and first subset vs. 30.00%). Also, they were more likely to remove the victim's clothing without damage in the first offence subset (21.05% vs. 6.00%). The one-off rapists were more likely than the serial rapists to vaginally penetrate their victims with their penises in the last offence subset (70.00% vs. 39.47%), representing a medium effect size. Finally, they were also more likely than the serial rapists to disrobe the victim themselves in the last offence subset (72.00% vs. 44.74%) (a small effect size). However, none of these significant associations remained following statistical correction.

Escape Domain

The Escape domain contains behaviours where the main function was to aid in the offender's escape from the scene and avoiding detection (Woodhams, Grant et al., 2007). These include certain precautions (e.g., Wore Gloves) and verbal themes used by the offenders (e.g., Warned Victim Not to Report Offence). As can be seen from Table 3, there was only one significant association found; within the first offence subset, the serial rapists were more likely to wear gloves than the one-off offenders (15.79% vs.

2.00%) representing a small effect size. This was no longer significant following Benjamini-Hochberg correction.

Style Domain

The Style domain contains behaviours that had no role in aiding the commission of the offence, but were instead something that the offender chose to do (Grubin et al., 2001). All of the behaviours in this domain were verbal themes (e.g., Apologises to Victim). As can be seen from Table 4, there were no statistically significant associations in this domain, nor were there any notable effect sizes.

DISCUSSION

This study aimed to address several of the limitations of existing research contrasting the crime scene behaviour of serial and one-off rapists by focusing solely on rapists who were strangers to their victims. Previous studies (LeBeau, 1987; Park et al., 2008) had found differences in the offence behaviours of serial versus one-off rapists; however it was unclear if these were due to inherent differences between serial or one-off rapists or a result of the mixture of victim-offender relationships in the samples. In this study, by holding the type of victim-offender relationship constant, these two competing explanations could be disentangled. A further improvement on past study designs was the extension of the sampling frame from just randomly sampling one offence per series for comparison, to also comparing one-off offences with both the first and last (known) offence from each series. This enabled the robustness of significant associations to be assessed in terms of determining whether they were present across the three subsets.

As with earlier studies, the majority of the behaviours included in the analysis did not differ significantly in terms of frequency of occurrence between the serial and

the one-off rapists (Park et al., 2008). This poses a significant challenge to using crime scene behaviour for the purpose of differentiating serial from one-off offences. As explained above, police forces in England and Wales are expected to treat each stranger rape reported to them as a potential serial offence. Information about crime scene behaviour is available to the police early in an investigation and so would be an effective means of supporting such investigative strategies if one-off and serial rapes could be discriminated accurately. The findings reported here indicate that there are few crime scene behaviours that could be used for this purpose.

Indeed, after conducting a Benjamini-Hochberg (1995) correction, the only statistically significant association remaining was the more frequent use of solicitation as a form of con-approach by serial rapists. As well as remaining significant following statistical correction, this finding was also replicated across all three subsets of serial offences. By implication, the victims of serial rapists were therefore significantly more likely to be sex workers. There is evidence from other research that serial sex offenders target sex workers, and that the offences against them are more violent (Silbert & Pines, 1982, 1984). Similarly, research on serial homicide has reported a tendency for serial murderers to target prostitutes (Fox & Levin, 1998). The serial rapists' apparent preference for targeting sex workers has another advantage for their continued offending: research shows that sex workers are reluctant to report rape and sexual assaults to the Police (Silbert, 1981, as cited in Barnard, 1993; Sullivan, 2007), therefore the offender can continue his offending without attracting police attention and hence is able to become a serial rapist.

Closely tied to the use of the con of soliciting were the locations that were chosen by the serial offenders for the offence, namely parking areas or on the street.

One of the most striking advantages for the offender of targeting a sex worker as a victim is that he/she is likely to go alone with the offender to a more remote location. There are also certain locations that sex workers choose, specifically to facilitate their businesses, which are then sought by the offender (Douglas, Ressler, Burgess, & Hartman, 1986). Most of the scene locations were places where there would not have been many people around at the time of the offence. Several studies have shown that sexual offenders weigh up the costs and benefits of where and when they commit their offences, and that there is a rationale behind their actions (Beauregard & Leclerc, 2007; Beauregard, Rossmo, & Proulx, 2007).

The one-off offenders, in contrast to the serial offenders, were more likely to try and con their victim by engaging her in a conversation. There was also a trend for one-off rapists to more often offer the victim a ride. This was a very different style of approach to the serial rapists, and would tend to be associated with a different type of location than those frequented by sex workers and their clients. As such, the one-off offenders were subsequently more likely to commit their offence indoors. Given that the one-off offender would have had to talk face-to-face with the victim to either engage in a conversation or offer a ride, the victim has more time during which to observe the offender's appearance and also possibly note other identifying information, such as their type of vehicle or registration plate. It is possible that such an approach, while successful in facilitating a completed or attempted rape, also aids in the apprehension of the offender, which might curtail the offending of an individual before a series can emerge.

Another behaviour within the control domain that might aid in the continued offending of serial rapists was their more frequent use of binding the victim. Binding

the victim inhibits his/her ability to seek help from potential witnesses through physical means and could potentially buy the offender more time in which to escape safely from the scene before the victim could raise the alarm. Previous studies have suggested that serial offenders are more "criminally sophisticated" and that this is what aids them in avoiding detection (Park et al., 2008). Besides binding the victim, no other statistical differences in the control behaviours of serial or one-off offenders were found, although similar trends to Park et al.'s study were noted. For example, the elevated frequency of gagging the victims by serial offenders could also not only facilitate the commission of the offence itself by preventing disturbance by a third party, but also prolong the period of time in which the offender can make a safe departure.

The other main area of difference between serial and one-off rapists that was seen in this study was regarding the actions involved in the sexual component of the crime. The serial rapists engaged in more sexual acts than the one-off rapists; specifically fondling the victim, forcing the victim to masturbate the offender, and discussing sex acts with the victim during the crime. These are very different findings than those reported by Park et al. (2008) where similar behaviours to these were more often associated with the one-off rapists. Park et al. suggested that these verbal themes, especially communications with the victim about the offender's fantasy and sex acts, helped investigators apprehend the offender. However, this study found that the serial offenders were more likely to talk about sex acts during the offence.

In their study of stranger rapists, Canter, Bennell, Alison and Reddy (2003) found four styles of behaviour within stranger rapes; control, theft, involvement and hostility, which have been previously reported in other studies of sexual offences (see Canter et al., 2003 for a review). These styles are proposed to affect the way a rapist

will relate to his victim, for example, rapists adopting an involvement style treat their victim as a reactive individual (as a person), whereas more controlling rapists are proposed to treat their victim as an object. Canter et al. suggest that the style adopted will result in different themes of verbal communication between rapist and victim. This seems to be reflected in the sample for this study, with the serial rapists appearing to adopt a more involved style of verbal communication, although it should be noted that some of their other behaviours, such as forcing the victim to masturbate them and binding the victim, would represent a more hostile or controlling style, respectively.

Limitations

There were some limitations to the study that would necessitate caution before applying these findings to all stranger rapists. It cannot be guaranteed that the one-off rapists included in this study have only committed the one offence, since it is not possible to be certain that the offences included in a study are the only ones the offender has committed. As such, some one-off rapists in this study may instead by serial rapists. In addition, in the absence of definitive DNA evidence, we cannot be completely certain of the "serial" status given to some offenders, due to the possibility of miscarriages of justice. These are limitations common to studies of this nature (Mokros & Alison, 2002; Santtila et al., 2005) which must rely on conviction to categorise the offenders in this way. Such errors in classification could mask potential differences in behaviour between one-off and serial rapists.

Similar to other studies in the area, we were unable to run a statistical cross-validation of the findings. Due to the size of the sample and the number of variables being considered, it was impossible to run a leave-one out logistic regression without violating the case: variable assumption (Peduzzi, Concato, Kemper, Holford, &

Feinstein, 1996). However, this study improved on previous study designs by comparing the findings across three different sub-samples (i.e., constituting one-off offences vs. first serial offence, one-off offences vs. last serial offence, and one-off offences vs. a randomly selected offence from each series) to determine if each finding was consistent.

The data that were utilised in this study were based only on offences for which there was a conviction; therefore, the sample cannot be considered representative of all stranger rapes. This is because it is well established that rapes which are prosecuted and result in a conviction more closely reflect rape myths in our societies (Frazier & Haney, 1996; Harris & Grace, 1999) and may contain different offence behaviours to those committed by offenders that have not been apprehended (Bennell & Canter 2002; Woodhams, Hollin et al., 2007). We cannot, therefore, be sure that our findings will transfer to crimes that remain unsolved, the type of crime to which investigators would apply the findings in practice. However, as noted above, the methodology required to compare apparent one-off with serial rapists necessitates it being "known" which offenders have committed just one offence or several; therefore it would be very difficult to overcome this limitation.

Conclusion

It has long been a policing priority to target prolific offenders; however, in the current fiscal climate it is even more advantageous to be able to target limited police resources in this way. In 2012, in England and Wales, police forces were advised to initially consider every stranger rape part of a potential series (HMIC & HMICPS, 2012). This is potentially a costly and time-consuming exercise which could be aided if it were possible to distinguish serial from one-off stranger rapists on the basis of crime

scene behaviour, reports of which are often available in the initial stages of a police investigation. This study aimed to contribute to a very small set of existing studies which have tried to empirically establish means of differentiating serial from one-off rapists using crime scene behaviour by addressing limitations in past study design. The findings of this present study suggest that there may be a limited number of differences in the offence behaviour displayed by a one-off stranger rapist and a serial stranger rapist, particularly in terms of the type of victim targeted, the locations chosen for the offence, methods of control and the sexual acts that they force upon the victim. The only key distinction between the two types of offenders was the choice of sex workers as potential targets by serial offenders, which supports previous studies. However, what was most striking was the similarity in crime scene behaviour between these two types of rapist, meaning that it would be difficult in practice to accurately differentiate serial from one-off rapes, at least on the basis of the crime scene behaviors investigated here.

REFERENCES

Barnard, M. (1993). Violence and vulnerability: Conditions of work for streetworking prostitutes. *Sociology of Health and Illness, 15,* 683-705. doi:10.1111/1467-9566.ep11434434

Beauregard, E., & Leclerc, B. (2007). An application of the rational choice approach to the offending process of sex offenders: A closer look at the decision-making. *Sexual Abuse: A Journal of Research and Treatment, 19*, 115-133. doi:10.1177/0093854807300851

Beauregard, E., Rossmo, K., & Proulx, J. (2007). A descriptive model of the hunting process of serial sex offenders: A rational choice perspective. *Journal of Family Violence*, *22*, 449-463. doi:10.1177/0093854807300851

Benjamini, Y., & Hochberg, Y. (1995). Controlling the false discovery rate: A practical and powerful approach to multiple testing. *Journal of the Royal Statistical Society. Series B (Methodological)*, 289-300. Retrieved from www.math.tau.ac.il/~ybenja/MyPapers/benjamini_hochberg1995.pdf

Bennell, C., & Canter, D. (2002). Linking commercial burglaries by *modus operandi:* Tests using regression and ROC analysis. *Science and Justice, 42*, 1-12. doi:10.1016/S1355-0306(02)71820-0.

Bennell, C., Mugford, R., Ellingwood, H., & Woodhams, J. (in press). Linking crimes using behavioural clues: Current levels of linking accuracy and strategies for moving forward. *Journal of Investigative Psychology and Offender Profiling.* Doi: 10.1002/jip.1395

Bownes, I. T., O'Gorman, E. C., & Sayers, A. (1991). Rape – a comparison of stranger and acquaintance assaults. *Medicine, Science and the Law, 31,* 102-109. doi:10.1111/j.1600-0447.1991.tb05507.x

Canter, D., Bennell, C., Alison, L. J., and Reddy, S. (2003). Differentiating sex offences: A behaviorally based thematic classification of stranger rapes. *Behavioral Sciences and the Law*, *21*, 157-174. doi: 10.1002/bsl.526

Douglas, J. E., Ressler, R. K., Burgess, A. W., & Hartman, C. R (1986). Criminal profiling from crime scene analysis. *Behavioral Sciences and the Law, 4*, 401-421. Doi:10.1002/bsl.2370040405

Field, A. (2009). *Discovering statistics using SPSS* (3rd ed.). London, England: SAGE.

Fox, J. A., & Levin, J. (1998). Multiple homicide: Patterns of serial and mass murder. *Crime and Justice, 23*, 407-455. Retrieved from http://www.jstor.org/stable/1147545

Frazier, P. A., & Haney, B. (1996). Sexual assault cases in the legal system: Police, prosecutor, and victim perspectives. *Law and Human Behavior, 20,* 607-628. doi: 10.1007/BF01499234

Grubin, D., Kelly, P., & Brunsdon, C. (2001). Linking serious sexual assaults through behaviour: HORS 215. *Home Office Research Development and Statistics Directorate*. Retrieved from http://library.npia.police.uk/docs/hors/hors215.pdf

Harris, J., & Grace, S. (1999). A question of evidence? Investigating and prosecuting rape in the 1990s. *Home Office Research Study 196.* Retrieved from http://rds.homeoffice.gov.uk/rds/pdfs/hors196.pdf

Her Majesty's Inspectorate of Constabulary (HMIC) and Her Majesty's Inspectorate of the Crown Prosecution Service (HMICPS) (2012). *Forging the links: Rape*

investigation and prosecution. Retrieved from http://www.hmic.gov.uk/media/forging-the-links-rape-investigation-and-prosecution-20120228.pdf

Hochberg, Y., & Benjamini, Y. (1990). More powerful procedures for multiple significance testing. *Statistics in medicine*, *9*(7), 811-818. doi: 10.1002/sim.4780090710

Koss, M. P., Dinero, T. E., Siebel, C. A., & Cox, S. L. (1988). Stranger and acquaintance rape: Are there differences in the victim's experience? *Psychology of Women Quarterly, 12*, 1-24. doi:10.1111/j.1471-6402.1988.tb00924.x

Kraemer, G. W., Lord, W. D., & Heilbrun, K. (2004). Comparing single and serial homicide offenses. *Behavioral Sciences and the Law, 22,* 325-343. doi: 10.1002/bsl.581

LeBeau, J. L. (1987). The journey to rape: Geographic distance and the rapist's method of approaching the victim. *Journal of Police Science and Administration, 15*, 129-136. Retrieved from http://heinonline.org/HOL/Page?collection=journals&handle=hein.journals/jclc78&type=Image&id=321

Mokros, A., & Alison, L. J. (2002). Is offender profiling possible? Testing the predicted homology of crime scene actions and background characteristics in a sample of rapists. *Legal and Criminological Psychology*, *7,* 25-43. doi:10.1348/135532502168360

Muram, D., Hostetler, B. R., Jones, C. E., & Speck, P. M. (1995). Adolescent victims of sexual assault. *Journal of Adolescent Health*, *17*, 372–375.

Pallant, J. (2007). *SPSS survival manual* (3rd ed.). Maidenhead: Open University Press.

Park, J., Schlesinger, L. B., Pinizzotto, A. J., & Davis, E. F. (2008). Serial and single-victim rapists: Differences in crime-scene violence, interpersonal involvement, and criminal sophistication. *Behavioral Sciences and the Law, 26*, 227-237. doi:10.1002/bsl.804

Peduzzi, P., Concato, J., Kemper, E., Holford, T. R., & Feinstein, A. R. (1996). A simulation study of the number of events per variable in logistic regression analysis. *Journal of clinical epidemiology*, *49*(12), 1373-1379. doi: 10.1016/S0895-4356(96)00236-3

Rainbow, L. (in press). A practitioner's perspective: Theory, practice and research. In J. Woodhams & C. Bennell (Eds.), *Crime linkage: Theory, practice and research.* Boca Raton, FL: CRC Press.

Salfati, C. G. (2003). Offender interaction with victims in homicide: A multidimensional analysis of frequencies in crime scene behaviors. *Journal of Interpersonal Violence, 18*, 490-512. doi:10.1177/0886260503251069

Salfati, C. G., & Bateman, A. L. (2005). Serial homicide: An investigation of behavioural consistency. *Journal of Investigative Psychology and Offender Profiling, 2*, 121-144. doi:10.1002/jip.27

Santtila, P., Junkkila, J., & Sandabba, N. K. (2005). Behavioural linking of stranger rapes. *Journal of Investigative Psychology and Offender Profiling, 2,* 87-103. doi:10.1002/jip.26

Sexual Offences Act (2003). Retrieved from http://www.legislation.gov.uk/ukpga/2003/42/pdfs/ukpga_20030042_en.pdf

Silbert, M. H., & Pines, A. M. (1982). Entrance into prostitution. *Youth and Society, 13*, 471-500. doi:10.1177/0044118X82013004005

Silbert, M. H., & Pines, A. M. (1984). Pornography and sexual abuse of women. *Sex Roles, 10*, 857-868. doi:10.1007/BF00288509

Sorochinski, M., & Salfati, C. G. (2010). The consistency of inconsistency in serial homicide: patterns of behavioural change across series. *Journal of Investigative Psychology and Offender Profiling, 7*, 109-136.

Sullivan, B. (2007). Rape, prostitution and consent. *Australian and New Zealand Journal of Criminology, 40*, 127-142. doi: 10.1375/acri.40.2.127

Williams, V. S., Jones, L. V., & Tukey, J. W. (1999). Controlling error in multiple comparisons, with examples from state-to-state differences in educational achievement. *Journal of Educational and Behavioral Statistics*, *24*(1), 42-69. doi: 10.3102/10769986024001042

Woodhams, J., Grant, T. D., & Price, A. R. G. (2007). From marine ecology to crime analysis: Improving the detection of serial sexual offences using a taxonomic similarity measure. *Journal of Investigative Psychology and Offender Profiling, 4,* 17-27. doi: 10.1002/jip.55

Woodhams, J., Hollin, C. R., & Bull, R. (2007). The psychology of linking crimes: A review of the evidence. *Legal and Criminological Psychology, 12,* 233-249. doi: 10.1348/135532506X118631

Woodhams, J., & Labuschagne, G. (2012). A test of case linkage principles with solved and unsolved serial rapes. *Journal of Police and Criminal Psychology, 27*, 85-98.

Woodhams, J., & Toye, K. (2007). An empirical test of the assumptions of case linkage and offender profiling with serial commercial robberies. *Psychology, Public Policy, and Law, 13,* 59-85. doi:10.1037/1076-8971.13.1.59

Table 1

Incidence of Behaviours in the Control Domain

Behaviour	Non-Serial % of Offences (*N*=50)	Random			First			Last		
		Serial % of Offences (*N*=38)	Phi	All Rapists % of Offences (*N*=88)	Serial % of Offences (*N*=38)	Phi	All Rapists % of Offences (*N*=88)	Serial % of Offences (*N*=38)	Phi	All Rapists % of Offences (*N*=88)
Indoors	**42.00**	**21.05**	**-0.22***	32.95	**21.05**	**-0.22***	32.95	23.68	-0.19	34.09
Outdoors	76.00	86.84	0.14	80.68	89.47	0.17	81.82	86.84	0.14	80.68
Industrial Area	4.00	7.89	0.083	5.68	10.53	0.13	6.82	7.89	0.083	5.68
Retail Area	**42.00**	**63.16**	**0.21***	51.14	**65.79**	**0.24***	52.27	57.89	0.16	48.86
Residential Area	**84.00**	71.05	-0.16	78.41	**65.79**	**-0.21***	76.14	81.58	-0.032	82.95
Rural Area	8.00	13.16	0.084	10.23	7.89	-0.002	7.95	10.53	0.044	9.09
Living Quarters	40.00	23.68	-0.17	32.95	26.32	-0.14	34.09	23.68	-0.17	32.95
In a Vehicle	14.00	15.79	0.025	14.77	15.79	0.025	14.77	18.42	0.060	15.91
Entertainment Area	**20.00**	7.89	-0.17	14.77	7.89	-0.17	14.77	**2.63**	**-0.26***	12.50
Public Area	10.00	15.79	0.087	12.50	13.16	0.049	11.36	13.16	0.049	11.36
Parking Area	**6.00**	**23.68**	**0.26***	13.64	15.79	0.16	10.23	**21.05**	**0.23***	12.50
Alleyway	8.00	5.26	-0.054	6.82	10.53	0.044	9.09	7.89	-0.002	7.95
Wooded Area	**2.00**	**13.16**	**0.22***	6.82	7.89	0.14	4.55	7.89	0.14	4.55
Access Path	14.00	18.42	0.060	15.91	15.79	0.025	14.77	15.79	0.025	14.77
Street	46.00	**68.42**	**0.22***	55.68	**76.32**	**0.31***	59.09	57.89	0.12	51.14
Main Road	24.00	18.42	-0.067	21.59	21.05	-0.035	22.73	18.42	-0.067	21.59
Park	10.00	15.79	0.087	12.50	10.53	0.009	10.23	10.53	0.009	10.23
Asked Victim for Help	8.00	2.63	-0.11	5.68	5.26	-0.054	6.82	5.26	-0.054	6.82
Solicited Victim	**2.00**	**31.58**	**0.41****	14.77	**31.58**	**0.41****	14.77	**34.21**	**0.44****	15.91
Offered Ride to Victim	**10.00**	**.00**	**-0.21***	5.68	**.00**	**-0.21***	5.68	2.63	-0.14	6.82
Engaged Victim in Conversation	**24.00**	**7.89**	**-0.21***	17.05	**5.26**	**-0.25***	15.91	**7.89**	**-0.21***	17.05
Threatened Victim upon Approach	8.00	2.63	-0.11	5.68	2.63	-0.11	5.68	2.63	-0.11	5.68
Snuck Up on Victim	28.00	44.74	0.17	35.23	42.11	0.15	34.09	36.84	0.094	31.82
Victim was Sleeping when Approached	12.00	7.89	-0.067	10.23	7.89	-0.067	10.23	7.89	-0.067	10.23
Gagged Victim	**2.00**	10.53	0.18	5.68	10.53	0.18	5.68	**15.79**	**0.25***	7.95
Covered Victim's Mouth	24.00	34.21	0.11	28.41	28.95	0.056	26.14	34.21	0.11	28.41

Bound the Victim	**.00**	**10.53**	**0.25***	4.55	**10.53**	**0.25***	4.55	**13.16**	**.28***	5.68
Verbally Threatened Victim	54.00	55.26	0.013	54.55	52.63	-0.014	53.41	52.63	-0.014	53.41
Attempted to Reassure Victim	24.00	31.58	0.084	27.27	26.32	0.026	25.00	39.47	0.17	30.68
Upon Resistance used Some Violence	16.00	28.95	0.16	21.59	21.05	0.065	18.18	31.58	0.18	22.73
Without Resistance used Some Violence	28.00	28.95	0.010	28.41	23.68	-0.049	26.14	31.58	0.039	29.55
Threatened to Use Weapon, but Never Seen	10.00	13.16	0.049	11.36	10.53	0.009	10.23	10.53	0.009	10.23
Displayed Weapon but did not Use	20.00	10.53	-0.13	15.91	13.16	-0.090	17.05	21.05	0.013	20.45
Weapon was Used	6.00	7.89	0.037	6.82	7.89	0.037	6.82	10.53	0.083	7.95
Weapon was Brought By Rapist	20.00	21.05	0.013	20.45	26.32	0.075	22.73	28.95	0.10	23.86
Weapon was a Stabbing Instrument	30.00	28.95	-0.011	29.55	23.68	-0.070	27.27	36.84	0.072	32.95

Note. * $p < .05$. ** $p < .001$

Table 2

Incidence of Behaviours in the Sex Domain

Behaviour	Non-Serial % of Offences (*N*=50)	Random			First			Last		
		Serial % of Offences (*N*=38)	Phi	All Rapists % of Offences (*N*=88)	Serial % of Offences (*N*=38)	Phi	All Rapists % of Offences (*N*=88)	Serial % of Offences (*N*=38)	Phi	All Rapists % of Offences (*N*=88)
Rapist Kissed Victim's Face	**46.00**	28.95	-0.17	38.64	**18.42**	**-0.29***	34.09	**18.42**	**-0.29***	34.09
Rapist Kissed Victim's Chest	14.00	7.89	-0.095	11.36	10.53	-0.052	12.50	7.89	-0.095	11.36
Rapist Kissed Victim on Other Area	8.00	5.26	-0.054	6.82	.00	-0.19	4.55	2.63	-0.11	5.68
Rapist Fondled Victim	**30.00**	**52.63**	**0.23***	39.77	44.74	0.15	36.4	42.11	0.13	35.23
Rapist Masturbated	10.00	13.16	0.049	11.36	10.53	0.009	10.23	15.79	0.087	12.50
Rapist Performed Oral Sex on Victim	8.00	10.53	0.044	9.09	2.63	-0.11	5.68	7.89	-0.002	7.95
Rapist Used Hand to Penetrate Vagina	18.00	28.95	0.13	22.73	28.95	0.13	22.73	26.32	0.10	21.59
Rapist Used Penis to Penetrate Vagina	**70.00**	60.53	-0.099	65.91	63.16	-0.072	67.05	**39.47**	**-0.31***	56.82
Rapist Penetrate Vagina from Behind	20.00	23.68	0.044	21.59	23.68	0.044	21.59	13.16	-0.09	17.0
Rapist Used Hand to Penetrate Anus	2.00	7.89	0.14	4.55	5.26	0.089	3.41	2.63	0.021	2.27
Rapist Used Penis to Penetrate Anus	18.00	28.95	0.13	22.73	23.68	0.070	20.45	15.79	-0.029	17.05
Victim Kissed Rapist's Face	8.00	5.26	-0.054	6.82	2.63	-0.11	5.68	.00	-0.19	4.55
Victim Masturbated Rapist	**2.00**	**18.42**	**0.28***	9.09	**13.16**	**0.22***	6.82	**13.16**	**0.22***	6.82
Victim Performed Fellatio	28.00	34.21	0.067	30.68	44.73	0.17	35.23	28.95	0.01	28.41
Rapist was Naked	10.00	7.89	-0.036	9.09	5.26	-0.087	7.95	5.26	-0.087	7.95
Victim was Naked	16.00	23.68	0.096	19.32	18.42	0.032	17.05	13.16	-0.040	14.77
Victim was Partially Disrobed	40.00	36.84	-0.032	38.64	34.21	-0.059	37.50	34.21	-0.059	37.50
Victim's Clothing was Moved to Expose	32.00	21.05	-0.12	27.27	36.84	0.051	34.09	15.79	-0.19	25.00
Rapist Disrobed Victim	**72.00**	63.16	-0.094	68.18	71.05	-0.010	71.59	**44.74**	**-0.28***	60.23
Victim Disrobed Herself	20.00	31.58	0.13	25.00	28.95	0.10	23.86	21.05	0.013	20.45
Rapist Disrobed Himself	76.00	76.32	0.004	76.14	73.68	-0.026	75.00	60.53	-0.17	69.32
Clothing was Removed without Damage	**6.00**	18.42	0.19	11.36	**21.05**	**0.23***	12.50	10.53	0.083	7.95
Clothing Removed was Torn Off	16.00	15.79	-0.003	15.91	15.79	-0.003	15.91	18.42	0.032	17.05
Rapist Discussed Sex Acts	**30.00**	**55.26**	**0.25***	40.91	**55.26**	**0.25***	40.91	42.11	0.13	35.23

Note. * $p < .05$. ** $p < .01$

Table 3

Incidence of Behaviours in the Escape Domain

Behaviour	Non-Serial % of Offences (*N*=50)	Random			First			Last		
		Serial % of Offences (*N*=38)	Phi	All Rapists % of Offences (*N*=88)	Serial % of Offences (*N*=38)	Phi	All Rapists % of Offences (*N*=88)	Serial % of Offences (*N*=38)	Phi	All Rapists % of Offences (*N*=88)
Wore Gloves	**2.00**	10.53	0.18	5.68	**15.79**	**0.25***	7.95	10.53	0.18	5.68
Covered Victim's Eyes	6.00	10.53	0.083	7.95	10.53	0.083	7.95	13.16	0.12	9.09
Told Victim 'Not to Look'	12.00	26.32	0.18	18.18	18.42	0.090	14.77	23.68	0.15	17.05
Used a Condom	6.00	5.26	-0.015	5.68	7.89	0.037	6.82	2.63	-0.080	4.55
Used a False Name	10.00	7.89	-0.036	9.09	7.89	-0.036	9.09	5.26	-0.087	7.95
Warned Victim Not to Report Offence	18.00	26.32	0.10	21.59	21.05	0.038	19.32	21.05	0.038	19.32
Instructions to Ensure His Safe Escape	18.00	15.79	-0.029	17.05	23.68	0.070	20.45	10.53	-0.10	14.77
Makes Reference to Justice System	6.00	18.42	0.19	11.36	18.42	0.19	11.36	7.89	0.037	6.82

Note. * $p < .05$

Table 4

Incidence of Behaviours in the Style Domain

Behaviour	Non-Serial % of Offences (*N*=50)	Random			First			Last		
		Serial % of Offences (*N*=38)	Phi	All Offenders % of Offences (*N*=88)	Serial % of Offences (*N*=38)	Phi	All Rapists % of Offences (*N*=88)	Serial % of Offences (*N*=38)	Phi	All Rapists % of Offences (*N*=88)
Discusses Victim's Sex Practices	6.00	7.89	0.037	6.82	.00	-0.16	3.41	10.53	0.083	7.95
Orders Victim to Participate	8.00	10.53	0.044	9.09	7.89	-0.002	7.95	7.89	-0.002	7.95
Uses Abusive Language	14.00	23.68	0.12	18.18	21.05	0.093	17.05	15.79	0.025	14.77
Expresses Curiosity About Victim	18.00	21.05	0.038	19.32	15.79	-0.029	17.05	23.68	0.070	20.45
Rapists Discloses Information about Self	38.00	44.74	0.068	40.91	39.47	0.015	38.64	31.58	-0.067	35.23
Tries to Ingratiating Himself with Victim	12.00	13.16	0.017	12.50	10.53	-0.023	11.36	18.42	0.090	14.77
Compliments the Victim	10.00	13.16	0.049	11.36	10.533	0.009	10.23	7.89	-0.036	9.09
Apologises to Victim	8.00	15.79	0.12	11.36	13.16	0.084	10.23	13.16	0.084	10.23
Attempts to Prolong Relationship	6.00	7.89	0.037	6.82	7.89	0.037	6.82	2.63	-0.080	4.55
Displays Personal Knowledge of Victim	4.00	7.89	0.083	5.68	5.26	0.030	4.55	5.26	0.030	4.55
Says Victim Feels Enjoyment in Offence	14.00	15.79	0.025	14.77	15.79	0.025	14.77	7.89	-0.095	11.36
Justifies Actions	14.00	13.16	-0.012	13.64	13.16	-0.012	13.64	7.89	-0.095	11.36