RELATIONAL PROFILING: AN INVESTIGATIVE PSYCHOLOGICAL APPROACH TO IDENTIFYING VICTIM-SUSPECT RELATIONSHIP IN SOLVED HOMICIDE CASES FOR APPLICATION TO UNSOLVED CRIMES IN ENGLAND AND WALES

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A <u>MASSIVE</u> thank you goes to those who helped me on my way

Through the <u>MASSIVE</u> undertaking I have finished here today

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Abstract

Although the relationships between homicide perpetrators and their victims have traditionally been recorded and reported by homicide research (e.g. family, friend, lover), few have attempted to connect these pre-existing relationships to victim and perpetrator behaviour during the homicide transaction. The current research is the first known to utilize more than 10 perpetrator action variables in a single relational analysis and more, the first to create comprehensive behavioural profiles of perpetrators by relationship typology (e.g. stranger, acquaintance, close) and relationship status (stranger, active, estranged) based on the presence or absence of 62 action variables within homicide crime scenes. Traditional methodologies for analysing behavioural information about homicide (e.g. multidimensional scaling, regression analyses, and qualitative comparative analysis) were not able to compute correlational data of this magnitude given the smaller sample size. The data sample for this project was derived from copies of 64 complete homicide police case files, previously collected from city and county police departments across the England and Wales spanning the years of 1985-1991, accessed from the Canter Archives at the University of Huddersfield, United Kingdom in 2011 (See Appendix D). The final sample included 87 suspects and 69 victims and it was the task of the current set of studies to compute how all 62 of the recorded homicide scene action variables correlated to relationship type and status between perpetrators and victims. Thus, for the first time in recorded homicide research, Fisher's Exact Test was implemented in order to increase internal validity and pave the way for a more directive approach to psychological homicide research, coined for this paper as "Relational Profiling." The purpose of the analyses across the five studies within the current dissertation were to empirically establish to what degree the actual victim-offender relationships, the relational role the victims played for their offenders (Canter & Heritage, 2000), and relationship status between offenders and their victims impacted the outcome of crime scene actions in English and Welch homicides. Findings from Study 1 established external validity for the project with a comparative analysis of sample statistics to historical homicide statistics. Studies 2 and 3 supported the original hypotheses that homicide scene actions would connect back to relational circumstances between victim and convicted suspect. It was found that the relationship type between victim and convicted suspect prior to the homicide event (stranger, acquaintance, and close) did not have as strong as an impact on homicide transactions as was expected from prior research. Study 3 utilised the same stringent methodological parameters from the previous study, only the analyses controlled for relationship status (stranger, active, and estranged). The impact that this shift in categorization of known relationships had on the representation of crime scene action variables was remarkable and further validated this novel methodology for small homicide sample sizes. Studies 4 and 5 finalized the analysis by testing a long held theory in the field of Investigative Psychology, hypothesizing that the Narrative Action System framework (Canter & Youngs, 2009a) could further differentiate offenders in the way that they related to their victims (as objects, as vehicles, and as persons) (Canter & Heritage, 2000) as evidenced by behaviour. The methodological way this theory had been previously tested was, for the first time in recorded research, reversed, finding support for only the victim-as-object narrative. The implications of the results are discussed at length in the final Chapter, followed by a discussion of the limitations of this project and suggestions for future research into relational profiling.

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Chapter 1: Homicide Relationships and Suspect Profiling

1.1.0 Introduction

Although the relationships between victim and offender have historically been recorded for academic research on homicide cases, little work has been focused on how specifically the victim-offender relationship may affect the presentation of crime scene variables. In fact, much of the previous research on offender profiling focusses findings on psychological motives for the killings, charting inferences about offender behaviour based on why the offender may have chosen to kill (e.g. Douglas et al., 2006). Understanding why one or another may have chosen to kill is a subject of deep interest to academics and laypersons alike, yet analysing behaviour to first identify a motive, then attempting to connect that motive to suspects of interest (Behaviour→Motive→Who?) provides an extra-step for investigators that may not be necessary. Additionally, for difficult-to-solve or Atypical homicides (Moffatt & Hersey, 2009) and cold-cases where motive is unclear, investigators have only physical evidence available from which to draw conclusions about suspect prioritization (Douglas et al., 2006). Empirical research making more direct connections between homicide scene behaviour and victim-offender relationships (Behaviour→Who?) can potentially help investigators save time and resources by eliminating the need to identify motive. Previous empirical research highlights only a few direct connections between homicide scene behaviours and victim-offender relationship covered in the current thesis, yet some ambiguity remains as to the classification of these relationships by policing authorities (Jordan et.al, 2010), large crime databases from which many homicide researchers draw their data (Loftin et al., 1987), and self-imposed relationship classifications by homicide researchers. Classificational ambiguity of relationship type may contribute to a disparity in past research findings; also leaving the gaping question of how homicide crime scenes may

differentiate between active and estranged victim-offender relationships. Understanding how the status of pre-existing relationships between victim and offender impacts homicide scene behaviour is vastly under-researched. To the current date, two known studies on intimate partner killings (Dawson & Gartner, 1998; Johnson & Hotton, 2003) have made the active/estranged distinction using Canadian data, yet differing samples led to differing results, and neither could be applied to male victims nor were any other relationships (ex. friends, business partners, family members) explored by the authors.

1.1.1 Victim-Offender Relationships

Making these connections, between homicide crime scene actions and the relationships between the parties involved, is prevalent for suspect prioritization in unsolved or cold case files (Karlsson, 1999). All homicides are high priority cases, but for example, if a set of homicide crime scene actions could suggest a "stranger" connection between victim and offender, higher prioritization should be given to finding this suspect before they kill again, whereas if the crime scene indicated a closer relationship between offender and victim or a "crime of passion" (e.g. an inter-personal confrontation resulting in death of one or another party), the offender would be less likely to kill again before being apprehended, therefore priority would be slightly lower. Beyond the descriptive study (Study 1, Chapter 4), the second set of analyses in the current series of studies (Study 2, Chapter 5) shed some light on how the representation of crime scene variables for UK homicides were impacted by victim-offender relationship typologies in three categories (stranger, acquaintance, and close). Because the data compiled for this research were extracted from a set of complete police case files for 72 solved homicides, victim-offender relationship had been recorded for each case during their original investigations between the years of 1981-1992 by investigatory authorities. Therefore, these differences were gauged with a

high level of validity in that recorded relationship categories were correlated to crime scene

behaviours in solved homicides.

1.1.2 Offender-Victim Relational Roles

Given that the relationships between offenders and their victims are not always readily

distinguishable to investigators approaching unsolved homicide crime scenes (Quinet & Nun,

2014), it was proposed in the early works of Canter (2004) that where investigators only have

crime scene information to work with, the relational role the offender assigns to their victims, or

the way the homicide offender relates to their victim (as an object, vehicle, or person) may be

revealed at the scene of the crime by the individual actions of the offender (Canter, 1994) and

their interactions with their victim(s) (Fritzon & Garbutt, 2001). Other prominent researchers

have compiled action-based analyses of crime scene variables to help categorize the proposed

relational underpinnings (e.g., Horning et al., 2015). The overall reasoning for the theoretical

classification of relational categories is stated to be useful for investigative interviewing purposes

(Canter & Youngs, 2009b) because it may point to the personal narrative of the offender,

information that could be advantageous for rapport building in interviews as well as for

narrowing down suspects based on how they identify with self and others (said to be

discoverable by the representation of crime scene variables) (Canter & Youngs, 2012a). Further,

it was suggested the relational distinction may have treatment implications geared toward violent

sexual offender's deficits in empathy and control (Canter & Youngs, 2012a); however, these

suppositions have not been further tested.

Hypothesis 6 of the current research, tested in Studies 4 and 5, was that relational

classification may actually point to something more than the offender's narrative or psychiatric

deficits; perhaps it can point investigators in the direction of establishing the relationship between offender and victim where the relationship may have previously been ambiguous. This supposition was tested in Study 6 (Chapter 7) by applying Canter's (1993; 2000) crime scene actions to offender characteristics (A→C) theory, the basis of a significant portion of the work published by a select few researchers IP field, to a novel sample and reversing the equation. This theory posits that the actions (A) in any given crime scene can point to the personal characteristics (C) of the person who committed the crime. Researchers in the field of Investigative Psychology have made attempts to provide evidence for the A→C theory with an A→C analysis – self assigning psychological partitions to clusters of crime scene variables (e.g., Fritzon & Ridgway, 2001), leading to harsh criticism of the methodology (Ward, 2012). It seemed logical to instead more validly test the theory by reversing direction of the analysis to C→A, by exploring how the characteristics of the offender (in this case their relationship, relationship status, and relational identity relative to their victims) impacted crime scene variables during the recorded homicide transactions. The analyses in Chapter 7 (Studies 4 and 5) first classified each homicide case by whether it evidenced the offender relating to their victim(s) as an object, vehicle, or person as assessed by the Canter & Youngs, 2009a; 2009b; 2012a Relational Identity theory. Analyses went on to correlate relational classifications (C) to 62 crime scene behaviours (A) for 74 solved homicide cases with 87 offenders and 69 victims. A comparative analysis was thence performed to gauge correlations between the assigned relational categories and actual offender-victim relationship (stranger, acquaintance, and close) for validation purposes. Yet still, there was another level of understanding on how relationships impact crime scene actions that begged for exploration: relationship status.

1.1.3 Offender-Victim Relationship Status

Prior research by McFarlane et al., (1999) and Block (2000) had both suggested that relationship status in intimate partner homicides was a factor that highly impacted the outcome of behaviour during homicide transactions. The questions answered within Chapter 5 (Study 2), Chapter 6 (Study 3) and Chapter 7 (Studies 4 and 5) were a) does relationship status impact the representation of crime scene variables and b) what is the level of impact that relationship status has compared to actual relationship or relational roles? A noteworthy difference for the seminal research performed in Chapter 6 (Study 3) compared to previous research on estranged vs. active relationships with intimate partner homicides (e.g. Block, 2000; McFarlane et al., 1999) was that all previous relationships were taken into account for the relationship status analysis. The findings of Study 3 combined with Studies 2, 4 and 5, revealed that relationship status (inter-personal factors) had more of an impact on the representation of crime scene variables than did actual victim-offender relationship (sociological factors) or relational identity (psychological factors).

Therefore, the purpose of the analyses across the five studies within the current dissertation was to empirically establish to what degree the actual victim-offender relationships, the relational role the victims played for their offenders, and relationship status between offenders and their victims impacted the outcome of crime scene actions; a novel methodological contribution to investigative research on offender profiling. Understanding more about how these three relationship-focused categories impacted single-event (not serial) homicide crime scene variables has the potential to positively influence the approach to suspect prioritization. For example, compiling empirical evidence on homicide behaviours that indicate a pre-existing or non-existent type of relationship between the perpetrator and victim could aid homicide

investigators to make initial inferences in unsolved cases that could increase the efficiency of targeting suspects. It becomes ever more important for investigative inferences to combine field experience with the support of empirical evidence. Currently, an in-depth analysis of how crime scene actions may be indicative of victim-perpetrator relationships had not yet been performed with a single-event homicide UK data set, making the current studies novel contributions to the field Investigative Psychology and the criminological sciences. The current methodology paves the way for future research to focus on a less abstruse, more directive, actions-based criminal profiling technique– coined in this paper as "Relational Profiling". Before examining the current methodology, an exploration of the literature surrounding the representation of crime scene actions for homicide relationships was the first task. This subsequently led to the formation of a set of eight hypotheses that were tested across four studies (Chapter 5-7, Studies 2-5) after a descriptive analysis revealed common features of homicide transactions, offender characteristics and victim characteristics in England and Wales (Study 1, Chapter 4).

1.2.0 Homicide Relationships – The Interaction of Victim and Offender Identity

As human beings, it has been said that our survival relies on more than primary needs (food, water, shelter); that we need human interaction on both a physical and emotional level to function (Spitz, 1945; Bowlby, 1980; Ainsworth, et al.,1978). Emotional interaction helps a person to develop a relational style, or a way of being with other people (Last & Fritzon, 2005) that develops throughout the lifespan. Human interaction can also help to shape an individual's identity (who one perceives themselves to be) in relation to other people (who other people are to the perceiver) (Plummer, 2010). For example, identity can change with each role one adopts – the parent, the student, the teacher, the supervisor and with each person we interact – the family member, the friend, the stranger, the acquaintance. With whom we come in contact with and how

we perceive those people, therefore, will also work to shape our behaviour while interacting. For instance, a hug between friends is an action with high probability of occurrence, whereas a hug between strangers is significantly less likely to occur. In the homicide relationship between victim and offender, these relational identities were suggested to also have an impact on the actions within each homicide situation for both victim and offender (e.g. Wolfgang, 1958) and that combined, evidence of victim and offender interaction can paint a picture about the personal or psychological characteristics of the offender (Canter & Youngs, 2012a). Although this indirect, relational theory of crime scene actions has yet to be thoroughly tested, some researchers have made attempts to establish a more direct connection between crime scene actions and victim-offender relationships in homicide situations.

1.2.1 Correlates of Homicide Scene Variables to Victim-Offender Relationship

Karlsson (1999) developed a procedure that helped to differentiate homicides and suicides through a logistic regression technique he termed 'forensiometrics" (Karlsson, 1997, p.183). This analysis began with 279 solved sharp-force Swedish fatalities and correlated 24 crime scene variables related to sharp force injuries (ex. injuries to genitals, injuries to neck, injuries to back), finding that certain variables predicted homicides (e.g., injuries to the upper extremities excluding wrist, blood alcohol level, injuries to head and back), whereas other variables (e.g., presence of a note, injuries to the wrist, suicidal ideation prior) predicted suicides in upwards of 90% of these cases. Because these cases had been previously classified during investigation, it is unclear whether the significance of this finding is useful for differentiation of Swedish suicides and homicides; however, applying the same forensiometric technique to 87 solved sharp-force homicides, Karlsson (1999) developed predictor variables by victim-offender relationship and attempted to validate these variables by applying the technique with the goal of

predicting the relationship between victims and their offenders for 39 solved sharp-force

Swedish homicides (test group).

The relationship variables in Karlsson (1999) identified (observed vs predicted) were

classified into 4 categories (acquaintances, drinking partners, relatives, and spouses) that were

analysed alongside 28 variables (e.g., location of injury variables, number of injuries, location of

body variables, gender, blood alcohol level). Karlsson (1999) excluded all but 10 of these

variables; "Victim found in home, female victim, a single sharp injury, injuries to the upper

extremity, superficial sharp injuries to the chest ('scratches'), ten or more sharp injuries,

presence of defence injuries, total number of sharp injuries, male victim, and victim found

outdoors" (p.33), finding that the others were not predictive of relationship, therefore not strong

enough for the model. Although this method was only found to be 44% accurate in its ability to

predict relationship (17/39), it was one step away from an accurate prediction in a further 17 of

these cases, indicating that future development of this model may provide more fruitful results.

Karlsson (1999) admits it is possible that the relationship categories utilized in this study were

ambiguously categorized, for example the "drinking companions" category, that could be

interpreted as acquaintance-like, comprised people very well known to the offender and who had

spent many nights drinking alcohol with the offender over a number of years. This would have

made the differentiation between 'relatives' (including close friends) and 'drinking companions'

difficult, and could have skewed the results. The study did, nonetheless, have some noteworthy

findings in regards to victim-offender relationship and crime scene variables. For instance, it was

found that 70% of all female sharp-force victims in their sample were killed by their spouses.

Also, multiple injuries inflicted, or "overkill" (p.40) was a found to be a significant predictor of a

closer relationship between victim and offender, corroborating earlier findings that spousal

killers (those closest to the victim) are the most brutal in their killing methods (Wolfgang, 1956; Heller et al., 1983). Because of these findings, injury severity was among the list of crime scene variables tested within the current set of studies, garnering correlations between crime scene action variables and relationship typologies. The set of actions identified to result in the most severe injuries (e.g. multiple wounding, beating, bludgeoning, and torture etc.) were correlated to victim-offender relationship and relationship status rather than the type and location of injuries on the body. Comparisons of UK data with past research incorporating an injury severity scale (e.g. Safarik & Jarvis, 2005) were not within the scope or resources of the current research. Several other crime scene action variables, directly applicable to the current research, were also drawn for the current analysis because of their prominence in past research findings.

In a Florida study examining homicide motive, weapon choice, and injury severity in 57 solved homicide cases, Drawdy et al., (2004), conversely, reported no significant differences between injury severity and relationship. Their relationship categories were separated into primary relationships (intimates, relatives, and friends) who were judged as closer to the victim, and secondary relationships (acquaintances and strangers) where little to no relationship had been established. These researchers recorded injury categories limited to "single" and "multiple" that were not analysed further by weapon or location. The dichotomous categorization method perhaps accounted for the insignificant findings. These researchers were also unable to establish a significant difference between victim-offender relationship and weapon choice; separating weapons off into 3 categories - firearm, contact, and combination, contrasting with previous findings that "weapons used vary by intensity of the victim-offender relationship at the individual level" (Hoskin, 2001 in Drawdy et al., 2004, p. 661).

A newer yet similar study (Trojan & Krull, 2014) that analysed 137 solved single-victim, single-offender Cincinnati homicides found an opposing result to Drawdy et al., (2004). For these researchers, weapon choice (or wound type) revealed a significant correlation with victim-offender relationship. In these cases, the proximity of the offender to the victim (taken most literally) during the homicide act was positively correlated with the intimacy of the victim-offender relationship. In other words, victims were more likely to be stabbed or strangled by friends, family, and intimates ($p<.05$), whereas victims who were shot had a higher likelihood of their offenders being strangers and acquaintances ($p<.001$). Thus, variables for weapon choice and method of killing were added to the current analysis to compare these findings to results with a UK sample.

Another method of killing-focussed study, this time analysing statistics from the FBI uniform crime reports from 1980-2009 (Fox & Allen, 2014), revealed a similar trend in that gun use was reported highest for male-on-male killings of non-family members, suggesting that these homicides are more instrumental in nature. When a club, ligature, or other manual form of killing is apparent, it is more likely in US homicides to have occurred between male family members, or male-on-female killings (primarily intimate partner homicides), suggesting that for men, a closer relationship between victim and offender results in more intimate forms of killing. Conversely, the primary weapon choice for female killers in the Fox & Allen (2014) study was a knife or sharp object regardless of the relationship, suggesting that it may be more difficult differentiate victim relationship with female killers by their crime scene actions. The leniency of the United States legal system on gun ownership by the public (Masters, 2017) will, in part, account for these weapon related results. The most common weapon of choice in all homicides for the 1997-2004 time period in England and Wales was a knife, or sharp object (36%), followed by kicking

or hitting (15%), blunt object (11%), strangulation or suffocation (10%), firearm (6%), causing

to fall (3%) , and poison (2.6%) (Hunt et al., 2010). A combined total of 19.4% of offenders

chose "other" ways to kill their victims including "arson, burning/scalding, drowning, struck by a

motor vehicle and unspecified other" (p.328) and 4% of murder weapons were unknown.

Homicide victims aged 25 and younger were more likely than other age groups to be killed from

the impact of corporal blows happening during a physical altercation: rates descending by

ascending age group (24% compared to 18% (25-44), 9% (45-64), and 2% (>65)). Sharp

instruments (34-42%) were the most common murder weapon for age groups under 65, yet blunt

instruments had almost equal rates to sharps for over 65 age group (23% & 26%). In the current

UK sample, less than a handful of offenders chose to use a gun as their homicidal instrument.

Therefore, the more intimate forms of killing (stabbing, beating and manual/ligature

strangulation) are seen to emerge in the majority of English killings (Salfati & Canter, 2004;

Salfati, 2000; Salfati 2003) by default, perhaps due to laws preventing UK inhabitants to readily

acquire firearms. Thus, the significance of weapon choice to relational underpinnings emerged as

an area of exploration for the current dissertation with homicide data from England and Wales.

Another emergent focus for the current research was garnered from an earlier English

study (Last & Fritzon, 2005) examining victim-offender relationship for offender profiling

purposes. Last & Fritzon (2005) took into account 6 crime scene variables (presence of weapon

and origin, location of wounding, severity of wounding, facial injury, post-mortem injury, and

manual injury), finding that acquisition of the murder weapon and injury location were

significant predictors of victim and offender relationship. In their examination of hospital case

files with 82 mentally disordered offenders with 116 UK victims (n=25 intra-familial, n=30

acquaintance, n=27 stranger), Last & Fritzon (2005) utilized a partial order scaleogram analysis

(POSA) and found that intra-familial homicide offenders were more likely to improvise their weapon (utilizing what was available at the crime scene) as opposed to stranger homicide offenders, who were more likely to bring their weapon to the crime scene (p<.001). This exact finding was then duplicated in a later American study examining the same variable (Trojan & Krull et al., 2014), indicating that weapon acquisition may be an important differentiating factor internationally. While weapon acquisition is easy to establish for solved homicides, it may be more difficult a feat to inaugurate where the weapon came from in unsolved homicides, where no offender interview had taken place. Therefore, however important this finding could be, weapon acquisition may not be a useful content category for offender differentiation in unsolved cases.

Another significant finding of Last & Fritzon (2005) in the case of multiple wounding indicated that intra-familial offenders were the least likely to wound only one part of the body of their victim; whereas stranger offenders were the least likely to harm multiple sites of their victim's body (p<.001). Although the facial injury variable did not meet with statistical significance between the three relationships categories, facial injury was found to be present for every victim who was subjected to multiple wounding for this study. Thus, the authors suggest the presence of facial injury may also indicate a closer relationship. These researchers assert that the multiple wounding variable "is the most important in differentiating the victim-offender relationship" (Last & Fritzon, 2005, p.188). Three studies (2, 3 & 4) within the current dissertation examined this statement with a more exhaustive set of homicide variables than had previously been utilized in homicide research. While Last & Fritzon (2005) reported that intra-familial offenders in the UK were more likely to injure the face of their victims than strangers or acquaintances, this result fell just below significance (p<.07). It is worth stating that American researchers Trojan & Krull (2014) found a significant result in the same direction at the (p<.01)

level for the likelihood of face wounding in their offenders harbouring an intimate relationship with their victims (family/friend, intimate partner). Another researcher (Alvarez Cussen, 2017) went more in-depth with their studies of relationship and the facial injury category. This study took into account 242 solved FBI case files from the United States for three types of homicides: domestic, sexual, and felony (homicides committed during a felony act). Utilizing the Abbreviated Injury Scale (Greenspan et al., 1985), charting the locations and severity of the facial injuries combined with the number of facial injuries, this researcher found significant differences between homicide offenders who were strangers, acquaintances, and closely related to their victims. Implementing a multinomial regression, this researcher found that closely related victims were more likely to suffer multiple life-threatening facial injuries than were strangers or acquaintances ($p<.000$) and both strangers and acquaintances were more likely to suffer one or multiple non-life-threatening facial injuries than close relations ($p<.000$). While the US study did not report specifically on relational differences in the presence or absence of facial injury variable for United States homicides, it is suggested that the simplicity of this information may be more readily applied to homicide investigations. Thus, within the scope of the current project, the methodology of Trojan & Krull (2014) and Last & Fritzon (2014) were mirrored by examining English and Welch homicides for the presence or absence of the facial injury variable and its correlates to relationship typologies, alongside yet another emergent theory.

Cao et al., (2008) argue that the location of the crime may also be an important factor in crime-scene-to-relationship analyses. The Routine Activity Theory (Messner & Tardiff, 1985) of criminal activity explains that crimes occur as an opportunistic function of the offender's daily activities. This theory might suppose that crime scene location, or the offender's access to a location, may be a function of the relationship between offender and victim. For example, friends

or intimates have access to more private locations to commit their crimes, whereas strangers may only have access to more public arenas. Testing this theory, Cao et al (2008) accounted for 308 Taiwanese homicides, coding 5 variables related to crime location (in school, public, streets, home, or car) and 3 variables related to victim-offender relationship (strangers, acquaintance/friends, intimates). In their multinomial logistic regression, Cao et al., (2008) were able to gauge the probability of the location variables to relationship type, finding that "being outside of one's home reduces the probability of acquaintance homicide by 0.3% and the probability of intimate homicide by almost 37% but increases the probability of stranger homicides by 37%" (Cao et al., 2008, p.668). This finding indicates that Taiwanese stranger homicides are more likely to happen outside of the home or car, and intimate homicides are more likely to occur in the home or car location, whereas acquaintance homicides share a nearly equal probability of occurrence across location. Further, this finding corroborates previous American research suggesting that relationship intensity between victim and offender is positively correlated with a higher probability of home killings (Decker, 1993).

1.2.2 Summary

Thus far, previous research findings indicate that injury location and weapon choice have mixed findings as to their significance in establishing victim-offender relationship, yet injury severity (or multiple wounding) and the location of the killings may have come to the forefront as differentiating factors in criminal profiling equations. Offense location and the gratuitous nature of offender action are variables were taken into account in Studies 2 and 3 of the current research examining homicide in England and Wales from 1987-1991. The results of the current research could not provide evidence for the impact of relationship on injury severity nor crime location in these killings.

1.3.0 The Impact of Victim Characteristics - Age and Gender - on Injury Severity

It has been previously established in a large body of research that males are more likely to be homicide offenders (Canter, 2000; Canter, 2004; Salfati & Canter, 2004; Salfati, 2000; Salfati, 2003; Miethe & Regoeczi, 2004; Porter et.al, 2009; Trojan & Krull, 2014) and victims (Alvarez & Bachman, 2014), with two exceptions; populations labelled with psychotic disorders (Hodgins, 2008) and populations of cohabitating (but not married) intimate partners (compared to married, dating, and divorced intimate partners), where offenders are more likely to be female-gendered (Rodriguez & Henderson, 1995). Also established is that male victims are more likely to report assault (Alvarez & Bachman, 2014) and be killed by strangers or unidentified offenders (Trojan & Krull, 2014), whereas a more intimate victim-offender relationship is apparent for female victims of assault and homicide (Dawson & Gartner, 1998; Jordan et al., 2010).

1.3.1 Correlates of Injury Severity to Victim-Offender Relationship Status

The trend in the reviewed literature is that differences in injury severity are apparent for female victims, but not for male victims, based on their level of previous intimacy with the offender and their age. Perhaps this gender difference in injury severity exists because men are more likely to be killed by strangers and acquaintances, or those without a jealousy or revenge motive. It has been empirically established that women in estranged relationships (i.e. divorce or recent break ups) are at a higher risk than men (Brennen & Sinha, 2000) and women in intact relationships of falling victim to homicide, particularly when the break has been recent, or in the three months just following the breakup (Hotton, 2001; Wilson & Daly, 2003). Also noted is that injury severity for intimate partner homicide situations tends to increase for female (Block, 2000), not male, victims in the estranged category (McFarlane et al., 1999).

One known study (Johnson & Hotton, 2003) corroborates earlier research findings on intimate partner homicides, yet also explores offender actions that differentiate active and estranged crime scenes for 846 female and 210 male victims, drawn from Canadian Homicide Surveys between the years of 1974-2003. These researchers reported that victims in estranged relationships were more likely than victims in active relationships to be subject to gratuitous violence by their intimate partners. Further, Johnson & Hotton (2003) took into account the location of the offense, weapon choice or cause of death, motive, and whether the victim was found to use force first. Johnson & Hotton (2003) found that for females (but not males) who were killed by estranged vs. intact intimate partners, that estranged women were more likely to suffer a death that was in the location of their formerly co-habituated homes, more likely to die at the hands of a firearm, more likely to be killed by reasons of jealousy and more likely to have precipitated their own homicide with violent acts toward their estranged offender at the $p<.05$ level. An earlier yet similar study (Dawson & Gartner, 1998) utilized Canadian Data from Coroners records and police files in Ontario from 703 solved intimate partner femicide crimes during the years of 1974-1994 to understand differences in offender and victim characteristics between estranged vs current relationships. While they did study differences in gratuitous violence specifically, they did find that current and estranged females were equally likely to have been sexually assaulted, which is by nature a gratuitous act (or a violent act unnecessary to accomplish the homicide goals). They also reported that estranged female killings were "more likely to occur in public, more likely to involve guns and more likely to occur in front of witnesses" (p.386). The differing results for femicide location from the two studies may be due to the differing sources of the data collected (survey vs report data). While the firearm category is not testable with the current data set, weapon choice is an important part of the current

exploration in addition to murder location and gratuitous violence for estranged and current relationships, yet current results not limited to intimate partner relationships.

1.3.2 Interim Summary

Where the victim is female, it can be assumed that the best place to begin the investigation is with an intimate partner (current or former). The Dawson & Gartner (1998) Johnson & Hotton et al., (2003) studies highlighted that perhaps many of the choices offenders make in their crimes could allude to whether they are currently involved in a relationship with their victims or estranged from them. A novel contribution of the current study is that the active vs. estranged relationship category has been recorded not only for intimate partners, but for all offenders with any type of relationship, current or active, to their victim. Analysis into the depth of this interpersonal differentiation has not yet been published, so Study 3 in the current research (Chapter 6) is assumed to be the first to address it.

1.3.3 Correlates of Injury Severity to Victim Age

Another impactful victim characteristic that has been discovered in empirical research is that of victim age. Hunt et.al (2010) analysed statistics from both the Homicide Index and the Home Office and recorded the following statistics for homicide perpetrators (N=4572) in the 1997-2004 time period for England and Wales. An interesting trend has been recorded relating to the age and sex of the victims. The 65+ age group contained the highest numbers of female victims compared to the other groups (79%) compared to 19% (<25), 32% (25-44), and 49% (45-64). Victims of the 25 and under age group were more likely to be males and also to be strangers to their offenders, meaning that this age group, having the highest N, is responsible for male-male homicide rates being recorded as the majority. In cases of homicides for victims age 25 and

over, it was shown that females were at higher risk for victimization – and that this victimization tends to be at the hands of a spouse or another family member. Offenders in the higher age groups are more likely to have a familial or spousal relationship to their victims; and in 87% of age group 65 and over this was the case, with 13% of those "considered 'mercy killings' (p.326).

Jordan et al., (2010) also argue, for their data set of 148 American homicide cases, that victim age and gender play a role in determining the closeness of the offender. These researchers found a modest but positive significant relationship between the age of victim and injury severity for their female sample; that is as victim age goes up, so does injury severity (p=.049). For their sample, the mean for severity was 5 injuries for victims age 65-85 (N=13), and 4.13 injuries for victims aged 13-64 (N=135). This finding could be due to the large variability in the number of wounds from victim to victim so the results could be skewed here.

Further analysis revealed that, "Only 20% of non-elderly female victims suffered multiple stab wounds, compared to 57.1% of elderly [female] victims" (Jordan et al., 2010, p.188). Repugnantly, only 10% of their elderly female population were killed by intimate or former intimate partners, compared to 68.4% of their non-elderly sample. This result implies that as women age, their risk of becoming a victim of intimate partner homicide is significantly less likely – perhaps even suggesting that their total risk of becoming a homicide victim may be less. It is unclear how this result applies to male victims, an important field of inquiry. That being stated, multiple wounding has been reported past research to be more common for elderly victims than for younger-adult victims (e.g. Koehler et al., 2008). Thus, Chapter 5 (Study 2) studied the impact of injury severity on age with a novel sample to understand whether the elderly were at higher risk of falling victim to gratuitous acts for homicides located in England and Wales.

1.3.4 Summary

These studies, limited to North America, give the impression that as injury severity in homicides increases, so does victim age. Also, the likelihood of a closer relationship between victim(s) and offender(s) decreases with age – presenting an entire body of research that negates the original supposition that injury severity indicates closeness in the victim-offender relationship. A disparity exists, leaving the field of offender profiling in a state of confusion as to the salient features (Canter & Youngs, 2009) that may lead homicide investigators to make empirically-based inferences toward the solving of ambiguous homicides based on relational propensities. Researchers must be challenged to cultivate empirically-based correlations between homicide details and victim-offender relationships in order to remedy this confusion. The next question to address is why this disparity exists?

1.4.0 Categorization in Criminological Data Collection

The large amount of variability in the criminological understanding of homicide offender actions and relationship could be a three-pronged problem. First, it is well understood that data collection by investigative authorities is largely conviction, rather than research driven (Canter & Youngs, 2009a; Fox & Allen, 2013). Therefore, the classification of homicide situations in law enforcement becomes ambiguous due to limited resources or dead leads. Second, in traditional categorization of UK homicides, a methodological flaw arises when analysing the relationship between victim and offender: the relationship is categorized "stranger" for not one, but two reasons. Salfati & Canter (1999) highlight this error in their paper aiming at differentiating stranger murders from other relationship types.

One reason for nomination into the "stranger" category happens when the offender is known to police, and is a stranger in relationship to their victim. The offender may also be defined by police as "stranger" when "at the time the crime was discovered, the police did not know the identity of the offender: "This definition did not preclude that, at the time the offender was identified, they were known to the victim" (Salfati & Canter, 1999). The latter calls into question any research attempting to differentiate stranger homicides to other homicide categories - unless this flaw is controlled for with exclusionary procedures for truly unknown offenders. As Regoeczi and Miethe (2003) explain in their analysis of the unknown category in American Homicides, "Although unknown and stranger homicides frequently share common structures, they demonstrate notable differences as well, suggesting that unknown relationships cannot automatically be assumed to involve strangers" (p.211). In other words, the unknown category may, in theory, be largely stranger based – given the lack of information police have to connect the homicide to anyone the victim knows. However, this category also would be comprised of savvy, known offenders who have slipped under police radar in initial investigations. In fact, many cases that are labelled stranger or unknown in one fiscal year may be solved the following year, changing their relationship category altogether in homicide databases (Quinet & Nunn, 2014; Miethe & Regoeczi, 2004; Regoeczi & Miethe, 2003), opening up a question as to whether any study using large scale data (i.e. Uniform Crime Reports, Home Office Homicide Statistics, or entire sets of police data for any given year), could validly to measure relational underpinnings to offender action. As Quinet & Nunn (2014) explain for their sample on Indianapolis, Indiana homicides, homicides that were coded as 'stranger' by police in one year were found after further investigation to be disproportionately represented by the acquaintance relationship. They assert that relationship has been inaccurately assumed as disproportionally

'stranger' across a body of research and thus, remains a myth that needs more scrupulous study in order to debunk (Quinet & Nunn, 2014). In another study analysing sexually motivated elder killings, authors Safarik et al., (2002) admitted that a draw-back of their study was also in the classification of relationships between offender and victim. They categorized relationship dichotomously (stranger and known) and later reported that that the classification of the stranger category by the Uniform Crime Reports data they utilized may have been a validity risk to their study, because it likely included those who were "marginally acquainted" (p.515) e.g. those who had provided or paid for a service (such as a contractor), or those who are familiar through sight during routine activities such as grocery shopping or passing in the street. The challenge with utilizing secondary data sets when differentiating relationships is that the classifications are provided by the original data collector, and do not always align with reality, common sense, or the new research framework.

For example, many researchers turn to large crime databases, such as the Federal Bureau of Investigation's Uniform Crime Reports (UCR), to study homicide trends because "although the SHR database has limitations, it is widely considered to be the best data set on homicides and homicide arrestees currently available in the United States" (Chan et al., 2013, p.86). While Chan et al. (2013) reported significant results in terms of racial differences in killings by relationship for their study on sexual homicide utilizing SHR data, they also explained that their results should be taken with caution because their effect sizes were low and further, the SHR reports on homicide transactions by suspect arrests, not convictions. Historically, researchers utilizing SHR data have also concluded that this data source categorizes homicide relationships in a way that compromises the validity of resulting studies. As Fox & Allen (2014) explain of their study analysing the SHR for relational correlates

…28 relationship categories [are] classified into three main types: (a) the victim is a family member (i.e. husband, wife, mother, sister, brother; (b) the victim is an acquaintance outside of the family but known to the offender (i.e. neighbour, friend, employer-employee); (c) the victim is not known to the offender (i.e. stranger)…Current or former boyfriends and girlfriends along with ex-husbands and wives are included in the acquaintance category" (p.304)

It seems illogical to place offenders who were friends or estranged lovers to the victim prior to the homicide into an acquaintance category. What is more "There is no information in the SHR that explains why a victim is placed into one category or another" (p.304), further adding to the confusion. This Classificational problem with SHR data is not new; Loftin et al. (1987) warned researchers in late 1980's that overlapping of relationship categories in SHR data renders the classifications ambiguous in nature due to the lack of explanation for SHR coding. In their reliability study of SHR relationship classification, Loftin et al., (1987) compared Baltimore City SHR relationship classifications with relationship classifications from local court records for the same cases, finding a 60% concordance rate between the two entities. Loftin et al., (1987) reported that the highest discordance was with the acquaintance category: "Relationships that are coded by the reliability study as "married" and "romantic" are coded as "acquaintances" in the SHR, despite the availability of categories like "husband," "wife," "boyfriend," and "girlfriend" (p.269). While the SHR data is a favoured source for US homicide research because it provides lofty sample sizes in which to make comparisons, it would seem that these studies may be compromising validity for volume. Thus, results from SHR studies examining homicide relationships "may not have significant utility for investigators" (Chan et al., 2013, p. 85) and the limitations of the SHR renders cultural comparisons from the resulting studies ineffectual.

The third prong of this problem arises not in the data, but in the way that each individual researcher or entity categorizes relationships. There is no universal nomination method, therefore the classification of homicide relationship varies from researcher-to-researcher; entity-to-entity. Researchers not utilizing large crime databases have reported similar limitations to their studies based on self-imposed classifications of relationships. For example, Karlsson (1999) openly admits the decision on relationship categorization presented methodological flaws that skewed the results of their study when they placed "drinking partners" into their own category, rather than considering the depth of the relationship between victim and offender prior to the homicide. When Jordan et.al (2014) made inferences about elderly vs. non-elderly female victim homicides, they were originally working with a dataset of 149 homicide cases, and only 85 of these relationships had been corroborated by police or coroner reports – thereby lowering their sample size by nearly half. A more prominent relationship categorization technique may also contribute to what little is known about the correlates of relationship and homicide behaviours.

While homicide researchers have traditionally categorized relationships dichotomously, for example "primary (e.g., family, friends, spouses) or non-primary (e.g., acquaintances, strangers, enemies)" (Drawdy & Myers, 2004, p.1); primary (friends, acquaintances and relatives) and non-primary (strangers) (Smith & Parker, 1980); stranger (victim and offender not known to each-other or offender not known to police) and non-stranger (victims knew the offender in any capacity before the attack) (Siegel et al., 2004), it seems that relationships may be dichotomized for convenience rather than taking into consideration the relational closeness (the frequency of interactions and the context or circumstances in which two parties are known to one another) of each victim to each offender in the categories (Loftin, et al., 1987). As Meithe and Regoeczi (2004) explain, attempting to separate human beings into two groups to explain behaviour has

methodological drawbacks. In their validity analysis of the Expressive and Instrumental themes in homicide transactions, they found that over 90% of their homicide sample showed characteristics of both categories. The current set of studies controls for the Classificational limitations of past homicide research by presenting clear definitions of relationship categories, providing empirically based justifications for the relationship model and further, by testing the current relationship model for internal validity.

1.4.1 Summary

It is imperative to work with, and create data sets from police files that clearly and logically define relationship categories and distinguish strangers from the known categories up-front and as part of the research model – such that a more targeted data collection process can be implemented in future research for the exploration and differentiation of victim-offender relationships by homicide actions. The study of how homicide actions can inform the criminal investigation process (offender profiling) and further, may be applied to criminal investigations (suspect prioritization) has formed a large body of empirical research (Investigative Psychology), founding the theoretical back-bone for the current project.

1.5.0 Offender Profiling and the Empirical Field of Investigative Psychology

Offender profiling is a term used to describe the act of making inferences about the personal characteristics of an offender based on the way the offender goes about committing his/her crime (Salfati, 1999). More traditional methods of offender profiling once relied on attempts to garner psychological traits from offense characteristics on a case-by-case basis, utilizing psychological trait theory (e.g., Pinizzoto & Finkel, 1990). Trait theory is focused on the idea that patterns can be established to explain human behaviour by studying routine

thoughts, emotions, and behaviours – with a further assumption that individuals can be differentiated by their behaviour because these traits remain stable over time (Sills, 1968). Personality has been established in empirical research to change over time, as people learn, grow and specialize (Bloom, 1964; Canter 1994/2000), reaching a more stable state by about age 30 (Costa & McCrae, 1990; Costa & McCrae, 1994). Notably, criminal behaviour has been recognised as a young person's game; that generally people grow out of the propensity to commit crime by their teens or early 20's (Bartol & Bartol, 2005; Schug & Fradella, 2015). Therefore, it could be assumed that basing criminal profiling practice on differentiating personality traits could be tedious and unfruitful due to the vast personality and behavioural changes an individual may go through during their teens to late 20's (the prime years for criminal activity). It is also suggested that behaviour changes alongside environmental characteristics and with experience (Canter, 1994), meaning an individual may choose to behave one way on one occasion, and another way on another as a simple computation and reaction to different environmental situations and practice. As Alison et al., (2002) warn, it is not likely that an individual's actions within highly stressful situations can be predicted, let alone help investigators to predict demographic details of offenders with any certainty; and until an inferential process for extraction of these characteristics can be established as valid and over time, reliable; suppositions derived from these studies should not be introduced or considered in legal proceedings.

It may, however, be suggested that in similar environmental situations, for instance homicide situations, people tend to act and react similarly rather than differently than each other (predictability being the back-bone of the field of Psychology). Thus, if we can study human interaction in a set of like situations, we may be able to establish patterns that can help us predict

how others may react in future, similar situations. One way to make more valid inferences about

offender characteristics (relationship included), as proposed by a large body of work in the field

of offender profiling, is to collectively connect what is currently known about criminal behaviour

and offender antecedents in solved crimes to similarities (in empirical research) in unsolved,

similar crimes.

The field of Investigative Psychology utilizes empirical research on solved crimes to

practically inform the criminal investigation process. There is a major drawback for the field of

IP as well as for the practice of criminal investigation. Unfortunately, by exploiting only solved

offenses to understand how crime scene actions point to offender characteristics, researchers are

merely scratching the surface because all of the offenders in question have been detected.

Because investigators have not detected who the offenders are in unsolved cases, the only way to

draw up conclusions about their personal characteristics is to make attempts to compare the

salient features of unsolved crime scenes with empirical data on the salient features of solved

crimes (Canter & Youngs, 2009).

It becomes necessary, particularly in homicides with ambiguous offender(s) and/or

motives, to systematically discover ways that the study of solved crimes can help inform the

criminal investigation process. It is essential to understand the contextual details that occur

before, during, and after a homicide event in order to create an informed profile of homicide

offenders (i.e. their personal and criminal background, their reasoning and justifications for the

crime, witness statements from family and friends who knew the offender, facts uncovered

during the investigation, information about why, where, and how the victim was chosen, and

what behaviours the offender and victim took part in from the contemplation to commission and

attempted cover up of the act). This is why the ideal data set for Investigative Psychologists is

made up of content categories derived from solved police case files (Canter & Heritage, 1990). With unsolved crimes, therefore it becomes ever necessary to use only the information presented within a crime (crime scene actions) in order to make inferences (or best educated guesses) about the characteristics of the offender. While some researchers have made attempts to understand the deeper psychology of the offender (i.e. motive, traits, psychological disorders, and justifications), it remains unclear as to how understanding these categories gets us closer to identifying the offender in unsolved crime scenes.

If one were to infer, hypothetically for example, that dragging the victim from the original crime scene to a hiding place had something to do with a psychological characteristic of the offender like bi-polar disorder for instance – regardless of how many studies may have made this connection, could investigators then make attempts to search for an unknown offender with this information? With a high prevalence of undiagnosed or misdiagnosed psychological ailments, this scenario would seem unlikely – and psychologically testing all possible human connections to the victim based on inferences about psychological traits or disorders in attempts to zero down on a suspect would present both fiscal and ethical confounds to investigative authorities. Connecting psychological motivations to relationship typologies can help to explain why people offend but this kind of research fails to explain how. For example, early research from Decker (1996) identified significant differences between victim-offender relationship (stranger, acquaintance, and intimates) and psychological motives labelled expressive, instrumental, and deviant. It was not clear; however, how these motivational categories connected back to homicide behaviour such that this information could be applied back to inform the process of homicide investigations. It is more prudent for current study to analyse variables that can help investigators to make inferences that will help prioritize and inform the criminal case when

traditional investigation methods have been exhausted, thus psychological motivations were not heavily explored. The foci of current and future research should be directed at understanding the psycho-social factor of who the victim is to the offender (i.e. relationship, relationship status, and relational identity) – and whether crime scene actions between victim and offender (the only data police have to work with in ambiguous crimes) can lead investigators to make inferences about the likely relational underpinnings present between the two parties, aiding in the overall investigative practice and suspect prioritization in England and Wales.

1.6.0 Suspect Prioritization – The End Goal

Suspect prioritization is the practice of how investigatory time and resources are allocated to crimes based on their severity (Canter & Youngs, 2009a). As identified in prior sections, what is known about victim-offender relationship and how the understanding of this can direct suspect prioritization has been studied using information gathered from large data-bases, or secondary data. For example, UK demographic research on homicides identify that adult female victims are most often killed by intimate partners, followed by acquaintances while males are most often killed by strangers followed by acquaintances (Fatley, 2016). The same research garnered from the Great Britain Office of National Statistics; however, identified business partners in the pool of strangers. Also when police officers or prison officers were killed during the course of duty their perpetrator was automatically named a stranger. Further, when the relationship between suspect and victim was unknown, they were also named strangers for the analysis (Fatley, 2016). Recorded information in national databases about homicide relationships have been repeatedly criticized for having mis-information, and the lack of standardization in classifying relationships has led to the inability to make solid conclusions about how relationships impact homicide transactions (Roach, 2014). It becomes ever important to move away from utilizing large

databases when attempting to make inferences about the impact that relational intricacies or other psychological characteristics may have on criminal behaviour and move toward using more complete police file data sets where the data can be checked for accuracy (Moffatt & Hersey, 2009).

The following set of current studies were completed in order to construct a research process to gather information that could be applied to current investigations and unsolved homicides in England and Wales, such that possible suspects in difficult cases could be identified by comparing relationship-driven behaviours at homicide crime scenes to behavioural profiles of local, solved homicide cases. The research questions were constructed to garner information about what relational complexities between perpetrator and victim would most highly impact the crime scene. It is currently proposed that that relationship between victim and perpetrator prior to the homicide will impact the behavioural profile of the homicide crime scene and that salient behavioural features from this study can be directly applied to inform the process of suspect prioritization in current and cold-case re-investigations of homicides England and Wales.

1.6.1 Profiling applications to investigating homicide in England and Wales

According to the most recent Murder Investigation Manual (ACPO, 2006) when UK homicide investigations begin, suspect prioritization starts with identifying persons of interest in an around the crime scene, questioning witnesses, and detaining possible suspects from this line of inquiry. The first 24 hours of a homicide case are considered the most critical to information gathering, evidence preservation, and resource allocation. It can be very time-consuming and costly to allocate time and resources to a larger goal, such as identifying and interviewing all suspects who may have had a motive to commit the crime. Although the larger goal can make the most

investigative sense, time and resource constraints can make a larger goal impossible to achieve in the beginning stages of the investigation. Thus, the current homicide investigative protocol breaks the lines of inquiry down into smaller, more achievable sections, beginning with identifying suspects living in a close vicinity to the crime with prior histories of violent behaviour or other crimes (ACPO, 2006). What Moffatt & Hersey (2009) label "typical homicides" (p.40), or homicides that include offenders already known the victim and to the police, are often detected during the first stages of investigative inquiry. It has been relatively successful for police forces in the UK to take this approach, for example reports from 2006 recorded a 92% detection rate handling homicide cases in this manner (Atkin & Roach, 2015). Yet as Moffatt and Hersey (2009) explain, when homicides are seen as typical, investigative short-cuts, or fast-tracks (ACPO, 2006) are often taken due to lack of resources and this leads to errors in data collection that can increase the likelihood that the case will turn cold. This hasty approach can also lead to errors in investigative decision-making, stated to be a major contributor to miscarriages of justice (Fahsing & Ask, 2013).

When a rapid decision is made to follow a particular line of suspect inquiry (tunnel vision) all the way through to a conviction, directing resources toward one suspect rather than toward following multiple lines of inquiry all the way through to the truth (cognitive bias), it can lead to errors in process, judgement, and investigative decision making (Roach, 2017). It is unclear how many of the detected homicide cases from 2006 could have been subject to errors in decision making, thus leading to faulty convictions (The Innocence Project, 2017), yet assuming there were no errors, 52 homicide UK cases remained undetected for the year (Atkin & Roach, 2015), implying that there is a problem in need of attention. Perhaps the focus on prioritizing offenders known to the police has contributed to this problem. When officers are faced with "Atypical Homicides",

or those possibly involving a serial offender, psychopathic killer, or an killer outside of the typical homicide suspect pool, Moffatt & Hersey (2009) explain that lack of proper training on how to handle Atypical cases results in errors in data recording, effecting current and cold-case re-investigations.

Behavioural analysis, called pattern-analysis, of the crime-scene typically ensues once investigators suspect there may be a possible link to a previous crime – e.g. a previous homicide in the area shows similar characteristics to the current homicide (ACPO, 2006). Where a possible link to a previous crime is not suspected, the investigation does not typically rely on behavioural analysis to identify suspects and instead continues with witness interviews, neighbourhood canvasing, and identifying those relationships closest to the victim who may have had a motive. Introducing behavioural analysis in the earlier parts of Atypical investigations can be useful in identifying possible suspects where no link has been made to prior crimes. The current set of studies show that homicide-scene behavioural analysis can direct suspect prioritization in homicide investigations where there are no suspected links to previous homicides. By recording common homicide-scene behaviours in single-event homicides and linking these behaviours to victim-offender relationships, the dissemination of these trends could direct the allocation of resources for homicide investigations toward a manageable and cost-effective line of inquiry in the beginning stages of the investigation. In other words, rather than relying on behavioural analysis to establish a possible link between two separate homicides later in the investigation, it may help to establish a link between common homicide-scene behaviours identified in solved homicides committed by friends, relatives, intimate partner relationships, acquaintances or strangers by applying this information back to behavioural evidence gathered in real-time. It has been suggested that longitudinal analysis of local crime can help aid investigative decision

making in local homicide cases (Roach, 2014) yet also can be useful in solving difficult cases that have remained unsolved over a period of time – cold cases. It has also been posited that analysis of cold-case files, namely long-interval detection cases (Roach, 2012) where offenders were identified many years after the killing, can helping investigators identify process pitfalls in investigative decision-making and detect salient features that align with their own difficult cold-cases, perhaps aiding in earlier detection. The current methodology, utilizing behavioural analysis, supports this supposition and can be applied locally, to current and cold-case re-investigations.

1.6.2 Profiling applications to cold-case re-investigations

As Davis et al., (2014) revealed, half of cold-case re-investigations in Washington DC began with "checking investigative data-bases", thus it is imperative that data patched with inaccuracies not be the focus of research investigations designed to support criminal re-investigations of homicide. Davis et al., (2014) further explain that in the United States, there have been enhanced efforts geared at solving cold cases, and task forces set up solely with the goal to solve unsolved homicide cold-cases. In addition to enhanced technology (e.g. DNA), 10 out of 60-70 cold cases (cases that have remained unsolved for 36 months) in Washington DC are later solved by adding resources to the investigations, and entering in new investigators with a fresh mind-set to the cases.

By analysing outcomes of cold case re-investigations, Davis et al., (2014) found that cases where new investigative information was added, (witnesses or suspects came forward with new information or confessions) had the highest likelihood of being solved, whereas those that were addressed because of family pressure or simply time-passed were least likely to be solved.

Although behavioural analysis was mentioned by Davis et al., (2014) as a modality that is used to aid in solving cold-case investigations, case outcomes did not include this as an action taken by investigators in their study.

One of the challenges of revisiting cold cases is in the data-preservation. Investigative data is often lost or destroyed during the course of the investigation (Atkin & Roach, 2015), which leads to less than favourable outcomes when the cases are up for review. In the current data-set of historical, solved homicide cases, it became apparent early on that missing information made the original lines of inquiry into motivation, incentives, victim characteristics and convicted suspect antecedents impossible to record and analyse for every homicide case. The study evolved to a more practical approach, utilizing information that regardless of the case, had always been recorded – homicide scene behaviours and the relationship between the victim and convicted suspect.

The Association of Chief Police Officers (ACPO) places a large emphasis in their Murder Investigation Manual (2006) on the initial response of chief investigators in the UK. The Manual outlines a process by which after efforts are made to preserve life at the scene, detecting, securing and protecting evidence at the homicide scene(s) is the top priority for investigative action. When there is more than one crime scene to secure, or the victim is not dead on arrival, contamination of evidence can occur in the earlier stages of the investigation. Because homicide investigations are often so thorough, there are opportunities to recover some of the lost information from the initial inquiry in subsequent reports. It is posited that utilizing homicide scene data from complete case-files and connecting this back to relationship information may help to circumvent the problem of missing data in historical or cold-case files, given the apparent and verifiable nature of this source of data through witness reports, homicide scene photos and

videos and autopsy reports. Standardizing the way in which relationships are recorded and the creation of investigator-accessible databases containing behavioural information about local solved crimes would aid immensely in detection of difficult-to-solve cold-cases. As a step in the right direction, The American Investigative Society of Cold-Cases announced in 2015 their "aims to create a scholarly, empirical, peer-reviewed professional journal that encompasses the vastness that is the cold case epidemic and its related investigatory concepts, etc." (Pettler & Curtit, 2015, p.3).

The utilization of empirical research to aid in the process of offender profiling has turned the field criminal profiling into a scientific discipline, whereby inferences can be made that can lead investigators of serious crime toward possible suspects when the case turns cold. For the last three decades, research has turned to analysing crime scene behaviours by making attempts to connect these behaviours to convicted offender antecedents; however, the relationship profiles of victim and offender and how this may impact behaviour have been long overlooked. It was proposed in the early works of Canter (2000/2004) and then reiterated in later works by Canter & Youngs (2009a/2009b) that crime scene behaviours paint a picture that relates to the inner psychology, or "inner narrative" of the offender. In essence, a deeper exploration of the phenomenon of victim-offender relationship may be a more useful contribution to the empirical field of offender profiling than past explorations of motive, personality, and psychological traits.

1.7.0 Reversing the IP Actions→Characteristics (A→C) Equation (Canter 1993/2000;2004;2011)

The field of IP emerged, essentially, by the early works of David Canter (1993) on serial assault, pioneering a theoretical exploration into how crime scene actions (A) – the where, when, and

how a crime is committed- could lead investigators to make inferences about the relevant

personal characteristics (C) of an offender at large. A systematic exploration of the relationship

between A and C began with the proposal of the A→C profiling equation (Canter, 2004). This

equation assumes that valid inferences about the personal characteristics of the undetected

offender (relevant to police investigation) can be derived by the criminal's actions and

interactions with their victim within a set of crimes (Canter, 2011). As Canter & Youngs (2009a)

explain:

> Although this relationship is not an 'equation' in a strict mathematical sense it is helpful
>
> to keep the looser meaning implied by this simple formulation…A→C mapping will
>
> rarely take the form of a simple one to one relationship…These complexities can be
>
> thought of as 'canonical equations' … [or] The relationships between combinations of
>
> action variables and combinations of characteristics variables (Canter & Youngs, 2009, p.
>
> 83).

Stated another way, any variance in the A side of the equation can affect the C side of the results,

and any variation in the C side of the equation can affect the A side of the results. Being able to

identify interpersonal style, emotionality, intellect, criminal experience/skills, or an offender's

familiarity to a particular area is theorized to provide investigators with four possible outcomes:

Salience (relevant differentiating details), Linkage (linking a particular offender or group of

offenders to a particular crime), Characteristics (offender antecedents), and Base (home)

Location (Canter, 2011). Noteworthy, the theoretical backbone of IP relies on the argument that

by compiling empirical explorations of such an equation by systematically studying solved crime

categories (rape, burglary, arson, homicide, theft etc.) over time, researchers and criminal

investigators can draw on this data to make valid inferences about undetected offenders in unsolved crimes (Canter & Youngs, 2009a).

As of late, there is a significantly large body of IP research that draws such conclusions about homicide particularly, manly focused on identifying the criminal history of the offenders involved in specific crime types, demographic characteristics, victim characteristics and various theories on how certain actions may reveal psychological typologies of offenders (e.g., organized/disorganized [Ressler et al., 1988], expressive/instrumental [Fesbach, 1964; Santilla et.al, 2001; Salfati & Canter, 1999; Miethe & Regoeczi, 2005], homicide motives [Fox & Levin, 1998; Canter et al., 2004], personality typologies [Holmes & Holmes, 1998; Holmes & DeBurger, 1985] and offender incentives [Barret, 2001]).

1.7.1 Interim Summary

While the data compiled on common criminal antecedents and demographic characteristics can be assumed to be a valid inference source because they are based on tangible evidence, the theoretical explanations (interpersonal style, motive, emotions) have largely failed to be empirically tested, except to reveal that trying to explain criminal behaviour with dichotomous theories (organized/disorganized; expressive/instrumental) is not comprehensive enough, and excludes a significant number of offenders who may fit into an unexplored category (Porter et al., 2009). The difficulty of exploring such theories aside from anecdotally emerges in the propensity of researchers to study them backward, from A→C. To systematically test an A→C theory on psychological typologies or categories, it becomes apparent that IP data sets (solved criminal case files) should be used to reverse the equation, thus exploring how psychological theories about C's may or may not correlate with the actual A's. Therefore, the

C→A approach is most appropriate when attempting to validate a particular typology as it applies to revealing the victim-offender relationship category, and arguably, this can uncover the most valuable and most sought-after piece of information for homicide investigators. As current London Metropolitan Detective Chief Superintendent Hamish Campbell asserts "It is not so much the numbers involved as who they [homicide offenders] actually are that is the focus" (Written Communication, 2011). It is proposed in the current research that a highly respected and empirically suggested narrative theory may lend itself to better understanding who the offenders are to their victims based on their actions within homicide crimes.

1.7.2 'Hypothesis from the 'Narrative Action System' (Canter & Youngs, 2009b, p.91) as it applies to Relational Profiling

Relational Profiling is a term coined for the first time in this paper, and is used to describe the correlational attributes of both offender and victim offense behaviours, within a single crime, to the likely relationship between the two parties. Stated another way, 'Relational Profiling' means discerning, based on the results of valid, empirical research, what will be the most likely relationship between victim and offender based on analysis of crime scene actions, or offense specific behaviours. In the case of the current research, this means analysing crime scene behaviours for their correlations to victim-offender relationships, victim-offender relationship status, and offender-victim relational roles to understand how these inter-personal, psycho-social, and psychological relationship factors impact the representation of offender behaviour homicides located in England and Wales. In criminological research involving clearance rates, it becomes apparent that the more accurate the field of offender profiling becomes in identifying the relationship between victim and offender, the higher likelihood that these crimes may be solved (Quinet & Nunn, 2014). As Quinet & Nunn explain, the closer the relationship of victim and

offender, the closer police are to identifying the perpetrator. This is why the emergent body of research should be focused on differentiating relationships within these unknown categories – because as stated previously, the likelihood that some (Miethe & Regoeczi, 2004) or many (Quinet & Nunn, 2014) of these unknown relationships are closer than 'stranger' is high.

1.7.3 Correlates of Crime Scene Actions and Relational Roles Offenders Assign to their Victims

A novel contribution that the current research relies on is a systematic exploration of the Narrative Action System framework (Canter and Youngs, 2009a; 2009b; 2012a), specifically as it attempts to categorize relational constructs of offenders to their victims, utilizing single-event homicide data from England and Wales. The narrative theory asserts that clues left behind in the crime scenes may aid in narrowing down homicide suspects whom have already been interviewed, placing concentration on suspects whom mirror the thinking pattern that the offender had during the crime, based on his/her crime scene actions. Moreover, a narrative understanding of homicide offenders may have applications to the investigative interviewing process of suspects and is proposed to be the foundation necessary to develop techniques that increase the chances of securing valid confessions and detecting malingering within an interview (Canter & Youngs, 2009a).

The Narrative Action System of criminal differentiation, or NAS (Canter and Youngs, 2009a; 2009b; 2012a), takes into account the stories offenders tell about the crimes they commit, ultimately relating to how criminals view the world, their perceptions of criminal responsibility, and the roles they place on their victim(s). The NAS of criminal differentiation theorizes that an offender's behaviour associated with their crime(s) will reveal details about the personal story and preferences of the offender. A further supposition of the NAS framework is that victim role

will play a part within the narrative, and that victim roles are reflective of the narrative typology that the offender most identifies. The schemas proposed by this theory that relate to the victim(s) in the criminal's plot are: as an object (pawns in the criminal's ultimate goal), as a vehicle (channel for the offenders' emotion), and as a person (recognizing their humanity) (Canter & Youngs, 2009a; 2009b; 2012a).

The beginnings of the relational theory (victim-as-object, vehicle, and person) of criminal differentiation (Canter & Youngs, 2009a; 2009b; 2012a) stemmed from a desire to understand the incomprehensible as it relates to serious crime. The notion that a relationship between victim and offender is explicit, and can be implied based on the victim and offender interaction during deadly assault situations was first addressed by Canter (1989). He asserted it was possible that the interpersonal interaction between victim and offender is indicative of an interpersonal exchange happening in the offender's daily life. The categories or facets of victim-as-person, object, and vehicle were first presented by Canter & Heritage (1990) in relation to rape offenses. It was initially theorized that offenders would relate to their female victims as objects, mere pawns in their quest for power or sexual desire. In crime scene analysis, the content categories created by researchers can be based on other researcher's work, or they can be very organic to the data sets researchers are working with. The emergent variables supported by this theory were both high in frequency and appeared closely together in the correlation matrix for these researchers, "indicating callous the offender's disinterest in his victim" (p.204).

'blitz' attack (3)

impersonal language (11)

no response to the victim's reactions (8)

surprise attack (2)

tearing of victim's clothing (14)

victim's clothing disturbed by offender (13) (Canter & Heritage, 1990, p. 203)

A number of variables emerged for Canter & Heritage (1990) that did not fit the object

theory; seven of these variables indicated the offenders' attempts at a more personal interaction

with their victims:

the victim's reaction influences/deters the offender (variable 7)

the offender requires the victim to participate verbally during the assault (17)

the offender requires the victim to participate physically during the assault (18)

the approach is one of a confidence trick (1)

the offender is inquisitive about the victim (10)

offender compliments the victim (9)

the offender apologises to the victim (33) (p.201-202).

It was subsequently reported in an SSA-1 analysis that these behavioural variables, while lower

in occurrence, clustered together in the same quadrant of the plot, meaning that they were highly

correlated with each other. Thus, the evidence that offender actions could indicate an innate

desire for a closer relationship with their victims emerged from this work, categorized as

"victim-as-person" (Canter & Heritage, 1990, p.201) in theoretical explanations of correlated

offense behaviours of this nature.

The "victim-as-vehicle" (Fritzon & Heritage, 1991, p.690) terminology did not emerge until

further conceptualization and classification of the earlier theory, yet began with an emergent set

of rape variables originating in the Canter & Heritage (1990) works, cited as indicating

overt violence and aggression" (p.203):

violence used as means of controlling the victim (24)

violence used, but not as a means of control (25)

aggressive verbal behaviour (26)

insulting language (12) (p.203).

The above variables, although not typical, also existed closely together on their correlational

plot, breeding a hypothesis that perhaps a prior history of aggressive behaviour was present in

the offender's past (Canter & Heritage, 1990). The idea that the offender could perhaps be acting

in an aggressive or violent manner toward the victim as a natural reaction to the victim's

behaviour, based on innately aggressive tendency, was further developed into the "victim-as-

vehicle" (Fritzon & Ridgway, 2001, p.690) category; this and the other two categories, "victim-

as-person" (p.698) and "victim-as-object" (p.691) .

A different interpretation of the Canter & Heritage (1991) relational theory was met with

a data set of 63 attempted homicide crime scenes (Fritzon & Ridgway, 1991) using the same

correlational SSA-1 analysis. Their data coding did not include police, witness or victim reports,

only information about the nature of the crime (attempted homicide) and information on the

actual crime scenes were recorded and utilized by these researchers due to confidentiality

restrictions. In their plot, the variables binding and gagging, one act of violence, stealing from

the victim, offender already on the premises prior to offense, weapon retrieved from the

premises, offender drunk, and single wound were partitioned into the category of "victim-as-

vehicle" (see fig. 1). It was then hypothesized that these variables would be generally presenting

themselves in these unplanned situations as involving alcohol and physical altercations prior to

the deadly assault (Fritzon & Ridgway, 1991). The violence in these cases was proposed to result

from the offender's desire to immediately control the victim, rather than to harm them. The

binding and gagging of the victim was seen as an instrumental act, indicative of a primary

motive of burglary or robbery turned homicide. Another theme emerged in that attempted homicide resulting from a physical altercation between quarrelling lovers, where the violence had escalated (Fritzon & Ridgway, 2001).

Variables partitioned into the "victim-as-person" category (Frizon & Rigeway, 1991) included the victim being located on the premises prior to assault, verbal violence, weapon used only to control victim behaviour, attempts at a conversation with the victim, bringing the weapon to the scene, use of a blunt instrument, and making verbal threats, and the act happening on the weekday. The offender who views his victim as a person was proposed to use a minimal level of violence with his victim, have prior knowledge of the victim's activities or lifestyle (as indicative by the victim's reports), and was thought to be indicative of a closer victim-offender relationship (see Fig.1). It was mentioned that this analysis did not include any actual information about victim-offender relationship due to accessibility issues, so this proposition could not be corroborated (Fritzon & Ridgway, 1991).

Finally the proposed "victim-as-object" variables for attempted homicides in the Fritzon & Ridgway, 2001) work included multiple injuries, injury to face, injury to head injury to torso, injury to limbs, victim defence wounds, injury to neck, slashing cut injuries, verbal insults to the victim, and change in offender behaviour subsequent to victim resistance (see Fig.1). The theory of "victim-as-object" assumes that the victim has little to no role in the occurrences happening at the crime scene, other than to perhaps compel the offender into escalation by merely defending themselves. The violence in these cases was viewed as excessive, and indicative of the offender's hateful or mistrustful world view (Fritzon & Ridgway, 1991).

It is important to note that the theoretical facets, or partitions on the plot of correlated variables were self-imposed by the researchers (see Fig.1).

Figure 1.7.3 Themes of Offending Behaviour in Fritzon & Ridgway, 2001, p. 690
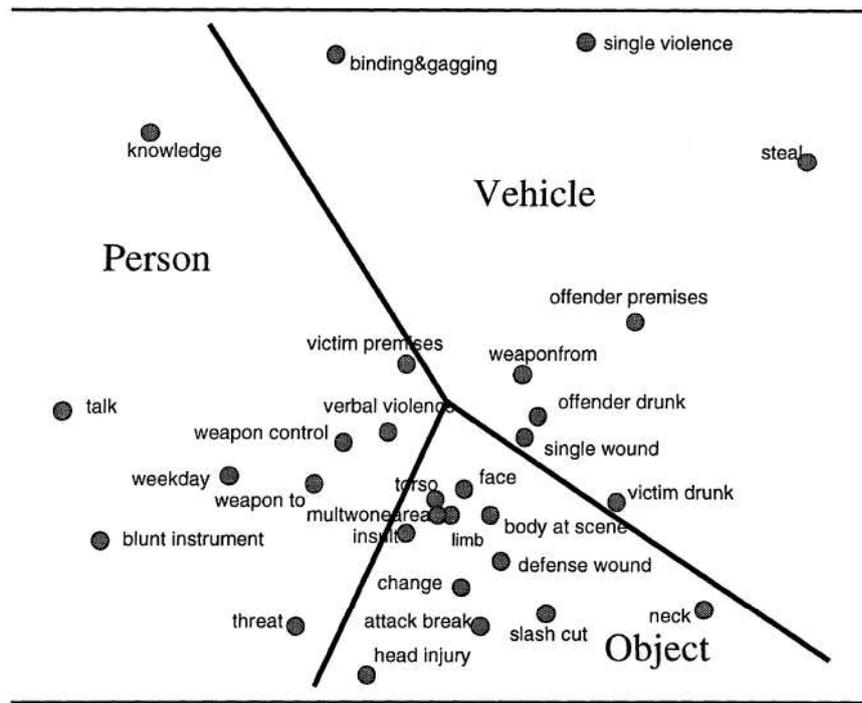
Thus, the partitioning here is subjective, and could easily be debated. For example, it has been seen in later dated research for both excessive violence and facial injury to be more indicative of a known or closer relationship between victim and offender (Last & Fritzon, 2005), except in cases where the victim is elderly (Jordan et al., 2010). Empirical research findings like the above mentioned are perhaps what lead to further development of the victim-as-object/vehicle/person relational theory for homicide situations – yet there have been no known prior attempts to validly test suppositions like these.

After being given access to information contained in entire police case files for unsolved serial assault cases, it occurred to Canter (1993; 2000) that "the distorted nature of the relationship in a violent assault on a stranger must be seen through the eyes of the offender" (pp.37) because the victim was seen to be merely a pawn in the offender's story, or narrative. Even when there was no prior relationship, as in stranger cases, the offender will assign a relational category to his or her victim in order to make sense of the actions he or she will commit. The chief relational assignment proposed for stranger assaults, primarily serial assaults, in this early work was the victim as an object category; wherein creating an environment of control and dominance may satisfy a need or an urge for the offender (Canter, 1993; 2000); perhaps indicating a lack of these themes in the offender's daily human interactions.

Another suggestion about the individual homicide event is that the offender's actions also depend on the reaction of the victim to the offender, and then on the reaction of the offender to the victim's behaviour (Fritzon & Ridgway, 2001). These two theories work hand in hand with each other; in clinical terms the victim and offender interaction in homicide situations would be contributed to be a complex transaction beginning with the offender's initiative behaviour and intent, the victim's reactive behaviour (fight, flight, or freeze), the offender's reactive behaviour to the victim's response, and emotive transference (a re-direction of emotions related to a past interpersonal experience onto a new object or person) (Howes, 2012) existing between the two parties derived from past experience. This is, perhaps, why stranger killers are more difficult to detect (Quinet & Nun, 2014). If the level of transference dictates action, actions within a 'stranger' crime may therefore mimic those seen in homicides imposed on known relationships, so the behavioural expression of the offender's intent or motive could be incongruent with what investigators deem as salient for possible suspects.

This incongruence with behavioural profiles in stranger homicides may very well be linked to a more ambiguous crime scene – yet crime scenes where there are multiple offenders with multiple relationships would likely also present this way. However, because emotive responses between known persons may be more consistent relative to reactive behaviour (Walker, 1979 in Weiner, 2003), it is proposed here that known relationships in the single-offender homicide situation may be revealed by the behavioural adjustments made between victim and offender, perhaps also indicating the intensity of their explicit relationship.

In the theory of relational identification as it applies to the victim-as-object/vehicle/person, ideologues have proposed, yet not verified that the victim-as-person narrative may be suggestive of a higher intensity (Fritzon & Ridgway, 2001), or prior relationship between victim and offender (Canter & Youngs, 2009a; 2012b). The theory stops here in its attempts to connect actual offender-victim relationship with how the offender relates to his victim in this sense. The theory is then expanded to include other victim narratives - hero, victim, professional, and revenger - that perhaps also correlate to the victim-as-object/vehicle/person roles (Canter & Youngs, 2009a; 2009b). Without going into further detail about these, as they are not seen to apply to the current research, the significance of such a distinction is said to be useful for investigative interviewing purposes (Canter & Youngs, 2009b) because it may shed light on the interviewing style of the offender, while having treatment implications geared toward violent sexual offender's deficits in empathy and control (Canter & Youngs, 2012a); however, these assumptions have not yet been further tested. The main critic of the Narrative Theory of Identity (Canter & Youngs, 2009b) argues that the works overall are vague in nature with undefined narrative terminology, lack of coherence, and lack of conceptual analysis (Ward, 2012). The author of this critique also points out "Another question rising from the study's design is whether

we can be confident that researchers are actually identifying offenders' narrative roles, or rather simply imposing a set of pre-determined categories upon their offense descriptions" (p.259). In fact, a recurrent theme in the research that highlights the categories of victim-as-object/vehicle/person is that prior authors analyse the correlations of action characteristics in crime, thereafter applying self-imposed partitioning separating the actions onto one or more of these three themes (e.g. Salfati & Canter, 1999; Fritzon & Ridgway, 2001; Canter, 1993/2000; Canter & Youngs, 2012b; Horning et al., 2015). Thereby, the claims that there is evidence for the three categories of relational interaction, however logical or valid they could be, remain statistically unsupported.

1.7.4 Summary

It is proposed for the current research explored in Study 3 (Chapter 6) that the relational categories of victim-as-object/vehicle/person may have a more tangible and testable significance than what has been proposed by Canter & Youngs, 2009a; 2009b; 2012a); that behavioural representation of such a theory revealed by homicide crime scene actions may indicate the actual relationship or relationship status between victim and offender for unsolved cases. The argument is that there is a need for statistical analysis of the categories victim-as-object, victim-as-vehicle, and victim-as-person relative to crime scene actions and interpersonal relationship, as they seem to have emerged as common themes in several works analysing serious violent crime across three decades, yet the validity of them has not been systematically tested until now and remains in question.

1.8.0 Chapter 1 Synopsis

The current project is an investigative psychological approach to offender profiling research. The above review of the literature has presented several findings that are testable within the scope of the current study, examining the connections between homicide offenders' interaction with their victims and what these may reveal about victim and offender relationship and relationship status in solved homicides for applications to unsolved homicides in England and Wales. The term for this relational crime analysis, and the criminal profiling technique that may be applied to real-world cases, was coined for the first time in this paper as "Relational Profiling". In the case of the current research, this means analysing crime scene behaviours for their correlations to victim-offender relationships, victim-offender relationship status, and offender-victim relational roles to understand how these inter-personal, psycho-social, and psychological relationship factors impact the representation of offender behaviour in British and Welch homicides. Several crime scene action variables were pulled for the current analyses because of their prominence and disparity in past research findings.

Notably, home location was found to be positively correlated with relationship intimacy in two studies, one in Taiwan (Cao et al., 2008), and one in the USA (Decker et al., 1993), making it a prime choice for exploration within the current data set of 64 solved homicides (87 offenders, 69 victims). Variations in the severity of facial injury were reported for one study (Avarez Cussen, 2017) to be a significant indication of relational differentiation between victim and offender, another study indicated a close interpersonal relationship between victim and offender where facial injury was present (Trojan & Krull, 2014) and another study fell just below significance yet also indicated a close interpersonal relationship was more likely where facial injury was present (Last & Fritzon, 2005). Weapon acquisition, particularly improvising or

deriving the weapon from the crime scene was confirmed in two homicide studies, one in the USA (Trojan & Krull, 2014) and one in the UK (Last & Fritzon, 2005), to be positively correlated with intimate relationship, indicating a more spontaneous, crime of passion incident has occurred. While the weapon acquisition variable is exploited in the current study, the usefulness of the result may not extend to offender profiling due to the difficulty of establishing where the weapon originated from in unsolved cases. Mixed results in two American studies regarding weapon choice and relationship intimacy create a gap for further exploration. On one hand, Trojan and Krull (2014) found that intimate forms of killings (manual or ligature strangulation, bludgeoning, and stabbing) are most common for more intimate relationship categories, whereas firearm use is most common for stranger killings – but only for male victims. Apparently, female offenders' tendency to choose knives as their murder weapons regardless of relationships makes them more difficult to differentiate in this way. On the other hand, Drawdy et al., (2004) examine the weapon choice variable finding no significant results across the board, calling attention to a disparity that needs further examination.

The research on injury severity has reached many positive findings for its correlations with intimate partner relationships (Wolfgang et al., 1956; Heller et al., 1983; Karlsson, 1999; Last & Fritzon, 2005) with one exception (Drawdy et al., 2005) noted as a methodological flaw in the study's design. However, once gender and age were approached and controlled for, other research paints quite a different picture, negating the injury severity as indicative intimate partnership supposition for male and elderly victims (Jordan et.al, 2010; Koeler et al., 2008; Abrams et al., 2007; Ahmed & Mensies, 2002). Injury severity is also recorded to be higher for estranged intimate partner relationships than active ones (McFarlane, 1999; Hotton, 2001; Brennan & Sinha, 2000; Wilson & Daly, 2003) yet outside of intimate partner relationships, the

estranged vs. active relationship category has not been explored in any published data to date. Only one Canadian study examines crime scene variables aside from injury severity with estranged vs. active intimate partner relationships, finding that home location, use of firearms, and precipitating victim violence are positively indicative of an estranged vs. active intimate partner relationship. Yet again, the study fails to examine the estranged vs. active category for other types of relationships (i.e. friends, family, business partners etc.).

A disparity currently exists both in the understanding of how crime scene variables may aid in relationship differentiation for female and elderly female victims, but also the research suggests that differentiating offender relationship to male victims by crime scene actions may not even possible. This disparity has three key causes: data collection issues at the State level (e.g. by police or government officials) (Canter & Youngs, 2009; Fox & Allen, 2013); relationship classification at the State level (Salfati & Canter; 1999; Miethe & Regoeczi, 2003; Quint & Nunn, 2014), and relationship categorization by researchers lending to errors in interpretation (both type 1 and type 2) (Loftin et al., 1987). Given that solved police files are the ideal data set for offender profiling research (Canter & Heritage, 1999), the first two issues involving data collection and classification cannot yet be avoided. These problems can, however, be controlled at the researcher level such that the relationship category can be explored with more rigorous inclusionary and exclusionary methodology. Also, with a more coherent and logical research agenda, research in the field of offender profiling can have a higher application value for crime scene investigators.

Research from the field of Investigative Psychology (IP) potentially offers the foundation for the current investigative climate. Traditional methods of offender profiling inquiry focused on psychological traits, motives, justifications, and psychological disorders have a plethora of

findings that forward a deeper understanding of offender psychology; however, focusing on the psychology of the offender may be confusing the applicational focus of profiling work because internal turmoil is difficult to correlate with behavioural factors, thereby this focus could be halting the applicational progress of offender profiling in general. If the focus of the IP field is to forward research efforts that identify salient features in crime scenes that help to differentiate offenders for investigative application, then the most fruitful, logical approach to this exercise is to focus empirical efforts toward the most imminent need of criminal investigators in the field of offender profiling practice – identifying who the offender actually is (Campbell, 2011).

In the IP field, the traditional methodology for extracting salient crime features currently relies on an Actions→Characteristics based equation (Canter, 2004), where researchers identify common and correlated crime scene variables and attempt to connect these themes to offender antecedents. This approach is complicated and explanations of how results apply are often vague because of a heavy reliance on the researchers' interpretation. For victim-offender relationships in homicide crimes, the C→A approach is backward and a reversal of the equation (Characteristics → Action) is critical to establishing valid inferences for relational profiling purposes. First, it is necessary to utilize solved homicide case files to identify the relationship between victim and offender, thereafter attempting to connect salient features of their individual crime scenes to the relationships they share. Understanding homicide scene behaviour by the relationships between victim and offender shifts the focus away from analysing or assuming personal characteristics of offenders by the behaviours that are correlated to one another in a set of crimes (an indirect approach to profiling behaviour), to analysing "who" likely committed the crime by the most common behaviours seen in each relationship category (a direct approach to

profiling behaviour). The studies within the current dissertation take this approach for the following areas of inquiry:

The exploration of the above highlighted set of variables (weapon choice, injury severity, the presence of facial injury, and crime location) are examined with the current data-set of 64 single-event (not serial) solved homicides from England and Wales, and attempted to corroborate or clarify the above findings for relational profiling applications (see Study 2, Chapter 5, Section 5.1.1). The contextual information surrounding the solved crime scenes aided in the valid classification of three relationship categories - stranger, acquaintance (including business associates), and close (including friends, family, and intimate partners) - for the current research; the meanings of these categories are not ambiguous, and followed an updated dictionary definition for the literal translation of the word (Merriam-Webster, 2012) at the time of data entry. A novel contribution in relation to these variables exists here by introduction of the active vs. estranged relationship into contingency for all relationship categories not recorded as "stranger". The status of all relationships (not limited to intimate partners as in prior research) were taken into account and correlated to crime scene action variables in Study 3 (Chapter 6, Section 6.2.1).

Investigatory practice, as opposed to research practice, must rely on an A→C approach when attempting to identify ambiguous offenders. Therefore, another area of inquiry is to test a theory that attempts to do so in a way such that it may have applicational value to police investigations. It was proposed in the early works of Canter (2000/2004) and then reiterated in later works by Canter & Youngs (2009a/2009b) that crime scene behaviours paint a picture that relates to the inner psychology, or "inner narrative" of the offender. In essence, a deeper exploration of the

phenomenon of victim-offender relationship may be a more useful contribution to the empirical field of offender profiling than past explorations of motive, personality, and psychological traits.

The Narrative Action System framework of criminal differentiation (NAS), developed by Canter & Youngs (2009a; 2009b; 2012b) is posited to lend itself to the offender profiling practice, perhaps having investigative interviewing and offender treatment applications. The theory is criticized for vague definitions and these interpretational difficulties render most of it untestable (Ward, 2012) with the current data set. One piece of this framework, that has been prominent in research for three decades, was sought after for testing within the current research methodology. The way that the offender is theorized to relate to his victim (as an object, as a vehicle, or as a person) has emerged across three decades of IP research (e.g. Salfati & Canter, 1999; Fritzon & Ridgway, 2001; Canter, 1993/2000; Canter & Youngs, 2012b; Horning et al., 2015), which makes it seem legitimate.

These three relational categories were defined, and common actions were identified and discussed as they relate to homicide behaviours. The relational categories of victim-as-object/vehicle/person were hypothesized for the current research to have a more tangible and testable significance than what has been proposed by Canter & Youngs (2009a; 2009b; 2012a), in that behavioural representation of such a theory revealed by homicide crime scene actions may indicate the actual relationship or relationship status between victim and offender for unsolved cases. The victim-as-object/vehicle/person theory remains an archetypal model (without validation) because the methodology approached to show evidence for, or "test" it, involves researchers' self-imposed application of these categories to correlated clusters of crime scene variables on visual plot, or SSA-1 analysis (ex. Fig.1). This means that research in the field of IP is continually taking an A→C approach with this theory, thereby neglecting to statistically test it.

In essence, the reverse, or a C→A approach, is the only way to enquire whether this theory has

applications to homicide offender profiling, and perhaps also to homicide relational profiling.

Studies 4 and 5 of the current research performed this reversal on the equation, and for the first

time in any known research, explored the validity of Canter's theory (1994) to offender profiling

applications. The overall purpose of the current project was to understand how relationship

typologies impact the presentation of crime scene variables and to what degree, thereby

providing a link to the information gathered at a homicide crime scene and the probable

relationship between the victim and their killer.

1.9.0 Definitions

1. Homicide: The term homicide, where referring to the current sample of convicted suspects and victims, includes only the acts of murder in the first degree, murder in the second degree and felony murders. Where referring to previous research classifications, the term homicide may also be referring to manslaughter. The current sample excludes manslaughter homicides, e.g "deaths resulting from criminal and noncriminal negligence, and unpremeditated vehicular deaths" (Megargee, 1982 in Douglas et al., 2006). Homicides included in the current sample were categorized by police investigators in England and Wales as single offender homicides (one killer) and multiple offender homicides (more than one killer). The current sample only included cases that Douglas et al., (2006) classify as single murders (one victim) and double murders (two victims) and do not include those classified as mass murder (one event, four or more victims), spree murder (a single event with two or more locations killing multiple victims and no emotional cooling off period), or serial murder (three or more events with two or more locations and an emotional cooling off period lasting days, weeks, months or years) (Alvarez & Bachman, 2014).

2. Murder: The term murder, when referring to the current sample of convicted suspects and victims, is used interchangeably with the term "Homicide" and only includes cases of the three following types, as defined by Alvarez & Bachman (2014):

I.   *Murder in the First Degree*: The killing was premeditated or pre-planned and intent, or mens rea was assumed.

II.   *Murder in the Second Degree*: The killing was not pre-meditated by the killer rather

reactive to the circumstances leading up to the homicide. For the current sample, intent,

or mens rea was assumed.

III.   *Felony Murder*: The killing was committed during the commission of another felony.

This would include instrumental killings resulting from a burglary, robbery, theft or other

crime. Intent, or mens rea was assumed.

3. **Convicted Suspects/Suspects:** These terms are used to refer to the subjects in the current

sample who were convicted of murder in the first or second degree, or were convicted of felony

murder. The term "offender" is not the term used to describe the convicted suspects in this

sample because the term offender assumes guilt. The confidentiality of the sample was

maintained, and it was not possible to follow the cases to understand whether any of these

convicted suspects had later been exonerated by DNA evidence or otherwise (The Innocence

Project, 2017).

Although relationships between victims and convicted suspects were originally recorded

separately (stranger, acquaintance, business partner, friend, family member, current lover, and

past lover), for the purposes of the current study, the relationship categories were consolidated

into three categories to balance the data set for homicide scene analysis (Stranger, Acquaintance,

and Close). The same three-part relational model produced successful results in the

differentiation of victim-offender relationship and homicide behaviours in two prior studies

outlined in previous sections of the literature review (Alvarez Cussen, 2017; Last & Fritzon,

2005). The choice to consolidate the relationship categories into three categories rather than

dichotomously was tested in Study 2 (Chapter 5) with a subsequent analysis consolidating

relationships further into two categories (Stranger and Known), finding that the three-part model

of classification revealed a greater conceptual differentiation of the groups compared to the two-part model. In addition, two further categories (active and estranged) were introduced to further differentiate the victim and convicted suspects that were known to each other before the homicide occurred. These relationships are defined for the scope of the current analysis as follows:

4. Stranger – the convicted suspect(s) was (were) not known to the victim(s) before the homicide occurred. Where a convicted suspect was believed to have stalked the victim before the killing for hours or even days, or was given information about the victim in the case of a contract killing, it could be argued that the killer knew the victim, yet the distinction here is that the killer was a stranger or *was not known to the victim* prior to the homicide. The police investigation and report led researchers to the conclusion that based on witness and suspect reports, the convicted suspect and victim had not developed a pre-existing relationship. Those who are familiar through sight during routine activities such as grocery shopping or passing in the street, considered marginally acquainted by Safarik et al., (2002), were categorized under the definition of stranger for the current research. It was theorized that if no relationship had been established between victims and their killers prior to the homicide, that the crime scene would differentiate to known homicides, due to lack of emotional and relational ties between the parties. If the victim had not formally met the convicted suspect, the parties were categorized as strangers.

5. Acquaintance – for the purposes of the current research, those who were marginally acquainted through a prior service (e.g. gardening, handy-man) (Safarik et al., 2002) were categorized as acquaintances. Where convicted suspects and victims had met prior (been acquainted), exchanged words, or were known to each other yet the result of the investigation revealed the parties had never developed a friendship, they were categorized as acquaintances.

The 'business associate' category was placed into the category of 'acquaintance' on the assumption that work colleagues are closer in definition to acquaintances than they are to strangers or close relationships, which while not expected, could have affected the reliability of the results.

6. Close – Close relationships, for the purposes of the current research, included victims and suspects who had established a close friendship, were family members, current lovers (intimate partners), or past lovers (estranged intimate partners). In other words, the parties were well known to one another prior to the homicide.

7. Active - The 'active' category housed all ongoing relationships between victims and convicted suspects known to one another prior to the homicide, including crimes of passion where the relationship had remained intact just prior to the homicide and those having less than a 12 month gap between interactions. This category included killings immediately following an argument between victim(s) and convicted suspect(s) with no cooling-off period elapsing between argument and killing, as the killing was considered immediately reactionary and not the result of a festering dispute between the parties. In other words, the victim(s) and convicted suspect(s) whom were not believed by witnesses or authorities to have been experiencing relationship difficulties prior to the homicide transaction were categorized as having an active relationship.

8. Estranged - For this study's sample, if a previous relationship had been established which ended in some kind of feud between victim and suspect before the homicide, with a cooling-off period between argument and killing, they was recorded into the 'estranged' relationship category. This category excluded killings immediately following an argument, such that there must have been a time period that elapsed between an argument and killing (several hours to

many months) such that it could not be immediately reactive in nature. Alternatively, if a

relationship had been previously established but had been absent for a period of over one year

(e.g. suspect moved to another city before returning to kill the victim) it was also marked as

'estranged'. This time lapse would allow for planning on the part of the perpetrator and it was

theorized that homicide scene behaviours in planned homicides would differentiate from those in

immediate reactionary killings.

Chapter 2: Objectives

2.1.0 Objectives of the Analyses for the Current Dissertation

The overall purpose of the analyses across the five studies within the current dissertation were to empirically establish to what degree the relational intricacies impacted the outcome of crime scene actions; a novel methodological contribution to investigative research on suspect profiling. Traditionally, the relationship category has been recorded for homicide research, but few researchers (e.g. Karlsson, 1999) have published work that further examines the components of relationship by how offending style is directly predicted by the real or perceived relationship with victims of homicide.

The overarching hypothesis of this research is that salient features of homicide scene actions between victims and perpetrators within individual, single-event homicides will reveal the most probable victim-suspect relationship, relationship status, and psychological role the victim played for their perpetrators in these crimes, thus has the potential to inform the criminal investigation process for homicide suspect prioritization and future research into relational profiling.

The disparity in research findings across three decades of crime scene analysis, and the vague nature of relational classification has left this area of study with many questions that are addressed within the scope of the current set of 5 studies. The current research first aimed to examine demographic characteristics of convicted suspect and victim characteristics alongside typical crime scene actions for 64 homicide cases from England and Wales (see Chapter 4, Study 1). An extensive secondary data set was compiled examining convicted suspect, victim, and crime scene characteristics with a three-fold purpose. The primary purpose of Study 1 was to

verify and validate the current sample of homicides as representative of UK homicide overall so that the subsequent analyses were more accurately correlating homicide behaviours to relationship. The second purpose of Study 1 was to precede the following four studies with frequencies and percentages of homicide scene behaviours and relationship categories. The third purpose was to identify other quantitative and qualitative variables that may prove useful to future research studies utilising the same secondary data set. The set of 8 hypotheses outlined below were garnered from previous research (see Chapter 1) and explored across four successive studies (2-5) in order to understand to what degree interpersonal (relationship), psycho-social (relationship status), and psychological (the role the victim played) aspects had an impact on the representation of crime scene behaviours in English and Welch homicide scenes. Study 2 (See Chapter 5) analysed how the representation of 62 crime scene actions were impacted by three suspect-victim relationship categories: stranger, acquaintance, and close. In Study 3 (see Chapter 6) the current research further explored the impact of relationship on homicide crime scenes by controlling for relationship status, analysing first the connections between gratuitous violence scores (no evidence, minor evidence, moderate evidence, and major evidence adapted from Porter et al., 2009) and relationship status (stranger, active, and estranged), then following with correlations between relationship status and 61 further crime scene action variables. The first three studies contained analyses that examined crime scenes more concretely, in that suspect-victim relationship and status variables were entered into analysis from previously recorded information provided by investigating officers during the original investigations into the crimes utilized for the current data set (a secondary data set). Study 4 (see Chapter 7) attempted to apply the Narrative Action Systems (NAS) Relational Theory (Canter & Youngs, 2009a/2009b) about the roles that victims play for their offenders (victim-as-object, victim-as-vehicle, victim-as-

person) to the original hypothesis, theorizing that these relational roles would also affect criminal behaviour. Although relational identity theory had been proposed over three decades ago (e.g. Canter, 1989/94/2004), no known previous research had attempted to establish concrete evidence for it beyond researcher-imposed partitioning onto crime scene action scatter plots (e.g. Frizon & Rigeway, 1991). It had been proposed by Canter & Youngs (2009a) that the role the victim played for the perpetrator could be analysed at the crime scene (in unsolved crimes or cold cases) and that this information could lead investigators to understand more about the personal characteristics of the suspect at large, possibly aiding in the investigative interviewing process (Canter & Youngs, 2009a; 2009b). The current research assumed that the victim-as-object/vehicle/person categories, given their relational underpinnings, would align with the relationship categories utilized in Study 2: Stranger, Acquaintance, and Close. Had this connection been made, it was theorized that the NAS theory could help to expound a more salient connection between crime scene variable representation and suspect prioritization. Chapter 7, section 7.7.1 (Study 4) first began by rating 64 suspects from their complete police files in congruence with relational theory in the literature. Suspects were rated (inter-rater reliability score of 1 - 100% concordance) on how they were perceived to have related to the victim of that crime (victims as objects, vehicles, or persons). These categories were then correlated to crime scene action variables in the same crime scenes to gauge whether the assumptions about the behaviour of perpetrators in the three categories (e.g. Canter & Heritage, 1990) aligned with the behaviour connected to the convicted suspects under study. A comparative analysis in Study 5, Chapter 7 attempted to link the three relational variables to the Study 2 relationship categories and the Study 3 relationships status categories. The purpose of this final analysis was to understand whether utilizing relational theory would provide additional

information about homicide relationships that could forward homicide investigations by leading investigators to suspects based on their homicide crime actions.

2.2.0 Percentages, frequencies and descriptive statistics for 64 homicides (Study 1) (Chapter 4)

The first study was designed to identify the frequencies of a comprehensive content dictionary in the current sample of 69 homicides from England and Wales. The content categories were compiled from categories used in several pertinent homicide studies (see Appendix D), and novel categories were created that support the three succeeding studies. Chapter 4 contains and reports on the most comprehensive list of homicide content categories ever known to be explored within a single study differentiating behavioural patterns of homicide crime scenes (143 convicted suspect characteristics, 43 victim characteristics, and 62 homicide action variables). Even the larger-scale and more well-known studies performing exploratory research of this kind have not included this magnitude of action variables (e.g. Salfati, 1998 **(n=36);** Salfati & Canter, 1999 **(n=48);** Fritzon & Ridgway, 2001 **(n=27);** Miethe & Regoeczi, 2004 **(n=10);** Canter et.al, 2004 in Canter & Youngs, 2009a **(n=39);** Last & Fritzon, 2005 **(n=6)).** This may be a function of practicality, investigational usefulness for the researcher, more stringent minimum requirements for analysis, or the non-occurrence of such variables within the other data sets of homicide crimes. The purpose of such an exploration was to validate the current sample by corroborating past research findings on similar homicides, while offering new categories that will be useful to the practice of Relational Profiling, a term coined for the current study's purposes. Demographics of victim(s) and convicted suspect(s) were recorded in accordance with their application to the forensic psychological assessment process. Because most UK homicide suspects have similar demographic histories [e.g. are men, white, unemployed/underemployed,

and living with a significant other while harbouring criminal histories (Salfati & Canter, 2004)] it was a challenge to infer further suspect characteristics that may help to differentiate homicide action variables. Further, suspect antecedents for the current set of homicide case files were entered by police professionals between the years of 1984-1991 with no ability for researchers to contact the reporting officers to corroborate or identify any missing variables previously entered. Therefore, only the suspect and victim information that could be checked against witness, police, suspect and autopsy reports within the police files were deemed viable for further exploration in subsequent analyses. Suspect and victim relationship prior to the homicide, suspect and victim age and suspect and victim gender were three categories that could be demonstrably identified and confirmed. Because homicide investigators are most concerned with identifying the culprit of these crimes (Campbell, 2011), victim-suspect relationship classifications emerged as the most viable and concreate way to understand how perpetrator behaviours in homicide crimes could help to identify suspects when a breadth of crime scene information is present yet the case remains unsolved. The literature explored in Chapter 1 left some gaping questions as to the correlates of victim-suspect relationship, the status of the relationship between victim and suspect (active vs. estranged) and victim age to homicide scene actions. Therefore, these variables were explored for their individual contributions to a comprehensive list of crime scene action variables. Three qualitative variables identifying how each suspect was rated to have psychologically related to the victim (victim-as-object, victim-as-vehicle, and victim-as-person) were introduced for the first time in Investigative Psychological research as their own content categories, and were assessed for reliability by two independent researchers (see Appendix B). Other qualitative variables that did fit in to the current scope of this study, yet were recorded and reported in Chapter 4, may be utilized at a later date for future study.

2.3.0 Characteristics to action analysis of 64 homicides (Study 2) (Chapter 5)

2.3.1 Research Question 1: What will a C$\rightarrow$A analysis of 69 homicides reveal about how homicide behaviour within a murder scene is impacted by victim- convicted suspect relationship?

The purpose of this study was to reverse the actions to characteristics (A$\rightarrow$C) equation (Canter 1993; 2000) to study crime scenes with a more directive approach than past IP homicide research had pioneered (where characteristics were inferred by actions as opposed to actions being directly linked to characteristics). By correlating the victim-convicted suspect relationship categories (C) to an exhaustive list of homicide scene action variables (A), it was hypothesized that:

2.3.2 **H1**: Trends will be revealed that will help to corroborate or clarify the disparity in past research findings regarding relationship correlations to weapon choice, injury severity, the presence of facial injury, and crime location with the current data-set of 64 single-event (not serial) solved homicides for relational profiling applications, and that

2.3.3 **H2**: Significantly high or low frequencies of 61 crime action behaviours will aid in differentiation of suspects by revealing their correlations to 3 victim-suspect relationship categories: Stranger (no previous relationship between victim and suspect), Acquaintance (low frequency of previous contact with no deep relational ties e.g. bar patrons, friends of friends, and business associates) and Close (friends, family, and current or previous intimate partners) at the time of the homicide event.

In cases where the victim was elderly, prior research by Jordan et al., (2010) suggested that strangers or acquaintances were more often implicated for the homicide compared closely known relationships. Therefore, a third hypothesis was tested as a part of Study 2.

2.3.3 **H3**: All age groups except for elderly will correlate with the "close" victim-suspect relationship category, whereas elderly adult homicides will be more likely connected to stranger or acquaintance suspects.

2.4.0 Active vs. estranged differentiation for known victim-suspect relationships in 64 Homicides (Study 3) (Chapter 6)

2.4.1 Research Question 2: Do active and estranged relationships in any category impact the presentation of action variables in homicide crime scenes?

There are several studies highlighted in Chapter 1 (Jordan et al, 2010; Koehler et al., 2008; Abrams et al., 2007; Ahmed & Menzies, 2002) accounting for the active vs. estranged relationship status categories for intimate partner homicides alone; however, no known prior study had noted this distinction for other known relationships (acquaintance, friend, business associate, family). For this study's sample, if a previous relationship had been established ending in a continued feud between victim and suspect prior the homicide, this was recorded as the 'estranged' relationship category. Alternatively, if a relationship had been previously established but had been absent for a period of over one year (e.g. suspect moved to another city before returning to kill the victim) it was also entered as 'estranged'. All other relationships were entered as 'active" when there was no evidence of a feud or no time lapse/break in the relationship. The purpose of this study was to understand whether active and estranged relationships in all categories (e.g. family, friend, business partner, intimate partner) impacted the representation of homicide crime scene actions. The answer to this question had been

established for intimate partner violence only, with findings suggesting that estranged relationships are at a higher risk for gratuitous actions by the hand of the suspect (Johnson & Hotton, 2003). The current exploration attempted to answer this question for other relationship types. A secondary analysis gauged correlates of a further 61 homicide scene variables to relationship status.

2.4.2   H4: It was hypothesized that homicides connected to estranged relationships in any category would be more gratuitous in nature than those connected to active or stranger relationships, as prior research identified this trend for intimate partner violence.

2.4.3   H5: Stanger, active, and estranged relationship categories will significantly differentiate in the representation of 61 further homicide scene action variables.

2.5.0 Correlates of victim-suspect relationship to offender relational identity (Studies 4 & 5) (Chapter 7)

2.5.1 Research Questions 3 & 4: The objective of this study was to identify 1) whether homicide scene action variables, as hypothesized in previous research, would demonstrably reveal whether the suspect related to the victim as an object, vehicle, or person. Further, 2) whether these relational categories proved useful to investigative practice (i.e. did they align with actual victim-suspect relationship categories)?

2.5.2   H6: Study 4 hypothesized that significantly high or low frequencies of crime scene variables would present themselves as correlated separately to recorded relational categories (victim-as-object/vehicle/person), differentiating them.

The crime scene actions of an offender with a victim-as-object narrative were described by Canter (1993; 2000) as impersonal in nature. The recognition of the victim as human and any emotional connection to the victim was missing (Canter & Youngs, 2009a/ 2009b/2012b).

2.5.3 **H7:** Therefore, the current research hypothesized that behaviours indicating the object narrative would point to a stranger relationship between victim and suspect and that the expression of this would mirror that of serial killer crime scenes. Indications of a stranger relationship in the presentation of crime scene actions are cues for investigators that, if the suspect is not captured, they are likely to offend again; therefore, these crimes should be highly prioritized. The crime scenes for this role will also appear disorganized, with victim clothing ripped, scattered, or missing. Forensic awareness, or behaviours indicating a desire not to be detected, would also be present for the object role, such as attempts to drag the victim to another location, hiding the body, burning the body to avoid detection, or killing the victim in a secluded location. Another theory proposed here was that the victim-as-object category would comprise more instrumental acts of violence – where the victim was killed by single or multiple perpetrators with a primary motive to obtain monetary awards. Behaviours here would include binding the victim, torture, use of a gun, robbery, burglary and forced entry behaviours (Canter, 1993; 2000).

2.5.4 **H8:** Excessive violence actions completed prior to the victims' death (multiple wounding, a higher gratuitous violence score, torture, and being beaten or bludgeoned to death) would be more indicative of a victim-as-vehicle narrative (Canter & Youngs, 2009b), rather than the object narrative as proposed by Fritzon & Ridgway (2001). Within this narrative identification, the perpetrator's purpose for the violence is to satiate an internal propensity toward violent and aggressive behaviour or anger toward the

victim, wherein there is "a sufficient recognition of the humanity of the victims [such] that attacking and exploiting her serves the suspect's purpose" (Canter & Youngs, 2009b, p.95). Thus, it was proposed for the current research, in single-event homicides, that excessively violent behaviours expressed by the victim-as-vehicle role would point to a crime of passion, where victims shared an intimate relationship with their perpetrators (current or prior).

Behavioural manifestations of the victim-as-vehicle role identification would include beating with fists, improvised weapons derived from the crime scene, multiple stab wounds, and multiple forms of injury (overkill). Additionally, the desire to justify the homicide may drive these perpetrators to behave in ways that attempt to stamp out the humanity of the victim (Canter & Youngs, 2009a), such as mutilation to the face (Fritzon & Ridgway, 2001). Prior research on mentally disordered homicide offenders revealed that, although homicidal acts are rare for this population, facial injuries are one of the more common behaviours presented by suspects suffering from psychosis when their relationship to victim is a close friend or relative, and that victims are generally living in the household with the suspect at the time of offense (Shug & Fradella, 2015). In this representation of the victim-as-vehicle theme, facial injury would indicate a psychotic individual with a close relationship to the victim.

The vehicle expression of violent behaviour (being more gratuitous in nature) would make perpetrators in this category second (to the victim-as-object perpetrator) for suspect prioritization. Though the greatest indication of future violence is prior violence (Alvarez & Bachman, 2014), it is less likely for a crime of passion to happen twice due to the reactive nature of this crime; the homicidal act was connected to the deceased victim. Detection remains a high priority as there are circumstances that could lead the perpetrator to further expressions of

violence, for example the emotional ramifications of the act itself, personal regret due to the loss of behavioural control, or aggression toward others perceived to have been in collusion with the victim. However, in cases with elderly victims for the victim-as-vehicle homicide, the greater likelihood that the suspect is a stranger would make this case a higher priority to solve, due to the assumption that a stranger perpetrator is likely internally motivated to commit homicide, therefore is expected to search out future victims that facilitate a continuance of this behaviour.

The victim-as-person role is the rarest of the three (Canter & Youngs, 2009a) because here the suspect desires to share a deeper connection with the victim (Canter, 1994; 2000). It was proposed by Canter & Youngs (2009a; 2009b) that the victim-as-person interaction may be indicative of the perpetrator's interpersonal life outside of the crime, being characterized by lack of intimate satisfaction or deficits in ability to maintain healthy relationships.

2.5.6   H9: Thus, it was hypothesized that the victim-as-person theme for homicide would point to an acquaintance relationship between victim and suspect, where the suspect would harbour maladaptive or obsessive thoughts toward the victim, yet would not have the ability to act on these thoughts unless they were acting in violation of social code – the colloquial saying, "If I can't have her, no one can.", would apply here. The behaviours presented by a perpetrator with the victim-as-person role would be more empathic in nature – resulting in the victim being posed or covered post-mortem. More intimate forms of killing, like manual or ligature strangulation and use of a blunt object would also be common in this theme. Sexually driven behaviours pre-and post mortem would also be represented in the victim-as-person category, as the perpetrator made attempts to be ever more intimate with their victim. Because of the likely tertiary relationship to the victim, the perpetrators in these cases may fear being detected, so an immediate act of violence

following the homicide is not as imminent a risk, placing perpetrators in this category

third for suspect prioritization.

Table 2.1.0 Research Questions and Hypotheses

Study	Chapter	Research Question	Hypotheses
2	5	*1. What will a C→A analysis of 64 homicides reveal about how perpetrator behaviour within a murder scene is impacted by victim-suspect relationship?*	**H0: No significant differences will be found that differentiate crime scenes by victim-suspect relationship.** **H1:** Significant differences will be found that will differentiate suspects by weapon choice, injury severity, the presence of facial injury, and crime location by their relationship to the victim (stranger, acquaintance, business partner, friend, family, and lover). **H2:** Significantly high or low frequencies of 62 crime action behaviours will aid in differentiation of suspects by revealing their correlations to 6 victim-suspect relationship categories (stranger, acquaintance, friend, business associate, family, and intimate partner) at the time of the homicide event.
		2. Does victim age correlate with victim-suspect relationship?	**H0**: **The age of the victim, as recorded by their belonging to one of 5 developmental age groups (adolescent, emerging adult, young adult, middle adult, elder adult) does not correlate with relationship categories (stranger, acquaintance, close).**

			H3: 1) All age groups except for elderly will be higher correlated with the "close" victim-suspect relationship category, whereas elderly adult homicides will be more likely connected to stranger or acquaintance suspects.
3	6	*2. Do active and estranged relationships in any category impact the presentation of action variables in homicide crime scenes?*	**H0: Active and Estranged victim-suspect relationships will not significantly differ in the level of gratuitous violence experienced by the victims of homicide.** H4: Estranged relationships in any category will be more gratuitous and expressive in nature than active or stranger relationships. **H0: The stranger, active, estranged relationship status categories will differentiate in the representation of 61 further homicide scene action variables.** H5: Stanger, active, and estranged relationship categories will significantly differentiate in the representation of 61 further homicide scene action variables.
4	7	*3. Do homicide scene action variables correlate to Canter & Heritage (2000) relational roles (victim-as-object, victim-as-vehicle, victim-as-person)?*	**H0: The Canter & Heritage (2000) relational roles assigned to the victims of homicide object/vehicle/person will not impact the presentation of crime scene action variables in UK homicides.** H6: Significantly high or low frequencies of crime scene variables will present themselves as correlated separately to recorded relational categories (victim-as-object/vehicle/person), differentiating them.

| 5 | 7 | 4. *Do relational categories (victim-as-object, victim-as-vehicle, victim-as-person) correlate to actual victim-suspect relationship categories?* | **H0: The relational categories (victim-as-object, victim-as-vehicle, and victim-as-person) do not correlate with victim-suspect relationship prior to the homicide event.**

H7: The **"Victim-as-object"** relational category will significantly correlate with the "Stranger" relationship category.

H8: The **"Victim-as-vehicle"** relational category will significantly correlate with the "Close" relationship category.

H9: The **"Victim-as-person"** relational category will significantly correlate with the "Acquaintance" relationship category. |

Chapter 3: Methodology

3.1.0 Participants - Origin of the current data sample

The data sample for this project was derived from copies of 73 complete homicide police case files, accessed from the Canter Archives at the University of Huddersfield, United Kingdom in 2011 (See Appendix D). The data set compiled from these files is therefore a secondary data set. The primary police file data set was originally collected in 1994 by a single researcher, Superintendent Rick Holden of the West Yorkshire Police. The agreement between Rick Holden and the partnering police stipulated that any identifying information be removed and that the data was only to be used for research purposes. Therefore, because secondary data was entered in a way that honoured this ethical agreement, and there were no direct human participants employed during data collection, the risks identified with utilizing human data sets were controlled for by removing names and addresses from the final data set. IRB approval was granted by the University of Huddersfield for the utilization of these police files to create a comprehensive secondary data set in 2011, then again in 2017 as the scope of the project had changed (See Appendix D).

Whilst Holden did collect the police files for the primary data set in 1994, his selection criteria for the cases included in his Master's thesis (N=62) was different in a few ways: Mens Rea, or intent was not differentiated (p.39), therefore a number of offenders were calculated into the equation who were accomplices to the actual murder (for instance those that were physically in the space of the killing when the murder was committed, but were not physically involved in the homicide, i.e. it was not their intent for a homicide to happen). The current research excluded these affiliated suspects, only taking into the analysis convicted suspects who were believed by investigators to be physically involved in the homicide (e.g. stabbing the victim). Also, child

homicides were not excluded nor separated in the primary sample as the only selection criteria was that the convicted suspect had been charged with homicide or manslaughter. The secondary data utilised for the current set of studies included only adult (16+) convicted suspects, with the exception of one minor (age 15) who was charged as an adult. Holden's cases accounted for 10% of all homicides committed in 1987, as his sample's mode year was identical to that of the secondary data set (1987). Therefore, it follows that a portion of the statistics from the two studies using the same population, the current research and the Holden (1987) paper, differed due to divergent exclusionary and inclusionary criterion.

Child homicides, ambiguous homicides where an offender could not be charged, and serial homicides were excluded from the secondary data set and a final N of 64 single-event (not serial) cases (87 convicted suspects and 69 victims) comprised the final data set. The final data set includes information on 64 cases with 87 offenders, all charged and prosecuted for homicide on one occasion (not serial). All cases in this sample occurred between the years of 1985-1991 with a mode of 1987. These homicides implicated single suspects for single victim homicides (75%), single suspects for multiple victim homicides (7.8%), and multiple suspects for single victim homicides (17.2%). Of 64 total homicide cases studied, 53 (82.8%) had implicated single suspects and 11 (17.2%) had implicated multiple suspects. Due to lack of empirical research and statistics on offenders of homicide during the exact time period in which the sampled homicides took place, it was unclear whether the current sample was representative of the offender-victim distribution in the UK, accounting for why the task in Study 1 was to establish the validity of the sample as representative. The final sample's convicted suspect distribution was also found to be reflective of more current statistics (from 2005 and 2006) indicating that multiple perpetrator homicide accounted for 22-26% of all homicides in the United Kingdom (Hopkins & Tilley,

2007; The Scottish Govt., 2010); however, this statistic could have included serial offenders, so it can be assumed that the number of multiple offenders would have been lower if the statistic were only to include single-homicide offenders.

Analysing population statistics for the 1985-1991 time period, a mean homicide rate of 13.13 deaths per year, per million capita, was calculated for England and Wales (House of Commons, 1999). With a mean population count of 57,080,000 for 1981-1991 (House of Commons, 1999), this would total approximately 750 deaths per year, or roughly 5,246 deaths by homicide for the 7 years spanning 1985-1991. Accounting for a portion of these deaths, 1368 offenders were convicted of homicide (House of Commons, 1999a). The final sample for the current research comprised (originally before exclusions) 77 solved cases and 100 offenders, and according to the above statistic if all 100 were all convicted they would represent 13.68% of all convicted homicide suspects during this unique time-period.

3.2.0 Materials - Content of the Current Data Set

A qualitative extraction of 143 convicted suspect characteristics, 43 victim characteristics, and 86 homicide scene action variables were entered into content categories for a reliability and validity measurement of the secondary data set in Study 1. Some, but not all, of these categories were further analysed for their relevance to relational profiling, and 62 crime scene actions with frequencies of 3 or more were utilized for subsequent correlations to relationship typologies in studies 2-5. The content categories created for the study (see Appendix D) were entered into SPSS for quantitative analysis as 1- present or 0- absent within each case. Previous researchers (e.g. Salfati & Canter, 2000) have analysed police files by extracting relevant behavioural information about murder with the aim of informing investigatory practice. The current project

utilized applicable variables that were created by previous researchers for their homicide studies in addition to other relevant variables created for the current research to mirror information critical to the forensic assessment process (See Appendix 4). The final data set, extracted by hand from each police report, was created from rich accounts of the crime containing:

1. Contextual detail and background information surrounding the crime and offender circumstance provided by investigating officers
2. Information about the victim and pre-crime circumstance
3. Crime scene photos
4. Victim autopsy photos and pathology reports
5. In some cases, offender interviews and
6. In some cases, full forensic reports and trial information.

A methodological risk with studying police reports is that they often contain conflicting information; as from the commencement of an investigation, investigators are merely beginning to piece the story together and can be subjected to malingering by witnesses and suspects. Often there are circumstances relative to the crime that are only uncovered throughout the investigation and indictment process (Mess, 2011). Another draw-back with police reports is that the data are compiled for the purposes of arrest and conviction and not for systematic study (Canter & Youngs, 2009a). The benefit of the current data set is that these reports were compiled during the investigation and completed after the suspect had been identified, charged with homicide, and prosecuted under this condition.

Having crime scene photos, autopsy photos, and pathology reports also provided a check-and-balance system with the investigative information, allowing for corrections to information that was missing or conflicting from various parts of the original report. Further, as indicated by the original letters requesting these files, each case within the current data set was, in fact, compiled for research purposes and particularly requested for research into offender profiling. Therefore,

the content of this unique data set was fruitful and complete, including all information that had

been available to police about these cases. Therefore, forwarding research into offender profiling

with this data set only required a more comprehensive analysis of the case files, by extracting

variables and performing analyses that had not yet been performed and were relevant to the

criminal investigation process of homicide crimes.

3.2.1 Coding Framework: Convicted Suspect Characteristics

(Bolded items are categories from the content dictionary – See Appendix: D)

Convicted suspect content categories were created from the archival police file data set by an

extraction of pertinent background and circumstantial detail, informing the situational context of

each individual crime, victim, and convicted suspect. The framework for extraction was chiefly

based on a precise and frequently used protocol in the criminal justice and forensic treatment

environment: the forensic assessment. This comprehensive process, designed to provide vital

details about the offender that can then be used to inform legal proceedings and treatment

objectives, can only be performed after the suspect has been arrested and charged for the crime

(Ackerman, 2006). Recording information pertinent to forensic assessments would be extremely

helpful for law enforcement agencies to add to their data collection process during homicide

investigations, such that researchers could utilize the information to aid in suspect detection and

prioritization.

Taking this perspective into the research setting, many of the content categories extracted were

based on the necessary components included within forensic reports. Analysis of this level of

detail was theorized to be comprehensive enough to reveal distinct patterns applicable to lone

murder cases in England and Wales, differentiating homicide behaviours based on real or

perceived relationships and relationship status between victim and convicted suspect. Additional extractions of the data recorded in Study 1 were completed with two goals in mind. The first was to externally validate the current data set for research purposes into homicide behaviours such that the results could be generalized. The second was to compile a rich data set for use in the current and future research studies. As such, the following components were extracted, aligning with the forensic assessment process (See Appendix: D).

1. Background information about the convicted suspect at time of arrest and personal history including details such as age, ethnicity, SES, home environment, and criminal history in addition to: "a) developmental history…, b) school history...c) medical history…, d) work related history…e) military history, f) substance abuse history, g) counselling or therapy history [including psychological factors such as traumatic brain injury or abuse history]…, h) relationship history…" (Ackerman, 2006, p. 67)

2. Information pertaining to criminal responsibility such as "legal insanity, diminished capacity, intoxication" (Greenfield & Gottschalk, 2008) as well as each player's level of involvement in the crime where multiple perpetrator homicides had occurred, and whether the crime was opportunistic or pre-meditated.

3. In place of psychometric testing, information identified in suspect and witness reports, police reports, and forensic assessments (where available) that related to the psychological motivation for committing the crime were included. For example: a) expressive and instrumental motivations (Miethe & Regoeczi) b) sadistic or sexual, or reactive motives (Porter et al., 2009).

3.2.2 Coding Framework: Victim Characteristics

The content categories for victim characteristics were created to include basic information that mirrors the personal history of the convicted suspect characteristics extracted. This section was added to determine whether the current victim sample was representative and also to discern whether findings from past research indicating that victims often mirror their offenders in demographic status (Papachristos, 2009) would apply to the current data set of English and Welch homicides. Another goal for this victim-focussed data entry was to explore, in future studies, homicide-victim risk-factors that reach beyond simple demographic data, adding information about the victim's circumstance at the time of the offense: where they were living at the time, SES, criminal history, personal history, and whether they were under the influence of drugs or alcohol at the time of the offense. The analysis for the current set of studies included three types of victim information that could be corroborated in various sections of the police file:

1. The victim(s) relationship to the convicted suspect(s),

2. The relationship status between victim(s) and convicted suspect(s) that were tested alongside a qualitative interpretation and extraction of the convicted suspects' narrative identity relative to their victims' (victim-as-object, victim-as-vehicle, victim-as-person) along with a quantitative set of crime scene behaviours; and

3. The victim's age was measured for connections to gratuitous crime scene action variables.

All three types of victim information were hypothesized help to inform the investigation process of unsolved crimes where only behavioural and victim information is present.

3.2.3 Coding Framework: Homicide Scene Behaviours

Many of the content categories derived for this portion of the analysis were organically extracted from the police files as they appeared relevant. A portion of the content categories utilized for the current research were mirrored from previous homicide research (See Appendix D, tables K-M). Other information extracted was evidence-based, or found common in crime scene information and pathology reports compiled at the time of investigation. These include the time frame between abduction and murder if the victim was abducted, a gratuitous violence score from 0-3 (Porter et al., 2009) and evidence of the victim's struggle. Information about weapon choice and the mode of behavioural interaction, or crime scene behaviours and victim disposal method were loosely based on categories garnered from previous homicide research (Canter & Youngs, 2009; Canter et al., 2004). Categories organically added (meaning demographic or action categories found to be naturally recurring within the current data set) to the analysis were victim disposal location, or where the victim was found, that tells a story about the perpetrator/victim interaction. Also, the contextual categories were organically added accounting for the homicide scene behaviours before - entry and struggle behaviours, during - when the murder was instrumental to other crimes, and after the murder - to avoid detection or attain property.

A portion of categories were added for he obstructive measures that perpetrators had taken to avoid detection alongside information on whether the suspect was judged by arresting officers to be truthful or dishonest at the beginning of the investigation as to their involvement in the crime – that could be measured in a later studies to understand the relationship between suspect-confession style and offending-style for investigative interviewing purposes. In the actions-based coding framework, background and contextual behaviours were extracted in addition to homicide

scene behaviours. The Narrative Action System Framework (Canter & Youngs, 2009a) posits that the crime scene can tell a story about the offender's narrative and how the offender relates to the victim, stated to be particularly useful for investigative interviewing (Canter & Youngs, 2012a). Under the NAS framework, three relational categories (victim-as-object, victim-as-vehicle, and victim-as-person) were hypothesized to correlate with three victim-suspect relationship categories (stranger, acquaintance, and close) to indirectly inform the homicide investigation process. These relational categories were and utilized to statistically test the theoretical framework with real-world homicide cases for the first time in recorded research (See Appendix D).

3.3.0 Procedure

A qualitative extraction was performed as above stated with most categories entered dichotomously. Although nominal, or categorical, data is considered the weakest form of measurement due to the fact that arbitrary numbers are assigned to categories or constructs (Siegel & Castellan, 1988), "Previous research has demonstrated that content analysis any more refined than presence/absence dichotomies is likely to be unreliable" (Canter & Heritage, 1990 in Salfati & Canter, 1999, p. 397). The nature of police file data commands a meticulous and dichotomous classification system because police data has not traditionally been collected for research purposes, rather to elicit a conviction (Canter & Youngs, 2009). Thus, a large margin for human error and individual differences in the collection process can be problematic for the analysis. Therefore, measuring only what had been recorded, had occurred, or was present at the crime scene was determined to be the only way to ensure a valid measurement (Canter & Heritage, 1990) when it could not be certain whether an action did or did not occur.

For example, if a category was created for "blood" at the crime scene and assigned a "1" for "present" and "0" for "absent", it would be incorrect to assume that blood was not present when the category been marked with a "0". Rather, it simply means that the presence of blood was not recorded by the police officer on that case. The presence of blood for that case is therefore, unknown, and not to be considered as "not present". Stated another way, the validity of the analysis depended on considering the "0", or "absent" entry as arbitrary, and what is known to be "present", or the "1" entry as the measurement criteria, in order to reduce likelihood of a type 1 error. Also, internal validity is further increased when the number assigned to all variables has the same meaning across the set of categories (Siegel & Castellan, 1988). That is why dichotomous categorization - where "1" means "present" across all categories, excluding the "0" from analysis - is the most valid way to measure relationships between variables that occurred within homicide crime scenes, thus quantifying the measurement of the qualitative police data set. It is worthwhile to mention that for the current research, relationship categories (stranger, acquaintance, close, active, and estranged) and homicide scene action variables were verified by scouring all parts of the police reports. Because the crime scene information in the current research could be verified by crime scene photos, crime scene videos and autopsy reports, the non-presence of these 62 homicide scene action variables was not considered arbitrary, rather, was a useful indication of what had not occurred in these crimes, further validating the results. There are a few exceptions where data was entered on a scale, based on content categories from Porter et al., (2009). Two categories (sadistic component, sexual component) were rated on a scale of 0-2: 0 (no evidence) 1, (some evidence) 2 and 3 (conclusive evidence) (see Chapter 4 for descriptive results).

The rating scale for these categories was incorporated to increase validity where individual interpretation could skew results. Also based on content categories from Porter et al., (2009), a score on a 4pt scale was input for gratuitous violence; 1 (no evidence), 2 (low level of evidence), 3 (moderate level of evidence) and 4 (major amount of evidence). A final category (forensic evidence) based on crime scene variables from Canter & Youngs (2009a) was originally entered on a 3pt. scale, but inter-rater reliability was not strong enough to support a scale for this variable (see Appendix B), thus, once the variable was dichotomized as present or not present, it increased the inter-rater concordance to 100%. All above stated scaled variables met with an appropriate inter-rater or concordance rate to include them in the final analysis. Chapter 4 describes the frequencies for all variables extracted. Inter-rater reliability scores for more theoretical or scaled variables were also explicated in Chapter 4 and the four qualitative content categories utilized to test the hypotheses for the current set of studies were subjected to Kappa testing, reported in Appendix B: Inter-Rater Reliability Testing.

When differences can be seen in 70%-100% of a population, the significance of the correlation resides at the $p \leq 0.05$ level (Osborne, 2008). Therefore, when the presence of variables in a category have occurred in 70% - 100% of the population, it can be assumed that this difference will be strong enough to correlate with the presence of another strong category in the same population. Thus, for the quantitative analysis portion of this study, only the stronger categories where 70%-100% of the population was accounted for (meaning were not placed in an unknown category) were utilized. For the following groupings, notice the unknown category for each (see Chapter 4). Where more than 30% of the population was unaccounted for, the category was removed from the final quantitative analysis. The methodology sections provided at the front of studies 2-5 explain exclusions to the final data set for each set of analyses.

Chapter 4: Percentages, Frequencies and Descriptive Statistics for 64 Homicides

4.1.0 Convicted Suspect to Victim Distribution

The final data set includes information on 64 cases with 87 convicted suspects, all charged and prosecuted for homicide on one occasion (not serial). All cases in this sample occurred between the years of 1985-1991, with a mode of 1987. Lone suspects were implicated for homicides with one victim (75%), lone suspects were implicated for homicides with two victims (7.8%), and multiple suspects were implicated for homicides with a single victim (17.2%). Of the 64 cases, 53 (82.8%) are lone convicted-suspect homicide cases (56 convicted suspects) and 11 (17.2%) are multiple convicted-suspect homicide cases (31 convicted suspects).

Table 4.1.0 Convicted Suspect/Victim Distribution	Frequency	Percentage
Lone-Single	48	55.2
Lone-Multiple	5	5.7
Multiple-Single	34	39
Multiple-Multiple	0	0
Unknown	0	0

Due to lack of research and statistics on convicted suspects of homicide (lone vs. multiple convicted suspect homicide) during the time period that the sampled homicides took place, it was unclear whether the current sample was representative of the single vs. multiple homicide convicted suspect distribution in the England and Wales during that time period. This sample's convicted suspect distribution is, however, reflective of more current statistics (from 2005 and 2006) (Hopkins & Tilley, 2007) indicating that multiple perpetrator homicide accounted for 22-26% of all homicides happening in the United Kingdom; however, this statistic could have included convicted suspects on serial crimes, so it can be assumed that the statistic would be

lower, and closer to the current sample's distribution, if it were only to include suspects convicted for single-event homicides.

The current sample also mirrors historical data from United States homicides, attributing approximately 13% of solved homicides in the 1990's to multiple perpetrators (Miethe & Regoeczi, 2004). Further, as will be revealed in the next section, the current homicide sample reflects general population and homicide statistics for the time-period when the sample was drawn, indicating that it is a representative sample.

4.2.0 Convicted Suspect and Victim Demographics

4.2.1 Convicted Suspect Age

The convicted suspect age distribution for the current sample was the same for both males and females, with a mean age of 28 at the time of their arrest. In the 247 British homicides that Salfati (1998) studied, it was found that the mean age was slightly higher yet similar for male (32) and female offenders (33). The mean, however, is not entirely indicative of what may be prevalent for this population. From the distribution of ages, it can be seen that the majority of offenders convicted for single-event homicides in the Salfati (1998) sample (76%) fell under the age of 35, differentiating them from the research on convicted offenders in serial homicides. Offenders are said to begin their serial careers between age 24 and 40 with a median age of 36 at time of arrest (Canter & Youngs, 2009a). Because the current sample has outliers that may be affecting the mean, the median is the more appropriate statistic. The current sample holds a median age of 25 for the convicted suspects' arrest, with 27% of the population falling below the median. There are 10 years separating the median age for these convicted suspects for single-event homicides and the research on serial homicide offenders. It would make sense that homicide suspects who were presumably arrested for their first offense of this kind would be

considerably younger than serial offenders caught after several offenses, with some outliers accounting for individual differences.

Research on 78 single-offender, single-victim British stranger homicides from the 1990's aligns with the current sample having a median age of 27 (Canter & Salfati, 2000).

Table 4.2.1 Convicted Suspect

Age at time of Arrest	Frequency	Percentage
10-15 (Minor)	1	1.1
16-19 (Adolescent)	17	19.5
20-25 (Emerging Adult)	27	31.0
26-39 (Young Adult)	28	32.2
40-65 (Middle Adult)	14	16.1
>65 (Aged Adult)	0	0

Figure 4.2.1 Convicted Suspect Age at Time of Arrest
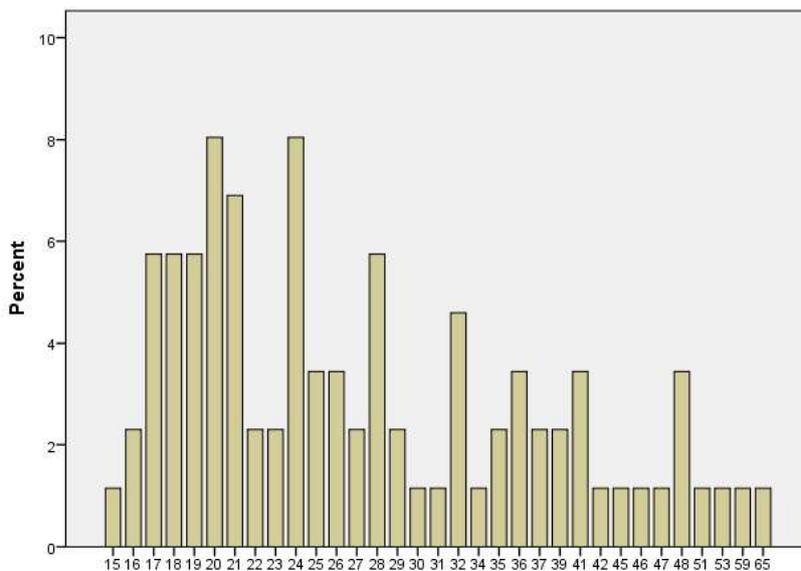
4.2.2 Victim Age

Victim age at time of death seemed to be evenly distributed across the age range of 14-94 with half of the sample falling below 40 years of age and half above, indicating perhaps that age is not a differentiating factor in victim choice for single-event homicides. With a mean age of 41.51, this sample mirrors the dissertation statistics for 247 British homicides as Salfati (1998) found

the mean age for victims to be 39. Because the current sample is distributed across ages and there are outliers affecting the mean, the median is a more appropriate statistic. The median for victim age at time of death is 40.

Figure 4.2.2 Victim Age (n=69) at time of Death
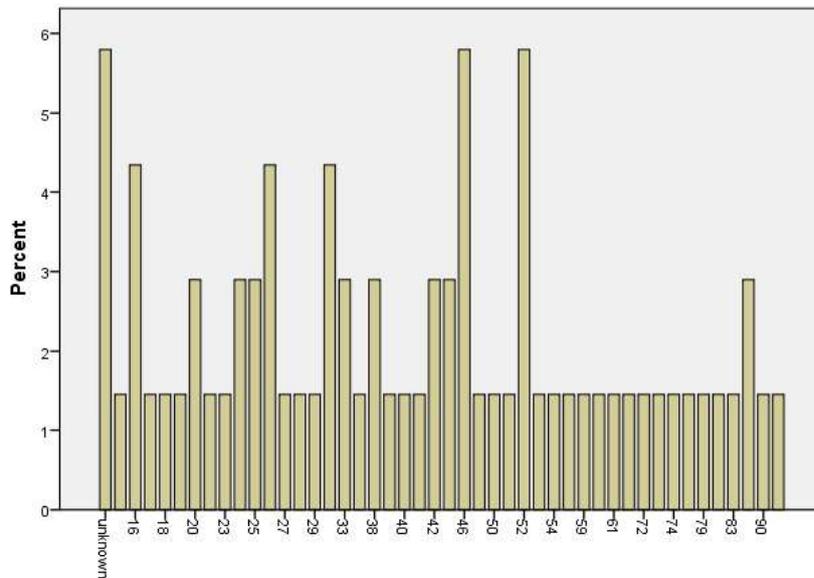
Table 4.2.2 Victim Age at time of Death

	Frequency	Percentage
10-15 (Minor)	1	1.1
16-19 (Adolescent)	6	8.7
20-25 (Emerging Adult)	8	12.5
26-39 (Young Adult)	15	21.7
40-65 (Middle Adult)	23	33.3
>65 (Aged Adult)	12	18.7
Unknown	4	5.8

4.2.3 Convicted Suspect Gender

In the current sample, the gender distribution for male (94.3%) and female suspects (5.7%) matches past research on these offenses (Canter, 2000) concluding that a greater majority of suspects convicted for homicide(s) were male (Jordan et al., 2012). Breaking this down for the current cases' gender distribution, female suspects are rarely convicted of homicide on their own,

yet are often convicted alongside male suspects (Miethe & Regoeczi, 2004; Porter et.al, 2009).

Table 4.2.3 illustrates the gender break-down of the convicted suspects presented in the current

homicide data set. The first two gender categories indicate lone offenses and the final 6

categories indicate the gender distribution in multiple-suspect homicides. As expected, female

suspects in the current sample were more often convicted alongside male suspects than they were

convicted on their own.

Table 4.2.3 Convicted Suspect Gender	Frequency	Percentage
Male (M)	52	81.3
Female (F)	1	1.6
M-M	3	4.7
M-F	1	1.6
M-M-M	4	6.3
M-F-F	1	1.6
M-M-M-F	1	1.6
M-M-M-M-M-M-M	1	1.6
Unknown	0	0

4.2.4 Victim Gender

Historical data from the 20th century reveals that homicide victims in the UK are over-

represented by the male gender (Miethe & Regoeczi, 2004) suggesting that the current sample's

gender distribution for male (62.3%) and female (37.7%) is slightly higher than expected for

female victims, yet still aligns with the general expectation for a greater number of male victims

compared to female victims.

Table 4.2.4 Victim- Convicted Suspect Gender	Male Convicted Suspects	Female Convicted Suspects
Male Victim	35 (81.4%)	8 (18.6%)
Female Victim	25 (96.2%)	1 (3.8%)

Of the 26 female victims in this sample, 25 (96.2%) males were convicted for their homicides and one (3.8%) female was convicted. Of the 43 male victims in the sample, 35 (81.4%) male suspects and 8 (18.6%) female suspects were convicted.

4.2.5 Convicted Suspect Ethnicity

The current sample of homicide suspects resided in England or Wales at the time of their arrest, and the majority were of European descent (89.7), 10.3% were ethnic minorities, and of the ethnic minorities, 4.6% were of Middle Eastern descent. Population statistics from the time indicate that 5.5% of the population in 1991 fell into the minority category (Scott et.al, 2001). The Home Office report from 1996-1998 reported that 94% of detected homicide offenders were of European descent (Richards, 1999). Notably, a majority of Canadian single-event homicide offenders were also of European descent (76%), so the current sample also mirrors Canadian population statistics. The United States and Australia, however, paint a different picture. Although a majority of the US and Australian population are also of European descent (White), their murder statistics indicate that homicides are evenly distributed between White and Black (African American in the USA and Aboriginal in Australia) populations (Miethe & Regoeczi, 2004). Future research may be able to shed light on this puzzling anomaly.

Table 4.2.5 Convicted Suspect Ethnicity

Ethnicity	Frequency	Percentage
Afro/Caribbean	1	1.1
Middle Eastern/Indian	4	4.6
Oriental Asian	1	1.1
White	78	89.7
Unknown	3	2.4

4.2.6 Victim Ethnicity

Just under 93% of the current set of victims were of European descent and 7.2% are of other

ethnic descents, mirroring the ethnic distribution of convicted suspects in this sample, mirroring

the finding that homicide offenders tend to choose victims in their own ethnic categories (Miethe

& Regoeczi, 2004). This indicates that perhaps ethnicity does not play a role as the deciding

factor in most homicides; rather ethnicity is merely a product of the environment.

Table 4.2.6 Victim Ethnicity	Frequency	Percentage
Afro/Caribbean	1	1.1
Middle Eastern/Indian	4	4.6
Oriental Asian	1	1.1
White	78	89.7
Unknown	3	2.4

4.2.7 Socio-Economic Status (SES)

In the current sample of homicides, with only four (4.6%) comprising the unknown category,

none of the convicted suspects' SES was recorded (by arresting officers) as upper-class. In fact,

most of this sample was comprised of the lower (78.2%) to middle-classes (17.2%), suggesting

that financial depression is main factor in a person's decision making toward violent behaviour.

Imprisonment may not be viewed as a deterrent because for people in the lower class of

economic circumstance, it may be difficult to meet primary needs (food, shelter, water), whereas

in the prison setting, primary needs are provided without cost to convicts.

Table 4.2.7 Convicted Suspect SES	Frequency	Percentage
Lower Class	68	78.2
Middle Class	15	17.2
Upper Class	0	0
Unknown	4	4.6

4.2.8 Victim Socio-Economic Status

For victim socio-economic status, the distribution was different than expected. In the Miethe &

Regoeczi (2004) homicide study, these researchers explain that homicide generally happens

within the same ethnicity and socio-economic status pools, yet the current sample shows a curve

toward convicted suspects choosing victims of slightly higher SES. In the current sample, 8 (9%)

victims comprised the unknown category, yet 36% were of lower socio-economic status, 29.2%

were in the middle-class category, and 3.4% were considered upper class. This indicates that

socio-economic status may be a differentiating factor for some UK homicides, perhaps for

monetary gain incentives. The theory of relative deprivation applied to violence and aggression

toward other human beings suggests that violence could be a by-product linked to feelings of

being disadvantaged compared to other people in close social circles or the greater society

(Alvarez & Bachman, 2017). Aside from monetary-gain incentives, some people who make the

decision to kill may be doing so because they feel that the victim is in a higher economic position

that they too deserve (Alvarez & Bachman, 2017).

Table 4.2.8 Victim SES	Frequency	Percentage
Lower Class	25	39.1
Middle Class	1	1.6
Upper Class	5	7.8
Unknown	10	15.6

4.3.0 Environmental Particulars of Homicide Situations in England and Wales

4.3.1 Time of Day

It may be of interest to homicide investigators and homicide prevention efforts for researchers to make available information about *when* homicide offenses generally occur. From the current representative sample, homicides occur most often in the early morning, between 12:00am and 5:59am (39.1%). When most of the working population is fast asleep, the early morning hours are ideal for isolating the victim, which is necessary for committing this offense without witnesses. This statistic may also be associated with bar fights turned fatal, where there are many witnesses. The late evening is next, between 10:00pm and 11:59pm (18.8%), followed by the afternoon time-period between 12:00pm and 4:59pm (15.6%), perhaps accounting for the break in working hours that might allow time for perpetrators to commit the crime and return to work undetected. Given that many of the convicted suspects in this sample were unemployed or under employed, the break in working hours may have been a function of the victim's availability.

Table 4.3.1 Time of Day	Frequency	Percentage
Early morning- 00:00-05:59	25	39.1
Morning- 06:00-10:59	1	1.6
Mid-Day- 11:00-13:59	5	7.8
Afternoon- 14:00-16:59	10	15.6
Early Evening- 17:00-19:59	8	12.5
Evening- 20:00-21:59	3	4.7
Late Evening- 17:00-19:59	12	18.8
Unknown	0	0

4.3.2 Day of Week

The day of the week is particularly telling because the majority of homicides (79.7%) in this sample were committed either on a Saturday (25%), a Friday (21.9%), a Wednesday (20.3%) or a Thursday (12.5%), with 84% of these happening on a Wednesday, Friday, or Saturday. Because it is expected that over half of victims (39.7% current sample) and convicted suspect (46% current sample) were under the influence of alcohol (Miethe and Regoeczi, 2004) at the time of the offense, it makes sense that homicides are centred around the days and times that are

most popular for public consumption of alcohol (Wednesday, Friday, Saturday late evening to early morning).

Table 4.3.2 Day of Week	Frequency	Percentage
Monday	4	6.3
Tuesday	4	6.3
Wednesday	13	20.3
Thursday	8	12.5
Friday	14	21.9
Saturday	16	25.0
Sunday	5	7.8
Unknown	0	0

Table 4.3.3 Victim/Suspect under the Influence	Frequency	Percentage
Convicted Suspect Alcohol	40	46.0
Convicted Suspect Drugs	8	9.2
Victim Alcohol	26	37.6
Victim Drugs	4	5.8

4.4.0 Geographical Particulars of Homicide Situations in England and Wales

4.4.1 Home Distance from Dumping Site (where body was found)

For the current convicted suspect sample, 69 (79.3%) lived within 5 miles of the crime scene, or could be placed in the "Marauder" category (Canter, 2000). Further, over half of the Marauders (n= 37 or 44% of the total sample) lived less than a mile away from the victims' final resting place. With the median distance of 1.4 miles and a mode of 0.0 miles (n=10), this indicates that over half (54%) of homicides happen in the home or same neighbourhood where the convicted suspects reside. The other 18 convicted suspects in the current sample (20.7%) would fit into the "Commuter" category (Canter, 2000), as the victims in these cases were killed more than 5 miles from the suspects' home, with a large, yet evenly distributed variance (5-158 miles), skewing the mean to 11.14 miles.

Figure 4.4.1 Convicted Suspect Home Distance from Dumping Site
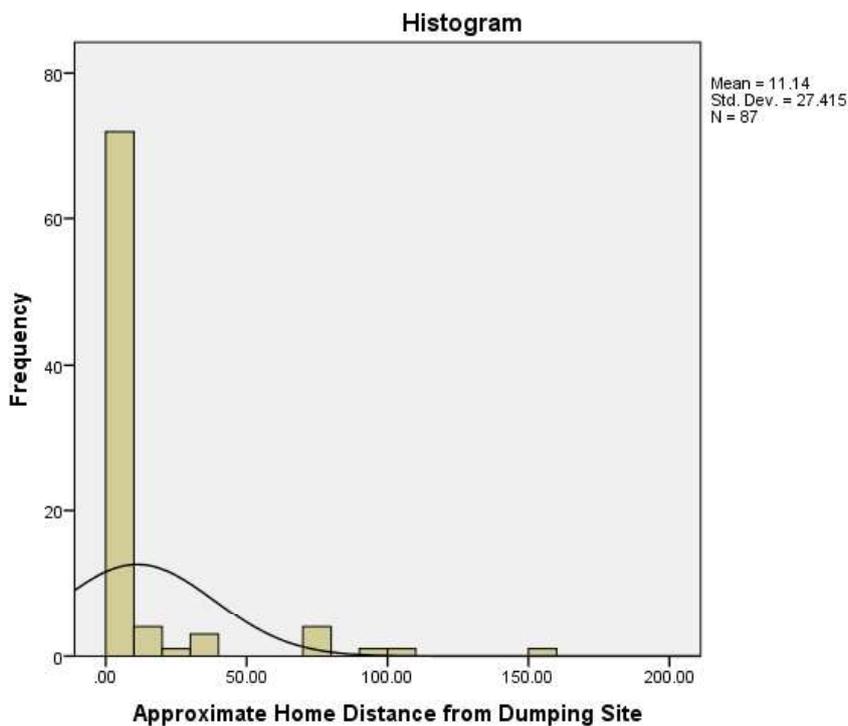
Table 4.4.1 Convicted Suspect

Commuter/Marauder	Frequency	Percentage
Marauder (<5miles)	69	79.3
Commuter (>5miles)	18	20.7
Unknown	0	0

4.4.2 Mode of Transportation

As can be derived from table 4.4.2 below, the most common method of transportation for convicted suspects to the crime scene was a motor vehicle, either their own personal vehicle or a friend's vehicle. There is not enough recorded for this variable in the current set of police files to make a solid inference, as the mode of transportation to the crime scene was not recorded for half of this sample.

Table 4.4.2 Convicted Suspect

Mode of Transportation to Scene	Frequency	Percentage
Bicycle	2	2.3
Friend's Vehicle	15	17.2
Personal Vehicle	24	27.6
Public Transport	2	2.3
Unknown	44	50.0

4.5.0 Convicted Suspect Characteristics at Time of Arrest

4.5.1 Convicted Suspect Relationship Standing

Half of this sample of convicted suspects fell into the "Single" relationship category at the time of their arrests and 29%, were "Divorced", "In a Relationship" or had suffered a "Recent Breakup". For 14 of the convicted suspects, mainly the accomplices in multiple perpetrator homicides, relationship standing was not recorded.

Table 4.5.1 Convicted Suspect Relationship Standing

Relationship Standing	Frequency	Percentage
Married	29	33.3
Single	44	50.6
Divorced	15	17.2
In a Relationship	20	23.0
Recent Breakup	12	13.8
Unknown	14	17.0

4.5.2 Convicted Suspect Education

Notably, most of the convicted suspects in the current sample (75.7%) were found to be educated to at least the high school level. Only 16% were known to be uneducated beyond the grade-school level and just over 12% of the sample was recorded as highly educated.

Table 4.5.2 Convicted Suspect Education

Education	Frequency	Percentage
Grade School	14	16.1
High School Diploma	55	63.2
College Diploma	9	10.3
University Diploma	1	1.1
Post Graduate Diploma	1	1.1
Unknown	7	8.0

4.5.3 Convicted Suspect Occupation

The saying dated back to Biblical Proverbs that; "Idle hands are the devil's workshop" (16:27-29), could be interpreted as those who find themselves with more time to spare also have more time to lend to devious activity. The current sample of convicted homicide suspects as 81.5% were not gainfully employed at the time of their arrest, leaving their schedules open to other methods of criminal activity, as corroborated in their conviction histories, ultimately including homicide.

Table 4.5.3 Convicted Suspect Occupation	Frequency	Percentage
Full Time Employment	16	18.4
Part Time Employment	7	8.0
Unemployed	53	60.9
Self Employed	11	12.6
Unknown	0	0

4.5.4 Convicted Suspect Accommodation

The media has sensationalized homicide offenders as evil master-minds who have low social intelligence and who turn to homicide as a form of self-indulgence. Public perception research found that homicide offenders are perceived to be solitary in nature and socially awkward (Gafford, 2004). This assumption is not validated with the current data set nor in the Salfati & Canter (1999) sample, finding that 48% of their lone-offender single-victim offenders were married or cohabiting at the time of their arrest. Table 4.5.4 shows that 41.4% of the current data set of convicted suspects were recorded by investigators as living in a social partnership, and 81.6% were residing amongst others at the time of their arrest. Many were living what could have been perceived as a "normal" life before an "abnormal" circumstance led to their convictions.

Table 4.5.4 Convicted Suspect Accommodation

Accommodation	Frequency	Percentage
Lives Alone	11	12.6
Lives with Flatmate	11	12.6
Lives with Parent/Family	23	26.4
Lives with Spouse/Partner	36	41.4
No Fixed Abode	6	6.9
Unknown	0	0

4.5.5 Convicted Suspect Parental Relationship Status

For 44.8% of the current sample of convicted suspects, information about the parental relationship was not recorded by police officers, yet for over half of the sample it was. Of the 48 (55.2%) convicted suspects where this information was available, 58% were raised having a good relationship with their parents, and 42% were estranged at least one parent, or at least one parent was deceased at the time of their arrest. It cannot be determined at this time whether parental relationship has an impact on homicide behaviour; however, future research could attempt to make this connection with a larger sample size (50+) where parental information is consistently recorded.

Table 4.5.5 Convicted Suspect Parental Relationship Status

Parental Relationship Status	Frequency	Percentage
Good Parents	28	32.2
Estranged Parent	13	14.9
Deceased Parent	7	8.0
Unknown	39	44.8

4.5.6 Convicted Suspect Mental Health History (Hx)

The current research assumed that information important to the forensic assessment process would be measurable in the current data set; however, many of the categories created were only applicable had psychological evaluations of the convicted suspect been presented in the case. This historical data contains only a handful of cases that included a psychological evaluation. In the current year, psychological evaluations are far more common, particularly with more serious offenses. Forensic assessment information for correlation studies of convicted suspect characteristics to crime scene actions could be completed with a more current homicide case sample.

For the categories below, with exception of the incarceration variable, being that the non-presence of this variable is corroborated fully with the arrest record for each convicted suspect, only a qualitative analysis of these outliers would be possible. For example, the "Traumatic Brain Injury" variable was recorded by police officers for two cases. The cases harbouring both of these variables contained a narrative account from family and friends of erratic and violent behaviour, only occurring after the brain injury had been incurred by the convicted suspects. These two cases contain rich information that could shed light on the behavioural characteristics of the docile-turned-violent due to brain injury, yet could not lend to any conclusive evidence due to the low (n), or number of occurrences in the current data set.

Table 4.5.6 Convicted Suspect Mental Health History

Mental Health History	Frequency	Percentage
Abused Emotionally	6	6.9
Abused Physically	3	3.4
Abused Sexually	3	3.4
Addiction	16	18.4
Addiction Treatment	4	4.6
Hospitalization	5	5.7
Incarceration	30	34.5
Mental Illness	9	10.3
Military Training	11	12.6
Personality Disorder	4	4.6
Traumatic Brain Injury	2	2.3

4.6.0 Convicted Suspect Prior Conviction History (Hx)

4.6.1 Convicted Suspects' Total Number of Previous Convictions

The mean number of total convictions for the current convicted suspect population is 22.55, with

a median 10 convictions. The conviction history for 80 of the 87 convicted suspects was present

in their individual files. Although many of these convicted suspects had several prior

convictions, only 30 of the 64 were previously incarcerated, despite the severity of these offenses

described in table 4.63.

Table 4.6.1 Convicted Suspect Total Number of Previous Convictions

Number of Previous Convictions	Frequency	Percentage
Previously Incarcerated	30	34.5
No Prior Convictions	14	16.1
1-3 Convictions	21	24.1
4-10 Convictions	13	15.0
11-20 Convictions	12	13.8
20-50 Convictions	13	15.0
>50 Convictions	6	6.8
Unknown	7	8.0

4.6.2 Convicted Suspect Age at First Conviction (n=64/87)

The mean age for the first conviction in the 64 convicted suspects who were documented as having a prior criminal record was 13.25, with a median and mode of 15. Table 4.6.2 highlights that 75.1% of convicted suspects received their first conviction between the ages of 10 and 19, indicating that the Minor and Adolescent period in the life cycle marked the beginning for many of their criminal careers. The Emerging Adult and Young Adult period in the life cycle holds the highest concentration of arrests for the single-event homicides recorded in this sample. This indicates that earlier criminal histories may provide a gateway into more serious criminal activity.

Table 4.6.2 Convicted Suspect Age at First Conviction	Frequency	Percentage
10-15 (Minor)	28	43.8
16-19 (Adolescent)	20	31.3
20-25 (Emerging Adult)	12	18.8
25-39 (Young Adult)	3	4.7
40-65 (Middle Adult)	1	1.6
<65 (Aged Adult)	0	0

Figure 4.6.2 Convicted Suspect Age at First Conviction
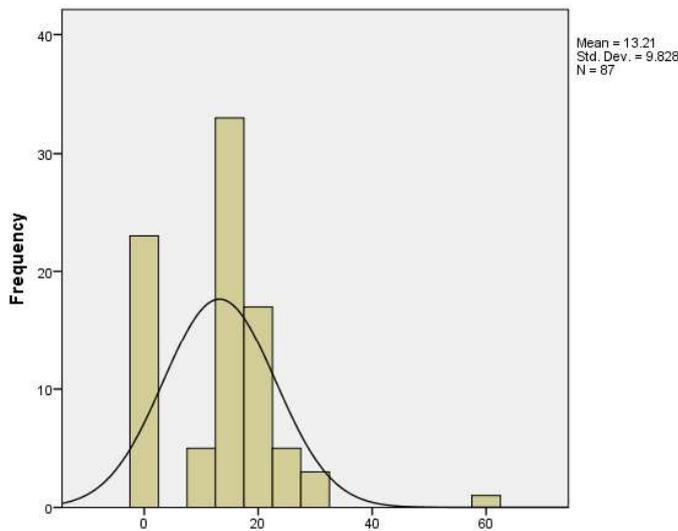
4.6.3 Convicted Suspect Prior Conviction Types (n=64/87)

Any behaviour can become addictive with continued exposure (Milkman & Sunderwirth, 2009) particularly those that release stress hormones into the brain (e.g. adrenaline). As the brain becomes habituated to dangerous behaviours (e.g. bungee jumping), the excitement for the act diminishes, leading people to seek out more dangerous behaviours (e.g. sky diving) to satiate the addiction to stress hormones, or "natural highs" (Milkman & Sunderwirth, 2009, p.1). Lower-level crimes (e.g. theft) can provide excitement (e.g. adrenaline) for offenders, and the relief stemming from avoiding detection while retrieving the rewards associated with this behaviour (e.g. monetary gain, social prowess) can be euphorically addictive. When the brain becomes habituated to this euphoria, or the brain's tolerance to the natural opiate and dopamine production reaches homeostasis (Milkman & Sunderwirth, 2009), it potentially leads to further cravings for more serious crime (e.g. burglary), in efforts to satiate the conditioned need for higher volumes of neurotransmitter production. This could explain why many of the homicide suspects in this sample had been convicted of several prior offenses leading up to their homicide convictions.

The current data set revealed that of the 64 convicted suspects who had committed previous offenses, theft (75%), burglary (65.2%), and criminal damage (53.1%) were the most commonly committed offenses prior to the homicide. This is corroborated with similar high to low frequencies in a comparable data set of 193 British homicide offenders with previous convictions; theft (60%) burglary (36%) damage (26%) (Salfati, 1998). The current data set, however, had significantly higher occurrences in each category. In 82 lone-offender single-victim British stranger homicides, Salfati and Canter (2000) found that theft (56%), burglary

(45%) and criminal damage (30%) were also amongst the highest frequency of previous

offenses.

Table 4.6.3 Convicted Suspect

Prior Conviction Type	Frequency	Percentage
Animal Cruelty	3	4.7
Arson	1	1.6
Burglary	42	65.6
Child Sexual Abuse	4	6.3
Criminal Damage	34	53.1
Domestic Violence	10	15.6
Drug Offense	12	18.8
Fraud	12	18.8
Murder (Attempted)	1	1.6
Rape	4	6.3
Robbery	8	12.5
Sex Offense (other)	4	6.3
Theft	48	75
Violent Offense (other)	11	17.2

4.7.0 Convicted Suspect Mens Rea and M.O.

4.7.1 Intent and Planning

In the current set of British and Welch homicides, convicted suspects either self-reported or were

reported by friends, family or witnesses as to their intent, or the legal term "Mens rea" (Greene

et.al, 2007, p.233) to commit the homicide. In 14 of the homicides, the absence of intent was

recorded. In one opportunistic homicide, a convicted suspect explained that he wanted to "scare"

his victim by pulling the knife, but accidentally punctured his heart, instantly killing him. The

distribution of opportunistic and pre-planned homicides is almost equal for the current data set of

convicted suspects, indicating that *Mens rea* can be present regardless of whether the crime was

pre-planned or happened during the course of other daily activities.

Table 4.7.1 Intent and Planning	Frequency	Percentage
Mens Rea (Present)	73	83.9
Mens Rea (Absent)	14	16.1
Opportunistic Homicide	45	51.7
Pre-Planned Homicide	42	48.3

4.7.2 Modus Operandi

A clear distinction is made in the current data set for the definitions of expressive and

instrumental homicides. In a study by Miethe and Regoeczi (2004), these researchers reported

that over 90% of their cases had markers for both expressiveness and instrumentality. There is a

great deal of ambiguity related to these themes, yet the current research makes an important

distinction that aids in the classification of these crimes and increases the validity of the

classification, yielding an 88% concurrence in inter-rater reliability testing for the classification

of the current set of crimes. Expressive homicides (59.7% of the current sample) were classified

when the murder was an expression of the perpetrator's inner psychological functioning, but also

very importantly, expressive homicides are classified when the primary motive was originally to

commit the homicide. Instrumental homicides (52.9% of the current sample) were classified

when the primary motivation was not to commit the homicide, rather gain something outside of

the homicide, yet the homicide (as perceived by the perpetrator) was necessary in order to

achieve another goal(s). Just 11 (12.6% of convicted suspects) were not classified into either

category, where their primary motives were judged to be both expressive and instrumental in

nature.

Holden (1994) reported that a reactive node emerged in the data, including most of the cases that

were re-examined for the current data set. He theorized that if the convicted suspect was

unarmed, and the homicide was not pre-planned, then it would have been reactive in-nature. The

reactive node also emerged for the current classification with a different interpretation. For example, when a convicted suspect was armed with a knife for protection and was provoked or attacked by the victim at random, the use of that weapon resulted in the death of the victim. In the case highlighted above, the murder was not the initial intent, yet the weapon was present, therefore the event was classified as unplanned. This event would have been classified as pre-planned in the 1994 grouping scheme. Miethe and Regoeczi (2004) explain that for their sample of 197,178 homicides from 1976-1998 in the USA "Confrontational disputes amongst males and arguments among primary group members are the most common situations often linked to expressive homicides whereas killing during the commission of a robbery are the most prevalent type of instrumental homicides" (p.116), indicating that the convicted suspects' reaction to environmental circumstances had greatly contributed to their reported motives. Porter et.al (2009) also gave heed to the reactive nature of many homicides. They separated the instrumental category into four sub-sections representing the level of reactivity involved in the crime (from not reactive to total reactivity). They did not, however, consider the expressive theme as having a reactive node, and for the purposes of future studies utilizing the current data set, this distinction has emerged and has been recorded for the current sample as follows:

The *Purely Expressive* homicide (36.7%) was characterized by the perpetrator reporting that the primary motive for the homicide was a desire to kill. These murders were hypothesized to most closely resemble serial murder in that the act was pre-planned, the killer harboured "urge" incentive, the victims were caught off –guard, rendering them less able to struggle, there was some evidence forensic awareness on the part of the perpetrator, the homicide was in most cases gratuitous, and due to the nature of the offense it was hypothesized that these offenders would be

more likely than others to travel outside of the 5 mile radius of their homes in pursuit of the victim.

The *Expressive-Reactive* homicide (20.7%) was classified in homicides that occurred as a result of a physical fight between strangers or acquaintances, also including "crimes of passion" between conflicting lovers. They were hypothesized to be opportunistic in nature, have practical (fight) or emotionally driven incentives (revenge, rid obstruction to desired relationship, restoring justice). The expressive-reactive homicidal perpetrator was hypothesized, due to the opportunistic nature of the crime, to be living closer to the crime scene than any of the other classifications, being that these crimes were more often located in the home of the victim or at a local hang out spot.

The *Purely Instrumental* homicide (28.7%) was classified in murders committed by the beneficiary of a life insurance policy, and were hypothesized to be pre-planned and also more often a collective effort between multiple parties in order to achieve this common goal (a portion of the insurance pay-out). It was further hypothesised that in the cases of multiple perpetrator homicide, some of these perpetrators may live outside of the 5 mile radius, but that the inciting party (at least one) would live or work with their victim (as they need to be close enough to be aware of the pay-out amount). This type of crime is largely monetarily driven, yet can also include cases where the motive is to remove the obstruction to a desired relationship with another person (e.g. the boyfriend who kills the husband of his lover).

The *Instrumental-Reactive* homicide (24.1) was classified in burglaries turned instrumental homicide, where it was hypothesized that these crimes would be opportunistic and driven by the desire to cover up another crime – or the desire to remain undetected. Burglary-homicides were also hypothesised to have the most cross-over between expressive and instrumental motives

because although the primary motive may not have been to commit the homicide, it may have become the primary motive as it was not necessary to kill the victim to achieve the original desired goal (the money/ goods).

Sub-categories for the qualitative breakdown of expressive and instrumental homicide motives are listed first in table 4.7.2. These were recorded when primary and/or secondary motives were reported by suspects or witnesses to the crime. Notice that there was no overlap for expressive motives, perhaps due to the emotional nature of these crimes (Miethe & Regoeczi, 2004). Instrumental motives were overlapping at 31% (meaning multiple instrumental motives were recorded for the same person), indicating that many convicted suspects had more than one instrumental reason to kill the victim (e.g. the down-on-his-luck perpetrator who commits the homicide for two monetary motives: (1) to acquire new monetary rewards and (2) to absolve his debt owed to the victim.)

Table 4.7.2 Modus Operandi	Frequency	Percentage
Expressive	50	57.4
Hallucinations/Delusions	2	2.3
Fame/Notoriety	1	3.4
Revenge/Retribution	22	1.1
Restore Justice/Order	10	11.5
Satisfying Urge	32	36.8
Instrumental	46	52.9
Absolve Debt	6	6.9
Attacked by Victim	4	4.6
Fight	19	21.8
Conflict over Lover	6	6.9
Cover-Up Crime	17	19.5
Given Order	5	5.7
Monetary Motive	44	50.6
Non-Consensual Sex	4	4.6
Rid Relationship Obstruction	9	10.3
Overlapping Instrumental	27	31.0
Purely Expressive	32	36.7
Expressive-Reactive	18	20.7
Purely Instrumental	25	28.7
Instrumental-Reactive	21	24.1
Overlapping Motives	9	10.3

4.7.3 Sadistic or Sexual Component

The sexual/sadistic rating system utilized was adapted from Porter et.al (2009) for their research into differentiation of single vs. multiple perpetrator homicide. They found that individual killers Canada were three times as likely to engage in gratuitous violence as multiple perpetrators. They also found that single perpetrators were nearly twice as likely to include a sexual component in their acts of homicide. Table 4.7.3 shows that just over half of the UK homicides in the current sample were rated as having a sadistic component (53%) whereas only 16% were rated as having a sexual component. These variables met with 86% corroboration in inter-rater reliability testing.

Table 4.7.3 Sadistic/Sexual Component	Frequency	Percentage
Sadistic	46	52.9
No Evidence	41	47.1
Some Evidence	25	28.7
Conclusive Evidence	21	24.1
Sexual	14	16.1
No Evidence	73	83.9
Some Evidence	7	8.0
Conclusive Evidence	7	8.0

4.7.4 The relational role of the victim according to the Narrative Action System framework (Canter & Youngs, 2009a)

The Narrative Action System of Criminal Differentiation (NAS) (Canter and Youngs, 2009a, 2009b, 2012a) assumes that offender's narrative accounts of the crimes they commit will relate to how criminals view the world, their perceptions of criminal responsibility, and the roles they place on their victim(s). NAS theorizes that behaviour associated with violent crime(s) will reveal details about the personal story and preferences of the perpetrator. A further supposition of the NAS framework is that the victim role will play a part within the narrative, and that victim roles are reflective of the type of narrative that the perpetrator identifies with.

The schemas that relate to the victim(s) in the criminal's plot are: as objects (pawns in the criminal's ultimate goal), as vehicles (a channel for the offenders' emotion), and as persons (recognizing their victim's humanity). The inter-reliability on classifying the convicted suspects' relation to the victim in the current sample met with a 100% concordance (See Appendix B). Fewer convicted suspects in the current sample identified with the victim-as-person category (16.5%) compared to the victim-as-object (47.3) and victim-as-vehicle (36.3) narratives. The victim-as-person narrative was theorized in past research to be the rarest form of personal identification with victims for serial homicides (Canter & Youngs, 2009a; 2009b; 2012a). Single-event homicides in the current sample substantiate this part of the theory. The Narrative

Action System Framework (Canter & Youngs, 2009a; 2009b; 2012a) posits that the crime scene can tell a story about the offender's narrative and how they see themselves in relation to their victim, purported to be particularly useful for the practice of investigative interviewing (Canter & Youngs, 2009b).

Under the current framework, these recorded relational role identifications are hypothesized to correlate with homicide scene actions, thereby informing criminal investigation process of British and Welch homicides. By providing a new methodical process to further test the NAS theory against real world homicide cases, a greater understanding of how these narratives apply to homicide behaviour was calculated in Studies 4 & 5 of the current research. Until this point, the psychological role theory has not been statistically tested. Study 4 analysed the current cases using information from the entire police file to first classify these roles (See Appendix B), and second to measure how the convicted suspects' relation to the victim(s) may have affected the behavioural profile of the crime scene (see Chapter 7, section 7.1.1). One case that showed markings for all three roles, so while it was added to the frequency chart below, it was not calculated into these percentages.

Table 4.7.3 Convicted Suspect Relates to Victim

to Victim	Frequency	Percentage
As an Object	43	47.3
As a Person	15	16.5
As a Vehicle	34	36.3

4.7.5 Post Arrest Actions

The variables reported in table 4.7.5 occurred after the arrest by the convicted suspect. A section for obstructive measures taken to avoid detection was added. Also, as 94% of these convicted suspects eventually confessed to the homicides they were arrested for, categories were created for whether the convicted suspects who confessed were deemed truthful (immediately confessed) or dishonest (immediately denied involvement) at the beginning of the investigation – this was measured for possible future research on offending style. For the current sample, three variables received zero frequencies, so were excluded from the table: commit suicide, left note, cover up as suicide. Table 4.6.5 recorded that 92% of convicted suspects did not express remorse during their police interviews. Over half of the convicted suspects were believed to have initially lied to police in attempts to evade charges, and nearly a quarter of these convicted suspects took further measures to evade detection by framing someone else or falsely attempting to help police officers (false appeal) during investigations to throw them off their trail. Notably, 31% confessed immediately.

Table 4.7.5 Convicted Suspect Post-Arrest Actions

	Frequency	Percentage
Called Police	9	10.3
Framed Someone	6	6.9
False Appeal	7	8.0
Immediate Confession	31	35.6
Initially Denied Charges	51	58.6
Confession Present	82	94
No Contest on Charges	5	5.7
Remorse Expressed	7	8.0

4.8.0 Victim Characteristics at Time of Death (n=69)

This section highlights what was recorded by police officers about the 69 victims under study. As of this date, very little is known about the victim choice for homicide offenders, and the subject of victim characteristics is met with a general divide or ethical controversy between researchers because naming these characteristics can be interpreted as placing blame upon the victim. The content categories for victim characteristics recorded were built from basic information, mirroring the personal history categories recorded for the convicted suspect characteristics in the current data set.

This section was compiled to gather whether the finding that victims in American homicides often mirror their convicted suspects in demographic status (Miethe & Regoeczi, 2004; Papachristos, 2009) could be corroborated with the current data set. It was additionally the task to develop a more comprehensive understanding of homicide victim risk-factors for future study, going beyond simple demographic data and adding information about the victim's circumstance at the time of the offense (where they were living at the time, SES, criminal history, personal history, and whether they were under the influence of drugs or alcohol). Also recorded were the victims' relationships to the convicted suspect(s) in their cases, tested for applications to the psychological theory on how offenders relate to their victims (as objects, vehicles, or persons) and homicide scene behaviours (see Chapter 7, section 7.7.1). It was theorized for the current research that the NAS theory would help to inform the investigation process of unsolved homicides, where only behavioural and victim information was present, by indicating the relational standing between victim and perpetrator.

It became clear during the course of the current research that the recording process for homicide investigations was far more thorough for convicted suspects; while the police data entry was sparse for victim antecedents. This is a problem for researchers because there are very few things that can actually be ascertained about victim choice, and it may be difficult to make generalizations due to missing pieces in the police recording process. Nevertheless, categories that were previously addressed in the section on convicted suspect characteristics were entered for victims as follows.

4.8.1 Victim Accommodations

The 69 victims in this data set had living arrangements that mirror the convicted suspect living arrangements (67.8%) in that most (62.2%) lived with a spouse/partner or family member at the time of their deaths (see table 5.54). A greater percentage of these victims (21.7%) as opposed to their killers (12.6%) lived alone at the time of their deaths, perhaps making them easier targets. In 5 of these deaths, the victim's living arrangements were not recorded by police officers.

Table 4.8.1 Victim Accommodation	Frequency	Percentage
Lives Alone	15	21.7
Lives with Flatmate	3	4.3
Lives with Parent/Family	21	30.4
Lives with Spouse/Partner	22	31.8
No Fixed Abode	3	4.3
Unknown	5	7.2

4.8.2 Victim Prior-Conviction Records

Because it was a standard practice during the time-period when these homicides were investigated to begin the police report by outlining any prior conviction record for victim and convicted suspect, this was information was possible to record for all victims. All be it, a criminal conviction does not seem to be a strong risk-factor for victims, as just 15 (20.3%) of the victims in the current data set had prior-convictions.

Table 4.8.2 Victim Total Number of Previous Convictions

	Frequency	Percentage
No Prior Convictions	54	78.2
1 Prior Conviction	14	20.3
22 Prior Convictions	1	1.5
Unknown	0	0

4.8.3 Victim Age at First Arrest

Of the victims who did have prior-convictions (n=15), most were arrested during the late childhood or adolescent phase in the life cycle, yet remarkably, where most people tend to taper off their criminal activity during emerging adulthood, and cease criminal activity by young or middle adulthood (Bartol & Bartol, 2005; Arnett, 2012), these victims statistics saw an increase.

Table 4.8.3 Victim Age at First Arrest

	Frequency	Percentage
10-15 (Minor)	3	20.0
16-19 (Adolescent)	4	26.7
20-25 (Emerging Adult)	1	6.6
25-39 (Young Adult)	0	0
40-65 (Middle Adult)	3	20.0
Unknown	3	20.0

4.8.4 Victim Prior Conviction Types

There were 28 prior convictions for 36 offenses within the victim sample, with 8 identical

offenses where victims had been charged for the same crime more than once. Victims arrested

for crimes before their death focused their criminal activity in the same arena as convicted

suspects (burglary, theft, and violent offenses), either because these crimes are every common or

perhaps these victims were travelling in the same social circles as some of the convicted suspects

in the sample. There were no prior-convictions of criminal damage for victims - a favourite

among the convicted suspects in this sample.

Table 4.8.4 Victim Prior

Conviction Type	Frequency	Percentage
Burglary	6	40.0
Drug Offense	2	13.3
Rape	1	6.7
Robbery	2	13.3
Theft	7	46.7
Violent Offense (other)	10	66.7

4.8.5 Victim and Convicted Suspect Relationship

n=92 (87 convicted suspects, 5 cases with 2 victims)

The colloquial advice: "stay away from strangers", is perhaps misleading for this group of

homicide victims, as the majority were known to the suspect convicted of their murder. While

stranger suspects were implicated for their deaths in 42.4% of cases, 57.6% of victims' deaths

were connected to suspects known to the victim.

Table 4.8.5 Victim Relationship to

Convicted Suspect	Frequency	Percentage
Acquaintance	29	31.5
Business Associate	8	8.7
Current Lover	4	4.3
Past Lover	3	3.3
Family	3	3.3
Friend	6	6.5
Stranger	39	42.4
Unknown	0	0

4.8.6 Victim Gender and Relationship with Convicted Suspect

It had been documented by Richards (1999) then corroborated by Alvarez & Bachman (2017) that in cases of deadly assault, female victims were more often killed by persons known to them while males were more often killed by strangers. For the current sample, there was an even distribution of killings when the relationship variable was dichotomized to stranger and known, slightly over-representing the known category in both male and female killings (table 4.8.6).

Table 4.8.6 Victim Gender and Relationship	Stranger	Known
Male Victim	20(46.5%)	23 (53.5%)
Female Victim	11(42.3%)	15(57.7)

4.8.8 Victim and Convicted Suspect Relationship Status

For the current data set of 69 victims, 53 of their deaths were recorded as non-stranger homicides. One of the questions that needed to be answered in the scope of the current research was whether the relationship status between victims and convicted suspects prior to the homicide had been active (not estranged) or estranged (some event emotionally separated the convicted suspect from victim; or a prior relationship had been dissolved). The hypothesis tested in Study 3 was that relationship status would have a significant impact on the homicide scene behaviours associated with known suspects. The distribution had a greater concentration of active

relationships. For most victims, their interactions with the convicted suspect(s) prior to death were not conflicted, and therefore a violent interaction would not have been expected.

Table 4.8.8 Relationship Status of Victim and Convicted Suspect	Frequency	Percentage
Active	31	58.4
Estranged	22	41.5

4.9.0 Homicide Scene Characteristics

The content categories recorded for this portion of the crime scene analysis (n=64 Cases) were common behaviours identified as they emerged within the current police data set including content categories previously used in homicide research (See Appendix 4). Some of the information extracted was evidence based, or information emerging from crime scene photos, videos and pathology reports at the time of investigation. These include the time frame between abduction and the homicide for abducted victims, a gratuitous violence score from 0-3 (Porter et.al, 2009) and evidence of the victims' struggle. Also, information about weapon choice, weapon acquisition, mode of behavioural interaction (or crime scene behaviours) and victim disposal methods were categories mirrored from previous homicide research (Canter & Youngs, 2009a; Canter et.al, 2004). Added to the analysis was victim disposal location (where the victim was found), telling a story about the perpetrator/victim interaction just before death. Also, contextual categories were added, accounting for the perpetrators' behaviours before (entry and struggle behaviours), during (whether the murder was instrumental to other crimes), and after the murder (to avoid detection or to attain property).

4.9.1 Homicide Scene Actions (Qualitative Variables)

An inter-rater reliability test was performed on the measurement of the variables in table 4.9.1, as these constructs reside on a subjective continuum. The forensic awareness category met with an inter-rater concordance of 75% (no, low, medium, and high evidence), yet once the rating was dichotomised as to forensic awareness present/absent, 100% of the crime scenes tested were agreed upon (See Appendix B). The Gratuitous Violence score, developed from the Porter, et.al (2009) research, met with 100% concordance in inter-rater testing and was scored as follows (see Appendix B).

> *0, no evidence of gratuitous violence;*
> *1, low level of gratuitous violence:* evidence of a brief single incident of excessive violence in a brief period, such as a superficial cut to the victim for the purpose of nonfatal harm (based on professional inference);
> *2, moderate gratuitous violence:* evidence of excessive violence with two or more of the previously mentioned indicators being present over a short period or one of the above criteria spanning more than a single incident; and
> *3, major amount of gratuitous violence:* evidence that gratuitous violence was a central component of the crime and evidence of excessive violence that spanned multiple incidents within the course of a lengthy, drawn-out homicide (Porter et.al, 2009, p829)

In Canadian research where the Gratuitous Violence score was generated (Porter et al., 2009), their results explained that gratuitous violence was present in most homicides; however, the level was not significantly differentiated between single and multiple perpetrator homicides. For the current data set, the majority of homicide transactions did show excessive force, and the gratuitous violence score was analysed for the presence or absence of overkill behaviours by relationship (stranger, victim, and close) and victim age (See Chapter 5, section 5.4.1). Whether there were signs of a victim struggle during the homicide (e.g. strong ligature marks, bruises, broken dishes, scattered or torn clothing) was also agreed on at 100% by inter-rater testing (See Appendix B).

Table 4.9.1 Qualitative Homicide Scene Variables

Scene Variables	Frequency	Percentage
Forensic Awareness Present	25	39.1
None	39	60.9
Low	15	23.4
Moderate	5	7.8
Extreme	5	7.8
Gratuitous Violence Present	41	64.1
None	23	35.9
Low	12	18.8
Moderate	19	29.7
Major	10	15.6
Victim Struggle Present	44	68.8
No	20	31.3
Minor	30	49.6
Moderate	12	18.8
Major	2	3.1

4.9.2 Homicide Weapon Choice

The following section describes the victim and perpetrator transaction at the homicide scene, and although the following homicide scene actions were recorded dichotomously (present; absent) the information found in police reports, witness reports, and suspect interviews were corroborated by crime scene photos, crime scene videos and autopsy reports. Therefore, recorded absence of these behaviours was just as pertinent to the research as their presence. The police reports were scoured and checked thrice for valid measure, and the commonalities in these findings are highlighted below.

It was noted by Salfati (1998) and later by Canter & Youngs (2009) that a knife is the most popular weapon choice for perpetrators of homicide in the UK. The current sample aligns with this statistic as 45.3% of perpetrators used a knife in the killings, followed by asphyxiation tools (31.3%) and blunt objects (18.8%) (e.g. a pillow or hammer respectively).

Table 4.9.2 Homicide Weapon Variables	Frequency	Percentage
Blunt Object	12	18.8
Gun	8	12.5
Knife	29	45.3
Ligature Strangulation	8	12.5
Manual Strangulation	12	18.8
Weapon Other	3	4.7
Weapon Improvised*	22	34.4

*found near or at scene

4.9.3 Home Invasion Variables

For home-location homicides in the current data set, table 4.9.3 illustrates how the perpetrator gained access to the victims' property.

Table 4.9.3 Home Invasion Variables	Frequency	Percentage
Consensual Sex Before	6	9.4
Forced Entry Glass	4	6.3
Forced Entry Other	13	20.3
Home Open	5	7.8
Invited By Victim	9	14.1

4.9.4 Course of Action Variables

Table 4.9.4 highlights the crime scene actions that occurred during the course of the homicide. The most common course of action was multiple wounding (54.7%) followed by stabbing (45.3%), then beating (42.2%), and asphyxiation (31.25%). The least popular actions, excluding zero frequencies, were burying the victim, necrophilia, limb removal, and genital mutilation (1.6%), perhaps because these actions would require a considerable effort post-mortem. Of the 8 victims who were abducted, only 5 were tortured. Facial disfigurement happened in a quarter of cases, suggesting that the perpetrator would have related to their victim as a person (Canter & Youngs, 2009a).

Table 4.9.4 Perpetrator Course of Action Variables

	Frequency	Percentage
Asphyxiated	20	31.25
Abducted	8	12.5
Beaten	27	42.2
Bitten	0	0
Bludgeoned	13	20.3
Buried	1	1.6
Burned	3	4.7
Disembowelled	0	0
Facially Disfigured	9	14.1
Gagged	3	4.7
Shot	7	7.8
Scratched	8	12.5
Set on Fire	2	3.1
Stabbed	29	45.3
Penetrated Anally	0	0
Penetrated with Object	3	4.7
Necrophilia Present	1	1.6
Multiply Wounded	35	54.7
Mutilated Genetalia	1	1.6
Mutilation Other	2	3.1
Physically Abused After Death	2	3.1
Parts Taken	0	0
Restrained	6	9.4
Removal of Head	0	0
Removal of Limbs	1	1
Sexually Abused	5	7.8
Throat Cut	9	14.1
Token	4	6.3
Tortured	5	7.8

4.9.5 Post Homicide Crime Scene Actions

The following variables listed in table 4.9.5 accounted for what happened after the homicide; i.e. what effort the perpetrator exerted to place, cover, and conceal the body to avoid detection (if any). Overwhelmingly for the current data set of single-event (not serial) homicides, perpetrators generally made little to no effort to cover their tracks (or avoid detection). Over half of the victims' bodies (54.7%) were either found on public property (e.g. a school or other establishment) or on a public street. Additionally, 79.7% of victims' bodies were left out in the

open, meaning there was no effort to conceal their bodies from the public. Only a quarter of perpetrators made attempts to drag the body to a different location in the same crime. The unplanned nature of many of these offenses could account for this result. Also, 78.1% of victims were left fully clothed, logical due to the low occurrence (n=14) of sexually motivated crimes (see table 4.7.4) in the current data set.

Surprisingly, only 25% of victims in these cases (n=16) were robbed of money or possessions after their death, meaning that the majority of perpetrators (75%) were more motivated to exit the scene than they were to commit petty theft, despite the fact that the majority of convicted suspects in the sample (55.1%) had theft convictions in their criminal backgrounds.

Table 4.9.5 Post-Homicide Action

Variables	Frequency	Percentage
Body Found in Home	26	37.7
Body Found on Public Property	17	25
Body Found in the Street	18	26.1
Body Found in Water	3	4.3
Body Found in Woodland Secluded	7	10.1
Committed Arson to Avoid Detection	3	4.7
Ransacked Home	13	20.3
Scattered Belongings	11	17.2
Trail of Clothing	3	4.7
Victim Covered	5	7.8
Victim Dragged	16	25.0
Victim Fully Clothed	50	78.1
Victim Hidden	8	12.5
Victim Left out in Open	51	79.7
Victim Removed	7	10.9
Victim Robbed	16	25.0
Victim Naked	5	7.8
Victim Partially Clothed	6	9.4
Victim Posed	6	9.4

4.9.6 Weapon Disposal

In some cases, the murder weapon was absent from the scene due to a manual strangulation modality, so these cases were removed from the following calculations.

Table 4.9.6 Weapon Disposal Variables	Frequency	Percentage
Left at Scene	18	28.1
Left Inside Victim	4	6.3
Removed from Scene	33	51.6

4.9.7 Instrumental Homicide Variables

The following table 4.9.7 demonstrates the frequency (n=37) and type of instrumental homicides in the current sample. In these instrumental murder (IM) cases, the perpetrator had been committing another crime and the victim was killed as an after-thought. The perpetrator(s) of these other crimes made the decision to kill at the point of victim interference.

Table 4.9.7 Instrumental Homicides	Frequency	Percentage
IM Burglary	14	21.9
IM Rape	5	7.8
IM Robbery	6	9.4
IM Theft	7	10.9
IM any Crime	5	7.8

4.10 Chapter Summary

This concludes the first study in the current works, designed to garner a more comprehensive understanding of convicted suspect characteristics, victim characteristics, and homicide scene actions in British and Welch homicide crimes. This Chapter outlined these common characteristics for the current sample, largely corroborating what is currently known about UK homicides with previous research, identifying the current sample as externally representative and appropriate for subsequent analyses. The categories that emerged as viable for analyses across the following four studies were based on hypotheses outlined in Chapter 2 (table 2.1.0): convicted suspect-victim relationship and victim age (Chapter 5, Study 2, section 5.4.1), convicted suspect-victim relationship status (Chapter 6, Study 3), and the victims' role in the convicted suspects' narrative identity (Chapter 7, Studies 4 and 5). These three successive studies mark the first attempt to understand whether inter-personal factors (actual relationship), psycho-social factors (relationship status), or psychological factors (relation to the victim) are impacting factors on the representation of homicide scene behaviours for homicides in England and Wales.

Chapter 5: Characteristics to Actions (C➔A) Analysis of 64 Homicides by Relationship (Study 2)

5.1.0 Characteristics to action analysis of 64 Homicides (Study 2)

The second study (Parts 1 and 3) in the five-part series aimed to answer the question as to whether the presence of 62 crime scene variables across 64 homicides, randomly sampled from cities throughout England and Wales, may help investigators to differentiate victim-suspect (convicted suspect) relationship when only crime scene information about the interaction with the victim is present for unsolved homicide cases. Previous research identified several crime scene variables that may help to differentiate victim-suspect relationship (see Chapter 1, section 1.2.1); however, this is the first known UK study to analyse these variables alongside victim-suspect relationship, and the first to use more than 10 crime scene variables for relational analysis. The most common and uncommon behaviours in homicide scenes per relationship type (stranger, acquaintance, and close) were identified in part 3 of the analysis as a relational profiling exercise. Frequencies and percentages were calculated; higher and lower frequencies of each homicide action within relationship categories suggested that each relationship type had features that differentiated from each other. A follow-up analysis was added to Study 2 in to test viability of the three-part relationship model with a consolidated two-part model. The purpose was to understand whether stranger suspects were differentiated with any known suspects, including acquaintances, for their behaviours.

The differences gauged were statistically stronger in the three-part-model (stranger, acquaintance, close), validating it as a more viable model for understanding homicide scene behaviour relative to their relationships (or lack there-of) with victims. Part 4 of this study simplified the analyses, charting the frequencies of crime scene action variables by their presence

within and between relationship groups, making a further contribution to the understanding of how homicide scene actions are differentiated by victim-suspect relationship. Part 5 of this study aimed to answer the question as to whether the age of the victim differentiated by victim-suspect relationship. Research by Ahmed & Menzies (2002) and later by Jordan et al. (2010) suggests that elderly victims are more likely killed by strangers or acquaintances than closely known perpetrators. The results from Study 5 (section 5.4.1) concurred with this supposition; however, the statistical strength of these differences did not meet the standard set for the study (p<.05). Because the direction of the results for the current sample of homicides aligned with prior research findings, further research into victim age and relational differentiation is warranted with a larger sample size.

5.1.1 Procedure

86 crime scene variables made up the original data set recorded in Chapter 4. These data were checked for accuracy/researcher error three times before the analysis. Variables that occurred in fewer than three cases were removed from the final analysis, and 71 variables comprised the final homicide scene action data set. To make the data set more uniform for analysis, the rating scales for forensic awareness, victim struggle, and gratuitous violence were dichotomized to present and absent, reducing the crime scene variable count to 62. The final data set comprised 64 cases: 48 were lone-suspect single-victim homicides. In the five cases where multiple victims had been killed, the homicide procedure happened to be the same (e.g. both victims were stabbed multiple times in the same location) thus the crime scene data was duplicated for each of these victims. Additionally, 11 cases were multiple perpetrator homicides with one victim. For these cases, relational information for only the convicted suspects believed by policing authorities to have physically committed the homicide (e.g. stabbed the victim) were recorded; tertiary

suspects who were involved in planning and/or cover up of the homicide were excluded from

relationship analysis as it was assumed that the crime scene information would have been

primarily and maximally impacted by physical perpetrator the crime. Thus, the final data set

coincided with the number of victims, comprising an (n) of 69 victim-suspect relationships.

5.2.0 Study 2, Part 1 − Comparing the current homicides to relational profiles in prior

research

Prior research identified in Chapter 1, section 1.2.1, has shown evidence that injury severity,

weapon choice, crime location and the presence of facial injury may be differentiating crime

scene factors regarding victim-suspect relationship; however, none of the prior research was

performed with a UK sample.

Upon further inspection of the recorded relationship categories, it was found that the closer

relationships (current lover, past lover, family, and friend) all had an (n) of less than 10, making

them difficult to compare with the larger number of stranger and acquaintance relationships. For

this reason, the closer relationships were consolidated into one category (Close) so that the

model of relative closeness could be compared with a balanced data set. The 'business associate'

category was placed into the category of 'acquaintance' on the assumption that work colleagues

are closer in definition to acquaintances than they are to any other category, this re-classification

(although not expected) may, in turn, affect the reliability of the results.

The primary analysis measured 19 homicide scene action variables identified in prior research

for their correlations to the consolidated victim-suspect relationship variables. Table 5.1.1 reports

the frequencies of the consolidated victim (V) and suspect (S) relationship categories and the 19

crime scene variables as they occurred for the 69 victims in the data set.

Table 5.2.0 – Study 1 H1 Variables	Frequency	Percentage
V-S Relationship		
Stranger	31	44.9
Acquaintance/Business Associate	25	36.2
Close	13	18.8
Injury Severity		
Gratuitous Violence Present	45	91.8
None	24	34.8
Low	13	18.8
Moderate	21	30.4
Major	11	15.9
Bludgeoned	14	20.3
Beaten	29	42.0
Burned	4	5.8
Set on Fire	3	4.3
Facial Injury	9	13.0
Multiply Wounded	39	56.5
Tortured	5	7.2
Sexually Abused	5	7.2
Weapon Choice		
Blunt Object	14	20.3
Gun	9	13.0
Knife	31	44.9
Ligature Strangulation	9	13.0
Manual Strangulation	12	17.4
Crime Location		
Body Found in Home	25	36.2
Body Found on Public Property	17	24.6
Body Found in the Street	17	24.6
Body Found in Water	4	5.8
Body Found in Woodland Secluded	6	8.7

5.2.1 Hypothesis 1

H0: No significant difference will be detected for the presence or absence of 19 crime scene variables in table 5.1.1. for the 3 consolidated victim-suspect relationship categories (stranger, acquaintance, close).

H1: Trends will be revealed that will help to corroborate or clarify the disparity in past research findings regarding relationship correlations to weapon choice, injury severity, the presence of

facial injury, and crime location with the current data-set of 64 single-event (not serial) solved homicides with 69 victims, for relational profiling applications to homicides in England and Wales.

5.2.2 Results

The preferred method for computing the probability that any one non-continuous variable occurs more or less frequently than expected within a category, for non-parametric data, is the chi-square test (Gavin, 2008). Generally, the chi-square value is appropriate for data sets with n> 100, housing independent values for categorical data, and assuming the data set has a normal distribution (Mehta & Patel, 2012, iii). When data sets are gathered from various, non-verifiable environments that are "small, sparse, heavily tied, or unbalanced and the validity of the corresponding large sample theory is in doubt" (Mehta & Patel, 2012) the Fisher's Exact Test is the appropriate test to compute the probability that any one continuous or non-continuous variable occurs more or less often than expected within a category for data sets with an n<100. The data set for Study 1 is verifiable, but small and unbalanced, therefore because the goal of Part 1 of Study 2 was to compute the probability that any of these 19 crime scene variables occur more or less often in one relationship category to another, the Exact *p* value was calculated. The Fisher Exact *p* value is the most reliable and accurate method of assessing probability, yet often is too difficult to compute for larger data sets (Mehta & Patel, 2012). Given that the final data set used for the current study contains 69 victim-suspect relationships, and many of the cells containing homicide action variables have an expected count of less than 5, the categorical frequencies along with the Exact *p* value were computed for the first 19 variables as they occurred within the 3 consolidated relationship categories reported in table 5.2.2. In order to enhance the validity of this test, all 62 crime scene variables were included in the analysis so that

the significant presence of any of the first 19 variables could be analysed in relation to all other crime scene variables for the relationship categories.

Table 5.2.2 Frequencies & percentages of crime scene behaviours, Fisher's Exact chi-square test value, and 2-sided *p* values for 19 crime scene variables as their outcome was recorded within 3 consolidated relationship categories.

Homicide Scene Variables	Stranger (n31) Present (%)	Acquaintance (n25) Present (%)	Close(n13) Present (%)	Fisher's Exact (2-sided Sig)
Gratuitous Violence	17 (54.8)	18 (72)	9 (69)	1.908(.408)
Bludgeoned	4 (12.9)	6 (24)	4 (30.8)	2.301(.304)
Beaten	12 (38.7)	10 (40)	7 (53)	.965 (.694)
Burned	1 (3.2)	2 (8)	1 (7.7)	1.090(.664)
Set on Fire	1 (3.2)	1 (4)	1 (7.7)	.998(.778)
Facial Injury	4 (12.9)	3 (12)	2 (15)	.307(1)
Multiply Wounded	17 (54.8)	14 (56)	8 (61)	.216(.950)
Tortured	3 (9.7)	2 (8)	0 (0)	.981(.709)
Sexually Abused	4 (12.9)	1 (4)	0 (0)	2.059(.330)
Blunt Object	7 (22.6)	4 (16)	3 (23.1)	.560(.791)
Gun	3 (9.7)	4 (16)	2 (15.4)	.789(.719)
Knife	**19 (61.3)**	**7 (28)**	**5 (38.5)**	**6.378(.044)**
Ligature Strangulation	4 (12.9)	3 (12)	2 (15)	.307(1)
Manual Strangulation	5 (16.1)	5 (20)	2 (15)	.276(.918)
Location Home	9 (29)	9 (36)	8 (61)	4.011(.131)
Location Public Prop	9 (29)	7 (28)	1 (7.7)	2.423(.311)
Location Street	9 (29	6(24)	3 (23.1)	.284(.937)
Location Water	1 (3.2)	2 (8)	0 (0)	1.158(.586)
Location Secluded	4 (12.9)	1 (4)	2 (15)	1.865(.449)

Results indicated in table 5.1.2 lead to rejection of the null hypothesis for weapon type: Fisher's Exact *p* for weapon type met with a p<.05 significance score, indicating that stranger suspects (n=19/61.3%) were significantly more likely than acquaintances (n=7/28%) or close relations (n=5/38.5%) to be implicated for crimes that utilized a knife as the murder weapon. This means that the presence of a knife was 2.2 times more likely to occur in crime scenes connected to stranger suspects and 1.6 times more likely to occur in crime scenes connected to close suspects than it was in crime scenes connected to acquaintance suspects.

The null hypothesis was accepted for victim location, injury severity, and facial injury as results indicated no significant differences between the stranger, acquaintance and close relationship categories for the probability that the further 18 variables occurred more or less frequently than the final 43 homicide scene action variables.

5.3.0 Study 2, Part 2 - Relationship (C) to homicide scene action (A) analysis for 64 homicides with 69 victims

The 43 remaining homicide scene action behaviors were analyzed using Fisher's Exact *p* values alongside the 19 crime scene variables in table 5.2.2 to enhance the validity of the comparison. The goal was to ascertain whether any of these 43 variables would be more or less likely to appear in the crime scene outcomes implicating stranger, acquaintance, or close relationship suspects. Further results are reported in table 5.3.2.

5.3.1 Hypothesis 2

H0: No significant differences will be found amongst the 3 victim-suspect relationship categories for the presence or absence of 43 crime scene action variables.

H2: Significantly high or low frequencies of 43 crime action behaviours will aid in the differentiation of victim-suspect relationship by revealing their correlations to 3 victim-suspect relationship categories; stranger, acquaintance (including business associates) and close (including friends, family, and intimate partners) at the time of the homicide event.

5.3.2 Results

Table 5.3.2 Frequencies & percentages of crime scene behaviours, Fisher's Exact chi-square test value, and 2-sided *p* values for the final 43 crime scene variables as their outcome was recorded within 3 consolidated relationship categories.

Homicide Scene Variables	Stranger (n31) Present (%)	Acquaintance (n25) Present (%)	Close (n13) Present (%)	Fisher's Exact (2-sided Sig)
Single Suspect	24 (77)	21 (84)	13 (100)	3.369 (1.95)
Multiple Suspects	7 (22.5)	4 (16)	0 (0)	3.369 (1.95)
Forensic Awareness	12 (38.7)	11 (44)	5 (38.5)	.248 (.948)
Victim Struggle	21 (67.7)	16 (64)	11 (84.6)	1.730 (.461)
Weapon Left	6 (19.4)	7 (28)	7 (53.8)	5 (.078)
Weapon Removed	**21 (67.7)**	**10 (40)**	**4 (30.8)**	**6.701 (.036)**
Weapon in Victim	1 (3.2)	3 (12)	0 (0)	2.146 (.394)
Weapon Improvised	11 (35.5)	9 (36)	4 (30.8)	.158 (1)
Stabbed	18 (58.1)	9 (36)	4 (30.8)	3.9 (.146)
Throat Cut	6 (19.4)	2 (8)	2 (15.4)	1.482 (.493)
Shot	3 (9.7)	3 (12)	2 (15.4)	5.74 (.887)
Scratched	5 (16.1)	1 (4)	2 (15.4)	2.353 (.340)
Asphyxiated	7 (22.5)	9 (36)	6 (46.2)	2.708 (2.56)
Victim Abducted	5 (16.1)	2 (8)	2 (15.4)	1.008 (.641)
Penetrated w/ Object	3(9.7)	1 (4)	0 (0)	1.236 (.524)
Restrained	4 (12.9)	2 (8)	2 (15.4)	1.865 (.449)
Gagged	2 (6.5)	1 (4)	0 (0)	.712 (1)
Token Taken	3 (9.7)	1 (4)	1 (7.7)	.821 (.839)
Left Naked	3 (9.7)	2 (8)	0 (0)	.981 (.709)
Fully Clothed	23 (74.2)	19 (76)	12 (92.3)	1.764 (.437)
Partially Clothed	4 (12.9)	2 (8)	1 (7.7)	.479 (.875)
Posed	4 (12.9)	1 (4)	1 (7.7)	1.330 (.561)
Hidden	2 (6.5)	5 (20)	2 (15.4)	2.456 (.328)
Covered	3 (9.7)	2 (8)	2 (15.4)	.787 (.762)
Not Hidden	26 (83.9)	17 (68)	10 (76.9)	1.980 (.423)
Dragged	7 (22.5)	7 (28)	3 (23.1)	.351 (.933)
Removed	4 (12.9)	2 (8)	2 (15.4)	.756 (.703)
Cover up Arson	2 (6.5)	1 (4)	1 (7.7)	.644 (1)
Robbed Post Mortem	7 (22.5)	8 (32)	3 (23.1)	.739 (.767)
IM Burglary	8 (25.8)	5 (20)	3 (23.1)	.331 (.930)
IM Robbery	5 (16.1)	1 (4)	0 (0)	3.078 (.186)
IM Theft	2 (6.5)	5 (20)	0 (0)	3.684 (.146)
IM Arson	3 (9.7)	1 (4)	1 (7.7)	.821 (.839)
IM Rape	4 (12.9)	2 (8)	0 (0)	1.490 (.475)
IM Crime	17 (54.8)	13 (52)	4 (30.8)	2.196 (.356)
Broken Glass	2 (6.5)	2 (8)	0 (0)	.804 (.825)
Home Open	2 (6.5)	3 (12)	0 (0)	1.445 (.589)

Forced Entry	8 (25.8)	4 (16)	3 (23.1)	.861 (.742)
Suspects Invited	**2 (6.5)**	**5 (20)**	**5 (38.5)**	**6.471 (.026)**
Consensual Sex	3 (9.7)	1 (4)	2 (15.4)	1.639 (.397)
Ransacked	7 (22.5)	4 (16)	3 (23.1)	.560 (.791)
Clothing Scattered	5 (16.1)	6 (24)	3 (23.1)	.547 (.838)
Trail Clothing	1 (3.2)	2 (8)	0 (0)	1.158 (586)

Results from table 5.3.2 indicate that the null hypothesis was rejected for variables "weapon removed" (p<.05) and "suspect invited" (p<.05). For the current homicide data set, a suspect with a close relationship with their victim was two times less likely (n=4/30.8%) than a stranger (n=21/67.8%) to have been implicated for crimes where the perpetrator had removed the weapon from the crime scene. Strangers were 1.6 times more likely than acquaintances (n=10/40%) to have been implicated for homicides where the perpetrator had remove the murder weapon from the crime scenes. This is corroborated by another noteworthy finding that almost met with significance (p=.078); that close relations were most likely to have been convicted of homicides where the perpetrator left the weapon at the scene compared to the other two relationship categories. This finding suggests that a removed weapon is more indicative of a stranger relationship, whereas leaving the weapon at the scene is more indicative of a known relationship between victim and perpetrator. Additionally significant, convicted suspects were almost 6 times more likely to be invited into the victim's home prior to the homicide if they had a close relationship to the victim (n=5/38.5%) compared to strangers (n=2/6.5%), and almost twice as likely as acquaintances (n=5/20%), who were 3 times more likely than strangers to be invited in. This result illustrates that the probability of being invited into the home by the victim prior to homicide increases with relational familiarity, yet is highly unlikely to occur before a homicide situation between strangers.

There were several variables (multiple suspects, weapon in victim, penetrated with object, IM Theft, IM Robbery, IM Rape, broken glass, home open and trail of clothing) that had zero frequencies (n=0) for crime scenes where the victim and convicted suspect were close in relation to each other. Although these did not meet statistical significance compared to the other two categories, the nil result occurred within the close relationship category alone, and this finding should not be ignored. This result concedes that instrumental crime categories or homicides resulting from theft, robbery, rape, and those that implicated multiple suspects did not apply to crimes incriminating closer relationships for the current sample.

5.4.0 Study 2, Part 3 - Testing the viability of the three-part relationship model

It was considered that perhaps the low sample size in each category could be accounting for the largely non-significant findings. Therefore, the relationship categories were re-consolidated into two categories with larger n's; Stranger (31) and Known (38) to test the three-part model against this more balanced 2 part model. For this test, reported in table 5.3.1 below, the chi-square value was computed alongside the 2-tailed significance for all 71 crime scene variables because the sample for this test was balanced and therefore did not indicate the use of Fisher's Exact p. Nevertheless, the results for this test should be taken with caution because the chi-square value (with an "a" next to the output) could indicate that the categories had been consolidated together at the expense of a previous category. Thus, this test provides evidence that the three-part-model (Stranger, Acquaintance, and Close) is a more viable exploration than the two-part-model (Stranger, Known) with the current sample.

5.3.1 Results

Table 5.3.1 Frequencies & percentages of crime scene behaviours, Chi Square test value, and 2-sided *p* values for 71 crime scene variables as their outcome was recorded within 2 consolidated relationship categories; Stranger (n=31) and Known (n=38).

Homicide Scene Variables	Stranger (n31) Present (%)	Known (n38) Present (%)	Chi Square Value/ (2-sided Sig)
Gratuitous Violence	17 (54.8)	27 (71.1)	1.943a (.211)
Bludgeoned	4 (12.9)	10 (26.3)	1.899a (.232)
Beaten	12 (38.7)	17 (44.7)	.255a (.634)
Burned	1 (3.2)	3 (7.9)	.681a (.622)
Set on Fire	1 (3.2)	2 (5.3)	.170a (1)
Facial Injury	4 (12.9)	5 (13.2)	.001a (1)
Multiply Wounded	17 (54.8)	22 (57.9)	.065a (.812)
Tortured	3 (9.7)	2 (5.3)	.495a (.651)
Sexually Abused	4 (12.9)	1 (2.6)	2.680a (.166)
Blunt Object	7 (22.6)	7 (18.4)	.183a (.767)
Gun	3 (9.7)	6 (15.8)	.562a (.5)
Knife	**19 (61.3)**	**12 (32)**	**6.091a (.017)**
Ligature Strangulation	4 (12.9)	5 (13.2)	.001a (1)
Manual Strangulation	5 (16.1)	7 (18.4)	.062a(1)
Location Home	9 (29)	17 (44.7)	1.793a (2.17)
Location Public Prop	9 (29)	8 (21.1)	.585 (.576)
Location Street	9 (29)	9 (23.7)	.253a (.784)
Location Water	1 (3.2)	2 (5.3)	.170a (1)
Location Secluded	4(12.9)	3 (7.9)	.470a (.692)

Single Suspect	24 (77)	34 (89.5)	1.851a (.202)
Multiple Suspects	7 (22.5)	4 (10.5)	1.851a (.202)
Forensic Awareness	12 (38.7)	16 (42.1)	1.082a (.810)
Victim Struggle	21 (67.7)	27 (71.1)	.088a (.798)
Weapon Left	6 (19.4)	14 (37)	2.536 (1.82)
Weapon Removed	**21 (67.7)**	**14 (37)**	**6.522a (.015)**
Weapon in Victim	1 (3.2)	3 (7.9)	1.082a (.818)
Weapon Improvised	11 (35.5)	13 (34.2)	.012a (1)
Stabbed	18 (58.1)	13 (34.2)	3.925a (.056)
Throat Cut	6 (19.4)	4 (10.5)	1.074a (.327)
Shot	3 (9.7)	5 (13.2)	.202a (.722)
Scratched	5 (16.1)	3 (7.9)	1.129a (.452)
Asphyxiated	7 (22.5)	15 (39.5)	2.243a (.195)
Victim Abducted	5 (16.1)	4 (10.5)	.472a (.721)
Penetrated w/ Object	3(9.7)	1 (2.6)	1.552a (.319)
Restrained	4 (12.9)	3 (7.9)	.470a (.692)
Gagged	2 (6.5)	1 (2.6)	.599a (.584)
Token Taken	3 (9.7)	2 (5.3)	.495a (.651)
Left Naked	3 (9.7)	2 (5.3)	.495a (.651)
Fully Clothed	23 (74.2)	3 (7.9)	.547a (.561)
Partially Clothed	4 (12.9)	3 (7.9)	.470a (.692)
Posed	4 (12.9)	2 (5.3)	1.255a (.397)
Hidden	2 (6.5)	7 (18.4)	2.156a (1.71)
Covered	3 (9.7)	4 (10.5)	.013a (1)
Not Hidden	26 (83.9)	27 (71.1)	1.575a (.259)
Dragged	7 (22.5)	10 (26.3)	.128a (.784)
Removed	4 (12.9)	4 (10.5)	.094a (1)
Cover up Arson	2 (6.5)	2 (5.3)	.044a (1)
Robbed Post Mortem	7 (22.5)	11 (29)	.359a (.593)
IM Burglary	8 (25.8)	8 (21.1)	.217a (.776)
IM Robbery	5 (16.1)	11 (29)	3.917 (.083)
IM Theft	2 (6.5)	5 (13.2)	.843a (.446)
IM Arson	3 (9.7)	2 (5.3)	.495a (.651)
IM Rape	4 (12.9)	2 (5.3)	1.255a (.397)
IM Crime	17 (54.8)	17 (44.7)	.697a (.472)
Broken Glass	2 (6.5)	2 (5.3)	.044a (1)
Home Open	2 (6.5)	3 (7.9)	.053a (1)
Forced Entry	8 (25.8)	3 (7.9)	.547a (.561)
Suspect Invited	**2 (6.5)**	**10 (26.3)**	**4.698a (.053)**
Consensual Sex	3 (9.7)	3 (7.9)	.068a (1)
Ransacked	7 (22.5)	7 (18.4)	.183a (.767)
Clothing Scattered	5 (16.1)	7 (18.4)	.062 (1)
Trail Clothing	1 (3.2)	2 (5.3)	.170a (1)

The re-consolidated two-category relational analysis met with similar results to the three-category analysis, aside from the questionable chi-square output (a). The presence of a knife for crime scenes in homicides implicating strangers (n=19/61.3%) was 1.9 times more likely to occur than in crime scenes in homicides implicating known suspects (n=12/32%) (p<.05). For the primary analysis in part 1, the known victim-suspect relationship category was further separated into acquaintance and close, revealing that close relationships were 10% more likely than acquaintance relationships to be implicated for homicides where perpetrators had used a knife as the murder weapon (p<.05).

Results on the weapon removed behaviour met with statistical significance (p<.05) for the two relationship categories tested, indicating that strangers (n=21/67.7%) were 1.5 times more likely than known suspects (n=14/37%) to be convicted of homicides where the perpetrator had removed the weapon from the crime scene (p<.05). When the relationship analyses differentiated acquaintances from close suspects (in the three-part-model), it revealed that acquaintances (n=10/40%) were nearly 10% more likely to have been implicated for homicides where the perpetrator had removed the weapon from the crime scene compared to closer relations (n=4/30.8%); and that strangers were over twice as likely than closer relations and nearly 2.4 times more likely than acquaintances to have been reprimanded for homicides where the perpetrator had removed the murder weapon (p<.05).

For the re-consolidated analysis, nearly meeting with statistical significance, stranger homicide suspects (n=18/58.1%) were 1.7 times more likely than known homicide suspects (n=13/34.2%) to have been convicted of homicides where perpetrators had stabbed their victims (p=.056). Also, instrumental murders that occurred as a result of robberies (IM Robbery) were 1.8 times more likely to have been connected to known suspects (n=5/16.2%) compared stranger suspects

(n=11/29%) (p=.083). Remember from the three-part relational model that robberies turned instrumental homicide had a zero frequency (n=0) in homicides implicating close suspects, showing further support for the three-part-model in that prioritizing acquaintances for these crimes would be more useful to investigative practice compared to prioritizing all known suspects.

The victim behaviour - inviting the convicted suspect into their home prior to the homicide - met with significance for both models of analysis; however, the re-consolidated analysis shows that 10/38 or 26.3% of known suspects were invited into the victims' homes before the homicide compared to stranger suspects, just shy of the cut off for statistical significance (n=2/6.5%) (p=.053). The original three-part-model of analysis also revealed that crimes connected to close relations (n=5/38.5%) were present for the suspect invited in variable 18% more often than were crimes connected to acquaintance relations (n=5/25%) (p<.05).

These three results combined suggest that while statistical significance of the differentiations appear stronger for the two-part relationship category model, the results should be taken with caution because the statistical strength of the output was weakened (indicated by an (a) following the chi-square correlational value). This was not a problem for the three-part-model, indicating that the differences in the three-part model are statistically stronger. Also, the qualitative understanding of UK homicide scenes was further weakened by the two-part model. When the relationship categories were more expansive in the three-part model, the understanding of human behaviour in homicide situations was more fruitful because it explained more about where these differences occur, as current relationships vary in relative closeness. Overall, the two-part analysis strengthens the original hypothesis that victim-suspect relationship categories should be further separated when performing relational profiling analyses, and also merits future research

incorporating a larger police-file data set with more balanced frequencies in the three-part-model (min 50 each) to garner whether these differences remain consistent.

5.4.0 Study 2, Part 4 – Correlates of relationship and victim age

5.4.1 – Hypothesis 3

H0: The age of the victim will have no significant correlations with pre-existing relationships between victims and convicted suspects.

H3: The age of the victim will correlate with pre-existing relationships between victims and convicted suspects. In cases where the victim was elderly, as prior research suggested, the offender was more likely to be a stranger or acquaintance than closely known (e.g. Jordan et al., 2010) to the victim.

The age of the victims involved in the current study were separated into five human-developmental categories (Arnett, 2016): Adolescent (14-17); Emerging Adult (18-24); Young Adult (25-39); Middle Adult (40-64); and Elder Adult (65+). There were four victims with ages unknown throughout the course of the homicide investigation, so these victims were removed from this analysis, leaving 65 victims. The Fisher Exact Test was administered to the data to gauge correlations between victim age groups and the consolidated three-part relationship categories (Stranger, Acquaintance, and Close). Table 5.4.0 records these results.

5.4.2 Results

Table 5.4.2 Frequencies & percentages of victim age groups, alongside the Fisher Exact chi-square test value, and 2-sided *p* value, as the outcome was recorded for 3 consolidated relationship categories.

Victim Age Groups	Stranger (n31)	Acquaintance (n25)	Close (n13)
Adolescent (n=7)			
Present (%)	4 (57.1)	1 (14.3)	2 (28.6)
Emerg. Adult (n=8)			
Present (%)	3 (37.5)	3 (37.5)	2 (25)
Young Adult (n=15)			
Present (%)	7 (46.7)	6 (40)	2 (13.3)
Middle Adult (n=23)			
Present (%)	7 (30.4)	12 (52.2)	17 (30.8)
Elder Adult (n=12)			
Present (%)	6 (50)	3 (25)	3 (25)
Fisher's Exact (2sided Sig)	2.587 (.656)	3.473 (4.86)	1.632 (.848)

The null hypothesis was accepted for the victim age to victim-suspect relationship analysis as no significant differences were found between groups. This result implies that for the current sample, victim age does not differentiate the probable relationship between victim and convicted suspect. Because of this result, no further testing was run to connect age to gratuity or other crime scene variables. For the age-gratuitous violence testing to work within the overall purpose of these studies, the hypothesis (that the representation of crime scene variables would be

impacted by age group) was a necessary avenue of study had there been a way to connect the findings back to victim-suspect relationship.

5.5.0 Study 2, Part 5 - Relational profiling of homicide relationships

5.5.1 – Relational profiling of homicide relationships within groups

Relational profiling refers to the study of how crime-scene-action variables differentiate by victim-perpetrator relationships. The study of solved crimes may be applied to unsolved crimes to make inferences about the most probable relationship between victim and perpetrator. Applied to the current study, a series of relational profiling graphs were created to visually represent the differences between the three relationship groups under study (Stranger, Acquaintance, and Close) in the behavioural manifestations of these homicide crimes (Figures 5.2.3-5.2.6). The three victim-suspect relationship groups were examined to calculate the highest to lowest frequencies of the behaviours documented in these English and Welch homicide scenes, thereby allowing further qualitative examination of how relationships impacted behaviour.

When variable differences are calculated for 70%-100% of a population, the significance of the correlation resides at the $p \le 0.05$ level (Osborne, 2008). Stated another way, when the presence or absence of variables in a category occur for 70% - 100% of the population, it can be assumed that this difference will be strong enough to correlate with the presence of another strong category in the same population. Significance testing was completed for parts 1 and 2 of the current analysis; however, it was deemed a useful exercise to understand the upper and lower 30% of behavioural occurrence for these three groups. However simple the analysis, because significance testing was computed with a highly stringent non-parametric methodology, this relational profiling analysis revealed further differences that may be useful to investigators of

homicide crimes in England and Wales for identifying suspects as strangers or as having prior relationships with their victims. The current data set is large enough to see differences between groups; however, many of the homicide action variables studied here have very low frequencies for these homicide crime scenes overall. While the results may point to the possible order of suspect prioritization by relationship type, they should also be approached with caution. This methodology is seminal in nature and paves the way for future research with larger sample sizes.

5.5.2 Results

Figure 5.5.2 Perpetrator Actions by Descending Percentage for the Homicides Implicating the Stranger Suspect Population (n=31)
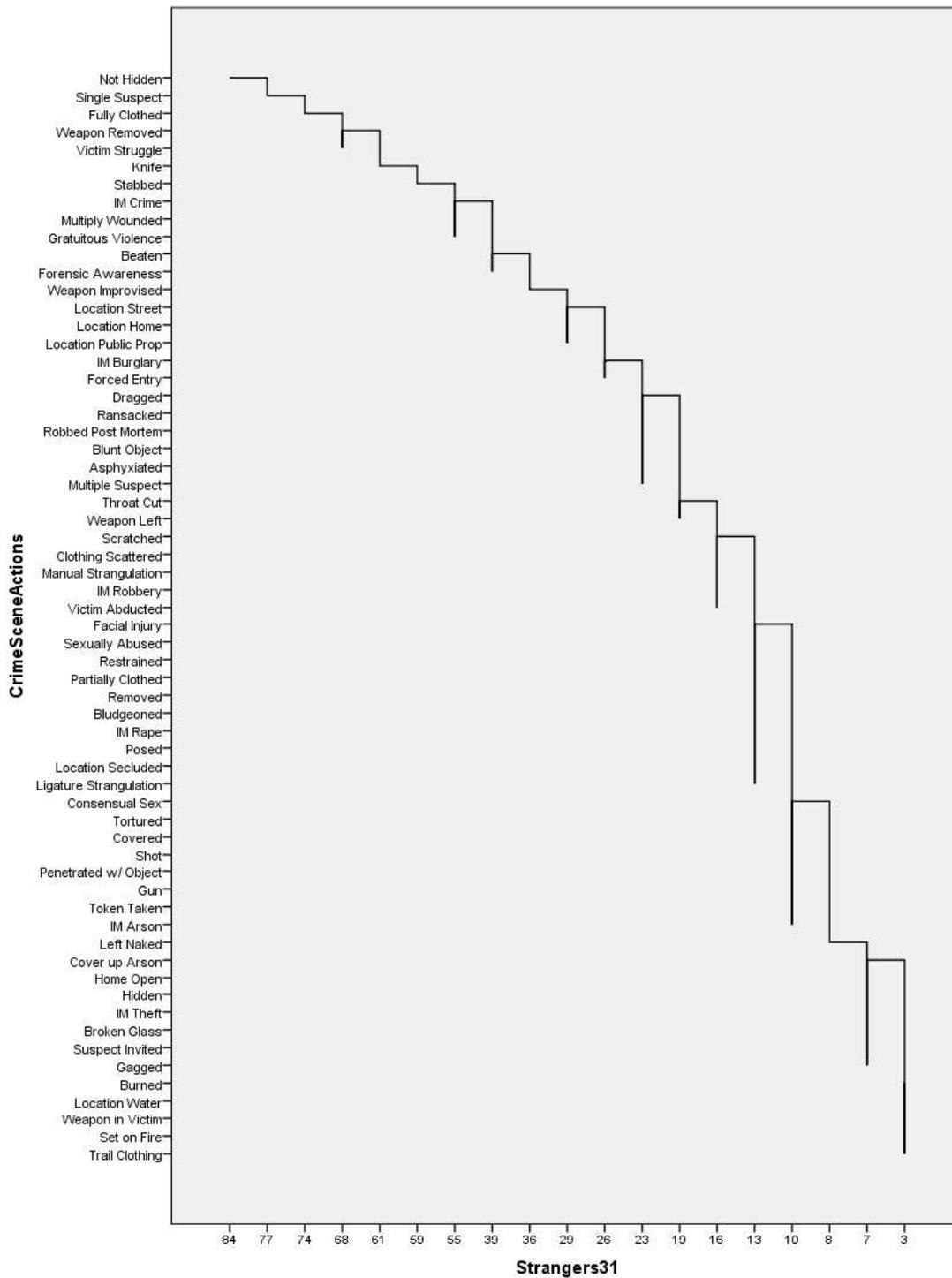
Figure 5.5.2 visually represents a behavioural profile for crimes implicating stranger suspects from the highest to lowest frequencies of perpetrator behaviours within these homicide transactions. Leaving the weapon inside the victim, leaving a trail of clothing, setting the victim on fire, or burning the victim are all actions that occurred in fewer than 5% of crimes implicating this stranger population. Being invited in to the victim's home pre-homicide, committing a theft turned instrumental murder, entering through an open door, breaking in through a window, hiding the victim post-mortem, gagging the victim, covering up the homicide with arson, or leaving the victim naked were occurred in fewer than 10% of homicide crimes connected to the stranger suspect population.

Leaving the weapon at the crime scene, covering the victim with cloth or plastic, killing the victim in a secluded location, a robbery or rape turned instrumental homicide, cutting the throat, manual or ligature strangulation, taking a token of the victim's, using a gun as a murder weapon, shooting, scratching, abducting, facially injuring, posing, having consensual sex pre-homicide with the victim, sexually abusing or penetrating the victim with an object, bludgeoning, restraining, raping, torturing, scattering clothing or partially unclothing the victim, and arson turned instrumental murder were all behaviours that occurred for victims in fewer than 20% of the cases implicating stranger suspects. Choosing the victim's home, public property, or a street location to dump the victim's body post-mortem, committing a burglary turned instrumental homicide, using a blunt object as the murder weapon, ransacking the victim's home, having accomplices, asphyxiating, dragging, or robbing the victim occurred in fewer than 30% of homicides incriminating this population of suspects. Improvising the weapon from the crime scene, having forensic awareness, and beating the victim to death were all behaviours that were

completed by less than 40% of perpetrators in homicides connected to the stranger suspect population.

Committing any crime turned instrumental homicide, displaying gratuitous behaviour, multiply wounding and stabbing the victim occurred in more than half of stranger implicated homicides. Signs of a victim struggle, using a knife as the murder weapon, and removing the weapon from the crime scene were perpetrator behaviours seen in over 60% homicides connected to stranger suspects. Being killed by a single perpetrator and being left fully clothed post-mortem were factors that occurred for more than 70% of victims in homicides implicating stranger suspects. Leaving the victim's body not hidden (making no attempts to move or cover the body post mortem) was the most common action committed by perpetrators of homicides that implicated stranger suspects in the current homicide population, covering over 80% of these murders.

Figure 5.5.3 Perpetrator Actions by Descending Percentage for Homicides Implicating the Acquaintance Suspect Population (n=25)
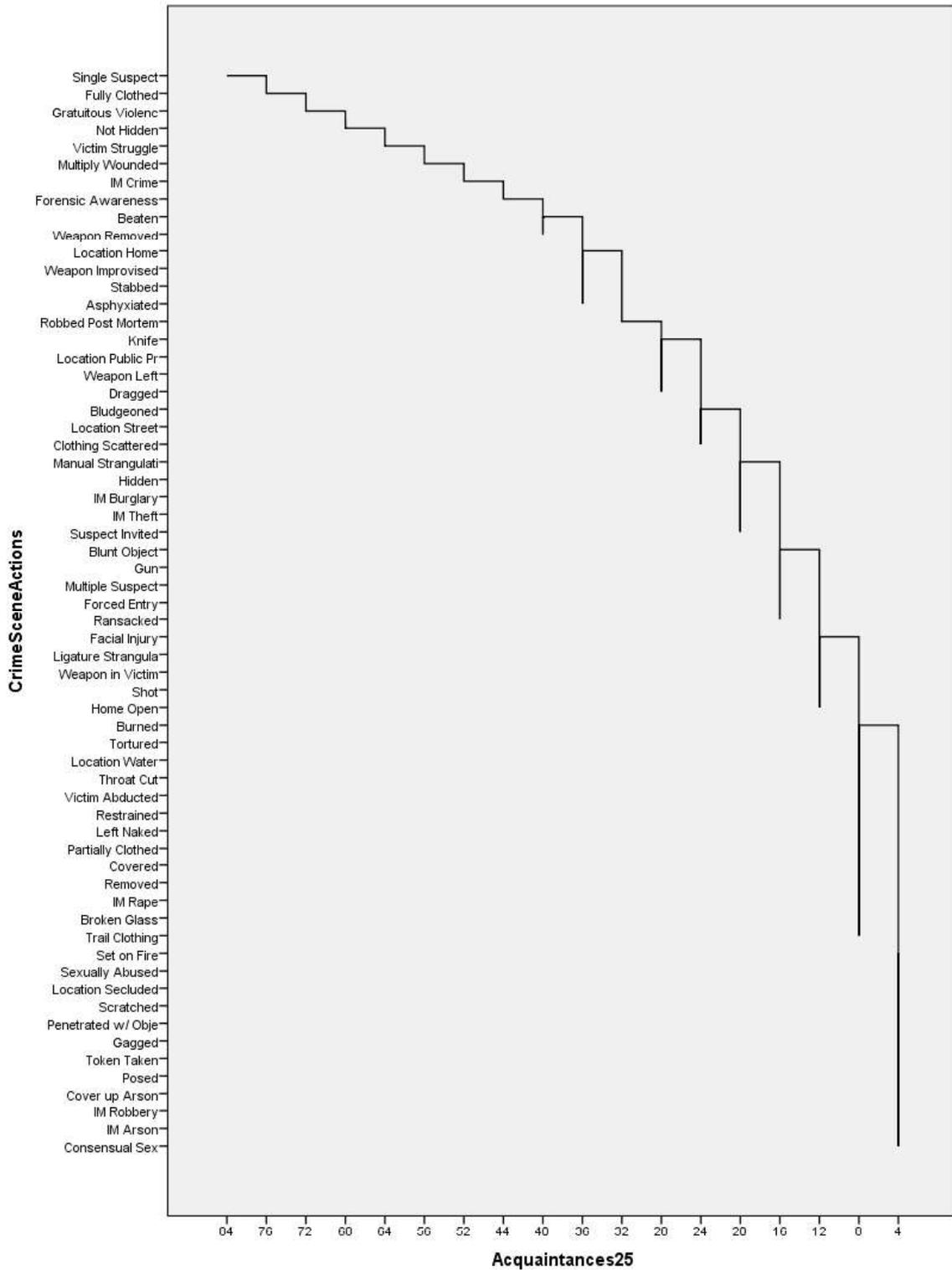
Figure 5.5.3 visually represents a behavioural profile for perpetrators of the homicide crimes in the sample that implicated acquaintance suspects, charting these behaviours from highest to lowest frequency within homicide transactions. Fewer than 5% of homicides connected to acquaintance suspects had perpetrators who set their victim's body on fire to avoid detection, killed their victims in secluded locations, had consensual sex with their victims prior to the homicide, were involved in a robbery or arson turned instrumental homicide, took a token from their victims, penetrated victims with objects, scratched, gagged, posed, sexually abused their victims or set them on fire during these killings.

Leaving the victim partially clothed or naked post-mortem, ransacking the victim's home, leaving a trail of the victim's clothing behind, beginning the crime with a rape turned instrumental homicide, removing the body from the original homicide location, covering the victim with cloth or plastic post-mortem, dumping the victim a body of water, burning, torturing, cutting the throat of, or restraining the victim were behaviours that occurred in fewer than 10% of homicides implicating acquaintance suspects. Being killed with a gun, ligature, or blunt object, having the weapon left inside the body post-mortem, being shot, being accosted with forced entry or open home entry by the perpetrator (s), having their home ransacked, being killed by multiple perpetrators or having multiple injury sites were actions that transpired for fewer than 20% of victims in homicides that implicated acquaintance suspects.

Acquaintance suspects were convicted in fewer than 30% of homicides where perpetrators killed their victims with a knife or by manual strangulation, left the victim's body out in the open, in the street or on public property post-mortem, were invited into the home of the victim prior to the homicide, dragged, bludgeoned, or hid the body of the victim, or were involved in burglaries or thefts turned instrumental homicide. Victims were killed in their homes, killed with a weapon

improvised at the scene, were stabbed or asphyxiated to death, or were robbed post-mortem in fewer than 40% of homicides convicting acquaintance suspects. Perpetrators beat their victim with fists, removed the murder weapon from the crime scene or showed signs of forensic awareness in fewer than 50% of these cases. In over half of acquaintance-linked cases, victims were subjected to multiple injuries or the event began with any crime turned instrumental homicide. Greater than 60% of acquaintance connected homicides showed positive signs of the victim's struggle or the body of the victim was not hidden (left in the open post-mortem). The victim was left fully clothed or the scene showed signs of gratuitous violence (overkill) in over 70% killings linked to acquaintance suspects. Most frequently occurring for this profile: over 80% of these killings implicated lone (not multiple) acquaintance suspects.

Figure 5.5.4 Perpetrator Actions by Descending Percentage in Homicides Implicating the Close Relationship Suspect Population (n=13)
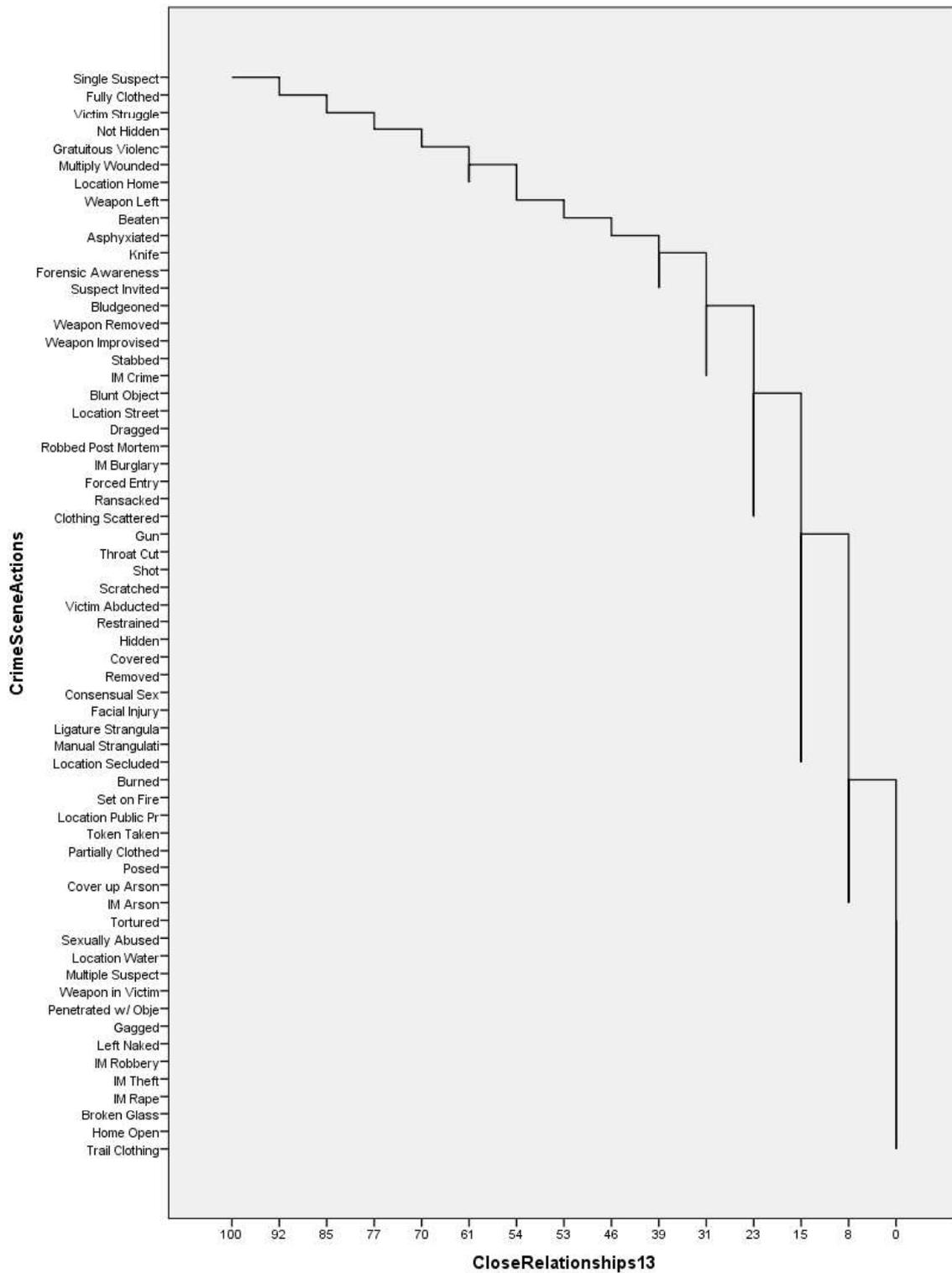
Being that there are only 13 cases of close victim-suspect relationships to profile in chart 5.5.4, it may account for that 13 of the crime scene action variables - tortured, sexually abused, dumped in a body of water post-mortem, victim killed by multiple suspects, weapon left inside the body, penetrating the victim with an object, leaving the victim naked, gagging the victim, a theft or robbery turned instrumental homicide, entering the home through an open door or breaking glass for a forced entry, and leaving a trail of clothing - showed zero frequencies in homicides implicating the close suspect population.

 These nil results, however, could actually be differentiating factors for homicides implicating close suspects, being that neither stranger nor acquaintance implicated homicides calculated nil results for any of the 62 homicide-scene variables presented in this study. For victims with close relationships to these convicted suspects, fewer than10% of victims were burned, set on fire, posed or had a token taken by their killers, were left to die on public property, left partially clothed, or were subject to an arson turned instrumental homicide (IM arson). Fewer than 20% of killers used a gun, cut the throat, or used a ligature or manual strangulation as the method of killing, shot, scratched, abducted, restrained, or facially injured their victims, hid or covered the victim's body with cloth or plastic, removed the body from the original murder scene, killed their victims in a secluded location, or had consensual sex with the victim pre-homicide in these homicides connected to close suspects.

Fewer than 30% of victims in homicides implicating close suspects were killed with a blunt object, left in the street post-mortem, dragged, had their home ransacked or had their clothing scattered, were robbed post-mortem, were accosted by their suspected killers with forced entry or were subject to a burglary turned instrumental homicide during these crimes. Perpetrators chose the knife as the murder weapon, bludgeoned or stabbed their victims, improvised or removed the

weapon from the crime scene, were forensically aware, were initially invited in the homes of their victim's pre-homicide, or began the event with any crime turned instrumental homicide in fewer than 40% of close-suspect connected cases. Asphyxiation occurred in fewer than 50% of cases implicating close suspects. Beating their victims with fists or leaving the weapon at the crime scene were behaviours representing over 50% of homicides having convicted suspects in the close relationship category. Gratuitous violence, multiple wounding, home killings occurred in over 60% cases linked to close relationship suspects. Leaving the body out in the open post-homicide (not hidden) was a decision made by over 70% of perpetrators in close suspect implicated homicides. Victims struggled through their deaths in over 80% of these homicides. Perpetrators left their victims fully clothed over 90% of the time in homicides implicating close suspects. Finally, 100% of homicides implicating close suspects were connected to lone (not multiple) suspects.

5.5.3 Relational profiling of homicide relationships between groups

Because the differences seen in figures 5.5.2-5.5.4 developed a further understanding of the most and least common behaviours for homicides implicating stranger, acquaintance, and close suspects in England and Wales, it was necessary to further understand the differences between groups for the presence or absence of homicide scene behaviours. Therefore, homicide behaviours were first computed for their overall frequency of occurrence with the 69 homicide victims in these crimes. The frequency and percentage of these behaviours were then calculated for homicides implicating suspects with stranger, acquaintance, and close relationships to the victims by how often they occurred. To explain further, when a homicide scene variable had been present for 16 of 64 cases, the frequencies and percentages were calculated for how often

stranger, acquaintance and close suspects were implicated for the crime in 16 cases marked as having a presence, excluding cases that did not have the presence of that behaviour.

In this way, a deeper qualitative understanding of the delineation between victim-suspect relationship groups was explored. The overall data set is large enough to gauge differences between groups and the following analysis may suggest the order of suspect prioritization by relationship type. Because, however, the current data set is a smaller sample size (69 victims), 95% behaviours occurred in fewer than 50 cases. Therefore, results in table 5.5.4 should be approached with caution yet the differences suggest that this seminal methodology could be utilized with larger sample sizes to make more definitive conclusions in the realm of suspect prioritization by relationship when the presence of these 62 homicide scene behaviours has occurred within any given crime.

5.5.4 Results

Table 5.5.4 Frequencies and Percentages of the total actions present for 62 homicide scene behaviours occurring for 69 victims in 64 cases differentiated by relationship.

Homicide Scene Behaviours	Total Present	Stranger Present (%)	Acquaintance Present (%)	Close Present (%)
Set on Fire	3	1 (33)	1 (33)	1 (33)
Location Water	**3**	**1 (33)**	**2 (66)**	**0 (0)**
Gagged	**3**	**2 (66)**	**1 (33)**	**0 (0)**
Trail Clothing	**3**	**1 (33)**	**2 (66)**	**0 (0)**
Burned	4	1 (25)	2 (50)	1 (25)
Weapon in Victim	**4**	**1 (25)**	**3 (75)**	**0 (0)**
Penetrated w/ Object	**4**	**3 (75)**	**1 (25)**	**0 (0)**
Cover up Arson	4	2 (50)	1 (25)	1 (25)
Broken Glass	**4**	**2 (50)**	**2 (50)**	**0 (0)**
Tortured	**5**	**3 (60)**	**2 (40)**	**0 (0)**
Sexually Abused	**5**	**4 (80)**	**1 (20)**	**0 (0)**
Token Taken	5	3 (60)	1 (20)	1 (20)
Left Naked	**5**	**3 (60)**	**2 (40)**	**0 (0)**
IM Arson	5	3 (60)	1 (20)	1 (20)
Home Open	**5**	**2 (40)**	**3 (60)**	**0 (0)**
Posed	6	4 (67)	1 (17)	1 (17)
IM Robbery	**6**	**5 (83)**	**1 (17)**	**0 (0)**
IM Rape	**6**	**4 (67)**	**2 (33)**	**0 (0)**
Consensual Sex	**6**	3 (50)	1 (17)	2 (33)
Location Secluded	7	4 (57)	1 (14)	2 (29)
Partially Clothed	7	4 (57)	2 (29)	1 (14)
Covered	7	3 (43)	2 (29)	2 (29)
IM Theft	**7**	**2 (29)**	**5 (71)**	**0 (0)**
Restrained	7	4 (57)	3 (43)	0 (0)
Scratched	8	5 (63)	1 (13)	2 (25)
Shot	8	3 (38)	3 (38)	2 (25)
Removed	8	4 (50)	2 (25)	2 (25)
Facial Injury	9	4 (44)	3 (33)	2 (22)
Gun	9	3 (33)	4 (44)	2 (22)
Ligature Strangulation	9	4 (44)	3 (33)	2 (22)
Victim Abducted	9	5 (56)	2 (22)	2 (22)
Hidden	9	2 (22)	5 (56)	2 (22)
Throat Cut	10	6 (60)	2 (20)	2 (20)
Multiple Suspects	**11**	**7 (64)**	**4 (36)**	**0 (0)**

Manual Strangulation	12	5 (42)	5 (42)	2 (17)
Suspects Invited	12	2 (17)	5 (42)	5 (42)
Bludgeoned	14	4 (29)	6 (43)	4 (29)
Blunt Object	14	7 (50)	4 (29)	3 (21)
Ransacked	14	7 (5)	4 (29)	3 (21)
Clothing Scattered	14	5 (36)	6 (43)	3 (21)
Forced Entry	15	8 (53)	4 (27)	3 (20)
IM Burglary	16	8 (50)	5 (31)	3 (19)
Location Public Prop	17	9 (53)	7 (41)	1 (6)
Dragged	17	7 (41)	7 (41)	3 (18)
Location Street	18	9 (50)	6 (33)	3 (17)
Robbed Post Mortem	18	7 (39)	8 (44)	3 (17)
Weapon Left	20	6 (30)	7 (35)	7 (35)
Asphyxiated	22	7 (32)	9 (41)	6 (27)
Weapon Improvised	24	11 (46)	9 (38)	4 (17)
Location Home	26	9 (35)	9 (35)	8 (31)
Forensic Awareness	28	12 (43)	11 (39)	5 (18)
Beaten	29	12 (41)	10 (34)	7 (24)
Knife	31	19 (61)	7 (23)	5 (16)
Stabbed	31	18 (58)	9 (29)	4 (13)
IM Crime	34	17 (50)	13 (38)	4 (12)
Weapon Removed	35	21 (60)	10 (28)	4 (11)
Multiply Wounded	39	17 (44)	14 (36)	8 (21)
Gratuitous Violence	44	17 (39)	18 (41)	9 (20)
Victim Struggle	48	21 (44)	16 (33)	11 (23)
Not Hidden	53	26 (49)	17 (32)	10 (19)
Fully Clothed	54	23 (43)	19 (35)	12 (22)
Single Suspect	58	24 (41)	21 (36)	13 (22)

When observing differences within populations, as described in sections 5.5.2-5.5.4, it was found that the close populations of suspects were implicated for homicides housing fewer of the 62 homicide scene behaviours than were acquaintances or stranger suspects. 14 behaviours show zero frequencies for homicides implicating the close suspect population - location water, gagged, trail of clothing, weapon in victim, penetrated with object, broken glass, tortured, sexually abused, left naked, IM Robbery, IM Rape, IM Theft, and multiple suspects. The gagged, weapon

in victim, sexually abused, left naked, IM Robbery, IM Rape, and multiple suspect behaviours were shown to be more indicative of a stranger relationship between victim and convicted suspect than any other, given that 60-80% of these behaviours were completed by perpetrators in homicides implicating strangers, 20-40% implicating acquaintances, and 0% implicating close relations.

When taking into account the minimum 70% -30% significance split for determining significant differences in correlational studies (Osborne, 2008), the penetrated with object behaviour occurred four times in the data. Stranger suspects were implicated in ¾ (75%) of these crimes compared to ¼ acquaintances and zero close suspects. Of the five victims who were sexually abused, four of these cases (80%) were attributed to stranger suspects, compared to 20% attributed to acquaintance suspects. Of the six cases that began with a robbery turned instrumental homicide (IM Robbery), five of these cases (83%) were attributed to stranger suspects compared to one (17%) attributed to an acquaintance suspect. These results suggest that when crime scenes show signs of the victim being penetrated with an object, sexual abuse, or instrumental robbery homicide, the order of suspect prioritization should begin with stranger suspects, followed by acquaintance suspects, and should not be hyper focused on closely known suspects.

Contra-wise, when the murder weapon was left inside of the victim (n=4) (e.g. a knife remaining lodged in the victim's body), acquaintances were implicated for these crimes in ¾ (75%) of cases, compared to strangers (25%) and close suspects (0%). Of the 7 cases where killing was instrumental to a theft (IM Theft), five (71%) of these homicides implicated acquaintance suspects, as opposed to 29% stranger suspects and 0% close suspects. These results suggest that when the murder weapon is left inside the victim or the homicide shows features of being

instrumental to theft at UK homicide scenes, the order of suspect prioritization should begin with acquaintance suspects, followed by stranger suspects, and should not be hyper focused on closely known suspects.

5.6.0 Chapter Summary

Chapter 5 answered the question as to how impactful the pre-existing relationship between victims and convicted suspects for homicide situations in England and Wales was on the representation of homicide actions presented in these 64 crime scenes. It was hypothesized that injury severity, weapon choice, crime location and the presence of facial injury (differentiated by relationship in prior multi-national research) would differentiate by relationship (stranger, active, and close) for the current set of homicides. It was found that weapon choice, namely the use of a knife, was the only differentiating factor between the relationship categories. The presence of a knife for this homicide sample indicated a stranger relationship between victim and perpetrator. 62 homicide scene actions were analysed, and of these, two further actions were differentiated by relationship. When the murder weapon was left at the crime scene or the convicted suspect was invited into the victim's home prior to the event, it was an indication of a close relationship between victim and perpetrator. Further analysis revealed that victim age did not differentiate by relationship for the current set of homicides. In a seminal methodology, behavioural profiles for each relationship category were charted, and a deeper qualitative understanding of how homicide scenes were impacted by relationship is discussed in thoroughly Chapter 8.

The next question to follow was whether controlling for relationship status (stranger, active, estranged) would further differentiate 62 homicide scene behaviours. The analysis in Chapter 6 addressed this question thoroughly with four further statistical analyses.

Chapter 6: Characteristics (C) to Actions (A) Analysis of Homicides by Relationship Status (Study 3)

6.1.0 Active vs. estranged differentiation for known victim-convicted suspect relationships in 64 homicide crime scenes

The current set of analyses for this Chapter were aimed to gather whether controlling for relationship status prior to the homicide (stranger, active, and estranged) would show salient features that could further help to differentiate homicide scene actions.

Part 1 of Study 3 analysed the correlates between active and estranged relationship categories to perpetrator behaviour for the same 69 victims of homicide, theorizing that the gratuitous nature of the homicide event would increase when victim-convicted suspect relationships were estranged from each other prior to the murder as opposed to being actively engaged. Previous research identified that for intimate partner violence (e.g. Heller et al., 1983), the gratuitous nature of the homicide increased when victims were estranged from their killers.

Parts 2-4 of Study 3 mirrored the relational profiling analyses performed in Study 2, except for that the known suspects were divided not by their inter-personal circumstances (having an acquaintance or close relationship to the victim), rather their psycho-social standing (having an active or estranged relationship with the victim) preluding the homicide event. The hypotheses tested in Study 3 apply to all relationship categories (e.g. friends, business partners, family members, and intimate partners), thus results are not exclusive to intimate partner violence, making this study a novel contribution to suspect prioritization and profiling research.

6.1.1 Procedure

86 crime scene variables made up the original data set recorded in Chapter 4. These data were checked for accuracy/researcher error three times before the analysis. Variables that occurred in fewer than three cases were removed from the final analysis, and 71 variables comprised the final homicide scene action data set. To make the data set more uniform for analysis, the rating scales for forensic awareness, victim struggle, and gratuitous violence were dichotomized to present and absent, reducing the crime scene variable count to 62. The final data set comprised 64 cases: 48 were lone-suspect single-victim homicides. In the five cases where multiple victims had been killed, the homicide procedure happened to be the same (e.g. both victims were stabbed multiple times in the same location) thus the crime scene data was duplicated for each of these victims. Additionally, 11 cases were multiple perpetrator homicides with one victim. For these cases, relational information for only the convicted suspects believed by policing authorities to have physically committed the homicide (e.g. stabbed the victim) were recorded; tertiary suspects who were involved in planning and/or cover up of the homicide were excluded from relationship analysis as it was assumed that the crime scene information would have been primarily and maximally impacted by physical perpetrator the crime. Thus, the final data set coincided with the number of victims, comprising an (n) of 69 victim-suspect relationships.

6.2.0 Study 3, Part 1 – Gratuitous violence and relationship status

It was hypothesized that estranged relationships between victim and convicted suspect would have contributed to a more gratuitous event compared to active relationships. Prior relationships were classified into two categories based on psycho-social circumstances pre-dating the homicide. This relational model had three modulators, 0 – Stranger, 1- Active, and 2- Estranged. For this study's sample, if a previous relationship had been established that ended in a continued feud between victim and suspect before the homicide, this was recorded in the 'estranged' relationship category. The estranged category excluded killings immediately following an initial argument, as it was decided that a time period must have elapsed between the initial argument and the killing (several hours to many months) such that it could not be immediately reactive in nature.

This time lapse would allow for planning on the part of the perpetrator and it was theorized that homicide scene behaviours in planned homicides would differentiate from those in immediate reactionary killings. Alternatively, when a relationship had been previously established but had been absent for a period of over one year (e.g. suspect moved to another city before returning to kill the victim) it was also marked as 'estranged'. The active category included both crimes of passion, where the relationship had remained intact just prior to the homicide, and un-disturbed relationships having less than a 12-month gap between interactions. The active and estranged categories were analysed alongside the stranger category, to provide a comparison group of suspects whose behaviour could not be motivated by any prior relationship with the victim. Gratuitous violence was assessed on a 0-3 scale: 0 - No Evidence; 1, Minor; 2- Moderate; 3- Major (see Chapter 4, section 4.9.1 for a complete breakdown of the score). The Gratuitous

Violence Score, developed from the Porter, et.al (2009) research, met with 100% concordance in inter-rater reliability testing for the current study (see Appendix, Section B).

6.2.1 Hypothesis 4

H4: It was hypothesized that estranged relationships between victim and convicted suspect would result in homicide scenes that were more gratuitous in nature than those where victim and convicted suspect had active or stranger relationships, because prior research identified this trend for intimate partner violence (Johnson & Hotton, 2003).

H0: There will be no significant difference in the gratuitous violence score for 64 rated homicides (with 69 victims) that implicated active vs. estranged vs. stranger suspects.

6.2.2 Results

The preferred method for computing the probability that any one non-continuous variable occurs more or less frequently than expected within a category, for non-parametric data, is the chi-square test (Gavin, 2008). Generally, the chi-square value is appropriate for data sets with n> 100, housing independent values for categorical data, assuming that the data set has a normal distribution (Mehta & Patel, 2012, iii). When data sets are gathered from various, non-verifiable environments that are "small, sparse, heavily tied, or unbalanced and the validity of the corresponding large sample theory is in doubt" (Mehta & Patel, 2012) the Fisher's Exact Test is the appropriate test to compute the probability that any one continuous or non-continuous variable occurs more or less often than expected within a category for data sets with an n<100. The data set for Study 3 is verifiable, but small and unbalanced; therefore, because the goal of Part 1 of Study 3 was to understand how active, estranged, and stranger relationships varied in gratuitous violence on a 0-3 score, the Exact *p* value was calculated. The Fisher Exact *p* value is

the most reliable and accurate method of assessing probability, yet often is too difficult to compute for larger data sets (Mehta & Patel, 2012). Given that the final data set used for the current study contains 69 victim-convicted suspect relationships, and many of the cells for homicide actions have an expected count of less than 5, the categorical frequencies along with the Exact *p* value were computed and tables 6.1.2 and 6.1.3 highlight these results.

Table 6.2.2 Presence of Gratuitous Violence for Relationship Status Categories

Relationship Status	Gratuitous Absent	Gratuitous Present	Fisher Exact Chi Square/ 2 tailed sig
Stranger (n=31)	*13 (42%)*	17 (55%)	
Active (n=18)	*3 (17%)*	15 (83%)	**4.220 (.126)**
Estranged (n=20)	*8 (40%)*	12 (60)	

Table 6.2.3 Presence of Gratuitous Violence for Relationship Status Categories (Strangers Removed)

Relationship Status	Gratuitous Absent	Gratuitous Present	Fisher Exact Chi Square/ 2 tailed sig
Active (n=18)	*3 (17%)*	15 (83%)	
Estranged (n=20)	*8 (40%)*	12 (60)	**2.508a (.160)**

Table 6.2.4 Gratuitous Violence Score for Relationship Status Categories

Relationship Status	GV Score No Evidence	GV Score Score Minor	GV Score Moderate	GV Major	Fisher Exact Chi Square/ 2 tailed sig
Stranger (n=31)	*13 (42%)*	5 (16)	6 (19%)	7 (23%)	
Active (n=18)	*3 (17%)*	4 (22%)	8 (44%)	3 (18%)	**7.749 (.253)**
Estranged (n=20)	*8 (40%)*	4 (20%)	7 (35%)	1 (5%)	

Table 6.2.5 Gratuitous Violence Score for Relationship Status (Strangers Removed)

Relationship Status	GV Score No Evidence	GV Score Minor	GV Score Moderate	GV Score Major	Fisher Exact Chi Square/ 2 tailed sig
Active (n=18)	*3 (17%)*	4 (22%)	8 (44%)	3 (18%)	
Estranged (n=20)	*8 (40%)*	4 (20%)	7 (35%)	1 (5%)	**3.243 (.372)**

The null hypothesis (4) was accepted as there were no significant correlational differences established for the presence of gratuitous violence or gratuitous violence score for homicides implicating active vs. estranged vs. stranger suspects for Study 3, Part 1. When active and estranged relationships were isolated for the analysis (Tables 6.2.2 and 6.2.5), no significant differences were prevalent for the presence of gratuitous violence nor the gratuitous violence score in connected homicides. These results highlighted in tables 6.1.2 thru 6.1.5 suggest that all homicide transactions in this data set were more similarly gratuitous in nature than they were different.

6.3.0 Study 3, Part 2 – Relationship status (C) to actions (A) analysis for 64 homicides with 69 victims

Although the gratuitous nature of these murders were not statistically differentiated by the active or estranged relationship categories, the question still remained as to whether the other 61 homicide scene actions were differentiated by estranged vs. active vs. stranger relationships between victim and convicted suspect. Therefore, secondary analysis ensued to chart these differences. The Fisher Exact Test value was computed, focusing on the two-tailed significance value for 61 further crime scene variables in correlation with the three above outlined relationship status categories. Table 6.3.1 highlights these results.

6.3.1 Hypothesis 5

H0: The stranger, active, estranged relationship status categories will not differentiate in the

representation of 61 further homicide scene action variables.

H5: Stanger, active, and estranged relationship categories will significantly differentiate in the

representation of 61 further homicide scene action variables.

6.3.2 Results

Table 6.3.2 Frequencies & percentages of crime scene behaviours, Fisher's Exact chi-square test value, and 2-sided *p* values for 61 crime scene variables as their outcome was recorded within 3 relationship status categories.

Homicide Scene Variables	Stranger (n31) Present (%)	Active (n18) Present (%)	Estranged (n20) Present (%)	Fisher's Exact (2sided Sig)
Single Suspect	24 (77.4)	15 (83.3)	19 (95)	2.757(.211)
Multiple Suspect	7 (22.5)	3 (16.7)	1(5)	2.757 (.211)
Forensic Awareness	12 (38.7)	7 (38.9)	9 (45)	.287 (.904)
Victim Struggle	21 (67.7)	13 (72.2)	14 (70)	.159 (1)
Weapon Left	**6 (19.4)**	**10 (55.6)**	**4 (20)**	**7.615 (.022)**
Weapon Removed	**21 (67.7)**	**6 (33.3)**	**8 (40)**	**6.597 (.041)**
Weapon in Victim	1 (3.2)	2 (11.1)	1 (5)	1.473 (.684)
Weapon Improvised	11 (35.5)	8 (44.4)	5 (25)	1.590 (.447)
Stabbed	18 (58.1)	5 (27.8)	8 (40)	4.403 (.123)
Throat Cut	6 (19.4)	3 (16.7)	1 (5)	2.100 (.378)
Shot	3 (9.7)	2 (11.1)	3 (15)	.528 (.891)
Scratched	5 (16.1)	2 (11.1)	1 (5)	1.349 (.567)
Asphyxiated	7 (22.5)	9 (50)	6 (30)	3.847 (.162)
Victim Abducted	5 (16.1)	4 (22.2)	0 (0)	4.974 (.088)
Penetrated w/ Object	3(9.7)	1 (5.6)	0 (0)	1.791 (.368)
Restrained	4 (12.9)	3 (16.7)	0 (0)	3.505 (.160)
Gagged	2 (6.5)	1 (5.6)	0 (0)	1.266 (.609)
Token Taken	3 (9.7)	1 (5.6)	1 (5)	.514 (1)
Left Naked	3 (9.7)	1 (5.6)	1 (5)	.514 (1)
Fully Clothed	23 (74.2)	14 (77.8)	17 (85)	.831 (.702)
Partially Clothed	4 (12.9)	1 (5.6)	2 (10)	.639 (.879)
Posed	4 (12.9)	2 (11.1)	0 (0)	2.735 (.269)
Hidden	**2 (6.5)**	**6 (33.3)**	**1 (5)**	**7.179 (.017)**
Covered	3 (9.7)	4 (22.2)	0 (0)	4.753 (.064)
Not Hidden	26 (83.9)	11 (61.1)	16 (80)	3.271 (.191)

Dragged	**7 (22.5)**	**9 (50)**	**1 (5)**	**10.115 (.007)**
Removed	4 (12.9)	4 (22.2)	0 (0)	4.722 (.075)
Cover up Arson	2 (6.5)	0 (0)	2 (10)	1.615 (.470)
Robbed Post Mortem	**7 (22.5)**	**9 (50)**	**2 (10)**	**7.659 (.022)**
IM Burglary	8 (25.8)	6 (33.3)	2 (10)	3.150 (.220)
IM Robbery	5 (16.1)	0 (0)	1 (5)	3.431 (.158)
IM Theft	2 (6.5)	3 (16.7)	2 (10)	1.440 (.461)
IM Arson	3 (9.7)	0 (0)	2 (2)	1.792 (.508)
IM Rape	4 (12.9)	2 (11.1)	0 (0)	2.735 (.269)
IM Crime	17 (54.8)	11 (61.1)	6 (30)	4.3 (.125)
Broken Glass	2 (6.5)	1 (5.6)	1 (5)	.337 (1)
Home Open	2 (6.5)	2 (11.1)	1 (5)	.771 (.715)
Forced Entry	8 (25.8)	2 (11.1)	5 (25)	1.602 (.459)
Suspect Invited	2 (6.5)	5 (27.8)	5 (25)	5.040 (.085)
Consensual Sex	3 (9.7)	2 (11.1)	1 (5)	.635 (.872)
Ransacked	7 (22.5)	4 (22.2)	3 (15)	.531 (.802)
Clothing Scattered	5 (16.1)	3 (16.7)	4 (20)	.267 (.922)
Trail Clothing	1 (3.2)	1 (5.6)	1 (5)	.691 (1)
Bludgeoned	4 (12.9)	6 (33.3)	4 (20)	2.883 (.235)
Beaten	12 (38.7)	9 (50)	8 (40)	.687 (.779)
Burned	1 (3.2)	1 (5.6)	2 (10)	1.250 (.806)
Set on Fire	1 (3.2)	0 (0)	2 (10)	1.969 (.450)
Facial Injury	**4 (12.9)**	**5 (27.8)**	**0 (0)**	**6.288 (.028)**
Multiply Wounded	17 (54.8)	12 (66.7)	10 (50)	1.143 (.579)
Tortured	3 (9.7)	2 (11.1)	0 (0)	2.225 (.432)
Sexually Abused	4 (12.9)	1(5.6)	0 (0)	2.614 (.258)
Blunt Object	7 (22.6)	5 (27.8)	2 (10)	2.055 (.380)
Gun	3 (9.7)	3 (16.7)	3 (15)	.805 (.730)
Knife	**19 (61.3)**	**5 (27.8)**	**7 (35)**	**6.133 (.043)**
Ligature Strangulation	**4 (12.9)**	**5 (27.8)**	**0 (0)**	**6.288 (.028)**
Manual Strangulation	5 (16.1)	3 (16.7)	4 (20)	.267 (.922)
Location Home	9 (29)	7 (38.9)	10 (50)	2.3 (.318)
Location Public Prop	9 (29)	2 (11.1)	6 (30)	2.425 (.327)
Location Street	9 (29)	4 (22.2)	5 (25)	.313 (.939)
Location Water	1 (3.2)	2 (11.1)	0 (0)	2.402 (.337)
Location Secluded	4(12.9)	3 (16.7)	0 (0)	3.505 (.160)

It was found that circumstantial relationship status between victim and convicted suspect prior to the homicide event had a greater impact on the representation of crime scene action variables (or perpetrator behaviour) than did the social relationship. Thus, the null hypothesis (5) was rejected.

Findings for the facial injury (p<.05), ligature strangulation (p>.05), dragged (p>.01), hidden (p>.05) and robbed post mortem (p<.05) actions were differentiated in that homicides implicating estranged suspects were distinguished from those implicating stranger and active suspects, yet the latter two relationship status categories did not statistically deviate from each other for these behaviours. For these six action variables, their absence from the current set of homicide crime scenes indicates that victims were not estranged from their perpetrators. The robbed post-mortem category stands out because perpetrators in these homicides applied a more instrumental approach. Suspects with active relationships to the victim (n=9/50%) were implicated over twice as often as strangers (n=7/22.5%) and five times more often than estranged (n=2/10%) suspects when victims were robbed post-mortem, indicating that the motive for monetary gain post-homicide was not as pertinent in estranged homicides (p<.05).

In Study 3, part 2, many of the over-kill variables (bludgeoned, beaten, burned, set on fire, multiply wounded, tortured, sexually abused) did not differentiate by relationship status, as was expected from the results in Study 3, Part 1; however, the facial injury variable did. While a zero frequency was calculated for the facial injury variable in the homicides that implicated estranged suspects, victims of homicides that implicated strangers (n=4/12.9%) and active relationships (n=5/27.8%) were respectively 13 and 28 times more likely to incur the facial injury variable (p>.05), suggesting that estranged perpetrators are less likely to make the killing expressively personal in nature. This result is corroborated, although did quite meet the criterion for statistical significance, by a further six nil results finding that victims of homicides implicating the estranged suspects were not tortured, sexually abused, penetrated with an object, raped, restrained, gagged, covered or posed after the crime (p>.05). Although it could be assumed that a level of pre-planning went into the estranged crimes given the time gap between the dissolution of these prior relationships and the homicide transactions, the perpetrators

in these crimes were less likely to cover their tracks post-mortem in order to avoid detection, compared to homicides incriminating stranger and active suspects. This statement is further supported by nil results in the estranged category for abducted, removed, covered, and dumping the body in a secluded location or in a body of water, where positive results for these actions were found in homicides implicating stranger and active suspects. Although these differences did not meet with statistical significance (p>.05), a nil result for these actions in the estranged category indicates that future research is warranted with a larger sample size, to understand whether these differences remain consistent.

Results in the weapon choice category specified that homicides linked to stranger suspects (n=19 /61.3%) the choice was more often a knife (p>.05) than it was for homicides linked to active (n=5/27.8%) or estranged suspects (n=7/35%). The active and estranged murders were differentiated in that estranged suspects not (n=0) connected to crime scenes presenting a ligature as the murder weapon, yet five (28.9%) of the active suspects and four (12.9%) stranger suspects were implicated for homicides where the victim was killed by ligature strangulation (p>.05).

One further differentiation of crime scene variables occurred in the weapon category. While suspects harbouring active relationships with victims (n=10/55.6%) were more likely than stranger (n=6/19.4%) or estranged suspects (n=4/20%) to have been convicted for homicides where perpetrators left the weapon at their crime scenes (p<.05), stranger suspects (n=21/67.7) were more likely than active (n=6/33.3%) or estranged (n=8/40%) suspects be convicted of homicides where perpetrators had removed the murder weapon (p<.05). Although this result suggests that killers with active relationships to victims were not as motivated to avoid detection compared to stranger and estranged killers, active suspects (n=6.33/3%) were more likely than stranger (n=2/6.5%) and estranged (n=1/5%) suspects to be convicted of crimes where the victim's body had been hidden post-mortem, suggesting that killers with

active relationships to victims were more immediately concerned with investigators' locating the person as opposed to the weapon (p<.05).

6.4.0 Study 3, Part 3 – Testing the viability of the three-part relationship status model

It was unclear from the analysis reported in Table 6.3.2 whether the difference found were a function of inclusion of the stranger category, or whether active and estranged relationships could be differentiated from each other when it came to the representation of crime scene action variables. Therefore, a follow up analysis was performed such that the cases implicating stranger relationships were removed from the analysis (n=31) such that the active and estranged relationship categories could be accurately measured for individual differences with the same 61 crime scene actions. 38 cases (n=18 active; n=20 estranged) were analysed in Part 3 of Study 3 accounting for the presence of an active or estranged relationship between victim and convicted suspect prior to the homicide transaction, excluding 31 cases where there was no prior relationship recorded (stranger cases).

Because the stranger relationship category was removed from the part 3 analysis, the Fisher Exact value could not be calculated, and these chi square results should be approached with caution (as indicated by the (a) following the output). Nevertheless, some notable differences were recorded and the 2-tailed significance, recorded in table 6.4.1, remains the most valid measure of correlational significance for these differences given its ability to remain accurate despite low variable counts within the action categories

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Table 6.4.1 Frequencies & percentages of crime scene behaviours, chi-square test value, and 2-tailed *p* values for 61 crime scene variables as their outcome was recorded within 2 relationship status categories.

Homicide Scene Variables	Active (n18) Present (%)	Estranged (n20) Present (%)	Chi Square (2-tailed Sig)
Single Suspect	15 (83.3)	19 (95)	1.369a (.328)
Multiple Suspect	3 (16.7)	1(5)	1.369a (.328)
Forensic Awareness	7 (38.9)	9 (45)	.145a (.752)
Victim Struggle	13 (72.2)	14 (70)	.023a (1)
Weapon Left	**10 (55.6)**	**4 (20)**	**5.147a (.042)**
Weapon Removed	6 (33.3)	8 (40)	.181a (.745)
Weapon in Victim	2 (11.1)	1 (5)	.487a (.595)
Weapon Improvised	8 (44.4)	5 (25)	1.591a (.307)
Stabbed	5 (27.8)	8 (40)	.629a (.506)
Throat Cut	3 (16.7)	1 (5)	1.369a (.328)
Shot	2 (11.1)	3 (15)	.125a (1)
Scratched	2 (11.1)	1 (5)	.478a (.595)
Asphyxiated	9 (50)	6 (30)	1.586a (.320)
Victim Abducted	**4 (22.2)**	**0 (0)**	**4.967a (.041)**
Penetrated w/ Object	1 (5.6)	0 (0)	1.141a (.474)
Restrained	3 (16.7)	0 (0)	3.619a (.097)
Gagged	1 (5.6)	0 (0)	1.141a (.474)
Token Taken	1 (5.6)	1 (5)	.006a (1)
Left Naked	1 (5.6)	1 (5)	.006a (1)
Fully Clothed	14 (77.8)	17 (85)	.329a (.687)
Partially Clothed	1 (5.6)	2 (10)	.257a (1)
Posed	2 (11.1)	0 (0)	2.346a (.218)
Hidden	**6 (33.3)**	**1 (5)**	**5.061a (.038)**
Covered	**4 (22.2)**	**0 (0)**	**4.967a (.041)**
Not Hidden	11 (61.1)	16 (80)	1.643a (.288)
Dragged	**9 (50)**	**1 (5)**	**9.894a (.003)**
Removed	**4 (22.2)**	**0 (0)**	**4.967a (.041)**
Cover up Arson	0 (0)	2 (10)	1.900a (.488)
Robbed Post-Mortem	**9 (50)**	**2 (10)**	**7.370a (.011)**
IM Burglary	6 (33.3)	2 (10)	3.103a (.117)
IM Robbery	0 (0)	1 (0)	.924a (1)
IM Theft	3 (16.7)	2 (10)	.368a (.653
IM Arson	0 (0)	2 (2)	1.900a (.488)
IM Rape	2 (11.1)	0 (0)	2.346a (.218)
IM Crime	11 (61.1)	6 (30)	3.709a (.101)
Broken Glass	1 (5.6)	1 (5)	.006a (1)
Home Open	2 (11.1)	1 (5)	.487a (.595)
Forced Entry	2 (11.1)	5 (25)	1.216a (.410)
Suspect Invited	5 (27.8)	5 (25)	.038a (1)
Consensual Sex	2 (11.1)	1 (5)	.487a (.595)

Ransacked	4 (22.2)	3 (15)	.329a (.687)
Clothing Scattered	3 (16.7)	4 (20)	.070a (1)
Trail Clothing	1 (5.6)	1 (5)	.006a (1)
Bludgeoned	6 (33.3)	4 (20)	.869a (.468)
Beaten	9 (50)	8 (40)	.383a (.745)
Burned	1 (5.6)	2 (10)	.257a (1)
Set on Fire	0 (0)	2 (10)	1.900a (.488)
Facial Injury	**5 (27.8)**	**0 (0)**	**6.397 (.017)**
Multiply Wounded	12 (66.7)	10 (50)	2.346a (.218)
Tortured	2 (11.1)	0 (0)	1.414a (.474)
Sexually Abused	1(5.6)	0 (0)	1.080a (.342)
Blunt Object	5 (27.8)	2 (10)	1.922a (.222)
Gun	3 (16.7)	3 (15)	.020a (1)
Knife	5 (27.8)	7 (35)	.299a (.734)
Ligature Strangulation	**5 (27.8)**	**0 (0)**	**6.397a (.017)**
Manual Strangulation	3 (16.7)	4 (20)	.070a (1)
Location Home	7 (38.9)	10 (50)	.473a (.532)
Location Public Prop	2 (11.1)	6 (30)	2.034a (.238)
Location Street	4 (22.2)	5 (25)	.040a (1)
Location Water	2 (11.1)	0 (0)	2.346a (.218)
Location Secluded	3 (16.7)	0 (0)	3.619a (.097)

Table 6.4.1 contains the same frequencies and percentages for crime scene actions as the active and estranged relationship categories did in Table 6.3.2. The task for part 3 of Study 3 was to understand whether the differences reported in Table 6.4.1 were a function of the "Stranger" relationship category (the control group) or whether the representation of crime scene variables were also differentiated by the relationship status (active vs. estranged) between victim and convicted suspect. Many of the differences found between homicides implicating stranger, active, and estranged relationships in Part 2 of Study 3 were also detected in Part 3 of the analysis, with the exception of the variables hidden (p<.05) and covered (p<.05), that did not meet with statistical significance in Part 2 yet did in Part 3, once the stranger category was removed.

Perpetrators in homicides that implicated active suspects were six times more likely to hide their victims and five times more likely to cover their victims with a cloth or plastic post-mortem than

were perpetrators of homicides that implicated estranged suspects (p<.05). The frequencies here were fairly low (under 7), yet a nil result for the covered variable suggests that for homicides in England and Wales, when victims are covered, estranges suspects are not likely the perpetrators.

Of the 20 homicides where estranged suspects had been implicated, none showed the presence of a ligature as the murder weapon, yet 28% of the 18 active suspect murders did. This result suggests that when a ligature is present at the crime scene, suspects with estranged relationships to the victim are not a fruitful area of primary focus for suspect prioritization in British and Welch homicides (p.>05). The same frequencies were charted for the facial injury action, suggesting that when a facial injury was incurred by victims of homicide, estranged relationships are also not a fruitful area of primary focus (p<.05) for suspect prioritization.

A similar trend exists for the removed (removed the victim's body to dump in another location) action, as a zero frequency was charted for victims in estranged cases (p<.05). The dragged action shows the greatest difference between active and estranged homicides; as findings indicate that suspects with active relationships to the victims were over nine times more likely than estranged suspects to be implicated for homicides where the perpetrator(s) dragged the victim(s) through the crime scene (p<.01). Next, being robbed post-mortem (p=.011) was over seven times more likely to occur for victims in active cases compared to estranged cases (p<.05).

It seems that suspects with active relationships in the current sample were motivated to go to further lengths to avoid detection when it involved the actual body of their victims, yet more often left the murder weapon left at the crime scene, suggesting that they may not have actual forensic awareness, a desire to delay the detection of the victims body. Perpetrators in homicides

between active relationships are perhaps more focused on the person than on the act post-homicide.

It is worth noting that 52 crime scene variables did not reach a low enough statistical significance to differentiate relationships status categories (stranger, active, and estranged), therefore it can be assumed that homicides separating the relationship status categories have more in common with each other than what makes them different.

6.5.0 – Study 3, Part 4 - Relational profiling of homicide relationship status

6.5.1 – Relational Profiling of Homicide Relationship Status' within Groups

Relational profiling refers to the study of how crime-scene-action variables differentiate by victim-perpetrator relationships. The study of solved crimes may be applied to unsolved crimes to make inferences about the most probable relationship between victim and perpetrator. The stranger relationship category was previously profiled in Chapter 5 (figure 5.5.2); therefore, two further relational profiling graphs were created to visually represent the differences between the active and estranged relationship status categories for the behavioural manifestations of these homicide crimes.

When variable differences are calculated for 70%-100% of a population, the significance of the correlation resides at the $p <= 0.05$ level (Osborne, 2008). Stated another way, when the presence or absence of variables in a category occur for 70% - 100% of the population, it can be assumed that this difference will be strong enough to correlate with the presence of another strong category in the same population. Significance testing was completed for parts 1-3 of the current analysis; however, it was deemed a useful exercise to understand the upper and lower 30% of behavioural occurrence for these three groups. However simple the analysis, because significance testing was computed with a very stringent non-parametric methodology, this

relational profiling analysis revealed further differences that may be useful to investigators of homicide crimes in England and Wales for identifying scene behaviours that indicate a stranger relationship between victim and killer, or the status of pre-existing relationships between victim and perpetrator. Results from the relational profiling charts are approached with caution, though many align with prior research on relationship and homicide behaviours. Although the current data set is large enough to see significant differences, many of the homicide behavioural action variables housed small enough frequencies to leave a question as to whether the same differences could be calculated with a larger sample or whether they were simply due to chance. Thus, it is recommended that the following results be re-examined with a larger UK homicide sample, to understand whether they have an impact on the practice of relational profiling in regards to making inferences about the most and least probable relationship status' between perpetrators and their victims prior to homicide events. While the results may point to the possible order of suspect prioritization by relationship status, this methodology is seminal in nature and paves the way for future research with larger sample sizes.

6.5.2 Results

Figure 6.5.2 Perpetrator Actions by Descending Percentage of the Homicides that Implicated the Active Suspect Population (n=18)
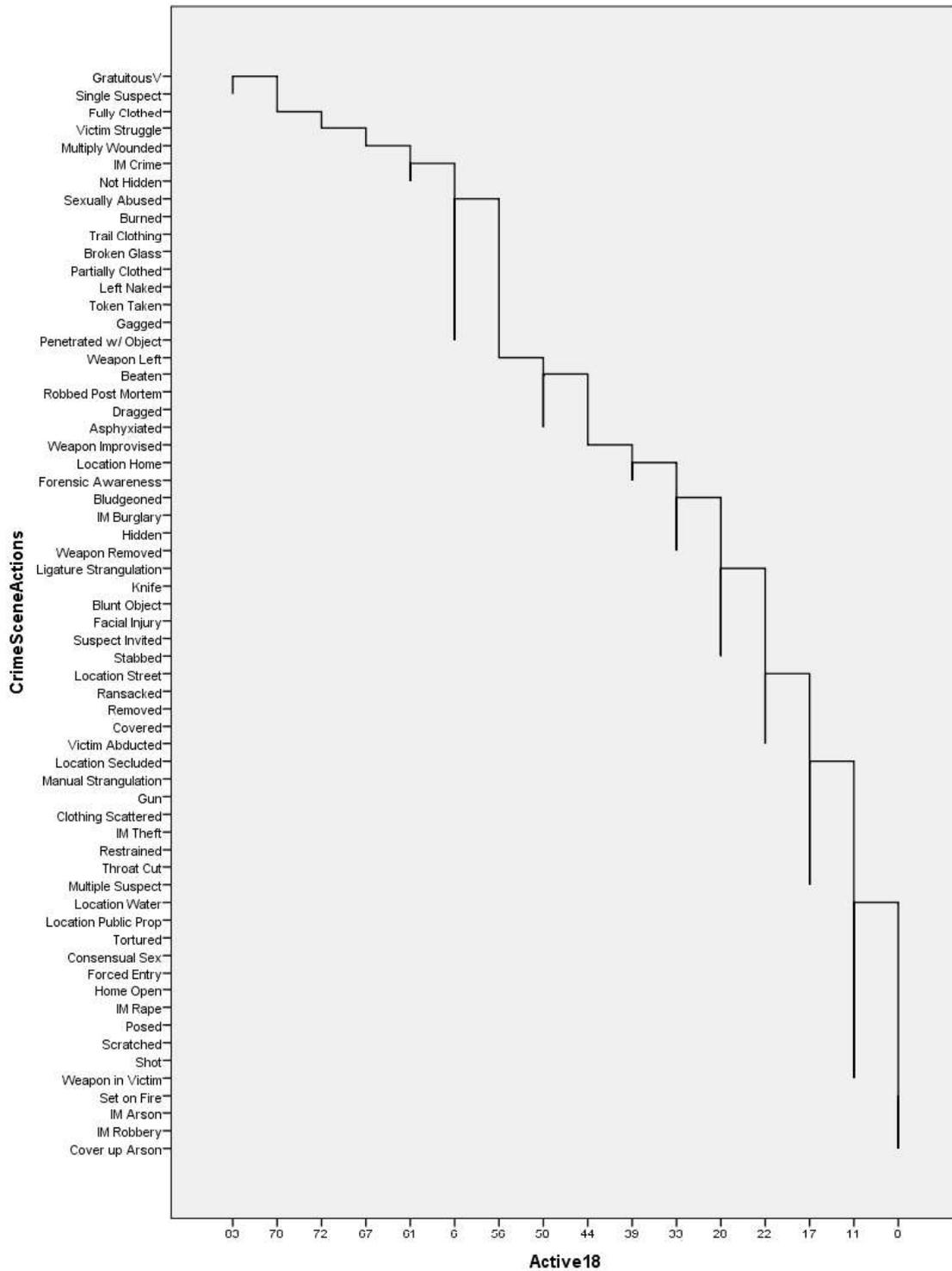
Homicides that implicated suspects with active relationships to victims housed a zero frequency for IM Arson (arson turned instrumental homicide, or the act of committing an arson to cover up the homicide). Further nil results for setting the victim on fire as an act of homicide. Thus, for fire-setting behaviours detected pre-homicide, during the act or post-mortem, results imply that active relationships to the victim would be not the most fruitful suspect targets in homicide investigations. Robberies turned instrumental homicide (IM Robbery) also housed a zero frequency for the active suspect category, indicating that these events were more often contributed to stranger or estranged suspects.

Fewer than 10% of victims with active relationships to convicted suspects were gagged, burned as a form of torture, sexually abused, left naked or partially clothed, had a token taken for keepsake, or had a trail of their clothing left at the crime scene.

Fewer than 20% of active suspects were implicated for homicides where perpetrators left the murder weapon inside of their victims, shot, scratched, had consensual sex with pre-homicide, tortured, posed, restrained, cut the throat, or scattered the clothing of their victims. Also fewer than 20% of active suspects were implicated with other suspects for the homicide (multiple suspects), or were convicted of homicides where perpetrators forced entry into the home of the victim, entered into the home of the victim through an open door, raped the victim then killed them to avoid detection (IM Rape), were involved in a theft turned instrumental homicide (IM Theft), killed their victims in a secluded location, dumped their victims in a body of water or on public property post-mortem, or used a gun or manual strangulation as the homicide weapon.

Fewer than 30% of victims having active relationships with the convicted party were covered with a cloth or plastic post-mortem, had their bodies removed from the crime scene, had their

homes ransacked, invited the suspect into the home prior to the homicide, were left in a street location post-mortem, were stabbed or subjected to facial injury, or were killed by a blunt object, knife, or by ligature strangulation.

Fewer than 40% of active suspects were implicated for homicides where perpetrators removed the weapon from the crime scene, hid the body, showed signs of having forensic awareness, killed the victim in their home location, bludgeoned their victim or were involved in an instrumental burglary turned homicide (IM Burglary). Just under half of perpetrators in the current set of homicides improvised the homicide weapon from an object found at the crime scene.

Active suspects were implicated for over half of homicides where perpetrators asphyxiated, dragged, had beaten their victims, left the weapon at the crime scene, or robbed the victim post-mortem. Over 60% of these suspects were connected to crime scenes where perpetrators left the body unhidden post-mortem, multiply wounded their victims, or were involved in any crime turned instrumental homicide (IM Crime). Over 70% of victims in active suspect connected homicides were left fully clothed and signs of their struggle were present. Gratuitous violence and one killer were factors that over 80% of active homicides incurred.

Figure 6.5.3 Perpetrator Actions by Descending Percentage of the Homicides that Implicated the Estranged Suspect Population (n=20)
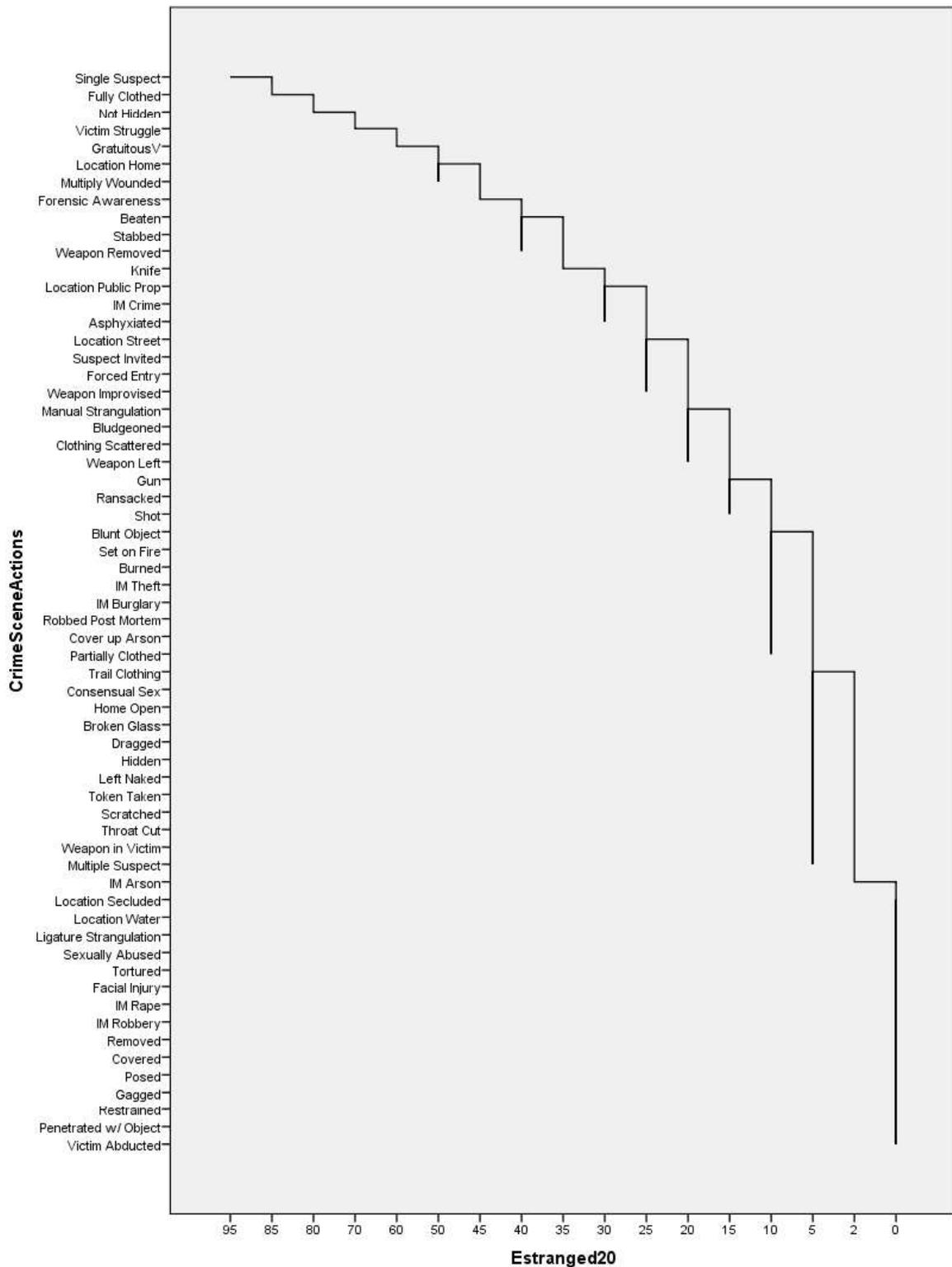
Homicides with estranged relationships between victims and convicted suspects housed the greatest number of zero occurrences for homicide scene variables compared to all other relationship categories. Abduction prior to homicide, gagging, posing, sexually abusing or penetrating the victim with an object, restraining, torturing, facially injuring, removing or covering the body with cloth or plastic, killing the victim in a secluded location or dumping the victim in a body of water, using a ligature as the murder weapon, killing the victim to avoid detection for a robbery (IM Robbery) or rape (IM Rape) were not actions completed by the killers in any of these crimes. It follows that for the above stated variables, if any were to be present at a homicide crime scene, it is suggested that the least fruitful course of investigation would be to target suspects with estranged relationships to the victim.

Fewer than 10% of estranged suspects were implicated for homicides where the perpetrator (s) had attempted to cover up the homicide by way of arson, left the weapon inside of the victim, cut the throat, scratched, dragged or hid the body of the victim, left the victim naked, took a token for keepsake, left a trail of clothing, left broken glass upon entry into the home of the victim, entered the home of the victim through an open door, or had consensual sex with the victim pre-homicide. Fewer than 10% of estranged suspects were convicted of crimes that implicated multiple suspects.

Just under 20% of victims with estranged relationships to the convicted suspects were killed to avoid detection of a burglary (IM Burglary) or theft (IM Theft), were killed with a gun or were shot, were burned or set on fire during the crime, or had their crime scenes subjected to arson for detection avoidance, had their homes ransacked, or were robbed post-mortem.

Fewer than 30% of estranged suspects were implicated for homicides where perpetrators left the weapon at the crime scene, improvised the weapon from the crime scene, forced entry into the

home of their victims or were invited in prior to the homicide, killed their victims via manual strangulation, scattered the clothing of their victims, bludgeoned their victims, or left victims' bodies in the street post-mortem.

Killing by asphyxiation, using a knife as the murder weapon, leaving the victim's body on public property, or being involved in any crime turned instrumental homicide (IM Crime) were actions that occurred in fewer than 40% of homicide cases that implicated estranged suspects. Just under half of these estranged suspect connected crimes showed no signs of forensic awareness on the part of the killer, were missing the homicide weapon or victims were stabbed or beaten. Over half of these homicides happening in the home location of the victim(s) also had the presence of the facial injury behaviour. Over 60% of these crimes showed signs for gratuity or overkill. Over 70% of estranged victims struggled to their deaths. Over 80% of these victims' bodies were not hidden or left fully clothed. Just over 95% of these victims were believed to be killed by a single perpetrator.

6.5.3 Representation of total homicide scene behavioural frequencies by relationship status

Because the differences calculated in section 6.5.3 and 6.5.3 developed a further understanding of perpetrator behaviour *within* homicides connected to stranger, active and estranged relationship status categories, it was necessary to further understand the differences *between* groups for the presence or absence of homicide scene behaviours. Therefore, homicide behaviours were first computed for their overall frequency of occurrence for the 69 homicide victims in these crimes. The frequency and percentage of these behaviours were then calculated for homicides implicating suspects with stranger, active and estranged relationships to the victims by how often they actually occurred. To explain further, when a homicide scene variable had been present for 16 of 64 cases, the frequencies and percentages were calculated for how

often active and estranged suspects were implicated for the crime in 16 cases marked as having a presence, excluding cases that did not have the presence of that behaviour.

In this way, a deeper qualitative understanding of the delineation between relationship-status groups was explored. The overall data set was large enough to calculate differences between groups and the following analysis may suggest the order of suspect prioritization by relationship type. Because, however, the current data set is a smaller sample size (69), 95% behaviours occurred in fewer than 50 cases. Therefore, results in table 6.4.3 should be approached with caution yet the differences reported suggest that this seminal methodology may be utilized with larger sample sizes to make more definitive conclusions in the realm of suspect prioritization by relationship status, when the presence of these 61 homicide scene behaviours (as gratuitous violence was covered in Part 1) had occurred within any given homicide.

6.5.4 Results

Table 6.5.4 Frequencies and Percentages of the total present for 61 homicide scene behaviours in 69 cases by relationship status.

Homicide Scene Behaviours	Total Present	Stranger Present (%)	Active Present (%)	Estranged Present (%)
Set on Fire	**3**	**1 (33)**	**0 (0)**	**2 (66)**
Location Water	**3**	**1 (33)**	**2 (66)**	**0 (0)**
Gagged	**3**	**2 (66)**	**1 (33)**	**0 (0)**
Trail Clothing	3	1 (33)	1 (33)	1 (33)
Burned	4	1 (25)	1 (25)	2 (50)
Weapon in Victim	4	1 (25)	2 (50)	1 (25)
Penetrated w/ Object	**4**	**3 (75)**	**1 (25)**	**0 (0)**
Cover up Arson	4	**2 (50)**	**0 (0)**	**2 (50)**
Broken Glass	4	2 (50)	1 (25)	1 (25)
Tortured	**5**	**3 (60)**	**2 (40)**	**0 (0)**
Sexually Abused	**5**	**4 (80)**	**1 (20)**	**0 (0)**
Token Taken	**5**	**3 (60)**	**1 (20)**	**1 (20)**
Left Naked	**5**	**3 (60)**	**1 (20)**	**1 (20)**
IM Arson	**5**	**3 (60)**	**0 (0)**	**2 (40)**
Home Open	**5**	**2 (40)**	**2 (40)**	**1 (20)**
Posed	**6**	**4 (67)**	**2 (33)**	**0 (0)**
IM Robbery	**6**	**5 (83)**	**0 (0)**	**1 (17)**
IM Rape	**6**	**4 (67)**	**2 (33)**	**0 (0)**
Consensual Sex	**6**	**3 (50)**	**2 (33)**	**1 (17)**
Location Secluded	**7**	**4 (57)**	**3 (43)**	**0 (0)**
Partially Clothed	**7**	**4 (57)**	**1 (14)**	**2 (29)**
Covered	**7**	**3 (43)**	**4 (57)**	**0 (0)**
IM Theft	7	2 (29)	3 (43)	2 (29)
Restrained	**7**	**4 (57)**	**3 (43)**	**0 (0)**
Scratched	**8**	**5 (63)**	**2 (24)**	**1 (13)**
Shot	8	3 (38)	2 (25)	3 (38)
Removed	**8**	**4 (50)**	**4 (50)**	**0 (0)**
Facial Injury	**9**	**4 (44)**	**5 (56)**	**0 (0)**
Gun	9	3 (33)	3 (33)	3 (33)
Ligature Strangulation	**9**	**4 (44)**	**5 (56)**	**0 (0)**
Victim Abducted	**9**	**5 (56)**	**4 (44)**	**0 (0)**
Hidden	**9**	**2 (22)**	**6 (67)**	**0 (0)**
Throat Cut	**10**	**6 (60)**	**3 (30)**	**1 (10)**
Multiple Suspects	**11**	**7 (64)**	**3 (27)**	**1 (9)**

Manual Strangulation	12	5 (42)	3 (25)	4 (33)
Suspects Invited	12	2 (17)	5 (42)	5 (42)
Bludgeoned	14	4 (29)	6 (42)	4 (29)
Blunt Object	**14**	**7 (50)**	**5 (36)**	**2 (14)**
Ransacked	14	7 (5)	4 (29)	3 (21)
Clothing Scattered	14	5 (36)	3 (21)	4 (29)
Forced Entry	**15**	**8 (53)**	**2 (13)**	**4 (27)**
IM Burglary	**16**	**8 (50)**	**6 (38)**	**2 (13)**
Location Public Prop	**17**	**9 (53)**	**2 (12)**	**6 (35)**
Dragged	**17**	**7 (41)**	**9 (53)**	**1 (6)**
Location Street	18	9 (50)	4 (22)	5 (28)
Robbed Post Mortem	**18**	**7 (39)**	**9 (50)**	**1 (6)**
Weapon Left	20	6 (30)	10 (50)	4 (20)
Asphyxiated	22	7 (32)	9 (41)	6 (27)
Weapon Improvised	24	11 (46)	8 (33)	5 (21)
Location Home	26	9 (35)	5 (19)	7 (27)
Forensic Awareness	28	12 (43)	7 (25)	9 (32)
Beaten	29	12 (41)	9 (31)	8 (28)
Knife	31	19 (61)	5 (16)	7 (23)
Stabbed	31	18 (58)	5 (16)	8 (26)
IM Crime	34	17 (50)	11 (32)	6 (18)
Weapon Removed	35	21 (60)	6 (17)	8 (23)
Multiply Wounded	39	17 (44)	12 (31)	10 (26)
Victim Struggle	48	21 (44)	13 (27)	14 (30)
Not Hidden	53	26 (49)	11 (21)	16 (30)
Fully Clothed	54	23 (43)	14 (26)	17 (31)
Single Suspect	58	24 (41)	15 (26)	19 (32)

For homicides connected to estranged suspects, nil results for location water, covered, facial injury, ligature strangulation, and body hidden point away from estranged relationships and point toward the active relationships as opposed to stranger relationships. Even though there were a higher volume of stranger suspects in the sample (n=31), the greater frequency of these behaviours in the active (n=18) category (>50%) can help to qualitatively explain homicide behaviour in the context of relationship status. When there were nil results in the active category, however, the stranger suspect category housed the highest frequency as opposed to the estranged

category, except for the set on fire category, having very low frequency (n=3) to begin with. For the other absent behaviours in the active category, cover up arson and IM arson were equally as likely to have been connected to stranger suspects as they were estranged suspects, suggesting only that suspect prioritization for the fire setting behaviours should not begin with suspects with active relationships to the victim. The IM robbery category, however, strongly pointed in the direction of stranger suspects, with an 83% frequency for this category, 17% for the estranged category, and 0% for the active category.

The gagged, penetrated with object, tortured, sexually abused, posed, IM rape, location secluded, restrained, and victim abducted were nil for the estranged category, yet the stranger category had the highest frequencies for the sample. Also, low frequencies in the estranged category (<20%) for throat cut, scratched, consensual sex, IM robbery, token taken, left naked, and partially clothed fell in the same direction, implicating stranger suspects for these homicides in over half of the cases. The sexually abused and the IM robbery behaviours stand out in the sample for stranger suspects because when these behaviours occurred, stranger suspects were almost always implicated (>80%).

6.6.0 Chapter Summary

It was established the relationship status had more of an impact on the representation of crime scene variables in the current data set of homicides than did categories in the previous relationship model, (see Study 2) suggesting that homicide offending style in England and Wales relies more on the perpetrators' psycho-social standing with victims than it does on the interpersonal circumstance.

While only three homicide scene behaviours (knife, invited in, and weapon removed) were significantly differentiated by relationship (Stranger, Acquaintance, and Close), eight homicide scene behaviours (weapon left, victim abducted, hidden, covered, removed, robbed post-mortem, facial injury, and ligature strangulation) were significantly differentiated by relationship status (Stranger, Active, and Estranged). One of the key findings in this Chapter highlights that victims with active relationships to the convicted suspects in their cases were more often hidden, covered, removed from the scene, and robbed post mortem. While homicides connected to stranger and estranged suspects more often removed the homicide weapon from the crime scene, the homicide weapon was left at the crime scene more often in homicides connected to active suspects. These results suggest that perpetrators with active relationships are primarily focused on prolonging the detection of the victims' body as opposed to the homicide weapon. In a seminal methodology, behavioural profiles for each relationship-status category were charted, and a deeper qualitative understanding of how homicide scenes were impacted by relationship is discussed in thoroughly Chapter 8. The following Studies (4 & 5) unravel this area of focus further by attempting to understand whether crime scene actions are differentiated by the intrapersonal psychology of how the suspect interprets the victim's role in the crime relative to their own role; or how the suspect relates to their victims (as an object, vehicle, or person) (Canter & Heritage, 2000).

Chapter 7: Characteristics (C) to Actions (A) Analysis for 64 homicides by Relational Identity (Studies 4 & 5)

7.1.0 Correlates of victim-suspect relationship to relational identity

The Narrative Action System of criminal differentiation (NAS) (Canter and Youngs, 2009a, 2009b, 2012a) takes into account the stories perpetrators narrate about the crimes they commit, ultimately relating to how criminals view the world, their perceptions of criminal responsibility, and the roles they place on their victim(s). The NAS of criminal differentiation theorizes that an offender's behaviour associated with their crime(s) will reveal details about the personal story and preferences of the offender. A further supposition of the NAS framework is that victim role will play a part within the narrative, and that victim roles are reflective of the narrative that the offender identifies. The schemas that relate to the victim(s) in the criminal's plot are: as objects (as pawns in the criminal's ultimate goal), as vehicles (a channel for the offenders' emotion), and as persons (recognizing the victim's humanity).

The claim that these theoretical roles impact the representation of crime scene behaviours in homicides (Canter & Youngs, 2009a) has not yet been statistically tested, rather support for the relational theory has been gathered by a community of investigative researchers attempting to make sense of clusters of homicide scene variables they find correlated to each other on scatter plots (e.g. Fritzon & Ridgway, 2001). Researcher imposed partitioning of the victim, object, and person role upon these scatter plots has in turn, built on to relational theory and the research thus far has aided in the composition of behavioural profiles for the three categories; tested in the current set of analyses. The final question answered with this final set of analyses was whether relationship (interpersonal circumstance), relationship status (psycho-social standing), or the relational role that the suspect had placed upon the homicide victim (psychological construct)

had more of an impact on the representation of crime scene variables; i.e. what relational profiling analysis will most immediately forward the field of suspect profiling?

The objective of Study 4 was to identify whether the presence or absence of the same 62 crime scene variables (tested in the previous two studies) could enhance the understanding of behavioural styles of offending by demonstrably revealing whether the offender relates to his or her victim as an object, vehicle, or person, as speculated on in past research (Canter & Heritage, 2000). Further, the final study in the current series attempted to understand whether these relational categories correlate to the pre-existing relationship between victim and convicted suspect (stranger, acquaintance, or close); or whether the NAS relational role distinctions prove useful to investigative practice for homicide scenes in England and Wales by aiding in a more qualitative understanding of how these relationships impact criminal behaviour?

The overarching objective of the performing the two studies in Chapter 7 was to, for the first time in recorded research, reverse the Actions→Characteristics analytical approach (Canter, 1994) as applied to relational theory (that actions in a crime scene will align with the way the offender relates to their victims) performed for over three decades by previous researchers (highlighted in Chapter 1, section 1.7.2). Instead, Study 4 approached the data with a Characteristics→Actions analysis. The goal was to tangibly assess the validity of the NAS relational model with solved homicide cases for whether the NAS relational categories could align with actual relationship or relationship status categories. The hypothesis being that when homicide scene behaviours could be connected to the NAS categories in unsolved homicides, investigators could then connect these crimes to the infer probable suspects by the presence or absence of a pre-existing relationship. Validating the NAS relational model would lead to the assumption that homicide crime scene investigators could tailor their approach to suspect

prioritization by understanding how behaviour is impacted by the psychological roles that perpetrators place upon their victims in homicide transactions.

7.1.1 Procedure

86 crime scene variables made up the original data set recorded in Chapter 4. These data were checked for accuracy/researcher error three times before the analysis. Variables that occurred in fewer than three cases were removed from the final analysis, and 71 variables comprised the final homicide scene action data set. To make the data set more uniform for analysis, the rating scales for forensic awareness, victim struggle, and gratuitous violence were dichotomized to present and absent, reducing the crime scene variable count to 62. The final data set comprised 64 cases: 48 were lone-suspect single-victim homicides. In the five cases where multiple victims had been killed, the homicide procedure happened to be the same (e.g. both victims were stabbed multiple times in the same location) thus the crime scene data was duplicated for each of these victims. Additionally, 11 cases were multiple perpetrator homicides with one victim. For these cases, relational information for only the convicted suspects believed by policing authorities to have physically committed the homicide (e.g. stabbed the victim) were recorded; tertiary suspects who were involved in planning and/or cover up of the homicide were excluded from relationship analysis as it was assumed that the crime scene information would have been primarily and maximally impacted by physical perpetrator the crime. Thus, the final data set coincided with the number of victims, comprising an (n) of 69 victim-suspect relationships.

The entire case files connected to each convicted suspect were analysed and each suspect was rated as having related to their victims as objects, vehicles, or persons based on how published research (e.g. Canter & Youngs, 2009a) characterized these groups in emotional terms (C).

When the convicted suspect was recorded as showing no emotional connection to the victim during the homicide investigation or in suspect interviews describing the event, they were recorded as having related to the victim as an object.

When the convicted suspect had behavioural tendencies toward violence and aggression in their personal history and the act of killing was judged to be an expression of this internal propensity toward violence and aggression, they were rated as having related to the victim as a vehicle. When the convicted suspect described the victim in terms related to their personality, expressed remorse or general feelings of love or adoration toward the victim with the absence of anger or violent thoughts toward the deceased, they were rated as having related to the victim as a person. This categorization process was then tested by a second researcher with expertise in the field of Investigative Psychology, garnering a 100% concordance rate for placing convicted suspects into these categories (See Appendix B). The relational status for two convicted suspects were rated as having characteristics of more than one category, so these two cases were removed from the analysis, thus, the final data set for the relational analysis comprised an (n) of 67 cases.

7.2.0 Study 4 - Relational Identity (C) to Actions (A) Analysis for 64 Homicides with 67 Victims

The objective of Study 4 was to identify whether the presence of 62 crime scene variables (A) could demonstrably reveal whether the offender related to his or her victim as an object, vehicle, or person (C). For the first time in recorded research, the NAS relational theory regarding victim roles was subjected to validity testing. The study first analysed entire solved homicide case files to assess the role the victims played for the convicted suspects. Once this rating had been established, assigned roles were then computed for correlations to 62 crime scene behaviours

(C→A) recorded in 64 homicides with 69 victims. In prior studies, researchers (e.g. Fritzon & Ridgway, 2001) superimposed theoretical relational partitions on to scatter plots with correlated crime scene variables and then attempted to make connections back to perpetrator characteristics (A→C). By reversing the A→C theory with a C→A approach, it was possible to determine whether the psychological NAS theory had valid practical implications for future research and whether it was possible to utilize this information to forward the practice of suspect prioritisation for homicide investigations in England and Wales.

7.2.1 Hypothesis 6

H0: There will be no significant difference in the representation of crime scene variables for the three relational role categories; victim-as-object, victim-as-vehicle, or victim-as-person. How the convicted suspect interprets the role of their victim(s) in the homicide transaction will not significantly impact his or her behaviour during the crime.

H6: Significantly high or low frequencies of crime scene variables will present themselves as correlated separately to previously rated and recorded relational categories (victim-as-object/vehicle/person); thereby differentiating convicted suspects by the roles they placed upon victims during the homicide transaction.

7.2.2 Results

The preferred method for computing the probability that any one non-continuous variable occurs more or less frequently than expected within a category, for non-parametric data, is the chi-square test (Gavin, 2008). Generally, the chi-square value is appropriate for data sets with n> 100, housing independent values for categorical data, assuming that the data set has a normal distribution (Mehta & Patel, 2012, iii). When data sets are gathered from various, non-verifiable

environments that are "small, sparse, heavily tied, or unbalanced and the validity of the corresponding large sample theory is in doubt" (Mehta & Patel, 2012) the Fisher's Exact Test is the appropriate test to compute the probability that any one continuous or non-continuous variable occurs more or less often than expected within a category for data sets with an n<100. The data set for Studies 4 and 5 was verifiable, but small and unbalanced; therefore, because the goal was to analyse correlations between crime scene action variables and the offender's relational role categories, The Fisher Exact p value is the most reliable and accurate method of assessing probability, yet often is too difficult to compute for larger data sets (Mehta & Patel, 2012). Given that the final data set used for the current study contains 67 cases, and many of the homicide scene variable cells had an expected frequency count fewer than five, the categorical frequencies along with the Exact p value were computed and tables 7.2.2 highlights these results.

Table 7.2.2 Frequencies & percentages of crime scene behaviours, Fisher's Exact chi-square test value, and 2-sided *p* values for 62 crime scene variables as their outcome was recorded within 3 victim role/relational categories.

Homicide Scene Variables	Object (n26) Present (%)	Vehicle (n29) Present (%)	Person (n12) Present (%)	Fisher's Exact (2sided Sig)
Single Offender	19 (73.1)	26 (89.7)	12 (100)	4.819 (.066)
Multiple Offender	7 (26.9)	3 (10.3)	0 (0)	4.819 (.066)
Gratuitous Violence	15 (57.5)	22 (75.9)	6 (50)	3.298 (.198)
Forensic Awareness	10 (38.5)	11 (37.9)	5 (50)	.639 (.803)
Victim Struggle	18 (69.2)	19 (65.5)	10 (83.3)	1.215 (.607)
Weapon Left	7 (26.9)	9 (31)	4 (33)	.301 (.883)
Weapon Removed	15 (57.7)	13 (44.8)	5 (41.7)	1.260 (.585)
Weapon in Victim	1 (3.8)	1 (3.4)	2 (16.7)	2.648 (.293)
Weapon Improvised	10 (38.5)	10 (34.5)	2 (33.3)	.192 (.945)
Stabbed	14 (53.8)	10 (34.5)	6 (50)	2.260 (.377)
Throat Cut	4 (15.4)	3 (10.3)	2 (16.7)	.668 (.718)
Shot	1 (3.8)	4 (13.8)	2 (16.7)	2.278 (.375)
Scratched	4 (15.4)	3 (10.3)	1 (8.3)	.519 (.886)
Asphyxiated	10 (38.5)	8 (27.6)	4 (33.3)	.801 (702)
Victim Abducted	1 (3.8)	7 (24.1)	1 (8.3)	4.672 (.077)
Penetrated w/ Object	**4 (15.4)**	**0 (0)**	**0 (0)**	**5.053 (.036)**
Restrained	3 (11.5)	4 (13.8)	0 (0)	1.447 (.508)
Gagged	2 (7.7)	1 (3.4)	0 (0)	.974 (.780)
Token Taken	3 (11.5)	1 (3.4)	1 (8.3)	1.5 (.486)
Left Naked	2 (7.7)	2 (6.9)	1 (8.3)	.318 (1)
Fully Clothed	17 (65.4)	25 (86.2)	10 (83.3)	3.433 (.180)
Partially Clothed	5 (19.2)	1 (3.4)	1 (8.3)	3.432 (.144)
Posed	2 (7.7)	3 (10.3)	1 (8.3)	.325 (1)
Hidden	1 (3.8)	7 (24.1)	1 (8.3)	4.672 (.077)
Covered	3 (11.5)	3 (10.3)	1 (8.3)	.211 (1)
Not Hidden	22 (84.6)	19 (65.5)	10 (83.3)	2.910 (.247)
Dragged	5 (19.2)	10 (34.5)	2 (16.7)	2.062 (.433)
Removed	**0 (0)**	**6 (20)**	**2 (16.7)**	**6.599 (.028)**
Cover up Arson	2 (7.7)	1 (3.4)	1 (8.3)	1.006 (.663)
Robbed Post Mortem	9 (34.6)	7 (24.1)	1 (8.3)	2.854 (.226)
IM Burglary	**10 (38.5)**	**3 (10.3)**	**2 (16.7)**	**6.115 (.038)**
IM Robbery	4 (15.4)	0 (0)	1 (8.3)	4.736 (.092)
IM Theft	4 (15.4)	2 (6.9)	1 (8.3)	1.117 (.672)
IM Arson	3 (11.5)	1 (3.4)	1 (3.4)	1.5 (.486)

IM Rape	4 (15.4)	1 (3.4)	1 (8.3)	2.340 (.273)
IM Crime	16 (61.5)	10 (34.5)	6 (50)	4.027 (.142)
Broken Glass	**4 (15.4)**	**0 (0)**	**0 (0)**	**5.053 (.036)**
Home Open	2 (7.7)	2 (6.9)	0 (0)	.697 (1)
Forced Entry	9 (34.6)	3 (10.3)	3 (25)	4.768 (.094)
Offender Invited	2 (7.7)	9 (31)	1 (8.3)	5.321 (.057)
Consensual Sex	0 (0)	4 (13.8)	2 (16.7)	4.739 (.076)
Ransacked	7 (26.9)	5 (17.2)	1 (8.3)	1.726 (.469)
Clothing Scattered	6 (23.1)	4 (13.8)	1 (8.3)	1.340 (.512)
Trail Clothing	2 (7.7)	1 (3.4)	0 (0)	.974 (.780)
Bludgeoned	4 (15.4)	7 (24.1)	3 (25)	.914 (.673)
Beaten	12 (46.2)	12 (41.4)	4 (33.3)	.572 (.764)
Burned	1 (3.8)	2 (6.9)	1 (8.3)	.779 (.828)
Set on Fire	1 (3.8)	1 (3.4)	1 (8.3)	1.056 (.583)
Facial Injury	3 (11.5)	2 (6.9)	3 (25)	2.594 (.251)
Multiply Wounded	14 (53.8)	18 (62.1)	5 (41.7)	.914 (.673)
Tortured	3 (11.3)	2 (6.9)	0 (0)	.572 (.764)
Sexually Abused	2 (7.7)	2 (6.9)	1 (8.3)	.779 (.828)
Blunt Object	7 (26.9)	6 (20.6)	1 (8.3)	1.056 (.583)
Gun	2 (7.7)	4 (13.8)	2 (16.7)	1.475 (.497)
Knife	14 (53.8)	10 (34.5)	6 (50)	1.192 (.595)
Ligature Strangulation	2 (7.7)	6 (20.7)	1 (8.3)	.318 (1)
Manual Strangulation	4 (15.4)	5 (17.2)	3 (25)	1.543 (.439)
Location Home	11 (42.3)	8 (27.6)	6 (50)	2.325 (.337)
Location Public Prop	7 (26.9)	8 (27.6)	1 (8.3)	1.832 (.448)
Location Street	7 (26.9)	8 (27.6)	3 (25)	.099 (1)
Location Water	0 (0)	3 (10.3)	0 (0)	2.869 (.211)
Location Secluded	1 (3.8)	4 (13.8)	2 (16.7)	2.278 (.375)

The results from this section indicate that the object/vehicle/person themes do not have as high of an impact on the representation of crime scene variables when compared to relationship status (stranger/active/estranged). The null hypothesis was, however, rejected because four crime scene action variables were significantly differentiated by this model.

Victim-as-object

Homicide victims who were sexually penetrated with an object (n=4/15.4%) fell only into the victim-as object category, indicated by a nil result for this variable in the homicides connected to the vehicle and person categories (p<.05). There were also more burglaries turned instrumental homicide (IM Burglary) in the object category (n=10/38.5%) compared to the vehicle (n=3/10.3%) or person (n=2/16.7%) categories (p<.05). Following this trend, just shy of statistical significance (p=.09), IM Robberies (turned homicide) were more likely to have occurred in the object category (n=4/15.4%) than the vehicle (n=0) or person (n=1/8.3%) categories.

This finding was supported by a subsequent finding that homicides connected to victims-as-objects (n=4/15/4%) were the only crimes in this sample showing the presence of the broken glass variable (forced-entry into the homes of victims through a broken window), indicated by a nil result for the other two categories (p<.05). It can be assumed that burglaries turned instrumental homicide have a higher occurrence of the forced entry action variables. To illustrate this point, almost meeting statistical significance (p=.09), convicted suspects rated as relating to victims-as-objects (n=9/34.6) were more likely than those relating to the victims-as-vehicles (n=3/10.3%) or victims-as-persons (n=3/25%) to be connected to crimes that presented any method of forced entry into the homes of victims prior to the homicide.

Another nearly significant difference followed this trend: suspects who were rated as relating to victims-as-objects (n=7/26.9) were more likely than those rated as relating to victims-as-vehicles (n=3/10.3) or persons (n=0) to have been implicated for the homicide alongside other suspects (p=.06), e.g. having the presence of the multiple suspect variable. Connecting this result back to

Study 2 (Section 5.1.2), when the multiple suspect variable was present at UK homicide crime scenes, close suspects were never implicated for the crime. Therefore, it can be assumed that close suspects who related to victims-as-persons were never implicated for homicides with multiple suspects. When multiple suspects impacted the homicide scene, it was found that either strangers or acquaintances were implicated for these crimes. Thus, it can also be assumed that these strangers and acquaintances would not relate to the victims as persons, rather as objects or vehicles.

Victim-as-vehicle

Victims as vehicles (n=6/20%) were more likely than victims as objects (n=0) or persons (n=2/16.7%) to have perpetrators who removed their bodies from the crime scene (p<.05). Connecting back to the relationship status categories from Study 3 (Chapter 6, table 6.2.1), a nil result for homicides that implicated estranged suspects and positive results for homicides that implicated stranger and active suspects for the removed behaviour suggests that when the victim's body had been removed from their crime scenes, convicted suspects were rated as having related to these victims as vehicles, and that these convicted suspects did not have an estranged relationship with these victims.

Additionally, just shy of statistical significance (p=.07), victims in the victim-as-vehicle category (n=7/24.1%) were more likely than victims in the object (n=1/3.8%) or person (n=1/8.3%) categories to be abducted by their perpetrators prior to the homicide. Another notable difference almost meeting statistical significance (p=.057) was that victims-as-vehicles (n=9/31%) were more likely than victims-as-objects (n=2/7.7%) or victims-as-persons (n=1/8.3%) to invite the convicted suspects in to their homes prior to the homicide. Connecting this back to a finding in

Study 2 (Section 5.1.2), a similar finding was reached in that convicted suspects who were invited into the victims' home prior to the homicide were found only to have close or acquaintance relationships with the victims of these homicides, as the stranger category met with a nil result for the invited in behaviour (p<.05). Therefore, the presence of the invited in variable was most likely to occur when the victim was related to as a vehicle, and the suspects implicated for these crimes were also known to the victim.

Victim-as-person

It has been proposed in prior research the victim-as-person narrative would be the most of rare the three relational roles (Canter & Youngs, 2009a; 2009b). The current sample does follow this supposition in that just under half as many of convicted suspects were rated into the victim-as-person category compared to the other two categories. It had further been proposed in prior research that facial injury would be more indicative of a victim-as-vehicle role (Fritzon & Ridgway, 2001), yet the current sample had near equal representation of the facial injury variable for the three relational categories.

Results from Study 4, highlighted above, suggest more about what is absent from homicide scenes connected to convicted suspects rated as relating to victims-as-persons , rather than what was present at these crime scenes. The victim's body was less likely to be removed from victim-as-person scenes compared to victims-as-vehicle scenes (p<.05), victims-as-persons were not penetrated with objects (p<.05) and did not have their homes entered into by broken glass prior to the homicide (p<.05), and they were the least likely to have been subjected to a burglary pre-homicide (p<.05). Also, almost at statistical significance (p=.06), the victims-as-persons were found to be perpetrated on by single suspects (not multiple) in 100% of these cases (12/12).

7.3.0 Study 5 - Psychological narrative theory applied to relational profiling

The purpose of the final study in this series (Study 5) was to delineate whether the Canter & Youngs (2009a; 2009b) proposed relational categories (victim-as-object, victim-as-vehicle, and victim-as-person) have investigatory applications to actual recorded relationships. Based on the results from Study 3 (Chapter 6), finding that relationship status had a greater impact on the presentation of crime scene variables for the current set of homicides than did actual relationship, a subsequent analysis was run to gather whether the three relational role categories could align with relationship status categories. If homicide investigators were only provided with information available at the crime scene, with no viable leads on suspects, the question addressed in this study was whether investigators could use a model like this to establish a relational picture that could lead homicide investigators to possible suspects based on the following categorization.

7.3.1 Hypotheses 7-9

H0: The **"Victim-as-object"** relational category will not significantly correlate with any relationship category.

H7: The **"Victim-as-object"** relational category will significantly correlate with the stranger relationship category.

H0: The **"Victim-as-vehicle"** relational category will not significantly correlate with any relationship category.

H8: The **"Victim-as-vehicle"** relational category will significantly correlate with the close relationship category.

H0: The **"Victim-as-person"** relational category will significantly correlate with any

relationship category

H9: The **"Victim-as-person"** relational category will significantly correlate with the

acquaintance relationship category.

7.3.2 Results

Table 7.2.1 Frequencies & percentages of relationship and relationship status categories
correlated to relational categories with Fisher Exact chi-square value, and 2-sided *p* values.

	Stranger (N31) Present (%)	Acquaintance (N25) Present (%)	Close (N13) Present (%)	Fisher's Exact (2 sided Sig)
Victim as Object	18 (58.1)	10 (40)	0 (0)	14.430 (.001)
Victim as Vehicle	10 (32.3)	12 (48)	8 (61.5)	3.485 (.174)
Victim as Person	4 (12.9)	5 (20)	5 (38.5)	3.534 (.169)
	Stranger (N31) Present (%)	Active (N18) Present (%)	Estranged (N20) Present (%)	Fisher's Exact (2 sided Sig)
Victim as Object	18 (58.1)	5 (27.8)	5 (25)	6.918 (.031)
Victim as Vehicle	10 (32.3)	10 (55.6)	10 (50)	3.004 (.237)
Victim as Person	4 (12.9)	5 (27.8)	5 (25)	2.103 (.352)

For Hypothesis 7, the null hypothesis was rejected because the victim-as-object category was

correlated to the stranger and acquaintance relationship categories (p<.001). The null hypothesis

was accepted for Hypothesis 8 and 9 because the victim-as-vehicle and victim-as-person

categories were not found to correlate with any of the relationship categories. This result was

corroborated by a subsequent analysis on relationship status that revealed the same result (p<.05)

regarding the stranger category, yet no significant correlations were found between relational

roles and the active or estranged categories. The results of Studies 4 & 5 combined indicated

that the presence of behaviors indicating evidence for the victim-as-object narrative (sexual

penetration of victim with object, forced entry (broken glass), and removal of the body from the original crime location), that there is a greater likelihood that the victim is a stranger to the perpetrator. It follows that if these three victim-as-object action variables are not present at homicide scenes, there is a greater likelihood that the victim had a previous relationship to the perpetrator prior to the offense.

7.4.0 Chapter Summary

This concludes the five studies completed to enhance the understanding of how relationship between victim(s) and convicted suspect(s) for homicides in England and Wales impacts perpetrator behaviour at the crime scenes. Studies 4 & 5 attempted to validate a long-held psychological theory, finding support only for one construct (the victim-as-object role) as it may be applied to the practice of Relational Profiling.

The following Chapter further discusses how the results garnered across these five studies contribute to the understanding and practice of suspect prioritization homicide investigations and future research with UK samples.

Chapter 8: Discussion, Limitations, & Future Research

8.1.0 – Re-cap

The overall purpose of the analyses across the five studies within the current dissertation were to empirically explore to what degree that actual victim-suspect relationships, the relational role the victims played for their suspects, and relationship status between suspects and their victims impacted the outcome of homicide scene actions; a novel methodological contribution to investigative research on suspect profiling. The body of past research on offender profiling by relationship had yet to explore more than 10 crime scene action variables in a single study, perhaps attributable to convenience or to constraints of the data or analyses chosen. The current exploration moved away from traditional crime data collection methods, typically garnered from crime reporting agencies (e.g. Uniform Crime Reports), by collecting data as close to the source of the crime as possible. The current data set was compiled for the current research from a secondary data set of complete police case files of UK homicide transactions. In this way, the project was not constrained by a lack of information; rather a surplus. Over a four-month period, commonly occurring suspect (187) victim (47) and crime scene (87) content categories were created and entered into SPSS from careful analysis of these complete homicide case files, resulting in a primary data set for the current research. Content categories occurring in the data fewer than three times were removed from the final analysis. While statistical outliers or behaviours occurring less frequently are of qualitative interest, the purpose of the current methodology was to connect common behaviours with relational type and status such that quantitative results could be directly applicable to suspect prioritization. The relatively smaller sample size utilized did not merit comparisons for lower frequency behaviours, which could be viewed as a methodological limitation. The current exploration first validated this historical,

secondary data set, compiled for the current research from 64 complete homicide case files previously collected as a random sample from city and county police departments throughout England and Wales spanning the years of 1985-1991. This was accomplished by comparing demographic information on 69 victims, 87 suspects (those who were investigated and convicted) and 72 homicide action variables to research compiled over the past four decades on homicide crimes. Limitations to the direct applicability of the current findings relative to the data set utilized are discussed later in this Chapter.

8.2.0 Study 1 - Percentages, Frequencies and Descriptive Statistics for 64 Homicides

The demographic study (Study 1, Chapter 4) identified the frequencies and percentages of a comprehensive content dictionary created as they appeared in the current sample of 64 complete homicide police files. The content dictionary had many categories that were mirrored from several poignant homicide studies, described in Chapter 3, as well as qualitative categories introduced for Studies 4 and 5. Chapter 4 (Study 1) explored the most comprehensive list of homicide content categories known to be reported within a single study, focusing on victim and suspect antecedents and crime scene behaviours, because it was important to validate the sample as well as offer novel categories for an original contribution to the body of research on homicide suspect profiling. Because victim and convicted suspect details in police files were previously collected for case reports geared toward a conviction rather than for research purposes (Canter & Youngs, 2009a), and the current set of police files were also collected by several officers in cities and townships throughout England and Wales, some information could be missing or inaccurate. For the current research, only homicide scene information that could be corroborated by the analysis of crime scene photos and videos, autopsy reports, witness statements, and suspect

statements was entered into the analyses. Findings from Study 1 (Chapter 4) both corroborated and were distinguished from prior homicide research in some notable ways.

8.2.1 Convicted Suspect Statistics

The male and female suspects in the current sample had the same mean age at time of arrest: 28 with a median age of 25 for the entire sample. Research on 78 lone-offender, single-victim British stranger homicides from the 1990's aligns with the current sample's age distribution, having a median age of 27 (Canter & Salfati, 2000). The gender distribution of the current sample (94% male, 6% female) falls in line with prior research from several studies across the UK (Canter, 2000; Canter, 2004; Salfati & Canter, 1999; Salfati, 2000; Salfati, 2003), USA (Miethe & Regoeczi, 2004, Jordan et al., 2012) and Canada (Porter et al., 2009), all seeing trends below 30% for the female to male gender distribution.

Suspect ethnicity (90% White) for the current sample mirrors population statistics from 1991 (Stott et al., 2001) in England and Wales, showing that 94.5% of the population at the time were White (of European descent). The Home Office report from 1996-1998 also reported that 94% of detected homicide suspects were of European descent (Richards, 1999). The majority of convicted suspects (78%) in the current population were found to be living in a state of low socio-economic status and 17% fell into the middle-classes. Canter & Salfati (2000) reported that over 40% of their lone-offender (single-victim) homicide sample was unemployed at the time of arrest, and 53% of the current sample mirrored this result, suggesting financial depression could be a factor in a person's decision making.

It has been confirmed that drugs and alcohol are implicated as a factor in approximately half of homicides (Miethe & Regoeczi, 2005) and half of all violent crimes (Alvarez & Bachman,

2017). Therefore, that drugs and alcohol were a contributing factor in 48% of the homicides in the current sample is not surprising, yet validates the sample with a favourable distribution. Just over 33% of the current data set of convicted suspects were also married at the time of their offense and a further 20% were involved in romantic relationships with 36% of these cohabitating at the time of arrest. Salfati & Canter (2000) found a similar result for their homicide offender group in that 48% were married or cohabitating at the time of their offenses.

Further, it has been established that geographically, the first homicide in a set of serial homicides is generally committed within 5 miles of the suspect's home base and that most crime happens in the geographical areas that the offenders are most familiar with (Canter, 2007). For the current sample, 79% of convicted homicide suspects lived within 5 miles from the victim's final resting place (dumping site) post-homicide.

Just 30% of the current sample of convicted suspects had served a previous prison sentence whereas 86% had prior convictions for other offenses; theft (75%), burglary (65%) and criminal damage (53.1%) show the greatest frequencies. This distribution fell in the same directions, though slightly higher than the Salfati & Canter (2000) sample documenting theft at 56%, burglary at 45% and criminal damage at 30% for their sample of 82 lone-suspect, single-victim British stranger homicides. Given that there are about 10 years between the two samples, updated conviction and arrest practices amongst UK police forces may account for this difference, although the trends remain similar.

8.2.2 Victim Statistics

Victim mean age (41.5) mirrors the Salfati (1998) representative sample of 247 British homicides, having a mean age of 39. Just over 7% of the current victim population were white,

or of European descent, emulating population statistics from 1991 in England and Wales (Scott et al., 2001), showing that 94.5% of the population at the time were also White. Home office statistics from 1996-1998 revealed that 92% of homicide victims were of White origins (Richards, 1999). Given that the current suspect statistics also show this trend, the findings that killers often chose victims similar to their own demographics (Richards, 1999; Miethe & Regoeczi, 2004) applies to the current sample. The theory of relative deprivation explicates that some people may justify violent behaviour because they feel that they are socially or financially deprived relative to their victim(s) (Alvarez & Bachman, 2017), which may account for that suspects in this sample chose victims with a slightly higher socio-economic status to themselves. In the current sample, only 36% of victims (compared to 78% of their suspects) fell into the low socio-economic status category and 29% fell into the middle classes (compared to 17% of the suspect population).

8.2.3 Victim-Convicted Suspect Relationship

Strangers (42%) were implicated for the majority of killings in the current sample, compared to acquaintances (32%), and closely known suspects (26%). Home office statistics for England and Wales in 1997 reported that "Almost four fifths of all female victims and just over half of all male victims knew the main or only suspect before the killing", and given that just over half of the current sample of convicted suspects were known to victims (58%) before the killings, this statistic trends in the same direction of statistics from the area in which the sample was drawn (Richards, 1999). Homicides reported in the United States during the 1990's differ slightly (yet must be taken with caution as they are sourced from the UCR, accounting for arrests rather than convictions) reporting that strangers were arrested for 25% of homicides, those who were family/intimates to the victim were arrested for 25% of homicides, and acquaintances comprised

the other 50% of arrests for US homicides (Miethe & Regoeczi, 2004). Relationship categorization for the UCR is highly criticized (e.g. Trojan & Krull, 2014; Loftin et al., 1987), yet remains the largest and most contributed to data set for US homicide statistics. It would seem that, in both cultures, killers known to the victim over-represent the suspect pool.

It has been documented in UK homicide statistics (Richards, 1999) and USA homicide research (Alvarez & Bachman, 2017) that female suspects are more often killed by known suspects whereas male victims are more often killed by strangers or acquaintances. For 88% of the male victims in the current sample, stranger or acquaintance suspects were implicated for the homicide, whereas for over half (58%) of female victims, acquaintances or close suspects were implicated for the homicide. While following the reported trends, gender differences were not as high as expected, posing stranger killers as a high-risk for both male and female victims of homicides in England and Wales. Also, as would be expected, a greater percentage of female victims were killed in crimes that implicated male offenders (96.2%) relative to male victims (81.4%). On the same token, a greater percentage of male victims (18.6%) were killed in crimes that implicated female offenders relative to female victims (3.8%), indicating that the presence of anatomical relationships (one male, one female) between victim and suspect prior to the homicide may shift gender statistics this way.

8.2.4 Homicide Weapon Choice

Most of the crime scene behaviours accounted for in this project were not demographically reported in past UK research on lone homicide offenses such that solid comparisons of the current findings with past findings relative to homicide relationships could be performed. Weapon choice, however, was sufficiently documented. The most popular weapon in the United

Kingdom used by homicide suspects is a knife (Salfati, 1998; Canter & Youngs, 2009a), corroborated in the current sample of homicides (45.3%), followed by asphyxiation (31.3%), and the use of blunt objects (18.8%) (for instance a hammer). This is no doubt this is a function of environmental circumstance, for American homicide suspects overwhelmingly chose guns as their weapon (Miethe & Regoeczi, 2004), and residents of Great Britain overwhelmingly avoid this choice (Salfati, 1998). There are two likely reasons that largely contribute to this trend. First, the freedom to bear arms (1747; U.S. Constitution) is a US constitutional right, and the US government enforces this right, therefore gun commerce is a booming industry in America, whereas the UK historically maintains extremely strict gun control laws (Casciani, 2010), making it very difficult for people to own guns while placing strict penalties on black market trade.

Second, because Americans have more freedom of choice when it comes to homicide weapons and a gun is the method of least resistance, it would be the preferred method for those seeking efficiency. It is far less personal an act to use a gun given the distance one can create apart from their victim to achieve the end goal. Because a gun is an effective, less personal option, the availability of such weapons to killers coupled with an impulsive mind may account for the skyrocketing homicide rates in the USA. Contra wise in the England and Wales, homicide not as common an act, perhaps because it would take far more effort to actually commit a homicide being that one must complete the homicide from close proximity with weapons other than a gun, often requiring more than one blow (54.7% in the current sample). It follows that percentages of crime scene actions would follow different trends in an American crime scene, and that further research should consider a cross cultural comparison of crime scene actions in this way.

To conclude this discussion on Study 1, the validity analysis, it has been established that the current homicide sample reflects general population and homicide statistics for the time period and location from which the current sample was drawn, indicating that it is a representative sample and was worthy of further analysis into how relational propensities impact the representation of homicide scene actions in England and Wales.

8.3.0 Study 2 – Characteristics (C) to action (A) analysis of 64 homicides by relationship

8.3.1 Study 2, Part 1 – Comparing the Current Homicides to Relational Profiles in Prior Research

It was important to narrow down the project to include only information that could be verified as accurate by cross referencing the multitude of reports in any given case (police, witness, autopsy, crime scene photos and videos). Initially, the project was approved as an exploratory analysis of British and Welch homicides, yet later evolved into a more directive methodological approach to data analysis of this magnitude. During the data-entry process, it was determined that victim-convicted suspect relationships and crime scene action variables were the most reliable variables in the data set as they could be cross referenced throughout the reports for accuracy. To enhance internal reliability of the current study, the variables that were most reliable comprised the final project such that findings could be directly applied to investigatory practice. The first analysis that went beyond demographic research for this project was Part 1 of Study 2, comparing results from the current data set to victim-suspect relationship data reported in prior research. Information from 64 solved homicide cases with 64 offenders and 69 victims comprised final data set for the analyses in Studies 2-5. Because a portion of these cases involved multiple suspects, for these cases only the suspects who were believed to have physically committed the

crime (e.g. actually stabbed the victim) were included, as these suspects would have had the greatest impact on the representation of homicide scene variables in multiple suspect homicides. Study 2 (see Chapter 5, Section 5.1.0) first aimed to answer the question as to whether the presence of 19 crime scene variables in four categories (**injury severity** [gratuitous violence, bludgeoned, beaten, burned, set on fire, multiply wounded, tortured, sexually abused], **weapon choice** [weapon blunt object, weapon gun, weapon knife, weapon ligature, weapon manual strangulation], **homicide/dumping location** [home, public property, street, water, secluded location] and the presence of **facial injury**), were differentiating factors for UK homicide crimes by victim-suspect relationship. Rather than utilizing a pre-determined scale for injury severity such as The Homicide Injury Severity Score (Safarik and Jarvis, 2005) that focusses on the number and location of injuries on the body, it was determined the type of actions that most commonly caused severe injuries (e.g. bludgeoned, beaten, set on fire) were of greater interest to the current study because they provided a context for how multiple injuries may have occurred. Additionally, because the current research focussed on correlations of 61 homicide-scene behaviours to relationship categories, it was not possible within the time constraints or the resources of the current study to consider scaling out individual behaviours by severity. Thus, the actions chosen from the current data-set for the current injury severity category were the actions (out of the 61 previously recorded) deemed to be the cause of severe victim injuries.

Suspect-victim relationships prior to the homicide events were factored into three categories for the current model; stranger (the victim and suspect had no prior relationship), acquaintance (the victim and suspect had previously established a casual relationship e.g. business associates, bar mates, and people who were known to each other with little exposure) and close (the relationship between suspect and victim had been established with high frequency of contact and/or the two

were well known to each other e.g. friends, family members, lovers, and former lovers). Due to the smaller sample size < 100 and finding fewer than 5 occurrences for many of the crime scene variables in the data, it was important to be as accurate as possible in calculating differences within this non-parametric data set, thus a chi-square analysis was run utilizing the Fisher Exact Test and the Exact 2-sided significance values were calculated and reported for each crime scene variable in correlation with the three relationship categories (stranger, acquaintance, and close). The Fisher Exact test is a novel methodology, utilized for the first time in known homicide research. Because of the strength of this methodology despite low sample sizes, the little performed, multi-national research comparing relationship and homicide scene characteristics could be compared to results for the current sample of 64 homicides to understand how English and Welch homicides lineate or delineate from what is currently understood about relationships and homicide behaviour.

In two prior studies, one from Taiwan (Cao et al., 2008) studying 208 solved homicides, and one from the USA analysing 792 solved homicides (Decker, 1993), it had been identified that when the victims were killed indoors (as opposed to outdoors or in an automobile) it indicated a closer relationship between victim and offender prior to the homicide. The current study categorized location by the type of property (home, public property, body of water, in the street) where the victim's body was found. For the current sample, although results formed in the same direction with indoor killings - a greater percentage of victims with close relationships to convicted suspects (61%) were found dead inside of a home dwelling compared to those with acquaintance (36%) or stranger relationships (29%), the differences calculated by Fisher's Exact 2-sided significance values were not high enough to be considered significant (p>.05), and differences charted between the previous samples could be due in part to the way location was categorized.

Cao et al., (2008) categorized location as "inside" and "outside" while the Decker (1993)

location categories were "inside", "outside", and "auto", thus it is not clear how many of these

homicides were committed in a home dwelling as "inside" could mean inside of a bar or

establishment, making it public property. It was assumed the representation of crime scene

variables would differ in a home dwelling as opposed to public property, so this distinction was

made for the current research. Differences in the way that relationships were categorized may

also account for differing results. For example, the Cao et al., study grouped acquaintances and

friends into the same category, and close relationships only included intimate partners, whereas

the current study included friends, relatives and intimates as close relationships to the victim.

The current study separated friends from acquaintances based on the number and duration of

social interactions and theorized that the nature of those relationships with very few interactions

and those with many interactions would impact the representation of homicide scene variables

differently. Decker (1993) concurred, and for their study also separated acquaintances and

friends stating "the inclusion of "acquaintances" with "friends"[In UCR Data] clearly distorts the

conventional meaning of the word" (p.597). Although the current results follow the trend of

these two prior studies in that a majority of victims with close relationships to the convicted

suspect were found indoors; the differences found were not strong enough to be definitively

applied to homicide investigations in England and Wales.

The presence of facial injury was reported to be an indication of a close interpersonal

relationship between offender and victim in three prior studies (e.g. Last & Fritzon, 2005; Trojan

& Krull, 2014, Alvarez Cussen, 2017); however, the current analysis did not corroborate these

results, finding no significant differences between homicides implicating close relationships,

acquaintances, and strangers in presence or absence of the facial injury behaviour at the

connected crime scenes. Trojan & Krull's (2014) findings, that the presence of facial injury was a significant indicator of intimate partner relationships compared to strangers, family/friends, and acquaintances, formed the basis for inclusion of the facial injury variable in the current study, such that the findings from an American study could be compared to data from England and Wales. The current study did not produce findings strong enough to indicate that the facial injury variable could differentiate victim-offender relationships, perhaps due to the differing locations and cultures in which the two studies were derived. The sample for the Last & Fritzon (2005) study was collected from a similar location and culture (UK) to the current study (England and Wales), although the two samples were derived from slightly different populations. Last & Fritzon collected their data from hospital case files of 82 mentally disordered offenders (a convenience sample as opposed to a random sample), and the author's admit that their results may not be representative of homicide offenders and their actions as a whole. The current study met with similar results to the Last & Fritzon (3005) study for the facial injury variable yet the results were interpreted in different ways. Relationships in the current study and the Last & Fritzon (2005) study were categorized in a nearly identical way and facial injury was recorded using the same dichotomous methodology. While neither study produced results significant enough to differentiate the relationship groups, both studies found slightly higher percentages for the presence of facial injury in the respective intra-familial and close relationship groups. Because the facial injury variable was present in all of their cases of multiple wounding, the subsequent Last & Fritzon (2005) finding of a positive correlation between the presence of multiple wounding and relational intimacy may have led the authors to suggest that there could be a stronger connection between facial injury and greater intimacy in homicide relationships.

The presence of multiple wounding was not found to be a significant differentiator of victim and convicted suspect relationships for the current study, and this variance could be accounted for by the differences between the two samples: mentally disordered sample (Last & Fritzon, 2005) and random sample (current study). Further, although Alvarez Cussen (2017) implemented a three-part relationship model virtually identical to the current study to differentiate relationship and homicide behaviours, injury severity and facial injury comprised the entire scope of their study in terms of homicide behaviours. Alvarez Cussen (2017) went much further in-depth with the facial injury and injury severity categories than the current study allowed for, incorporating a combination of the Abbreviated Injury Scale (Greenspan et al., 1985) to differentiate wounds in various locations and the number of attacks to the facial region to explore the facial injury category. The facial injury variable in the current study was incorporated as a dichotomous variable (present/not), and had further differentiation of this category been possible within the current scope of the study, significant differences in the patterns of injury to the victim's face between strangers, acquaintances, and close relationships may have been identified. The sample differences in the Alvarez Cussen (2017) study could also account for the differences in outcome, as the study included 242 FBI case files of domestic homicides, sexual homicides, and felony homicides from the United States. The current sample was smaller, but also was chosen at random, including establishment and home killings outside of sexual, domestic or felony homicides. Combined with cultural differences, the surgical targeting of specific types of homicide and methodological differences in the way the injury severity and facial injury category were coded could explain why the Avarez Cussen (2017) results found significant differences in this arena while the current study produced merely anecdotal evidence, however

since the presence or absence of the facial injury variable was not addressed in the former study, results could not be directly compared with the current study examining cultural differences.

Injury severity had also been recognised in dated research as an indicative theme in intimate partner crimes (e.g. Wolfgang et.al, 1956; Heller et al., 1983), meaning that the more gratuitous homicides were reported to be more likely committed by intimate partners. Stated another way; it was proposed that as relational closeness between victim and offender increased, the homicide would show more signs of gratuitous violence or overkill (Douglas et al., 2006) (e.g. bludgeoned, beaten, burned, set on fire, multiply wounded, tortured, sexually abused), visa-versa.

This positive correlation between gratuity and relational intimacy, however, was not found to be a significant differentiator of prior relationships for the current sample. Contra wise, results from the current study favour acquaintances, as a greater percentage of acquaintance-linked homicides were rated as gratuitous in nature (72% compared to 55% for strangers and 69% for close suspects), although not significantly enough to be definitive (p>.05). Similarity, Last & Fritzon (2005) reported for their sample of UK homicides, that strangers were least likely and family members most likely to harm multiple sites of the victim's body, purporting that the multiple injury behaviour was the most significant differentiator of relationships between victim and offender. Results from the current sample fall in this direction, but only within a few percentage points of each other, suggesting that these British and Welch homicide relationships cannot be differentiated by the presence or absence of multiple wounding. The current result, drawn from a random sample of homicides as opposed to a sample of homicides involving only mentally disordered offenders (Last & Fritzon, 2005), aligns with the Drawdy et al., (2004) random sample of 57 Florida homicides that found no significant differences between their relationship

categories and injury severity. Therefore Study 2 (Chapter 5, section 5.1.1) found for the current sample of homicides amongst strangers, acquaintances, and close relationships, that these crimes are more similarly gratuitous than they are different. Overkill behaviours are interpreted as those in which the force utilized by killers in homicide transactions exceeds the force necessary to kill the victim (Green, 1981 in Last & Fritzon, 2005). Markedly, gratuitous behaviour was displayed in the majority of cases analysed for the current study made up of single (non-serial) homicides, suggesting that non-serial or first time killers more often than not, may misinterpret the force necessary to complete the act of killing, perhaps due to lack of experience.

Part 1 of Study 2 discovered, despite assumptions that location, injury severity, and the presence of facial injury would be differentiated by relationship type, that for the current sample, strangers, acquaintances, and close relationships are more similar than they are different in their behavioural profiles for these variables. One difference from this comparative discussion of the current results and past research findings, however, did meet with statistical significance, in the category of weapon choice.

In an American study (Trojan & Krull, 2014) analysing the connection between weapon choice and victim-offender relationships in 137 solved lone-victim, single-offender homicides, findings suggest that friends and family are more likely to be stabbed or strangled, whereas victims who were shot were more likely to be strangers to the offender prior to the homicide. The Trojan & Krull (2014) results suggest that strangers have a propensity to be less personal in their methods of killings (e.g. a gun) than known offenders (e.g. manual strangulation). American studies have examined weapon choice finding varied results controlling for gender (Fox & Allen; 2014); however, the high presence of gun violence in the United States makes it difficult to compare to their results with the current UK sample, having only three gun killings. Unsurprisingly, results

from the current study did not fall in line with the Trojan & Krull (2014) result, because the use of guns is rare in UK homicides (Salfati & Canter, 2004) compared to American homicides (Hunt et al., 2010). Since there are no known UK studies examining correlates between victim and suspect relationships and weapon choice, it was important for the current study to calculate whether relationship had an impact on the choice of instrument used in English and Welch killings. Study 2 (Chapter 5, section 5.1.2) found no significant differences between victims being killed by manual or ligature strangulation, bludgeoning, or guns for homicides that implicated suspects with stranger, acquaintance, or close relationships to the victim.

Weapon choice did, however, emerge as a significant finding in that the presence of a knife at homicide scenes (as opposed to a gun, blunt object, or signs of manual or ligature strangulation) was more indicative of a stranger relationship (61.3%) than that of acquaintances (28%) or close (38.5%) relationships (p<.05). Stranger suspects were one and a half times more likely to be implicated for homicides where perpetrators killed their victims by knife compared to suspects with close relationships, and over twice as likely to be implicated compared to acquaintance suspects. It could be argued that second to gun killings, knife killings require less time, effort and physical contact to cause a death successfully than do manual strangulation, ligature strangulation, or bludgeoning methods. Thus, this result for homicides in England and Wales could, in theory, be comparative to the Trojan & Krull (2014) U.S.A. result highlighting that known killers are more likely than stranger killers to exert more effort in their killings to produce similar results (e.g. bludgeoning, manual or ligature strangulation).

8.3.2 Study 2, Part 2 – Relationship (C) to Homicide Scene Action (A) Analysis for 64 homicides

with 69 victims

Because so little was known about the impact that prior relationship between victims and killers (or lack thereof) may have on the representation of homicide scene behaviours, it was important to go beyond the findings of previous research to explore this impact further. Study 2 (Chapter 5), marked the first known or published research to utilize more than 10 crime scene variables for relational analysis, entering 62 crime scene variables into the investigation. The first 19 variables were covered in Part 1 of Study 2 (Section 5.1.2), and the remaining 43 variables were then analysed for correlations to likely pre-existing relationships between victim and convicted suspect (Stranger, Acquaintance, and Close) with Fisher's Exact Test and 2-sided significance values (Section 5.2.1). This project was the first known to utilize the Fisher Exact Test with correlational homicide research. It was determined that traditional methodologies for non-parametric analysis utilized in previous homicide research (Multi-Dimensional Scaling, Regression Analyses, and Qualitative Comparative Analysis) were not sufficient to calculate correlations between the current relationship models and 62 crime scene action variables at the same time. The Fisher Exact Test is the most accurate and reliable way correlate variables in data sets with fewer than 100 cases (Mehta & Patel, 2012) and does not limit to the number variables can be validly processed in a single analysis. It was hypothesized that high or low frequencies of these behaviours could aid in differentiation of suspects by revealing behavioural correlations to three victim-suspect relationship categories (Stranger, Acquaintance, and Close) prior to the homicide event.

The original secondary data was a set of complete police case files for 71 homicides, yet exclusionary criterion mentioned in Chapter 3 left 64 cases that comprised the final data set. A

primary data set was then created from these 64 cases for the current research. When homicide scene action variables (e.g. victim dragged, clothing removed) were identified as being present in each case, they were entered into the current data set as a 1, if the variable was identified as absent in the case it was entered into the data set as a 0. Many of the homicide scene variables added to the current data set were adapted from previous homicide research and others emerged from the data organically, thus new content categories were created and added to the current data set when new (and measurable) information emerged in the data.

The following 29 variables were adapted from homicide studies reported by Canter & Youngs (2009a): signs of forensic awareness (Forensic Awareness), signs of victim struggle (Victim Struggle), weapon left at the crime scene (Weapon Left), weapon removed (Weapon Removed) from the crime scene, weapon left inside the victim (Weapon in Victim), weapon improvised or found at the crime scene (Weapon Improvised), throat cut, stabbed, shot, scratched, victim bitten, asphyxiated, victim abducted, penetrated with object, restrained, gagged, victim left naked, fully clothed, partially clothed, posed, hidden, covered by cloth or plastic, left out in the open (Not Hidden), dragged, removed, ransacked, clothing scattered, trail of clothing and token (object of victim taken by killer). Past research (e.g. Salfati, 1999) had also utilized many of these variables alongside homicide outcomes (yet not for relationship correlations); therefore, there existed a solid groundwork to compile the current data set of homicide scene behaviours.

Of these 29 homicide scene variables, only one met with statistical significance, differentiating strangers from acquaintances and close suspects in homicide scene behaviours for the crimes that they were implicated for. When the weapon had been removed from the crime scene (either dumped in an alternate location or never found), this behaviour was more indicative of a stranger homicide than an acquaintance or close relationship homicide. Strangers (68%) were over twice

as likely as close suspects (31%) and 1.6 times more likely than acquaintance suspects (40%) to be implicated for homicides where perpetrators removed the weapon from the crime scene (p<.05). Also, just falling below statistical significance, when the weapon was left at the crime scene, close suspects (54%) were more likely convicted for the homicide compared to strangers (19%) or acquaintance (28%) suspects (p=.078).

These two results provide important differentiating information for investigative professionals, in that when faced with a homicide scene where the weapon was found, it is suggested that the most fruitful area focus for suspect prioritization are suspects known, or better, closely known to the victim. Contra wise, when a murder weapon is not present at the scene and there are no viable leads on current relationships with the victim, the prioritization on solving these cases should be very high, as current research would indicate that a stranger was most likely the culprit, meaning that there is a greater chance that the killer will offend again (Vronsky, 2004), perhaps in the near future. Additionally, of the 29 above mentioned content categories derived from Canter & Youngs (2009a), weapon in victim, victim penetrated with object and trail of clothing met with zero frequencies in the current sample for crimes connected to convicted suspects with close relationships to victims. Although these three variables did not meet with statistical significance, a nil result for the close relationship category indicates that for British and Welch homicides, when the weapon is left inside the victim, the victim is penetrated with an object, or a trail of clothing is left at the scene, closely related suspects (e.g. friends, family, current or former lovers) are the least viable direction for allocation of resources toward suspect prioritization.

The single (lone) suspect and multiple suspect categories entered into the current research were adapted from Porter et al., (2009) from their studies differentiating the gratuitous nature of homicide behaviours by the number of suspects implicated for the crimes. Although results for

single and multiple suspects did not meet with statistical significance (p>.05) in the current study, it is noteworthy to report that 100% of the 13 victims in the current data set having close relationships to convicted suspects were believed to be killed by a single (lone) offender. It is proposed that when investigators in England and Wales are faced with a homicide crime showing signs that multiple killers were involved, close relationships are the least viable avenue for allocation of time and resources toward suspect prioritization.

Six further content categories were created for the current research to measure whether the homicide was instrumental to another crime. The IM Burglary (instrumental murder burglary) category, for example, meant that a burglary had been initially commenced and the victim then came into contact with the suspect during said burglary, whereby the convicted suspect had explained in interviews that the victim was killed in order to cover up the initial burglary. It had been revealed by the current data set that burglaries, robberies, thefts, and arsons were often crimes that ended in instrumental homicides, thus the six IM (instrumental murder) categories were entered into analysis. If any of these crimes or any other crime had made the murder instrumental, it was entered as IM Crime. The purpose of creating these categories was to understand whether instrumental homicides could be differentiated by relationship. None of these instrumental categories met with statistical significance for the current data set differentiating prior relationships; however, IM Robbery, IM Theft, and IM Rape met with a nil result for homicides that convicted close relationships; strangers or acquaintances were implicated for all homicides showing signs of an initial robbery, theft or rape had occurred at the crime scene prior to the homicide. Coupled with the prior nil result from Part 1 of Study 2 (Section 5.1.1) for the sexual abuse behaviour and a nil result from Part 2 of Study 2 (Section 5.2.1) for the penetrated with object behaviour in close-suspect homicides, it can be suggested

that when signs of rape, sexual abuse, or object penetration are indicated at homicide crime scenes in England and Wales, suspects with close relations to the victim are the least likely culprit.

The final seven content categories entered into the current analysis: after the victim was killed the perpetrator attempted to cover up the crime with arson (Cover up Arson), the victim's person or personal property was robbed post-mortem (Robbed Post Mortem) with no signs of an initial robbery taking place, the perpetrator entered into the home by breaking a window (Broken Glass), the perpetrator entered the victim's home through an unlocked or open door (Home Open) prior to the homicide, the perpetrator entered into the home of the victim by any means of force (Forced Entry) prior to the homicide, the suspect was invited into the home prior to the homicide (Suspect Invited), and the suspect and victim commenced in consensual sex prior to the homicide (Consensual Sex) were variables created for the current research as they organically occurred within each case analysed. As these seven variables emerged in the data, they were deemed as occurring frequently enough to measure (n=3+) yet were not derived from previous research. Of the final seven action variables, only one met with statistical significance in differentiation of stranger, acquaintance, and close relationship-connected behaviours. Suspects with close relationships (39%) were invited into the victim's home prior to the homicide six times more often than were strangers (7%), and acquaintances (20%) were nearly half as likely to be invited into the home compared close relationships ($p < .05$). This result indicates that the probability of being invited into the home by the victim prior to homicide increases with relational familiarity yet is highly unlikely to occur in a stranger situation. Therefore, when homicide scenes show no evidence of a forced entry, a closer, known relationship between victim and suspect is more likely.

8.3.3 Study 2, Part 3 - Testing the Viability of the Three-Part Relationship Model

Part 3 of Study 2 (Section 5.3.1) tested the three-part relationship model (stranger, acquaintance, and close) by computing the Exact 2-sided significance values for the same 62 crime scene variables with a two-part relationship model, by separating the sample into stranger and known relationships. It was found that while more differences could be detected in the two-part model, the strength of the analysis was weaker than in the three-part-model. Also, more qualitative differences between the groups was detected in the three-part model, indicating that separating relationships into three categories provided a more accurate representation of the data set, showing how varying levels of relational intimacy between victim and suspect impacted criminal behaviour in homicide scenes.

8.3.4 Study 2, Part 4 – Correlates of Relationship and Victim Age

While it was suggested in prior studies that the gratuitous nature of the crime increases as relationships become more intimate between killers their victims (Last & Fritzon, 2005), other research alluded that violent crimes with elderly victims (compared to younger victims) are more gratuitous in nature (Jordan et al., 2010). A disparity exists because while homicides with elderly victims are reported to show a greater proportion of overkill behaviours compared to homicides with victims younger than 65 years old, elder killers were more likely acquaintances or strangers to victims (Jordan et al., 2010).

Therefore, the task of Part 4 of Study 2 (Chapter 5, section 5.4.1) was designed to test this finding alongside the 65 victims (4 victims had unknown ages) of homicide to calculate whether these solved UK crimes could delineate the victim's age by the relational closeness of the named perpetrators in these crimes. Fisher's Exact 2-Sided significance value was computed to test the

differences between the developmental age group of the victims (adolescent, emerging adult, young adult, middle adult, and elder adult) and relational closeness (stranger, acquaintance, close) for their convicted suspects, but no significant differences were found. Thus, further testing on the gratuitous nature of homicides by age was not deemed as a fruitful avenue of study for the current sample because it would not apply back to relationship.

There were, however, not found to be statistically significant, differences that table 5.4.1 charts that may point future research in this direction. Homicides with victims in the middle-adult age group (40-64) implicated acquaintance suspects the majority of the time (52.2%), then equally implicated stranger and close suspects. The adolescent age group (14-17) had a higher proportion of homicide investigations that convicted stranger suspects (57.1%) compared to close suspects (28.6%) or acquaintance suspects (14.3%). The same goes for the elder adult age group (65+), being that the homicide investigations for these victims implicated stranger suspects in half of these crimes, yet the other half were equally connected to acquaintance and close suspects.

Results for victim age revealed that 75% of the elder-adult victim sample (n=12) were connected to homicides implicating strangers or acquaintances, falling in line with the Jordan et al., (2010) result. This result may not be entirely meaningful, given that the other victim age groups in the sample were also more often linked to acquaintances and strangers. Similarly, when the acquaintance and close suspects were grouped together or, more preposterously, stranger and close suspects, the majority of killings were then connected to these two groups. Thus, corroborating the result from part 4 of Study 2, because of the varying closeness that each individual relationship category assumes, they should continue to remain separate from each other in future homicide studies. Also, the differences highlighted here, given that the number of victims in each category fell below (n=50), would be useful to test with a larger sample of

victims in order to make any definitive conclusions about the correlates of victim age choice and victim-offender relationship.

8.3.5 Study 2, Part 5 – Relational Profiling of Homicide Relationships

The term "Relational Profiling" was coined for the current research and refers to the study of how crime scene variables (for these studies homicide scene variables) are impacted by suspect-victim relationships prior to the crime. Homicide scene variables were charted in Part 5 of Study 2 in order to visually represent (see Chapter 5, section 5.5.1) the differences in behavioural profiles for the three relationship categories studied (Stranger, Acquaintance, and Close). For this part of the study, the goal was to understand how homicide scene behaviours connected to suspects with acquaintance and close relationships to the victims differentiate from homicide scene behaviours connected to suspects with stranger relationships to victims by frequency of occurrence and non-occurrence. The upper 70% (most common behaviours) and lower 30% (least common behaviours) were charted by relationship type. Table 8.3.5 below re-caps these results.

Table 8.3.5 – Upper and lower 30% of homicide scene behaviours by relationship type

	Stranger	Acquaintance	Close
0%			Body of Water Broken Glass Gagged Home Open IM Robbery IM Theft Left Naked Multiple Suspects Penetrated with Object Sexually Abused Tortured Trail Clothing Weapon Inside
<5%	Burned Set on Fire Trail Clothing Weapon Inside	Consensual Sex Gagged IM Arson IM Robbery Penetration w/ Object Posed Scratched Secluded Location Set on Fire Sexual Abuse Token Taken	
<10%	Broken Glass Gagged Hidden Home Open IM Arson IM Theft Invited In Left Naked	Body of Water Burned Covered IM Rape Left Naked Partially Clothed Ransacked Removed Restrained Throat Cut Tortured Trail Clothing Left Naked	Burned IM Arson Location Public Property Partially Clothed Posed Set on Fire Token Taken
<20%	Bludgeoned Consensual Sex Covered Facial Injury Gun	Blunt Object Forced Entry Gun Home Open Ligature Strangulation	Consensual Sex Covered Facial Injury Gun Hidden

	IM Arson IM Rape IM Robbery Ligature Strangulation Manual Strangulation Partially Clothed Penetrated w/ Object Posed Restrained Scattered Clothing Scratched Secluded Location Sexual Abuse Shot Throat Cut Token Tortured Victim Abducted Weapon Left	Multiple Injuries Multiple Suspects Ransacked Shot Weapon Inside	Ligature Strangulation Manual Strangulation Removed Restrained Scratched Secluded Location Shot Throat Cut Victim Abducted
<30%	Asphyxiated Blunt Object Dragged IM Burglary Location Home Location Public Property Location Street Multiple Suspects Ransacked Robbed Post-Mortem	Bludgeoned Dragged Hidden IM Burglary IM Theft Invited In Knife Location Public Property Location Street Manual Strangulation Not Hidden	Blunt Object Clothing Scattered Dragged Forced Entry IM Burglary Location Street Ransacked Robbed Post-Mortem
>70%	Fully Clothed Single Suspect	Fully Clothed Gratuitous Violence	Not Hidden
>80%	Not Hidden	Single Suspect	Victim Struggle
>90%			Fully Clothed
100%			Single Suspect

Relational Profiling of Homicide Relationships within Groups

Figures 5.5.2 thru 5.5.4 revealed in Chapter 5 and in table 8.1.1 (above) chart the highest (upper 70%) and lowest (lower 30%) frequencies for behaviours found at homicide scenes linked to the current data set of 64 convicted suspects, *within groups* (Stranger, Acquaintance, and Close). The relational profiling analysis in figures 5.5.2-5.5.4 for strangers found that in fewer than 20% of these cases, the murder weapon was left at the crime scene. In the majority of crimes linked to stranger suspects (61%), no weapon had been found at the crime scene although 16% used manual strangulation as the method of killing, leaving just 23% who used a murder weapon (e.g. gun, knife, blunt object, ligature) and left it at the crime scene.

These results from study 2 indicated that the murder weapon was removed from scene in the majority of homicides linked to stranger suspects (60%). While stranger suspects were implicated for 10% of homicides where perpetrators left the weapon at the crime scene, perpetrators left their weapons at the crime scene in 28% of cases linked to acquaintance suspects. In homicides linked to close suspects, however, the perpetrator left the weapon at the crime scene in 54% of cases, Therefore, results suggest that when a weapon is left at the crime scene, closely known suspects should be given the highest priority for allocation of investigatory time and resources, followed by acquaintances, then stranger suspects.

As figures 5.5.2-5.5.4 and table 8.3.5 reveal, a single (lone) suspect and fully clothed victim were factors that occurred in over 70% of killings linked to all suspect categories. Signs of gratuitous violence (or overkill) were present in over 70% of homicides linked to acquaintances, and in 60% of homicides linked to close relationships or strangers, suggesting that acquaintances may be slightly more prone to excessive violence. While the "not hidden" behaviour, meaning the

perpetrator did not make attempts to hide or cover the body, was in the upper 80% and 70% of

behaviours linked to stranger and close suspects respectively, homicides linked to acquaintances

exhibited this behaviour in fewer than 30% of cases. Therefore, results suggest that when the

homicide scene shows signs of the victim's body being hidden or covered, the most fruitful

avenue of suspect prioritization is to focus the investigation toward acquaintance suspects.

Relational Profiling of Homicide Relationships between Groups

For this part of the analysis, the frequencies of homicide action behaviours were calculated for

how often they occurred in the 64 homicides combined (e.g. stabbings occurred for just 31 of the

69 victims). Percentages were calculated for how often strangers, acquaintances, or close

suspects were implicated for homicides with this behaviour (e.g. of the 31 total stabbings). This

analysis was performed to chart the differences *between groups* in homicide scene behaviour

connected to stranger, acquaintance and close suspects (See Chapter 5, Table 5.5.4). Homicides

linked to suspects with close relationships to victims met with nil results for 14 of the 62 crime

scene variables; the close suspect group was the only group finding zero frequencies, meaning

the other two categories, however low, held positive frequencies for all 62 behaviours. Leaving

the weapon inside (of the victim), broken glass, trail clothing, leaving the victim's body in a

body of water, left naked, tortured and gagged behaviours met with fewer than 10% frequencies

for the stranger and acquaintance suspect categories, meaning that these behaviours are the least

common for all homicides and may not be differentiated by relationship. Yet nil results in the

close suspect category for multiple suspects, penetrated with object, sexually abused, IM theft

and IM robbery (behaviours with higher frequencies overall) could very well be important

differentiating factors despite not meeting with statistical significance with the Fisher Exact test.

For example, of the 11 cases that convicted multiple suspects (i.e. accomplices), it was determined that one suspect from each these groups was believed (by investigators) to have physically committed the murder (i.e. stabbed the victim(s) to death) while the other suspects were believed to be involved in either the planning or in aiding the main suspect to avoid detection by covering up the crime (e.g. lying to investigators, removing and/or hiding the weapon, removing and/or hiding the body). When multiple suspects were linked to the homicide, the main perpetrator was reported as either a stranger to the victim (63%) or an acquaintance (36%) to the victim in all cases, meaning there were no collaborative efforts when the actual killing (the combination of actions that impacted the crime scene the most) was linked to a suspect with a close relationship (0%) to the victim. Certainly, a larger sample size could help to better understand whether the direction of this result remains consistent, but these preliminary results suggest that the order of suspect prioritization in multiple suspect cases, relating to the physical perpetrator, should first focus first on strangers to the victim, then acquaintances, and rarely if ever on close relations. It is worth noting that the planning phase of the homicide transactions, where multiple suspects were implicated, was found to be attributed to known suspects (i.e. generally someone who knew the victim well enough to ascertain that there was an opportunity for monetary gain). Generally, the planners of the homicide were not present at the scene and did thus did not highly impact the crime scene, so while in multiple suspect cases there is often a known entity responsible for the killing, the crime scene does not show evidence of this. Thus, when investigators are presented with crime scene and victim information alone, the scene *behaviours* in multiple-suspect crime scenes are most likely attributed to stranger suspects (or those who have been hired or incited to do the job based on the opportunity presented for monetary gain). Once the stranger suspect is identified as the killer in multiple-

suspect crimes, it is prudent to assume that the stranger did not plan the event yet may be able to link investigators to the known suspect who planned and incited the stranger to kill the victim.

To better illustrate this point, one of the current cases had two convicted suspects, one a current spouse of the victim and the other her boyfriend. The female conspirator in this case, the wife of the victim, saw an opportunity for monetary gain by killing her husband, and thus incited her boyfriend to kill him with the incentive that they would share in the life insurance pay-out. The boyfriend, a stranger the victim, was convicted for kidnapping the victim from his home and killing him in the victim's car while the victim's wife waited at home. Although a close relationship incited this killing, the person who impacted the crime scene the most was the acting perpetrator, who had been identified as a stranger to the victim. Another case involved a burglary linked to multiple suspects and one contract killer. One named perpetrator, who was alleged to have incited and conspired with others to burglarize then kill the victim, was a business partner to the victim, but the actual killing was linked to the contract killer, a stranger, who had sole impact on the crime scene. In a study by Porter et al., (2009) examining differences between single and multiple perpetrator homicides, multiple-perpetrator homicides were more often were instrumentally motivated. In the current sample both multiple-suspect and instrumental homicides were connected most often to stranger or acquaintance suspects. This may have occurred because suspects who incited the killing but did not impact the crime scene were excluded from the relational analysis. Future research on homicide relationships, homicide behaviours, and the number of offenders implicated is warranted, yet was not a focus of the current research.

Of the seven instrumental (IM) theft homicides (the victim was killed to obtain money or objects from a person or property), 71% were linked to acquaintances, 29% to strangers and 0% to close

relations. This result suggests that when the victim was known to have recently acquired money (e.g. pensions, trusts, death benefits, social security benefits) and that money was removed from their person or property during the crime, that known acquaintance suspects should take priority in the investigation, followed by strangers.

The six IM Robbery crimes (the victim was held hostage by knife or gun point to obtain money or property, killing the victim to avoid detection) were most often linked to stranger suspects (83%), followed by acquaintances (17%), but not to close relations (0%). The tortured and gagged behaviours, part and parcel with robbery killings (Canter & Youngs, 2009a), were lowest frequency behaviours yet followed this same trend. These results suggest that the direction of suspect prioritization in UK robbery homicides should first focus on stranger suspects, second on acquaintances, and rarely if ever should be directed at close relationships to the victim. Combined with the IM Theft result, when the crime is monetarily motivated, and it is not the result of a burglary (e.g. home killing with forced entry, home ransacked, scattered clothing), close relationships would not be the most fruitful area of focus for suspect prioritization.

When the victim was sexually abused (n=5) or penetrated with an object (n=4) during the crime, 75% and 80% of the time respectively, strangers were implicated. One of each of these crimes was linked to an acquaintance suspect, and none of these crimes were connected to close relations. The same direction of results was seen for the victim left naked behaviour. These preliminary results suggest that sexually motivated homicides should be considered the highest priority for suspect detection in homicide crimes because a stranger is most likely the culprit.

As Vronsky (2004) explains, most serial homicides are logged as stranger-on-stranger murders or placed in the "unknown" or "stranger" category of victim-suspect relationship. When

homicide perpetrators leave signs of forced sexual contact with victims, rather than spending county resources on first ruling out suspects with close relationships, it would be useful for the focus to be more balanced, or even shift toward identifying strangers who may have committed the crime. Although not available for the current data set dating back to the 1980's and early 1990's, currently this could mean examining CCTV footage in and around the area where the victim's body was found for hours or even days before the crime was committed, identifying stranger suspects with behaviours indicating interest in the victim(s) before the crime.

Behaviours that mirror serial crimes were accounted for in fewer than 14% of cases for these 69 victims of homicide. For the current sample, fewer than 20% homicides showed actions mirroring serial homicide behaviours (reported in Canter & Youngs, 2009a), yet strangers also made up the majority of the convicted suspects linked to these crimes - e.g. abducting (5/9) or killing the victim in a secluded location (4/7), scratching (5/8), torturing (3/5), raping (4/6), sexually abusing (4/5), penetrating with an object (3/4), posing (4/6), partially unclothing the victim (4/7), leaving the victim naked (3/5) or taking a token of the victim's (3/5). This result indicates that sexually motivated crimes are less common in UK homicides overall, yet point toward stranger killers.

Although these seminal results are fruitful and strong enough to contribute to suspect-profiling research, significant differences between relationships and homicide scene actions were fewer than expected from the findings of prior research. It was initially presumed that perhaps the sample of suspects was not large enough to differentiate behaviour with the stringent, Exact testing; however, this was far from the case. The next analysis went beyond the inter-personal nature of victim-convicted suspect relationship and explored the psycho-social aspect of how homicide scene behaviour was impacted by controlling for relationship status (stranger, active,

and estranged). It was discovered across the analyses in Study 3 (Chapter 6) that relationship status had a far greater impact on homicide scene behaviour than did actual relationship.

8.4.0 Characteristics (C) to Actions (A) Analysis of Homicides by Relationship Status

Chapter 2, Study 2 examined behavioural differences between three relationship categories (stranger, acquaintance, close) in the representation of crime scene variables presented within 64 homicide scenes with 69 victims. The differences articulated in the discussion of Study 2 were not found to be as differentiating for the three groups as would be suggested by prior research. When the relational profiling analyses further controlled for the relationship status in all relationships recorded (e.g. business partner, friend, family, lover, prior lover) compared to stranger crimes, far greater differences were seen, validating this sample as large enough to support a three-part-model of relational differentiation with a small homicide sample. Previous research studying relationship status in homicides had thus far focused only on intimate partner relationships (e.g. Johnson & Hotton, 2003), making the current study a solid contribution to offender (or suspect) profiling research. Study 2 in the current dissertation was the first known study to control for the relationship status contributed to all relationship types (acquaintance, friend, business partner, family, lover, prior lover). The fruitful results indicated that the relationship status distinction is imperative for differentiating relationships within homicide transactions by homicide scene actions.

In any relationship, the psycho-social standing between the parties involved will impact their behavioural interactions. For example, when relationships remain active and conflicts within them are not communicated or resolved, it can lead to a state of hypervigilance, such that the parties are subject to an accumulation of negative emotion toward each other. Contra wise, when relationships are severed because of prior conflicts, or there has been some time following the

end of a relationship, negative emotion has time to dissipate or evolve in the absence of communication between the parties. When these differences in relationship status occur, they undoubtedly contribute to differences in how behaviours manifest when the relationship is finalized by a homicide transaction. It may very well be a function of this time and space following estranged relationships that results from Study 3 formed in an un-expected direction.

8.4.1 Study 3, Part 1 – Gratuitous Violence and Relationship Status

Part 1 of Study 3 (Chapter 6, section 6.2.1) tested prior findings from intimate partner research that homicides between estranged relationships would be more gratuitous in nature than homicides between active relationships (Johnson & Hotton, 2003). It was thus hypothesized that all homicides linked to estranged relationships in any form would show higher levels of gratuitous violence than all crimes linked to active relationships in any form.

As a reminder, if a previous relationship had been established that ended in a continued feud between victim and suspect before the homicide, this was recorded into the 'estranged' relationship category. This category excluded killings immediately following an argument; a time-period must have elapsed between arguments and killings (several hours to many months) such that they could not have been immediately reactive in nature. This time lapse would allow for planning on the part of the perpetrator and it was theorized that homicide scene behaviours in planned homicides would differentiate from those in immediate-reactionary killings. Alternatively, when a relationship had been previously established but had lapsed for a period of over one year (e.g. the perpetrator moved to another city before returning to kill the victim) it was also marked as 'estranged'.

When there was no feud between parties and no significant time lapse had occurred, the relationships were categorized as active. The active category also included crimes of passion, where the relationship had remained intact just prior to the homicide. The active and estranged categories were compared to the stranger category as a control group of suspects whose behaviour could not be motivated by any prior relationship with the victim. The gratuitous violence score for each homicide, adapted from Porter et al., (2009) was assessed for correlations to relationship status on a 0-3 scale (0 - No Evidence; 1, Minor; 2- Moderate; 3-Major) and also with a two-part rating (1 - Gratuitous Violence Present, 0- Gratuitous Violence Absent). Homicide crimes with convicted stranger, active and estranged suspects were then compared for levels of gratuitous violence. Because the entire data set containing 69 victims fell below n=100 and is suitable only for non-parametric testing, and the analysis could not be restricted by the number of variables in the correlation, the Fisher's Exact Test was found to be the most valid analysis for calculating differences between the groups.

Results for the gratuitous violence two-part score (present, absent), all relationship status categories were found to be similarly gratuitous in nature; 50% of the homicides were rated as having gratuitous features (over kill) and no significant differences were found between the three relationship status groups. Given that the Johnson & Hotton (2003) study only analysed intimate partner relationships, and the current study compared strangers (control group) to active and estranged intimate partners, family members and friends (Close), the sample differences could have contributed to divergent outcomes.

Noteworthy, 83% of homicides connected to active suspects were present for gratuitous violence, compared to 60% of homicides connected to estranged suspects and just 55% of homicides connected to stranger suspects. While nearly 40% of homicides connected to estranged and

stranger suspects had no presence of gratuitous violence, just 17% of homicides connected to active suspects did not have gratuitous features present at the crime scene. This result suggests that gratuitous homicide crimes are more often connected to suspects with active relationships to the victims, not estranged, as prior research would suggest. Surprisingly more, homicides connected to stranger suspects are the least likely to have overkill features present at the crime scene compared to homicides connected to active suspects and estranged suspects. The question then remained as to whether the three-part gratuitous violence score would differentiate status categories.

When the *level* of gratuitous violence was taken into account (no evidence, minor, moderate, major) for the three status categories, no statistically significant differences were found between the groups; however, some noteworthy differences were found. For the homicides marked as gratuitous in nature, over half of homicides connected to active and estranged relationships showed moderate signs of gratuitous violence. Nearly 40% of gratuitous homicides connected to stranger suspects were scored into the major category, compared to just 20% of homicides connected to active suspects and 8% of homicides connected to estranged suspects. While a greater number of gratuitous homicides in the current UK sample were connected to suspects with active relationship to the victim, the most heavily gratuitous homicides were attributed more often to strangers than they were to known suspects. While the general assessment of gratuity did not show statistically significant differences with the Fisher Exact Test, the question remained as to whether the representation of individual homicide scene action variables could further differentiate the relationship status categories.

8.4.2 Study 3 Part 2 – Relationship Status (C) to Homicide Scene Action (A) Analysis for 64 UK Homicides with 69 Victims

Utilizing the same 62 crime scene variables analysed in Study 2, Part 2 of Study 3 (Chapter 6, section 6.3.0) aimed to understand how the actions connected to convicted suspects with active and estranged relationships to the victims of homicide could differ from the actions connected to convicted stranger suspects in accordance with the 69 victims killed at 64 crime scenes in England and Wales. The Fisher Exact Test found more differences once relationship status was controlled for compared to actual relationship. In the arenas of weapon choice, weapon disposal, facial injury, and post-mortem actions to the victim's body, relationship status was found to have a significant impact, differentiating the three status categories.

For the weapon choice variables, no significant differences were found for the use of a gun, blunt object, asphyxiation, or the use of manual strangulation between the three relationship status categories. Evidence of the use of a knife and ligature strangulation did, however, meet significance criteria ($p<.05$). A knife was more often the murder weapon of choice in homicides that implicated stranger suspects (61%) compared to homicides implicating active (28%) or estranged suspects (35%). A similar result was garnered in Study 2 when comparing the same variable across the actual relationship categories (Stranger, Active, and Close). These results together suggest that a knife was more seldom the weapon of choice for homicides with convicted known suspects as opposed to convicted stranger suspects. What really stands out in the data is that none of the estranged-linked murder weapons had been a ligature, yet 28% of homicides implicating active suspects and 13% of homicides implicating stranger suspects were present for this feature. When a ligature is present at the homicide crime scene, it suggests that active suspects should be the main focus of suspect prioritization, followed by stranger suspects.

The result also suggests that pooling time and resources into investigating suspects with estranged relationships to the victim is not recommended unless the crime remained unsolved after investigating active and stranger suspects.

For the weapon acquisition and disposal variables, improvising the weapon from the crime scene showed no significant differences between relationship status categories nor did the weapon left inside of the victim behaviour. When the weapon was left at the crime scene, results significantly revealed that estranged suspects were over twice as likely (56%) as stranger suspects (19%) or active suspects (20%) to be implicated for these homicides ($p<.05$). When the weapon left variable was compared across homicides connected to Stranger, Acquaintance, and Close suspects in Study 2 (Chapter 5, Section 5.2.2), the result almost met with statistical significance ($p=.078$) suggesting that close relationships (58%) were the most likely to leave the weapon at the crime scene. The first-priority in a homicide investigation would be most fruitfully awarded to suspects with close (e.g. friends, family, lovers), but estranged relationships to the victim when the weapon is left at the crime scene. Similarly, when the weapon is removed from a crime scene, stranger suspects (68%) should be the first line of focus in the investigation, as homicides connected to active and estranged suspects presented this behavioural variable 33% and 40% of the time respectively ($p<.05$).

Further, it was found that several actions pertaining to the victim's body were differentiated by relationship status, one action prior to death (facial injury) and three actions post-mortem (hidden, dragged, and robbed post-mortem). As expected from the results of Study 3, Part 1 (Chapter 6, section 6.1.1) the more gratuitous variables (bludgeoned, beaten, burned, set on fire, multiply wounded, tortured, and sexually abused) did not differentiate by relationship status; however, the facial injury variable did.

The facial injury homicide action was absent in crimes connected to estranged suspects, was present in 13% of homicides connected to stranger suspects, and was present in 28% of homicides connected to active suspects (p<.05), suggesting that estranged suspects are not likely to make the killing expressively personal in nature. This result was supported by a further six nil results indicating that estranged victims in this sample were not tortured, sexually abused, restrained, gagged, covered or posed after the crime. When facial injury is present at homicide scenes in England and Wales, results from this sample suggest that suspects with stranger relationships should seldom be focus for suspect prioritization; rather the investigation should prioritize suspects sharing active relationships with victims. Given the nil result, focusing on suspects with estranged relationships to victims who have been facially injured is not recommended. Additionally, for the facial injury variable (almost meeting with statistical significance favouring close suspects in Study 2) it follows that close/active suspects are more often implicated for crimes reporting facial injury, further specifying the recommendation for suspect prioritization.

Although it could be assumed that a level of pre-planning was allocated to the homicides linked to estranged suspects, given the time-gap between the end of these prior relationships and the homicide transaction, avoiding detection was not as important to perpetrators of homicides that implicated estranged suspects compared to those that implicated stranger and active suspects. This seems counter intuitive because feud filled pre-existing relationships, as many of these were, would have been an obvious first focus for homicide investigators. The behaviours left naked, fully clothed, partially clothed, not hidden, and cover up arson did not meet with statistical significance therefore did not differentiate the stranger, active and estranged categories. However, fewer than 7% of crimes implicating estranged and stranger suspects

revealed that the victim's body was hidden post-mortem, yet 33% of crimes implicating active suspects were marked with the presence of this action (p<.05). Also, only 5% of estranged suspects were implicated for crimes where the victim was dragged through the crime scene as opposed to 23% of stranger suspects and 50% of active suspects (p<.05).

Further, while only 10% of estranged suspects were implicated for homicides where the victim's body had been robbed post-mortem, 23% of stranger suspects and 50% of active suspects were convicted in these cases (p<. 05). Results suggest that when the victim is hidden, dragged or robbed post mortem active relationships should be the first focus of suspect prioritization, followed by stranger suspects, and finally estranged suspects. Nil results for the covered and removed variables in the estranged category compared to present frequencies for the other two categories, with active relationships having the highest frequency, also suggests that the presence of these body-focussed actions should sway the investigation toward active relationships. Whereas the posed variable, showing nil results for the estranged category yet higher frequency in the stranger category compared to the active category suggests that when the victim is posed, estranged suspects should not be the area of focus and that stranger suspects should exhaust the first line of investigatory resources.

Notably, when suspects with prior relationships had been implicated for the current set of homicides, both status-categories in Study 3 showed nil results for a portion of the 62 crime scene variables. When actual relationships were correlated to the same 62 crime scene actions in Study 2, it was found that only the close relationship category showed zero frequencies. By controlling for relationship status, Study 3 was able to qualitatively differentiate the close relationship category, highlighting the strength of the model. When nil results occurred within either of the relationship status categories, it could also be assumed that these relationships were

close, rather than acquaintance relationships. Thus, when investigators are presented with homicide scenes showing signs that the victim was abducted, penetrated with an object, restrained, gagged, posed, covered, dumped in a body of water or in a secluded location or that the victim was raped prior to the homicide, *estranged suspects* with *close relationships* were never implicated. When homicide perpetrators first committed crimes of arson (IM Arson) or robbery (IM Robbery) before killing the victim, killed the victim by fire (Set on Fire) or attempted to cover up the crime by setting fire to the victim or victim's home (Cover up Arson), *active suspects* with *close relationships* to the victim were never implicated. Further research should focus on these variables with a larger sample size to test whether these relational differences remain consistent for homicides in England and Wales or the larger UK.

It is clear from these results that relationship status has more of an impact on the representation of crime scene action variables (or homicide behaviour) than did relationship (Stranger, Acquaintance, and Close). Markedly, many of the significant findings from Study 3 occurred in the opposite direction than what had been expected. Although it was expected that crimes linked to estranged suspects would be expressive in nature, having more in common with crimes linked to other known relationships, it appears that this was not the case. Rather, the representation of crime scene variables for homicides that implicated active relationships more closely mirrored those that implicated stranger relationships, suggesting that estranged crimes are more instrumental than expressive in nature. Time has been said colloquially to be the ultimate emotional healer. Perhaps time for estranged suspects allows for a less emotional and more cognitive and calculated crime.

8.4.3 Study 3, Part 3 – Testing the Viability of the Three-Part Relationship Status Model

Including the stranger suspect category in Part 2 of Study 3 acted as a control group (no pre-existing relationship) that the status categories (pre-existing relationships) could be compared with. The task in for the third part of Study 3 (Chapter 6, section 3.4.0) was to understand whether significance values were simply a function of having a control group, or whether the differentiations would remain consistent when examining crimes linked only to suspects with known relationships to the victims. Homicides implicating active and estranged relationships differentiated from each other with the majority of homicide action variables that also differentiated them from stranger relationships, suggesting that the three-part-model for relationship status is an appropriate and valid categorization. The weapon left ($p<.05$), hidden ($p<.05$), covered ($p<.05$), dragged ($p<.01$), removed ($p<.05$), robbed post mortem ($p<.01$) and facial injury ($p<.05$) behaviours were significantly differentiating in that active suspects were implicated for more of these crimes than were estranged suspects, noting that nil results existed for estranged cases in the facial injury, removed and covered behaviours. The results from studies 2 and 3 combined imply that homicides where strangers were convicted show behavioural differentiation from crimes where known suspects were convicted but also that crimes connected to known suspects are, behaviourally, more differentiated by relationship status (active and estranged) than they are by actual relationship (being that there were no significant differences found for these variables when comparing acquaintance and close relationships). In other words, the results from Studies 2 and 3 support the methodological decision to differentiate known relationships by relationship status for suspect prioritization of homicides in England and Wales, thus the active/estranged differentiation is recommended for future homicide profiling research. For example, a behavioural difference was found in Study 3 that was not charted in

Study 2, finding no significant differences between relationship types and the abducted behaviour. Active suspects were implicated for twice as many homicides where victims had been abducted compared to estranged suspects, who were never implicated when victims were abducted (p<.05).

This result coupled with the former result implicating stranger suspects at an equal rate to active suspects for the abducted behaviour implies that when abductions occur pre-homicide, both active and stranger relationships should be the first focus of suspect prioritization in homicide crimes located in England and Wales. Estranged suspects, particularly those with close relationships (friends, family, and lovers), would not be a productive area of investigative focus. While stranger and active suspects were responsible for the abducted behaviour, it is suspected that the two types of suspects would have different motives for doing so. Abduction is a tactic speculated to increase the killer's feelings of power and dominance over the victim before they die (Canter & Youngs, 2009a), which seems to be a priority for some active and stranger killers. Yet estranged killers, with time to ruminate, may view the death of the victim as the ultimate goal rather than having the need for power and control prior-to. While motivation, or the "why", was not the focus of the current research as much as the "who", further research into this phenomenon exploring motivation may make this differentiation more clear.

The stringent nature of non-parametric testing was appropriate for the current sample, and there were many differences found that helped to explain the impact that relationship status had on the representation of behaviours occurring within homicide crime scenes. It was also important to delve deeper into the qualitative understanding of this impact by noting the greatest and least frequent homicide behaviours *within groups*, distinguishing relationship status even further with a Relational Profiling exercise.

8.4.4 Study 3, Part 4 - Relational Profiling of Homicide Relationships by Relationship Status

Using the same methodology as the Relational Profiling sections in Study 2, Part 5 (Chapter 5, section 5.5.0), Study 3 also aimed to understand how homicide scene variables were impacted by suspect-victim relationship prior to the crime, but instead controlling for relationship status (active vs. estranged). Homicide scene variables were charted in Part 4 of Study 3 to visually represent (see Chapter 6, section 6.5.2-6.5.3) the differences in behavioural profiles for the two relationship categories studied (active and estranged). Relational profiling of stranger groups was performed in the previous Chapter (see Chapter 5, Figure 5.5.2). A secondary analysis was completed in this part of the study to chart how homicide scene behaviours differentiated *between groups*. Homicide scene variables were charted in Part 4 of Study 3 in order to visually represent (see Chapter 6, Figures 6.5.2-6.5.3) the differences *within groups* for the behavioural profiles represented by the two relationship status categories studied: active and estranged. The upper 70% (most common) and lower 30% (least common) homicide scene behaviours were charted by relationship status. Table 8.4.4 below re-caps these results.

Table 8.4.4 – Upper and lower 30% of homicide scene behaviours by relationship status

	Stranger	Active	Estranged
0%		Cover Up Arson IM Arson IM Robbery Set on Fire	Covered Facial Injury Gagged IM Rape IM Robbery Ligature Strangulation Location Secluded Location Water Penetrated w/ Object Posed Removed Restrained Sexually Abused Tortured Victim Abducted
<5%	Burned Set on Fire Trail Clothing Weapon Inside	Broken Glass Burned Gagged Left Naked Partially Clothed Penetrated w/ Object Sexually Abused Token Taken Trail Clothing	IM Arson
<10%	Broken Glass Gagged Hidden Home Open IM Arson IM Theft Invited In Left Naked		Broken Glass Consensual Sex Dragged Hidden Home Open Left Naked Multiple Suspect Scratched Throat Cut Token Taken Trail Clothing Weapon in Victim

<20%	Bludgeoned Consensual Sex Covered Facial Injury Gun IM Arson IM Rape IM Robbery Ligature Strangulation Manual Strangulation Partially Clothed Penetrated w/ Object Posed Restrained Scattered Clothing Scratched Secluded Location Sexual Abuse Shot Throat Cut Token Tortured Victim Abducted Weapon Left	Clothing Scattered Consensual Sex Cover up Arson Forced Entry Gun Home Open IM Rape IM Theft Location Public Prop Location Secluded Location Water Manual Strangulation Multiple Suspect Posed Restrained Scratched Shot Throat Cut Tortured Weapon in Victim	Blunt Object Burned Cover up Arson Gun IM Burglary IM Theft Partially Clothed Ransacked Robbed Post Mortem Set on Fire Shot
< or = 30%	Asphyxiated Blunt Object Dragged IM Burglary Location Home Location Public Property Location Street Multiple Suspects Ransacked Robbed Post-Mortem	Blunt Object Covered Facial Injury Knife Ligature Strangulation Location Street Ransacked Removed Stabbed Suspect Invited Victim Abducted	Asphyxiated Bludgeoned Clothing Scattered Forced Entry IM Crime Location Public Property Location Street Manual Strangulation Suspect Invited Weapon Left Weapon Improvised
>70%	Fully Clothed Single Suspect	Fully Clothed Victim Struggle	Victim Struggle
>80%	Not Hidden	Single Suspect Gratuitous Violence	Fully Clothed Not Hidden
>90%			Single Suspect
100%			

Relational Profiling of Relationship Status within Groups

Many of the significant results in Parts 2 and 3 of Study 3 (Chapter 6, Figures 6.5.2-6.5.3) also emerged in the relationship status profiling charts above; to avoid redundancy novel results will be discussed. The following findings did not emerge as statistically significant yet further help to qualitatively explain how relationship status between victim and suspect pre-homicide impacted the representation of homicide scene behaviours. In Study 2 (Chapter 5, section 5.3.1), there were many homicide scene behaviours that met with zero frequencies for crimes implicating close suspects. It can be assumed that when a nil result occurred for either of the relationship status categories, these crimes were not connected to close suspects, lending even more direction to the qualitative understanding of homicide behaviour in England and Wales.

The behaviours cover up arson and set on fire were never connected to suspects with active relationships to the victim, yet 10% of estranged suspects were implicated for homicides with these features and just below 8% of stranger suspects were. It also follows that *active* suspects with *close* relationships to the victim were never implicated for homicides that incurred the cover up arson and set on fire behaviours. Further, when the covered, facial injury, gagged, ligature strangulation, IM Rape, location secluded, location water, penetrated with object, sexually abused, posed, body removed, restrained, tortured, or victim abducted behaviours emerged in UK homicide scenes, estranged suspects were never implicated. It follows that when these 16 variables were present at homicide scenes, *close* suspects with *active* relationships were never implicated, therefore, they would be the least viable suspects to allocate resources toward.

Homicides with the asphyxiated variable occurred in the lower 30% for crimes that implicated both strangers (23%) and estranged suspects (30%); however, 50% of the crimes connected to

active suspects had perpetrators who asphyxiated their victims. It is proposed that when signs of asphyxiation occurred in UK homicide crime scenes, active relationships should be the first focus of suspect prioritization, followed by estranged relationships, and finally strangers. Homicides connected to active suspects were also the only category to show features of gratuitous violence in the upper 80%, indicating that gratuitous violence is the most likely behaviour for homicides that implicated suspects with active relationships to victims. While the not hidden variable occurred for both stranger and estranged categories in the upper 80%, just 60% of active suspects were connected to crimes that harboured this feature. As explained in Study 3 Part 2 (Chapter 6, Table 6.4.1), the perpetrators in homicides that implicated active suspects exerted more effort in manipulating the victim's body compared to perpetrators of homicides that implicated suspects in other relationship status categories.

Relational Profiling of Relationship Status between Groups

For this part of the analysis, the frequencies of homicide action behaviours were calculated for how often they occurred in all of the homicides combined (e.g. stabbings occurred for just 31 of the 69 victims). Then the percentage (e.g. out of 31) was calculated for how often stranger suspects, active suspects, or close suspects were implicated for homicides containing this behaviour (e.g. 58% strangers, 16% active, and 26% estranged in the 31 total stabbings). This analysis was performed to chart differences between relationship status groups and works as a seminal methodology that may be applied to unsolved cases and future research.

Homicides linked to suspects with close relationships to their victims were the only category that met with nil results for 14 of the 62 crime scene variables in Study 2 (Chapter 5, Table 5.4.1), meaning that the stranger and acquaintance categories, however low, had frequency counts

charted in all 62 homicide behaviours. For those 14 behaviours, it can be assumed that when results had zero frequencies in either the active or estranged relationship status categories, close suspects were also never implicated for these crimes. For example, homicides that implicated estranged suspects in the current sample had zero frequencies for location water, covered, facial injury, ligature strangulation, and hidden. Despite there being a larger number of stranger suspects in the sample (n=31), it was active suspects (n=18) who were implicated more frequently (<50%) for crimes having the presence of those variables. These results lend a direction to suspect prioritization for British and Welch homicide cases in that when the victim was found in a body of water, is covered, facially injured or hidden, that active suspects are most viable direction of inquiry followed by strangers, followed by estranged suspects.

Further, while there were zero frequencies in the active category for the IM Arson behaviour (arson as an instrumental cause of death) and the set on fire variable (covering up homicide crime with arson behaviours), active suspects were never implicated, and strangers were more often implicated for crimes with these features compared to estranged suspects. This places the order of suspect prioritization for homicides with arson features first with stranger relationships, then with estranged relationships, and also implies that active suspects should be allocated the lowest priority for investigative inquiry when fire setting is detected. The same order of prioritization could proceed for IM Burglary cases (showing evidence that burglary occurred as the primary motivation pre-homicide) as 83% of homicides with this feature implicated stranger suspects, 17% implicated estranged suspects, and 0% implicated active suspects. When robberies turned into instrumental homicides (IM Robbery) for the current sample, a stranger was nearly always implicated for the crime. The results for the IM variables combined suggest that strangers

more often precede homicides with a primary motive, generally monetary, making these crimes more instrumental in nature.

Strangers were also implicated more often when the gagged, penetrated with object, tortured, sexually abused, posed, IM Rape, location secluded, restrained, and victim abducted behaviours occurred, with nil results for the estranged category. When the presence of these serial-killer like behaviours (e.g. Canter et al., 2004) occur in British and Welch homicides, results implied that the first the allocation of resources in the investigation should first focus on locating possible stranger suspects, thereafter proceed to active relationships, and finally to estranged relationships. Results from studies 2 and 3, overall, indicated that known relationships were better differentiated by relationship status (e.g. psycho-social standing) than they were by relationship categories (e.g. inter-personal circumstance), suggesting that psychological factors may have accounted for some these differences. To further test this notion, a highly accepted psychological theory assuming that the personal narrative of the offender influences their behavioural style of offending (Canter & Heritage, 2000) was applied to the current model.

8.5.0 Studies 4 & 5 - Characteristics (C) to actions (A) analyses of 64 homicides by relational identity

8.6.0 Study 4 - Relational Identity (C) to Actions (A) Analysis for 64 Homicides with 67 Victims

The purpose of Study 4 (Chapter 7, section 7.2.0) was to understand whether a long held psychological theory in the area of homicide profiling could further or better explain homicide behaviour compared to the other relational analyses presented in this report. The Narrative Action Systems (NAS) theory of Relational Identity (Canter & Youngs, 2009a/b) proposed that

violent offenders have three ways that they relate to their victims: as an object, as a vehicle, and as a person. These psychological underpinnings are theorized to cause several differences in the way that offenders approach and behave during criminal activities. Previous support for the theory has been garnered by researchers studying crime scene action scatter plots of correlated behaviours, whereby attempts have been made to fit clusters of correlated behaviours to the relational model (e.g. Fritzon & Ridgway, 2001). Assumptions have thus been made about how homicide scene behaviours fit into the model, rather than about how offenders who show evidence of relating to their victims in this way behave in homicide situations. What has been previously theorized about how perpetrators relate to their victims has only been supported by research categorizing correlated crime scene action variables (A) by assigning the object, vehicle, or person narrative-partitions to clusters of these correlated variables, thereafter hypothesizing about what characteristics (C) that offenders who behave within the partitions might have. The psychological model further proposes that that these clusters of behaviours, indicating an object, vehicle, or person theme, will aid police in investigative interviewing situations (A→C) (Canter, 2011). For the current project, testing this relational theory called for a reversal of the methodologies that had come before it, therefore entire case files connected to each convicted suspect were analysed and each suspect was rated as having related to their victims as objects, vehicles, or persons based on how published research (e.g. Canter & Youngs, 2009a) characterized these groups in emotional terms (C). The current research utilized a fairly straight-forward method for this classification, explained further in Chapters 3 and 7. The current categorization scheme was also inter-rater tested, and 100% concordance rate between the cases was achieved (See Appendix B).

Suspects were assigned to victim-as-object, victim-as-vehicle, and victim-as-person categories (C) that were correlated with Fisher Exact testing to the 62 homicide scene behaviours utilized in studies 2 and 3 (A). This C→A analysis was hypothesized to show that the narrative roles would differentiate the representation of homicide scene variables, thus showing support for the NAS narrative theory (see Chapter 7, Table 7.2.2 for a list of the results). Studies 4 and 5 were the first known studies to statistically test the NAS Relational Theory regarding victim roles by reversing the A→C equation, and also the first to utilize Fisher Exact Testing to compute differences between the three relational categories (victim as object, victim as vehicle, and victim as person) in the behavioural manifestation of homicide transactions.

8.6.1 Victim-as-object

The victim-as-object role of narrative identity was first described by Canter (1993; 2000), theorizing about sexual serial homicide offenders, then later was applied it to all violent crime (Canter & Youngs, 2009a; 2009b; 2012b). In this narrative, the recognition of the victim as human and any emotional connection to the victim is purported to be missing. Thus, one hypothesis of the current research was that the behaviours connected to stranger convicted suspects would apply here. It was also hypothesized that behaviours indicating forensic awareness, including dragging the victim to another location, hiding the body, burning the body to avoid detection, or killing the victim in a secluded location would also apply to strangers. Attempts to move or conceal the victim's body post-mortem; see Study 3 (Chapter 6, Table 6.4.1), however, were more commonly associated with known suspects having active relationships with victims than they were to stranger suspects.

Also, the behaviours associated with moving and concealing victims' bodies could not be significantly applied to the victim-as-object category in Study 4 (Chapter 7, Table 7.2.2). In fact, the act of removing the victim's body from the crime scene occurred at a zero frequency (n=0) in the victim-as-object category, finding that rather the removed variable appeared most often in victim-as-vehicle connected crime scenes (p<.05). Being that there was a nil result for the removed behaviour in the results from Study 3 (Chapter 6, Table 6.4.1) for estranged suspects, it can also be assumed that when the body removed variable occurred, estranged suspects who related to the victim's as objects were never implicated for these crimes. Also, victims that were rated into the object category were no more likely to have perpetrators who were forensically aware than were victims rated in the vehicle category, negating support for the study's hypothesis.

A further hypothesis for the current research, that sexually-motivated actions would also fall into the victim-as-object category (e.g. sexual abuse, penetrated with an object, clothing completely removed or partially removed, clothing scattered, trail of clothing), was not supported by the findings. There were no significant differences found between the relational role categories for these behaviours, except for penetrating the victim with an object (p<.05). All four victims who were penetrated with objects were connected to convicted suspects who were rated as relating to the victims-as-objects. In Study 2, this behaviour was found most frequently at crime scenes connected to stranger suspects, validating for this behaviour alone, the theory that strangers who related to their victims-as-objects were most often implicated for crimes that applied the sexually driven behaviour of penetrating the victim(s) with and object.

The research by Canter (1993; 2000), the philosopher first responsible for the victim-as-object narrative concept, explicated that offenders who related to their victims-as-objects would also

display behaviours that were more instrumental in nature, and that the focus of the killings could be on receiving monetary rewards (forced entry behaviours, binding, torture, use of a gun, and robbery or burglary behaviours). The current study supports the NAS theory for the object narrative alone. It was found that when there had been forced entry by broken glass, only suspects rated as relating to victims-as-objects were implicated for these crimes (p<.05), with nil results for the other two categories. Study 2 (Chapter 5, Table 5.3.2) found that close suspects were never implicated for crimes with the broken-glass feature, but that stranger and acquaintance suspects were equally as likely to be implicated. Hypothesis 6 in Study 4 assumed that the forced entry by broken glass behaviour would be more indicative of homicides connected to stranger suspects who related to victims-as-objects; instead this study revealed that both stranger and active suspects who were rated as relating to victims-as-objects were implicated for these crimes.

Further supporting Canter's (1993; 2000) theory that victim-as-object crimes would be instrumental in nature, suspects in the current study who were rated as relating to victims-as-objects were implicated more often for crimes with the IM Burglary feature (p<.05), or burglaries turned instrumental homicide. Almost meeting with statistical significance (p=.092) was the IM Robbery behaviour, showing support in the direction of the Canter theory for the victim-as-object narrative. Also, just shy of statistical significance (p=.066), the presence of multiple-offenders was most frequently associated with victim-as-object connected crimes, accounting for why burglaries and robberies were more common in these homicides. Results from the current study did not support the Canter (1993; 2000) victim-as-object theory for the other monetarily driven homicide scene behaviours (forced entry, robbed post-mortem, tortured, gagged, gun, arson to avoid detection, and binding), as no significant differences were found

between the narrative categories, indicating that there was less support garnered for the victim-as-object theory in the current study than was expected.

Fritzon & Ridgway (2001) made connections to the victim-as-object narrative with excessive violence or gratuitous behaviours, multiple wounding, torture, and beaten or bludgeoned to death behaviours. The current study found no support for this theory, as there were no significant, or even near significant differences in the presence or absence of these behaviours between the three relational role categories.

8.6.2 Victim-as-vehicle

It was posited by Canter & Youngs (2009b) that excessive violence, or over-kill, would instead be more common for violent offenders who related to their victims-as-vehicles; however, there were no significant differences found between the categories for the excessive violence variables, showing no support for either theory connecting these behaviours to vehicle or object narratives. It was hypothesized in the current study that excessively violent behaviours would be connected to the victim-as-vehicle narrative and also would be more indicative of an intimate relationship between the convicted suspect and victim resulting in a crime of passion homicide, yet the null hypothesis was accepted showing no support for either supposition.

The victim-abducted variable almost met with statistical significance for the crimes connected to convicted suspects rated as having related to victims as vehicles (p=.077). Seven of 9 crimes harbouring this feature were connected to suspects rated as having related to the victim as a vehicle. Results from Study 3 (Chapter 6, Section 6.2.1) found that the abducting behaviour was indicative of stranger and active homicides, but never estranged ones (p=.088). Active and estranged suspects who were rated as relating to victims-as-vehicles were most often implicated

for crimes with the abducted feature, indicating that the victim abducted behaviour could be aggression driven. Nil results in the victim-as-vehicle category for the penetrated with object and IM Robbery behaviours would also indicate that these features are not emotionally charged.

8.6.3 Victim-as-person

It was asserted by Fritzon & Ridgway (2001) and by Canter & Youngs (2009a; 2009b) that the victim-as-person narrative is the rarest of relational roles assigned to victims in violent crimes. This was supported by the current research (n=12, compared to n=26 for the object-role and n=29 for the vehicle-role). Another assertion by Canter & Youngs (2009a) that facially injuring the victim is a deeply personal act, and that attacking the face would indicate that the perpetrator related to their victims as a person. Facial disfigurement was purported to symbolize the offender's desire to attack the part of the body that could most definitively stamp out the personality of the victim. It was hypothesized by Fritzon & Ridgway (2001) and for the current research that attacking the face is rather an indication of internal aggression, so would fit better into the victim-as-vehicle narrative. The facial injury variable, however, was found to be evenly disbursed across the narratives, meaning the act of facial injury does not differentiate the role that the victim played for the convicted suspects in the current set of homicide crimes.

Almost meeting with statistical significance was the finding that 13 out of 13 victims-as-persons were believed by investigators to have been killed by a lone-suspect (as opposed to multiple-suspects), similar to the finding in Study 2 (Chapter 5, Table 5.2.2) that 13/13 close suspects were believed to be killed by lone-suspects. Thus, it can be asserted that when the suspect was close to the victim and/or they related to the victim as a person, they were implicated as acting

alone in these crimes. It is proposed that the stronger the personal connection to the victim, psychologically or by relationship, the greater the propensity for the perpetrator to act alone.

It was hypothesized in the current study that perpetrators in victim-as-person homicides would also be more likely to display behaviours that indicated some level of remorse post-homicide. For example, the victim being posed or covered post-mortem might occur more often in victim-as-person crimes. Also, more intimate forms of killing would be ever present for this category compared to the object or vehicle categories, such as strangling manually or by ligature, or even employing the use of a blunt object. Also, this category was theorized to be a functionality of perpetrators who were less likely to have successful personal relationships (Canter & Youngs, 2009a), concocting a personal connection with the victim that wasn't present in their normal lives. For the current research, it was hypothesized that acquaintances with maladaptive or obsessive sexual thoughts toward the victim may identify victims-as-persons. Therefore, sexually driven behaviours were theorized to be a feature of the victim-as-person narrative, and that these perpetrators would have a more tertiary, or acquaintance relationship to the victim, wanting to be ever closer to the victim through inappropriate and non-consensual forms of sexual contact.

Neither the Canter & Youngs (2009a), Fritzon & Ridgway (2001), nor the current theories about how the representation of crime scene variables would be impacted by the victim-as-person narrative were supported by the current study, finding no significant differences for any of the above stated behaviours between the groups. Results from the current study formed in the opposite direction, and although not found to be statistically significant, victims of homicide crimes connected to suspects rated as having related to victims-as-persons were not (n=0) penetrated with objects, restrained, gagged, tortured, sexually abused dumped in a body of water post-mortem, and their perpetrators did not force entry into the home by breaking glass or by

entering the home through and open door. In study 2, these behaviours were found more indicative of a stranger relationship, and may be more appropriately categorized in the victim-as-object narrative. Further research with a larger sample size could follow up on these conclusions, but it can be determined that the hypothesis about sexual abuse being a feature of the victim-as-person narrative was ultimately rejected.

It was determined by the C→A analyses across Studies 2, 3, and 4 that the psycho-social standing of relationships (relationship status) as opposed to actual relationships (interpersonal circumstance) or the relational role the victim played for the convicted suspect (psychological aspect) had a greater impact on the representation of homicide scene action variables. Study 4 (Chapter 7) did, however, show some support for the victim-as-object narrative, and results suggest that this narrative is likely connected to stranger and acquaintance suspects, rather than stranger suspects alone as originally hypothesized by Canter (1993;2000). The final study (Chapter 7, Study 5, section 7.3.0) in the current series statistically tested whether the current findings had applications to the practice of relational profiling by making attempts to correlate the relational roles to the presence of actual relationships between victims and convicted suspects.

8.7.0 Study 5 – Psychological Narrative Theory Applied to Relational Profiling

The final study for this project was commenced to test whether the part of the NAS relational theory specifying the roles assigned to victims in violent crimes (victim-as-object, victim-as-vehicle, and victim-as-person) could be correlated with actual relationships between victims and convicted suspects (Stranger, Acquaintance, and Close).

It was further hypothesized that if relational role identity were to correlate with relationships, then homicide investigators could be driven toward a new understanding of suspect prioritization by distinguishing pre-existing relationships between perpetrators and victims by the psychological clues left behind in the behaviours displayed at homicide crime scenes. Connecting narrative theory to relationships and behaviour would also, in essence, support the Canter & Youngs (2009b) theory that the narrative roles could also support investigative interviewing efforts in homicide crimes. It was hypothesized that the victim-as-object narrative would indicate a stranger relationship, the victim-as-vehicle narrative would indicate a close relationship, and the victim-as-person narrative would indicate an acquaintance relationship for the reasons described in the discussion of Study 4 above. It was found that the only the victim-as-object narrative (p<.001) differentiated previous relationships between convicted suspects and victims, yet not exactly in the direction hypothesized. It was found that both strangers and acquaintances were rated into the category of relating to victims-as-objects, and that close suspects were never rated into this category. The follow-up analysis on relationship status categories also found that strangers (58%) were rated most often into the victim-as-object narrative (p<.05) whereas about a quarter of active and estranged suspects were rated as such. The victim-as-vehicle and victim-as-person roles could not be differentiated by relationship status. The conclusion made in Study 5 (Chapter 7) was that relational profiling could not generally benefit from focusing on the psychological role the victim played for the convicted suspects in these crimes, rather that relationship status (stranger, active, and estranged) between victims and convicted suspects should be the ultimate focus of future relational profiling research.

8.8.0 Limitations of the current research project

One of the greatest strengths of the current research, that the primary data set compiled for these studies was created utilizing complete homicide case files, could also be viewed as a limitation because the access was limited to 69 cases. The size of the data set was sufficient to complete valid statistical analyses, and many significant differences were found despite the stringent non-parametric parameters placed on the project. Due to the smaller sample size, behavioural differences between relationship and relationship status categories that just missed the cut off for significance in the correlations (p<.05), and relational categories that held zero frequencies for crime scene behaviours suggests that future research with a larger, more balanced sample size (e.g. 50 cases in each relationship category) could help to validate the current findings and also determine whether these near significant results or zero frequencies remain consistent in relational profiling research with homicide samples from England and Wales or the greater UK.

It could be interpreted that the data utilized in the current study (from the 1990's) is dated, and may not be applicable to current homicides. Study 1 (Chapter 4) compared homicide characteristics to UK homicide data from the 1990's and 2000's (Canter, 2000; Canter, 2004; Salfati & Canter, 1999; Richards, 1999; Salfati, 2000; Salfati, 2003) finding many similarities that solidified it as a representative sample from the location and the time period from which it was drawn. Thus, results for the current study can be directly applied to suspect prioritization in unsolved homicide cases in England and Wales from the time period in which it was drawn. Statistics from the current study also mirrored more current UK homicide trends for weapon choice (Canter & Youngs, 2009a). Despite the time difference, the gun control laws in the UK have remained virtually the same, meaning that the methodologies utilized in the killings (e.g. by knife, ligature strangulation, manual strangulation, beating, bludgeoning, and gun) remain the

same and have not been impacted by a greater availability of guns to the general public, as they

have in the United States. It can also be argued that the reasons people kill, or their motivations

for killing have also remained unchanged. The content categories for motivations (MO) for the

killings in Study 1 were derived from research published in 2009 by two separate sets of authors

(Canter & Youngs, 2009; Porter et al., 2009) in two different countries (e.g. sexual, sadistic,

monetary, urge, revenge). The current methodology was flexible in terms of adding content

categories that organically emerged in the data, although no motivational categories for the

current research were added organically, as the homicide motivations charted in the current data

aligned with homicide motivations derived in later data. In short, people kill for the same reasons

as they always have, and will utilize the methodologies available to them as they always have,

making comparisons of new data with older data possible. It is worth mentioning that the

introduction of the internet, namely social media and networking sites, has changed the way in

which killers can acquire victims, and a grey area may now exist in determining relationship

categories and status where it previously had not. For example, imagine two people meet on an

internet dating site through posting respective profiles. They develop a relationship, spend hours

or even month's communicating back and forth through the dating application, revealing

intimate information but never meeting in person until the day of the killing. They may have

developed a relationship based on real, falsified or imagined characteristics they believed they

shared in common. Are these strangers, acquaintances, or intimate partners? A limitation to the

application of this dated data to the current relational climate is that the categorization of

relationships cannot be applied to unclassified relationships such as those developed over social

media, internet dating sites, or community websites. Future research would first need to classify

these intangible relationships in order to connect them to homicide scene actions, motivations,

and methodologies. The current set of studies, thus, will not apply to homicide investigations where offenders have acquired their victims from internet websites.

A limitation faced in all data sets containing information originally collected by policing authorities is that these data were originally collected to garner a conviction rather than for research purposes (Canter & Youngs, 2009a). Some information could be missing, overlooked, entered incorrectly, or entered differently by different precincts (Moffatt & Hersey, 2009). Thus, the research questions that emerged in this project were those that could be definitively answered by the data. For example, convicted suspect and victim relationship and relationship status prior to the homicide were recorded in the original-secondary data set for every case (police files), and throughout the course of the investigation the case-specific information from witness reports, suspect interviews, and police reports corroborated or clarified the entry so that the final, primary data set utilized for the current analyses remained accurate. The 62 crime scene behaviours, recorded for their presence or absence within each case, were subject to stringent cross-analysis of police reports, witness statements, crime scene photos, crime scene videos, suspect interviews, and autopsy reports. The data gathered about crime scene actions were checked three times for accuracy, scaling the entire police file three times before finalizing the data set for analysis. Traditionally in crime scene research, the absence of a crime scene action within any case could be viewed as arbitrary due to the possibility that it was not recorded by investigators, but could have been present (Canter & Heritage, 1990), especially in research utilising crime reporting databases (Quinet & Nunn, 2014). Because the data could be verified for the current research, the absence of a crime scene action variable was just as strong of an indicator as the presence of the same variable, strengthening the inferential power of the results.

A further limitation was noted for the current studies 2-5. Being that most of the female suspects were convicted for these homicides as accomplices rather than convicted as the physical killers, the homicide crime scene trends gathered for these studies are more representative of the male gender than they were the female gender. For Studies 2-5, only the suspect implicated as responsible for the physical killing(s) (n=1) in each case were factored into the behavioural analyses. This could be seen as a draw back to the current research as most of the female suspects were not factored into the final data set because their male accomplices were implicated for physically completing the homicidal assault. From her studies on women who kill, Mann (1992) explicated that white women (over-represented in the current data set of female suspects) more often than any other ethnicity, kill with accomplices. In this previous research, it was not distinguished whether female killers in their samples physically stabbed the victim for instance, or had incited an accomplice to do so. Also, the over-representation of the male gender in homicide crimes is a limitation that most of the published research on homicide faces, given that males are far more often convicted of these crimes compared to females (Miethe & Regoeczi, 2004). Very little is known about how crime scene actions differentiate perpetrators and victims by gender, and even less is understood about the effects that relationships and gender together have on the behavioural style of offending in homicide crimes, perhaps due to the issues highlighted above. Therefore, further research into understanding gender differences within the behavioural profiles of UK homicides relative to relationships is further warranted; with a distinction charted as to the level of physical impact each of the convicted suspects had upon the scene.

Another limitation of the current research could possibly rest in the classification (by two researchers) of the qualitative variables: victim-as-object, victim-as-vehicle, and victim-as-

person. Despite a 100% concordance rate between researchers (see Appendix B) with expertise

in the field of Investigative Psychology and in depth understanding of the psychological model,

because the psychological understanding of these variables was merely theoretical, it could

account for why many of the expected differences did not occur. It is proposed that the

theoretical understanding of the victim-role differentiation and how that effects the crime scene

actions of perpetrators needs revisiting. It would also be useful to create a psychological measure

to test homicide offenders such that their statements about the victim role can be correlated back

to their behaviours at their crime scenes. Although, offender statements may not be entirely

reliable "Astonishingly, more than 1 out of 4 people wrongfully convicted but later exonerated

by DNA evidence made a false confession or incriminating statement" (The Innocence Project,

2017, p.1).

As explained during the discussion in Chapter 1, the homicide cases utilized for the current set of

studies were dated before DNA technology was tested and developed for accuracy, determined

valid and admissible in court, and thus widely utilized by policing authorities to demonstrably

connect suspects to victims of homicide (Calandro & Cormier, 2015). DNA technology has been

used to exonerate many convicted suspects, implicated for violent crimes based on the direction

of the evidence in their cases; such that some spent many years in prison for a crime they did not

commit (The Innocence Project, 2017). While 94% of the suspects in the current set of 87 had

confessed to the homicides they were implicated for during the course of the investigation, 59%

of these suspects had initially denied any involvement in the crime. This is why the current

research refrained from using the "offender" terminology and instead used the term convicted

suspects, as maintaining the confidentiality of the data (removal of victim and suspect names)

remitted the research from following up on the current conviction-status of these suspects. This

is not to suggest that the behaviours associated with each of the homicide crimes were not validly connected to the suspects implicated for these crimes, but just like in any homicide investigation, there is always a chance that the investigation could have led the courts toward a mistaken conviction. As such, it is not entirely known whether "offenders" of homicide are the actual perpetrators or whether they were labelled that way due to a mistaken conviction, most certainly a limitation faced by all researchers of homicide crimes.

When creating behavioural profiles for homicide crimes, the goal is generally to aid in the process "offender profiling". During homicide investigations, investigative authorities are attempting to detect possible suspects and not assumed offenders, so using the suspect terminology when describing the practical applications of this research will help to avoid confusion in the area of profiling homicide behaviours (Roach, 2017). Because profiling criminal behaviour assumes that the crime is yet unsolved, the term "offender profiling" is misleading, because investigators are actually attempting to detect possible suspects, not assuming that these suspects are already offenders. Therefore, it is argued that future research in the area of the currently termed 'offender profiling" should alternatively be called "suspect profiling". Additionally, when researchers continue efforts that enhance the understanding of how relationships effect the representation of crime scene behaviours, the term "Relational Profiling", coined in the current dissertation, should be used to describe future work in this area.

8.9.0 Preventing cold homicide cases – limitations and future research

The pre-existing homicide relationships under investigation in this study were, for the most part, what Moffattt & Hersey (2009) consider "typical homicides" (p.40). Typical homicides include non-stranger homicides that occur in the midst of another crime, including drug crimes. They

also include offenders and victims who may already be known to the police, with violent or other criminal convictions. Atypical homicides consist of "serial killers, psychotic killers, and perpetrators who do not fit [the description for typical homicides]" (p.40). Moffattt & Hersey (2009) assert that US police officers, due to lack of resources, often take short cuts when recording information for typical homicides, in-turn, effecting future efforts when the case turns cold. Further disturbing, as Moffattt & Hersey (2009) proclaim, most officers are trained only to handle typical homicides, therefore when an atypical homicide occurs; officers have difficulty handling the investigation, leading to recording errors that adversely affect investigations into cold-cases. Moffattt & Hersey (2009) assert that cases go cold for the following reasons; the victim cannot be identified, lack of resources or motivation needed to properly investigate, insufficient evidence, investigative error, and/or poor investigatory practice.

This author posits that typical homicides are generally straightforward; there are few possible suspects and the suspect is generally identified in a timely manner. Conversely, atypical homicide investigations (where an offender is not detected immediately) need further information from witnesses and forensic processes to solve the crime. Understanding the differences in the behavioural profiles between typical and atypical homicides would help investigative authorities to make empirically informed decisions when recording their data; this could, in turn, be the difference between a strong case and a cold-case. Often, by the time investigators realize the homicide is atypical; witnesses that could have been pivotal to the investigation may have disappeared. Moffatt & Hersey (2009) further explain that in order to properly profile a cold-case, an investigator needs "at least cursory skills in several areas of investigation- blood spatter patterns, basic detective work, anatomy, ballistics, psychology, sociology, and even culture- because these are the tools that help us piece the chain of events

together" (p.42). If one piece is missing, then the case could easily remain unsolved. These researchers also explain that "reading the police reports, interview transcripts and such helps me not only profile the perpetrator, but also gets an accurate picture of the victim" (p.43). Thorough recording of information about the victim (such as lifestyle or whereabouts before the crime etc.) is extremely important to the cold-case profiler, because years later this information next-to-impossible to acquire. Crime scene photos, autopsy reports and photos, ballistic and trajectory reports, and DNA and crime history reports are also essential to suspect-profiling in a cold-case homicide (Moffatt & Hersey, 2009). The current research utilized, and future research would benefit from utilizing, a comprehensive data set of complete police files, as Moffatt & Hersey (2009) assert, it is important to take into account all of the available data on the case in order to build a profile of the suspect that could potentially lead to detection.

The future of research in the field of suspect-profiling relies on the analysis of complete data sets including all of the investigatory information available for the cases, on both typical and a-typical homicides, such that valid inferences can be made when cases turn cold. The field of suspect-profiling will not benefit from utilizing crime-reporting databases as these reports cannot be verified. Combined with the experience that seasoned homicide detectives bring to their cases, systematised data collection and behavioural analyses of crimes are the next steps toward increasing the ability of the field to aid investigators in solving cold-cases. The current set of seminal, Relational Profiling studies provided a methodological building block for future research that may forward the process of suspect-prioritization in homicide crime scenes by analysing a complete data set of (mainly) typical homicides. The current results made strong case that the next focus of suspect-profiling and prioritization should be on identifying how

relationship status between victims and convicted suspects in solved homicides can help to connect behavioural profiles directly to the most likely perpetrator in unsolved homicides.

8.10 Suspect Prioritization in Future Research – Why it Matters

Future research would benefit from a uniform and research-oriented recording process at the policing level, such that information for typical and a-typical homicides is recorded and can be measured. In order to build applicable suspect profiles, a uniform data collection process is necessary, so that empirical research could be performed that would, over time, directly aid investigators in solving cold-case homicides. Unfortunately, streamlining this process is very time consuming and expensive, yet steps have been made to employ researchers to systematise the data-collection processes within agencies, but to this date data, data-collection is not consistent across agencies.

Researchers (given their ability to pass background checks and sign non-disclosure agreements) apply for grants to continue profiling work on a larger scale when access is granted by policing authorities, yet the sheer volume of information available to policing agencies far exceeds what researchers could gather for a single-research study. Nevertheless, it is important that researchers and policing authorities continue to work together to inform one another about criminal activity, facilitating a canonical crime-fighting relationship between empirical research and investigative inferences. As explained in Chapter 1 related to homicide crimes, suspect prioritization is the practice of how investigatory time and resources are allocated to crimes based on their severity. What is currently known about victim and suspect relationships largely relies on the analyses of data garnered from large crime reporting databases, shown to be muddled with inaccuracies (e.g. Fatley, 2016) and thus cannot be utilized for the purposes of suspect-prioritization. The current

research identified a process by which individual policing agencies may garner information that can be directly applied to their own homicide populations in regards to suspect prioritization of current and cold-case homicides by utilizing their own data of complete police files.

The inferences made in studies 2 and 3 of the current research were derived from a strong data set that did not have the limitations on accuracy that larger databases do (See section 8.8.0), and such the results gathered can be utilized for future research aimed at informing the process of suspect prioritization by relationship and relationship status for homicide investigators. Specifically, by distinguishing the behavioural differences that occur within the known category (acquaintance, close, active, estranged) as the current set of studies have accomplished, it was seen that the representation of crime scene behaviours varied greatly by the status of the relationship that convicted suspects had with victims prior to the homicide, even more so than did the actual relationship. Relational profiling as a practice should be applied to future research to test the current study's findings and continue to establish empirical evidence that will be pragmatic to investigatory practice. Furthermore, the current statistical methodology (the utilization of Fisher's Exact testing) allowed for correlations of 62 homicide scene behaviours to several independent relationship variables, but also allowed for correlations to occur between independent variables for all homicide scene behaviours entered dichotomously (present, not). Previous research studying victim-offender relationships and homicide scene behaviours have been largely limited in the number of variables they were able to correlate because of the statistical methodologies (e.g. regression analyses and qualitative comparative analyses) implemented (e.g. Fritzon & Ridgway, 2001 **(n=27);** Miethe & Regoeczi, 2004 **(n=10);** Last & Fritzon, 2005 **(n=6)).** These types of analyses also require larger sample sizes (200+) to garner the statistical power necessary to make inferences about offenders by their behaviour. It is now

possible, utilizing the current methodology, to extract a random sample of 60-100 homicide police files from a specific geographical location, and draw conclusions about any number of homicide scene behaviours and offender antecedents with Fisher Exact Testing. The impact of this would reduce research costs and enhance detection in local cold-case re-investigations.

Predicting the relationship (or lack thereof) that victims had with their killers, based on the perpetrators' behavioural style of offending, stretches beyond intellectual curiosity when it can be applied to solving real world cold-cases. The hope is that the direction of future research also mirrors the current methodology, utilized to detect relational differences within a small homicide sample studying homicides England and Wales by applying it to other homicide samples in various geographical locations. Future research can test the reliability of the results for the current set of studies across cultures, but also may identify reliable cultural differences in how people of differing relationship statuses behave in the face of committing the most heinous of assaultive acts. The impact of such an expedition into the reliability of the current results with other, larger samples, extends beyond the possibility of saving investigatory agencies time and resources, in essence it can also lend direction to ambiguity in unsolved homicides, helping to satiate the needs of suffering families who demand justice for their loved ones. A new arena of research identifies the psychological hardship placed upon homicide investigators, particularly when their cases remain unsolved after extensive efforts (Roach et al., 2016). Reducing this psychological impact by helping investigators to more quickly and or efficiently solve homicide crimes, essentially, will lead to lower rates of turn over and higher job satisfaction for these honourable public servants. Appendix E provides a list of recommendations for homicide investigators in England and Wales that may be applied to suspect prioritization by relationship type and relationship status, derived from the current research.

Appendix A: References

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Appendix B – Inter-Rater Reliability Testing

Three of the homicide scene action variables utilized in studies 1-5 were subject to the researcher's judgment, or scale variables. The level of forensic awareness (0-absent, 1-low, 2-moderate, 3-extreme measures) the perpetrator was rated to have had during the crime (developed from Canter & Youngs, 2009a), the level of gratuitous violence the perpetrator was rated to have shown (0-no evidence, 1-minor, 2-moderate, 3-major), and the level of the victim's struggle (0-no evidence, 1-minor, 2-moderate, 3-major). Chapter 4, section 4.9.1 explicates how rating system for the latter two variables was developed from the Porter et.al (2009) research. Entire case files were analysed and these three variables were rated based on how the rater perceived these levels appeared within the homicide crime scenes.

For Studies 4 and 5, entire case files were analysed and suspects were placed into three qualitative categories based on how the rater perceived that each suspect related to the victim of the homicide.

1. Victim-as-object – No emotional connection to the victim, victim was an object to be played with or to be extinguished in order to reach a different goal (e.g. covering up a burglary).

2. Victim-as-vehicle – Aggressive and violent tendencies of the suspect and violence toward the victim was judged as being a vehicle for the expression of aggressive propensity.

3. Victim-as-person – Genuine expression of love or adoration toward the victim, or signs of remorse for actions upon the victim.

A consensus estimate of 12.5% (n=8 cases) of the final data set of suspects (n=64) selected randomly were completed by two independent raters with expertise in Investigative Psychology and in depth understanding of the NAS psychological model (Canter & Youngs, 2009a; 2009b) as it pertained to the three relational categories. Typically, in order for the rating of qualitative variables to be determined consistent to a model, a minimum of 60% consensus between raters should be reached (Stemler, Tsai, & Osbourne, 2008). Recommendations for an even more stringent audit of clinical variables placed the minimum acceptable concordance between raters at 80% (Dixon, 2008).

Cohen's κ was run to determine if there was agreement between two raters' judgements on the level of forensic awareness in 8 cases for Cohen's Kappa inter-rater reliability testing, a Kappa value of .61-.8 is considered a moderate rating of agreement (Landis, 1977). For the current Kappa analysis, there was a moderate agreement between the two raters' judgements, κ = .652 (95% CI, .533 to .1310), p < .001.

Table A: Kappa Results for Forensic Awareness Inter-Rater Reliability Test

Symmetric Measures				
	Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Measure of Agreement Kappa	.652	.184	3.344	.001
N of Valid Cases	8			

Table B: Regression Results for Forensic Awareness Confidence Interval of Z scores

Coefficients[a]								
		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
Model		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1	(Constant)	-5.114E-17	.148		.000	1.000	-.363	.363
	Zscore: Forensic Awareness	.921	.159	.921	5.804	.001	.533	1.310

a. Dependent Variable: Zscore: Forensic Awareness

It was determined by parameters of the research that the 75% agreement between researchers was not high enough to move forward with correlating this variable, thus the it was decided to dichotomize the rating to 0- forensic awareness present and 2- forensic awareness present and re-run the Cohen's Kappa inter-rater reliability test.

Cohen's κ was run to determine if there was agreement between two raters' judgement whether there were signs of forensic awareness on the part of the perpetrator in 8 cases for Cohen's Kappa inter-rater reliability testing, a Kappa value above .8 is considered an outstanding rating of agreement (Landis, 1977). For the current Kappa analysis, there was an outstanding agreement between the two raters' judgements, κ = 1 (95% CI, 1 to 1), p < .005.

Table C: Kappa Results for Forensic Awareness Inter-Rater Reliability Test

Symmetric Measures				
	Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Measure of Agreement Kappa	1.000	.000	2.828	.005
N of Valid Cases	8			

a. Not assuming the null hypothesis.

Table D: Regression Results for Forensic Awareness Confidence Interval of Z scores

		Coefficients[a]						
		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
Model		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1	(Constant)	.000	.000		.	.	.000	.000
	Zscore: Forensic Awareness	1.000	.000	1.000	.	.	1.000	1.000

a. Dependent Variable: Zscore: Forensic Awareness

Cohen's κ was run to determine if there was agreement between two raters' judgement the level of gratuitous violence presented on the part of the perpetrator in 8 cases for Cohen's Kappa inter-rater reliability testing, a Kappa value above .8 is considered an outstanding rating of agreement (Landis, 1977). For the current Kappa analysis, there was an outstanding agreement between the two raters' judgements, κ = 1 (95% CI, 1 to 1), p < .001.

Table E: Kappa Results for Gratuitous Violence Inter-Rater Reliability Test

Symmetric Measures		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Measure of Agreement	Kappa	1.000	.000	3.699	.000
N of Valid Cases		8			

a. Not assuming the null hypothesis.

Table F: Regression Results for Gratuitous Violence Confidence Interval of Z scores

		Coefficients[a]						
		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
Model		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1	(Constant)	.000	.000		.	.	.000	.000
	Zscore: Gratutous Violence Score	1.000	.000	1.000	.	.	1.000	1.000

a. Dependent Variable: Zscore: Gratuitous Violence Score

Cohen's κ was run to determine if there was agreement between two raters' judgement for the level of victim struggle evidences at the crime scenes in 8 cases for Cohen's Kappa inter-rater reliability testing, a Kappa value above .8 is considered an outstanding rating of agreement (Landis, 1977). For the current Kappa analysis, there was an outstanding agreement between the two raters' judgements, κ = 1 (95% CI, 1 to 1), p < .001.

Table G: Kappa Results for Victim Struggle Inter-Rater Reliability Test

Symmetric Measures				
	Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Measure of Agreement Kappa	1.000	.000	3.699	.000
N of Valid Cases	8			

a. Not assuming the null hypothesis.

Table H: Regression Results for Victim Struggle Confidence Interval of Z scores

Coefficients[a]							
	Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
Model	B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1 (Constant)	.000	.000		.	.	.000	.000
Zscore: Victim Struggle	1.000	.000	1.000	.	.	1.000	1.000

a. Dependent Variable: Zscore: Victim Struggle

Cohen's κ was run to determine if there was agreement between two raters' judgement on whether 8 convicted suspects related to the victims of the same homicide as an object, vehicle, or person. For Cohen's Kappa inter-rater reliability testing, a Kappa value above .80 is considered an outstanding rating of agreement (Landis, 1977). For the current Kappa analysis, there was an outstanding agreement between the two raters' judgements, κ = 1 (95% CI, 1 to 1), p < .001.

Table I: Kappa Results for Relational Role (O/V/P) Inter-Rater Reliability Test

Symmetric Measures				
	Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Measure of Agreement Kappa	1.000	.000	3.960	.000
N of Valid Cases	8			

a. Not assuming the null hypothesis.

Table J: Regression Results for Relational Role (V/O/P) Confidence Interval of Z scores

Coefficients[a]							
	Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
Model	B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1 (Constant)	.000	.000		.	.	.000	.000
Zscore: Relational Role	1.000	.000	1.000	.	.	1.000	1.000

a. Dependent Variable: Zscore: Relational Role

Appendix C: Ethics

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School Research Ethics Panel (SREP) Submission

Applicant Name: Meredith Gafford (PhD Candidate)
School of Human and Health Sciences
University of Huddersfield

Original Research Title: "A multi-dimensional approach to UK homicide situations:
Implications for offender profiling and investigative interviewing"

Revised Research Title: "An Investigative Psychological Approach to Identifying Victim-
Suspect Relationships in Solved Homicide Cases for Application
to Unsolved Crimes"

Reference: SREP/2011 & SREP2011_Rev1_280817

I confirm that the above titled research project received ethical approval from the School
of Human and Health Sciences Research Ethics Panel (SREP), University of Huddersfield
on 19 December 2011, with a further revision approved on 4 September 2017.

I also confirm that indemnity for this project is covered by the insurance policy held by the
University of Huddersfield, as it falls within the normal range of research activity.

W. P. Gillibrand

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Appendix D: Content Dictionary

Table K: Convicted Suspect Characteristics Content Dictionary

Case Information	Score	Given Score
	Respondent	Case Number
	Type	Suspect-Victim (s-s; s-m; m-s; m-m) (single or multiple)
	Year	Year of Offense
	Date	Day, Month, Year
	Time	Approx. Time of day (early morning, morning, afternoon, early evening, late evening)
	Day	M,T,W,Th,F,S,Sn
	Narrative	Particulars of offense and offender communication
	Suspect Rel	Multiple only: Relationship to Suspects in group
	VictimRel	Multiple only: Relationship to V
	StatusRel	Multiple only: Relationship status to V (active/estranged)
	Role	Multiple Only: what was the O's role in the murder
Offender at time of arrest	Sex	Sex of Suspect(s)
	Location	Location of Offense
	HomeDist	Approximate distance from home to final resting place
	Age	Suspect's Age at time of Offense
	Single	Suspect was single
	Gfbf	Suspect was in a relationship
	Married	Suspect was married
	Divorced	Suspect was divorced
	Recentbreak	Suspect s suffers from a recent relationship breakup
	Witnesses	With whom was the Suspect traveling with
	Ethnicity	Suspect Ethnicity
	Nationality	Suspect Origin of Birth
	SES	Suspect Socio-economic Status
	Occupation	Suspect Occupation
	Education	Suspect level of education
	IQ	Suspect general mental capabilities
	City	Suspect lived in City
	Town	Suspect lived in town
	Country	Suspect Lived in Country
	LivedAlone	Suspect Lived Alone
	LivedMate	Suspect Lived with flatmate
	LivedFamily	Suspect lived with parent or other family members
	LivedPartner	Suspect lived with spouse or significant other
	NoAbode	Suspect had no fixed abode
	Alias	Does the Suspect use another name?
	Gang	Is the Suspect in a Gang?

Convicted Suspect Personal History	Convictions	Suspect's total number of previous convictions
	Age1con	Suspect's age at first conviction
	Robbery	Suspect's history of Robbery Offenses
	Burglary	Suspect's history of Burglary Offenses
	Theft	Suspect's history of Theft Offenses
	Arson	Suspect's history of Arson Offenses
	Drugs	Suspect's history of Drugs offenses
	Fraud	Suspect's history of Fraud offense
	AnimalCruelty	Suspect's history of Animal Cruelty
	Damage	Suspect's history of Criminal Damage
	CSA	Suspect's history of child sexual abuse offenses
	Rape	Suspect's history of rape offenses
	Sexother	Suspect's has a history of sex offenses
	Violent	Suspect's history of violent offenses other
	Manslaughter	Suspect's history of manslaughter offenses
	AttemptMurder	Suspect's history of murder offenses
	DV	Suspect's history of being the aggressor in Domestic Violence
	AbusePhys	Suspect's Physical Abuse history
	AbuseSex	Suspect's Sexual Abuse history
	AbuseEmo	Suspect's Emotional only Abuse history
	Goodparent	Suspect has good relationship with parents
	Estrparent	Suspect has estranged relationship with parents
	Deadparent	One or both of Suspect 's parents deceased
	Addiction	History of Addiction - Drugs, Alcohol, Gaming, Sex
	Rehab	History of Addiction Rehabilitation
	Hospital	History of Hospitalization for mental health
	Incarceration	History of Incarceration
	Hxmental	History of mental illness
	HxPersonality	History of Personality Disorder
	TraumaticBI	History of Traumatic Brain Injury perhaps resulting in behavioural issues
	HxMilitary	Suspect history of military training
Convicted Suspect Psychological Motivation	SadisticV	Did the convicted suspect derive pleasure and enjoyment during? **(Porter et al., 2009)**
	SexualC	Was there a sexual component to this crime? **(Porter et al., 2009)**
	Premeditated	Premeditated Crime
	Opportunistic	Opportunistic Crime
	Expressive	Expressive Mode
	Instrumental	Instrumental Mode
	InstReactive	Instrumental Reactive Mode
	Selfdefence	Offender was being attacked by Victim

	Monetary	Monetary Motive- Instrumental
	Debt	Motive was to absolve debt – Instrumental
	Givenorder	Given Order Motive-Instrumental
	Starcrossed	Rid obstruction to desired relationship- Instrumental
	Rapequiet	Non-Consensual Sex Motive- Instrumental Reactive
	Loverconflict	Conflict over lover Motive-Instrumental Reactive
	Coverup	Cover Up Crime Motive-Instrumental Reactive
	RestoreJustice	Personal Mission to Restore Order Motive- Expressive
	Fame	Fame/Notoriety Motive-Expressive
	Urge	Satisfying/replaying urge/fantasy Motive- Expressive
	Fight	Murder happened as a result of a physical altercation- Expressive Reactive
	Revenge	Revenge/Retribution- Expressive Reactive
	Shizo	Hallucinations/Delusions provided Motive- Expressive
Criminal Responsibility	Intent	Murderous Intent – Mens Rea
	Leader	Suspect took the lead on this crime
	Incite	Suspect incited others to aid in commission of crime
	Conspire	Suspect was a conspirator in aide of leader
	OnDrugs	Suspect used drugs before/during the crime
	ETOH	Suspect used alcohol before/during the crime
	Remorse	Suspect expressed remorse for actions
	PolNotif	Suspect attempted to notify police afterward (remorse)
Suspect location and mode of transport to/from crime scene	Marauder	Marauder- lives within 5 miles of crime scene
	Commuter	Commuter- lives over 5 miles from crime scene
	HomeDist	Approximate Home Distance from Dumping Site
	Walked	Suspect travelled by foot to scene
	Car	Suspect travelled in car to scene
	PubTrans	Suspect travelled on train/bus to scene
	Bike	Suspect travelled on bike to scene
	Ridewith	Suspect travelled in someone's car to scene
Suspects' relation to victim(s) (Canter & Heritage, 2000)	Object	Suspect relates to victim-as-object
	Vehicle	Suspect relates to victim-as-vehicle
	Person	Suspect relates to victim-as-person

Table L: Victim Characteristics Content Dictionary

Case Information	Score	Given Score
	Respondent	Old Label
	Type	Suspect-Victim
	Year	Year of Offense
Victim at time of offense	VGender	Sex of Victim
	Vage	Victim age at time of death
	VSES	Victim socio-economic status
	VIQ	Victim IQ
	Vethn	Victim Ethnicity
	Vnation	Victim Origin of Birth
	Vhair	Victim hair colour at time of death
	Vcity	Victim lives in city
	Vtown	Victim lives in town
	Vcountry	Victim lives in country
	VlivesA	Victim lives Alone
	VlivesF	Victim lives with Flatmate
	VlivesS	Victim lives with spouse or lover
	VlivesP	Victim lives with Parents or family
	VNoAbode	Victim has no fixed abode or is homeless
	Vgang	Is the Victim in a Gang?
	Vintox	Victim on Drugs at the time of death
	VETOH	Victim using Alcohol at the time of death
Victim's Personal History	Vconvict	Victim total number of previous convictions
	Vage1con	Victim age at first conviction
	Vrobbery	Victim history of Robbery offenses
	Vburglary	Victim history of Burglary offenses
	Vtheft	Victim history of Theft offenses
	Varson	Victim history of Arson offenses
	Vdrugs	Victim history of Drugs offenses
	VCSA	Victim history of child sexual abuse offenses
	Vrape	Victim history of rape offenses
	Vviolent	Victim history of violent offenses other
	Vmanslaughter	Victim history of manslaughter offenses
	Vmurder	Victim history of murder offenses
	Vrapehx	Victim Raped History
	Vcsahx	Victim Child Sexual Abuse History
	Vabusehx	Victim Physical Abuse history
	VhxV	Victim History of Victimization
Victim's	Vstranger	Stranger

relationship to convicted suspects (s)	Vaquaint	Acquaintance
	Vbusiness	Business associate
	Vfriend	Friend
	Vfamily	Family member
	Vlover	Lover
	Vexlover	Estranged Lover
	Vactive	Victims Relationship Status With Suspect Active
	Vestranged	Victims Relationship States with Suspect Estranged

Table M: Crime Scene Behaviours Content Dictionary

Case Information	Score	Given Score
	Respondent	Old Label
	Type	Offender-Victim
	Year	Year of Offense
	Sex	Sex of Offender(s)
Evidence Based	Timeframe	If abducted - start to death in hours
	GratuitousV	Gratuitous Violence Score **(Porter et al., 2009)**
	Struggle	Evidence of Victim's struggle
Weapon Choice	Gun	Murder Weapon Gun
	Knife	Murder Weapon Knife
	BluntObj	Murder Weapon Blunt Object
Crime Behaviours (Canter & Youngs, 2009a)	Wepleft	Murder Weapon Left at Scene
	Weprem	Murder Weapon Removed from Scene
	Wepinside	Weapon left inside victim
	WepImprov	Weapon Improvised
	VStab	Victim Stabbed
	Vmultiwound	Victim had multiple wounds
	VCutThroat	Victim throat cut
	VShot	Victim Shot
	VLStrangle	Victim Strangled with Ligature
	VMStrangle	Victim Manually Strangled
	VBitten	Victim Bitten
	VScratched	Victim Scratched
	VBurned	Victim Burned
	VFire	Victim Set on Fire
	VRunover	Victim Run over
	VBuried	Victim Buried
	VBrdAlive	Victim Buried Alive
	VAsph	Victim Asphyxiated
	VBeaten	Victim Beaten

	VBludg	Victim Bludgeoned
	Vmutilated	Victim Mutilated
	VTortur	Victim Tortured
	VAbduct	Victim Abducted
	VSex	Victim Sexually Abused
	VAnul	Victim Anal Abuse
	VPenObj	Victim Penetrated with Object
	VNecro	Victim Sexually Assaulted after death
	Vdeadabuse	Victims body was abused after death
	VGenital	Victim's genitalia were mutilated
	Vrestrained	Victim put in restraints
	Vgagged	Victim Gagged
	Vfacedisf	Victim was facially disfigured
	VBowel	Victim Disembowelled
	Vlimbs	Attempt or successful removing of limbs
	Vhead	Attempt or successful removing of head
	PartsTake	Parts of victim were taken
	Token	Something of Victim's taken into possession by perp.
Victim Disposal Location	Water	Body found in body of water
	Street	Body found in the street
	Woodland	Body found in a woodland or secluded area
	Establishment	Body found in or on the grounds of an establishment-Business, Park, School
	Home	Body found in a home
	Gardenshed	Body found in garden or shed
	Cellar	Body found in cellar
Victim Disposal Method (Canter & Youngs, 2009a)	VNaked	Victim left Naked
	VClothes	Victim Fully Clothed
	VPartCl	Victim Partially Clothed
	VPosed	Victim left in Pose
	VHidden	Victim Hidden out of Site
	VCovered	Victim Covered with something
	VOpen	No attempt to hide victim
	VDragged	Victim dragged from one spot to another
	Vremoved	Victim removed from crime scene
	Vdumped	Victim dumped in alternate location from crime scene
After Murder	Forensic	Level of forensic awareness
	VArson	Victim's house or car burned to avoid detection
	Vrobbed	Items taken from victims after death
	Confess	Confess at first police interview
	Lie	Lie at first police interview
	No Contest	Did not confirm or deny involvement

During Murder	IMBurglary	Murder happened during burglary
	IMRobbery	Murder happened during robbery
	IMTheft	Murder happened during theft
	IMArson	Murder happened as result of Arson
	IMRape	Murder happened during rape
	IMCrime	Murder happened alongside commission any crime
Before Murder	Brknglass	Home was entered through breaking glass
	Homeopen	Home was entered with no force
	Forcedentry	Perpetrator used force to gain entry
	Oinvited	Suspect was previously invited in to home for other reasons
	ConsentS	Suspect had consensual sex with V before murder
	Ransacked	Crime scene was found to be ransacked
	Scattered	Clothing or things scattered at the scene
	Trailclothing	Trail of clothing left at the scene
Obstructive Measures Taken After Murder	Note	Perpetrator left note for police/sent to police after
	FakeSuicide	Perpetrator attempted to cover murder up as suicide
	Frame	Perpetrator attempt to frame someone else for murder
	PolNotif	One or more offender attempt to notify police afterward
	Suicide	Perpetrator committed suicide during offense
	FalseAppeal	Perpetrator attempted to aide in investigation by appeal or other
Investigative Interview	Confess	Suspect immediately confessed to murder
	Lie	Suspect initially lied about involvement
	No Contest	Suspect exercised right to remain silent

Appendix E: Recommendations

Table N: Significant findings from the current set of studies that may be applied to current and cold-case homicide re-investigations in England and Wales.

Study	Significant Findings	Implications for Homicide Investigators in England and Wales
2	The presence of a knife at homicide scenes (as opposed to a gun, blunt object, or signs of manual or ligature strangulation) was more indicative of a stranger relationship (61.3%) than that of acquaintances (28%) or close (38.5%) relationships (p<.05).	When the presence of a knife was found at the homicide crime scene, the order of suspect prioritization should begin with stranger suspects, followed by close suspects (friends, family, past or current intimate partners), and followed by acquaintances to the victim.
2	Strangers (68%) were over twice as likely as close suspects (31%) and 1.6 times more likely than acquaintance suspects (40%) to be implicated for homicides where perpetrators removed the weapon from the crime scene (p<.05).	When the murder weapon was removed from the homicide crime scene, the order of suspect prioritization should begin with stranger suspects, followed by close relationships, followed by acquaintances to the victim.
2	Weapon in victim, victim penetrated with object, sexual abuse of the victim and trail of clothing met with zero frequencies in the current sample for crimes connected to convicted suspects with close relationships to victims.	When the murder weapon was found inside the victim, the victim was penetrated with an object, was sexually abused or clothing is scattered at the homicide scene, suspect prioritization should not include close relationships to the victim.
2	100% of the 13 victims in the current data set having close relationships to convicted suspects were believed to be killed by a single (lone) offender	When a homicide crime shows signs that multiple killers were involved, close relationships to the victim are the least viable avenue for allocation of time and resources toward suspect prioritization.
2	IM Robbery, IM Theft, and IM Rape met with a nil result for homicides that convicted close relationships; strangers or acquaintances were implicated for all homicides showing signs of an initial robbery, theft or rape had occurred at the crime scene prior to the homicide.	When a robbery, theft, or rape was believed to precede the killing (or was believed to have been the primary motive for the killing), close relationships to the victim are the least viable avenue for allocation of time and resources toward suspect prioritization.
2	Of the 6 Instrumental (IM) theft	When the victim was known to have

	homicides (the victim was killed to obtain money or objects from a person or property), 71% were linked to acquaintances, 29% to strangers and 0% to close relations.	recently acquired money (e.g. pensions, trusts, death benefits, social security benefits) and that money was removed from their person or property during the crime, acquaintance suspects should take priority in the investigation, followed by strangers to the victim.
2	Of the 6 IM Robbery crimes (the victim was held hostage by knife or gun point to obtain money or property, killing the victim to avoid detection), these were most often linked to stranger suspects (83%), followed by acquaintances (17%), but not to close relations (0%).	When a robbery was believed to have preceded the murder, the order of suspect prioritization should begin with stranger suspects, followed by acquaintances to the victim.
	Of the 6 IM Rape crimes (the victim was raped and then killed to avoid detection), these were most often linked to stranger suspects (67%) followed by acquaintances (33%), but not close relations (0%).	When a rape was believed to have preceded the murder, the order of suspect prioritization should begin with stranger suspects, followed by acquaintances to the victim.
2	Suspects with close relationships (39%) were invited into the victim's home prior to the homicide six times more often than were strangers (7%), and acquaintances (20%) were nearly half as likely to be invited into the home compared close relationships (p<.05).	When no signs of forced entry were present at the homicide crime scene, the order of suspect prioritization should begin with close relationships, followed by acquaintances, followed by strangers to the victim.
3	None of the estranged-linked murder weapons had been a ligature, yet 28% of homicides implicating active suspects and 13% of homicides implicating stranger suspects were present for this feature (p<.05).	When a ligature was found to be the method of killing, estranged suspects are the least viable avenue for allocation of time and resources toward suspect prioritization. The order of suspect prioritization should begin with suspects having active relationships to the victim, followed by strangers to the victim.
3	When the weapon was left at the crime scene, results significantly revealed that estranged suspects were over twice as likely (56%) as stranger suspects (19%) or active suspects (20%) to be implicated for these homicides (p<.05).	When the murder weapon was found at the crime scene, the order of suspect prioritization should begin with known suspects harbouring an estranged relationship to the victim, followed by active relationships, followed by strangers to the victim.
3	The facial injury homicide action was	When the presence of facial injury was

	absent in crimes connected to estranged suspects, was present in 13% of homicides connected to stranger suspects, and was present in 28% of homicides connected to active suspects (p<.05).	found, the order of suspect prioritization should begin with suspects with active relationships to the victim followed by strangers to the victim. Estranged relationships are the least viable avenue for allocation of time and resources toward suspect prioritization.
3	Fewer than 7% of crimes implicating estranged and stranger suspects revealed that the victim's body was hidden post-mortem, yet 33% of crimes implicating active suspects were marked with the presence of this action (p<.05).	When the victim's body was hidden post-mortem, the order of suspect prioritization should begin with known suspects with active relationships to the victim.
3	Just 5% of estranged suspects were implicated for crimes where the victim was dragged through the crime scene as opposed to 23% of stranger suspects and 50% of active suspects (p<.05).	When the victim was dragged through the crime scene, the order of suspect prioritization should begin with known suspects with active relationships to the victim, followed by strangers, then estranged relationships to the victim.
3	While only 10% of estranged suspects were implicated for homicides where the victim's body had been robbed post-mortem, 23% of stranger suspects and 50% of active suspects were convicted in these cases (p<. 05)	When the crime scene indicated that the body of the victim has been robbed post-mortem, the order of suspect prioritization should begin with known suspects with active relationships to the victim, followed by stranger suspects, and then estranged relationships to the victim.
3	When the victim was abducted, penetrated with an object, restrained, gagged, posed, covered, dumped in a body of water or in a secluded location, *estranged suspects* with *close relationships* were never implicated.	When the victim was abducted, penetrated with an object, restrained, gagged, posed, covered dumped in a body of water or secluded location, *estranged-close* suspects are the least viable avenue for allocation of resources toward suspect prioritization and strangers to the victim should be the first focus of suspect prioritization.
3	When homicide perpetrators first committed crimes of arson (IM Arson) before killing the victim, killed the victim by fire (Set on Fire) or attempted to cover up the crime by setting fire to the victim or victim's home (Cover up Arson), *active suspects* with *close relationships* to the victim were never implicated.	When any signs of arson are found at the homicide crime scene, *active-close* suspects are the least viable avenue for allocation of resources toward suspect prioritization, and strangers to the victim should be the first focus of suspect prioritization.
3	Active suspects were implicated for	When abductions occur pre-homicide,

	twice as many homicides where victims had been abducted compared to estranged suspects, who were never implicated when victims were abducted (p<.05). Stranger suspects were equally likely to active suspects to be implicated for homicides involving the abducted behaviour.	active and stranger suspects should be the first focus of suspect prioritization in homicide crimes, while estranged relationships to the victim are the least viable avenue for allocation of resources toward suspect prioritization.
3	Estranged and Close suspects were never implicated when the covered, gagged, location secluded, location water, posed, body removed, restrained, or tortured variables occurred at the crime scenes.	When the covered, gagged, location secluded, location water, posed, body removed, restrained, and torture behaviours occur in homicides, *active-close* suspects are the least viable avenue for allocation of resources toward suspect prioritization.
3	Homicides with the asphyxiated variable occurred in the lower 30% for crimes that implicated both strangers (23%) and estranged suspects (30%); however, 50% of the crimes connected to active suspects had perpetrators who asphyxiated their victims.	When signs of asphyxiation occurred in UK homicide crime scenes, active relationships should be the first focus of suspect prioritization, followed by estranged suspects, followed by strangers to the victim.
3	In IM Burglary cases (showing evidence that burglary occurred as the primary motivation pre-homicide), 83% of homicides with this feature implicated stranger suspects, 17% implicated estranged suspects, and 0% implicated active suspects.	When signs of a burglary have occurred within a homicide scene, stranger suspects should be the first order of suspect prioritization and active-close suspects are the least viable avenue for allocation of resources toward suspect prioritization.