

RUNNING HEAD: Testing a Typology of Serial Murder

**AN EMPIRICAL TEST OF THE HOLMES AND HOLMES
SERIAL MURDER TYPOLOGY**

RUNNING HEAD: Testing a Serial Murder Typology

AN EMPIRICAL TEST OF THE HOLMES AND HOLMES
SERIAL MURDER TYPOLOGY

David V. Canter¹ & Natalia Wentink

Centre for Investigative Psychology, Department of Psychology, Eleanor Rathbone Building,

University of Liverpool, Bedford Street South, Liverpool, UK, L69 7ZA

Telephone: +44 151 794 3910

Fax: +44 151 794 3938

Email: canter@liverpool.ac.uk

¹ Corresponding author

Abstract

The widely cited five-fold classification scheme of serial murderers² proposed by Holmes and Holmes (1998) is tested empirically. The crime scene evidence available on one hundred serial murderers, each identified as the third in a distinct series, committed in the United States, was content analyzed. The co-occurrence of content categories derived from the crime scene material was submitted to Smallest Space Analysis (SSA-I). The features they describe as characteristic of their category of ‘power/control’ killings were found to be typical of the sample as a whole, occurring in more than 50% of cases and thus did not form a distinct type. Limited support was found for aspects of their *lust*, *thrill* and *mission* styles of killing but this support drew attention to differences in the way the victim is dealt with, through ‘mutilation’, ‘restraints’ or ‘ransacking’ her property rather than the motivations implicitly inferred in Holmes and Holmes typology. The current results are therefore presented as an empirical basis for the classification of serial killings on which more detailed models can be built in the future.

² Serial murder is defined as an three or more murders occurring over a period of time with a “cooling off” period between each murder. The offender is usually male and the majority of victims are strangers.

An empirical test of the Holmes and Holmes serial murder typology

There have been a handful of attempts to classify serial murder. Some classification schemes have been developed directly to aid in investigations while others have been developed primarily to examine offender motives or offender-victim relationships (Jesse, 1924 as cited in Egger, 1984; Megargee, 1982). These typologies classify offenders on the basis of a mixture of features including inferred motives, crime scene evidence, and offender background characteristics. This is problematic for the development of systematic tests of these typologies because they mix objectively based definitions, such as gender of victim with subjective interpretations such as psychological motivation. Such classification schemes are also of limited practical use, especially to investigators, because the only objective data available is that drawn from the crime scene.

The most widely cited classification of serial murder is the organized/disorganized typology put forward by a number of FBI special agents (Ressler, Burgess, Douglas, Hartman, & D'Agostino, 1986; Douglas, Ressler, Burgess, & Hartman, 1986). This dichotomy is claimed as the foundation on which personality characteristics of the offender can be determined from crime scene information. Many researchers have questioned the validity of such a simple two-way division of serial murders (Turco, 1990; Canter, 1994; Rossmo, 1996) yet it underlies Holmes and Holmes (1998) five-fold model of serial killers. Though Holmes and Holmes do not overtly indicate the influence of the organized/disorganized typology in their model, their model can be seen as a division of an organized/disorganized continuum. At one end is their category of

visionary killer which they describe as follows: “The crime scene is also very disorganized. In this respect, the crime scene reflects the personality of the killer” (Holmes & Holmes, 1988 p.68). At the other extreme the method of murder for the *Power/control* type of killer is described as “simple and organized” (Holmes & Holmes, 1988 p.133).

Holmes and Holmes classification

Holmes and Holmes (1998) indicate that they developed their classification from the consideration of case material from 110 serial murders and interviews with selected offenders. However, they give no systematic account of exactly how that material was utilized to devise their system of classification. They merely mention that background characteristics, psychological motivation of the offender, crime scene evidence such as victim characteristics and methods of killing, and the offender’s spatial behavior were all taken into account to develop the classification. They also recognize that some offenders will possess characteristics and exhibit behaviors from more than one type. Yet they claim that there will be a definite, dominant theme to his actions and background characteristic so that an offender can be classified under a distinct category. However, no criteria are given to determine into which type an offender ought to be placed if he exhibits a combination of features.

Briefly, the following are descriptions of this typology:

Visionary: Suffering from a break with reality, the visionary serial killer murders because he has seen visions or heard voices from demons, angels, the devil or God telling him to kill a particular individual or particular types of people. His quick, act-focused killings are seen as a job to be done.

Mission: The mission killer is focused on the act of murder itself. He is compelled to murder in order to rid the world of a group of people he has judged to be unworthy or undesirable.

Hedonistic: This type of sexual killer is subdivided into the following two groups:

Lust: The lust killer kills for sexual gratification; sex is the focal point of the murder, even after he has killed the victim. This type of murderer derives pleasure from the process of the murderous event. Various acts such as cannibalism, necrophilia, and dismemberment are prevalent in this type of murder

Thrill: The thrill killer murders for the pleasure and excitement of killing. Once the victim is dead, this murderer loses interest. This type of killing often involves a long process involving extended acts of torture.

Power/Control: This killer derives pleasure and gratification from having control over the victim, and considered to be a 'master' at what he does. His motives are driven by the need for power and dominance over another human being. The

longer he can extend the process of murder, the greater his gratification.

Critique of Holmes and Holmes's typology

Five main concerns arise upon investigation of the Holmes and Holmes (1998) serial murder classification.

1. Reliability and validity of data collection

The manner in which the offender interviews were conducted is rather ambiguous. The original authors (Holmes and DeBurger, 1985) do not provide an account of their methodology. It is unclear as to how the offender interviews were structured or if a standardized set of questions were used for each offender. The sample of offenders was opportunistic consisting of a small number of offenders who were willing to speak with the researchers. There is a methodological weakness in constructing a classification based upon data obtained without a pre-determined set of criteria for defining the sample and without a pre-structured interview.

2. Lack of empirical testing of the model

Without proper empirical testing of the proposed model, it is not clear as to whether the characteristics proposed within each type do, in fact, consistently co-occur with one another.

3. Definitional issues

While Holmes and Holmes (1998) discuss characteristics of each typology briefly, there are no precise definitions for terms such as the “act-focused” or “process-focused” method of killing or “controlled” crime scene. Case studies are used as examples leaving the reader to wonder if the case examples are, in fact, all-encompassing definitions of the types. The nature of such illustrations raises concern over issues of reliability and validity and makes it difficult to operationalize variables for direct empirical test.

4. Overlap of criteria between types

Several features proposed for one type of serial murderer are also included for other types. For example, crime scene characteristics listed by Holmes and Holmes for both the *lust* type and the *power/control* type possess “controlled crime scene; evidence of torture; body moved; specific victim; aberrant sexual activity; no weapon at scene; victim not known by offender; strangles victim; penile penetration, and necrophilia. Utilizing characteristics such as these fails to distinguish one type from another. While the remaining characteristics in each category may provide a basis upon which a distinction to be made, it is not clear how a killing is to be classified if one or more of these distinct features do not occur in a given case.

5. The question of mixed types

In the instance that crime scene characteristics are indicative of more than one type it is unclear as to how to classify an individual. For example, the question is raised of how to classify a ransacked crime scene (*visionary* killer) that also contains evidence of post-mortem mutilation (*lust* killer). It is not clear from Holmes and Holmes (1998) if “pure

types” are to be expected as the rule or the exception. The issue of mixed types does, indeed, raise the question of whether such a scheme can accurately identify an offender or crime.

Inherent assumptions of a typology

As outlined above, the Holmes and Holmes typology is presented as five types, each of which is defined by the specification of the characteristics that distinguish each type. In other words, each type is defined by the co-occurrence of characteristics that are proposed as typical of it. These definitions of types therefore make two crucial assumptions. Firstly it is assumed that within each type the characteristics that define that specific type are likely to co-occur with one another with regularity. Secondly, specific characteristics of one type are assumed not to co-occur with any frequency with the specified characteristics of another type. For such typologies to have any utility each type needs to have characteristics that are clearly distinct from those of other types. Or, if there is a mix of characteristics belonging to different types, a clear set of criteria would need to be in place to determine how an individual is to be categorized.

In essence, then, the central test of this typology is to test the hypotheses that a) the characteristics *within* each type of serial murderer consistently co-occur with one another and b) that these characteristics do not co-occur with characteristics of other types. If the patterns of co-occurrences and lack of co-occurrences do not reflect the proposed characteristics of each type then there is no support for the typology.

One way to directly test the classification assumptions in the Holmes and Holmes (1998) model is to examine directly the co-occurrence of characteristics across a large number of cases. A thorough test requires that the frequency of co-occurrence between every pair of characteristics needs to be examined. This is a daunting task if handled in a purely numerical way. But a visual representation of these patterns of co-occurrence can be used to test the primary assumptions directly. Multi-Dimensional Scaling (MDS) procedures are of value for this because they represent the co-occurrence of variables (offense characteristics, in this case) as distances in a geometrical space. Each characteristic is a point in the space and the further apart any two points the less frequently do they co-occur. The hypotheses underlying the Holmes and Holmes model therefore are tested as 'regional hypotheses' (Borg and Shye, 1995). The characteristics defining each type are hypothesized to form a distinct region of the MDS space.

A number of studies of criminal actions have found such MDS models to be productive (e.g. Canter and Heritage, 1990; Canter and Fritzon, 1998; Salfati, 2000). They have made particular use of the non-metric MDS procedure known as Smallest Space Analysis (SSA-I, Lingoes, 1973). The particular power of SSA-I comes from its representation of the rank order of the co-occurrence as rank orders of the distances in the geometric space (hence it being called 'non-metric' MDS). This emphasis on the relative locations of the points rather than their absolute values makes regional structures easier to determine and makes the analysis less sensitive to biases in any particular sample that might have generated particularly high or low absolute frequencies.

To re-iterate for clarity, in MDS each point in the space represents a distinct characteristic of the events under study, such as whether or not the crimes scene was ransacked. The closer any two points are to one another on the spatial configuration, the higher their associations with each other, in this case the higher their frequency of co-occurrence. Similarly the farther away from one another any two points the lower their association with each other. As in other studies (Canter and Heritage, 1990; Canter and Fritzon, 1998; Salfati 2000), in this case the measure of co-occurrence used was Jaccard's coefficient (Jaccard, 1908). This calculates the proportion of co-occurrences between any two variables as a proportion of all occurrences of both variables.

To test hypotheses the SSA configuration is visually examined to determine the patterns of relationships between variables. Essentially, if there is support for the Holmes and Holmes model, five distinct regions of the SSA space will be readily identifiable corresponding to the five different types of serial murder. If these regions cannot be identified the existence of these five types cannot be supported. It is possible that some types will form regions and others will not, providing limited support for the model. The SSA also allows of direct examination so that hypotheses can be generated as to possible distinctions between sets of variables that may be tested by other analyses in the future.

The Holmes and Holmes typology does contain a number of categories that are difficult to operationalize objectively. For example even the claim that a offender seeks "sexual

gratification” is an inference derived from details of the crime scene and would be at variance with those theorists who claim that power is being expressed through the sexual act. For the present study the approach of Canter and Heritage (1990) is followed in which only those aspects of the offence are considered that can be derived directly from details of the crime scene. This allows an objective, empirical test of the typology as far as can be made with the sorts of information available to the police. A focus on crime scene information also has more direct practical value, being readily applicable to law enforcement in a murder investigation (Salfati, 2000).

METHOD

Sample

Public fascination with serial murder has resulted in a great deal of published material in this area, notably case studies. Often highly detailed descriptions of both the offender and the offences are available in published accounts as well as public records, which, in many circumstances, can be corroborated with investigators (Canter, Coffey, Huntley, & Missen, 2000). The analyzed material consisted of reasonably accurate secondary sources such as nationally and internationally known United States newspapers, periodicals, journals, true crime magazines, biographies, trial transcripts, and case history narratives. Selected material was restricted to work written by authors who utilized documents such as official police records and reports and court documents.

The data set used in this study is from the Missen Corpus of Serial Killer data (Missen, 1998) held in the data archives at the Centre for Investigative Psychology at the

University of Liverpool, England. The late Dr. Christopher Missen obtained the material over a period of several years. There have been several studies testing the reliability and validity of this material; despite some weaknesses that exist in most archival secondary sources, this Corpus has been found to be robust and consistent. All data is open to bias but published material, whether produced by academics, journalists, or others, has not been created for the purposes of the particular research and so is less open to biases that are weighted in favor of the hypotheses. Material in the public domain is directly open to corroboration as Dr Missen (1998) demonstrated. It is also clear from Holmes and Holmes (1988) that they drew on similar material in developing their typology. .

All of the cases occurred in the United States. This paper is limited to the results for the third offence in the series consisting of 100 cases from 100 different offenders. The first and second offences were not utilized because of the learning process that may be involved in these early cases and later offences than the third offence are likely to be greatly influenced by the experience of the early offences. However, further research is needed to test these assumptions. The present results are offered as a first step towards examining the typology of serial killings.

A content analysis (Robson, 1993) of the information available on these 100 crimes was carried out to identify features of the crimes that could be related directly to the characteristics offered by Holmes and Holmes. This yielded 34 characteristics that could be clearly determined as either present or not present in any given crime scene. In some cases these variables are exclusive to one type of offender, and in other cases, the

variable applies to more than one type. It is worth emphasizing that characteristics that could not be clearly derived from crime scene evidence were excluded from this study. For instance, information on whether the offender used a ‘con’ or ‘ploy’ technique in approaching the victim is not considered crime scene evidence, as it cannot necessarily be determined without live witnesses or offender interviews. Full variable descriptions are given in Appendix A.

As mentioned previously, Holmes and Holmes do not provide clear operational definitions for the actions that define each of their type. Therefore, using the descriptions given for each one the types (visionary, mission, lust, thrill, and power/control) the following variables have been chosen to represent the traits they propose.

Variable selection criteria for each type

The variables identified for each of the five types is found in Table 1. They have been derived as follows.

The crime scenes of *visionary* killers are described as being chaotic with much disorder and forensic evidence. Consequently, *ransacking* of property, *belongings scattered*, *clothing scattered*, and *trail of clothing leading to/from crime scene* have been selected. This is described as an ‘act-focused’ type of crime in which the offender desires a quick kill with no extensive acts of torture or interaction with the body. Consequently, *bludgeon*, has been selected as a method for a quick kill. This being described as a spontaneous and disorganized offence, the offender is expected to use whatever weapon

is available, then leaving it at the scene. Therefore *weapon of opportunity* and *weapon left in victim* have been selected as appropriate characteristics for this type of offender.

The *mission* killer operates in an act focused and planned manner; he does not engage in activities such as torture or post-mortem activity such as necrophilia or dismemberment. *Bludgeoned, throat cut* and *firearm used* are indicative of an act-focused murder in which the killing is swift. As described by Holmes and Holmes, the mission killer will take the murder weapon away with him after he has committed the crime; *murder weapon missing* is indicative of this action.

The *lust* murderer combines sexual gratification, sadistic acts, and murder. This offender is organized and plans the offence so as to avoid detection; *murder weapon missing, body covered post-mortem, body in isolated spot,* and *body concealed* reflect these characteristics. Sexual activity is a central part of this type of murder therefore *vaginal rape, alive during sex acts,* and *multiple sex acts* reflect this offence. The body is likely to have been moved after the killing, indicating there will be *multiple crime scenes*. Skin-to-skin contact or killing at close range is the preferred methods of killing, therefore beaten and manual strangulation have been selected. Holmes and Homes mention *torture, overkill,* and *object penetration* into the victim's body cavities as indicative of this offence, therefore these behaviors have been included. Sadistic acts and body mutilation after death feature in this type as well. Variables chosen as representative of this feature are the following: *genital mutilation, thoracic mutilation, abdominal mutilation, burns on victim, violence at genitalia* and *facial disfigurement*

Also a sexual-type killer, the *thrill* killer engages in a “process” kill and derives pleasure from administering pain and suffering to the victim. The use of *restraints*, *torture*, *bitemarks*, and *burns on victim* feature in this type. *Manual strangulation* and *ligature strangulation* are also taken as indicative of this category with the rationale that strangulation such as this could be used to cause the victim a slow death (referring to the process kill). The method of murder will reflect this offender’s desire for control over his victim. Contributing to this, *gagging* has been included because gagging is a means of controlling the victim and taking away his/her ability to speak or yell. Holmes and Holmes cite penile penetration and object penetration as part of the crime; *vaginal rape*, *alive during sex acts*, and *object penetration* have therefore been selected. Once the victim is dead the offender loses interest in the murder and concentrates on disposal of the body. The thrill killer gives careful thought to disposal of the body as well as taking precautions because he is aware of the dangers of being detected; therefore, the variables *multiple crime scenes*, *murder weapon missing*, *body covered post-mortem*, *body in isolated spot*, and *body concealed* have been selected.

The motives for the *power/control* killer center around the need for dominance, power, and control over the victim and over the offence as a whole. Consequently, the victim’s body is likely to yield signs of *torture*, having been *beaten*, and possibly *tease cuts* and *burns on victim*. The offender’s need for control over the victim may also be achieved by using methods such as *gagging* and *restraints*. Holmes and Holmes cite strangulation and penile penetration, consequently, *ligature strangulation*, *vaginal rape* and *alive*

during sex acts have been selected. This offender is likely to move the victim's body, therefore *multiple crime scenes* has been included. This offender's desire for power and control over the victim continues after death. Holmes and Holmes cite case examples that include dismemberment, with the offender taking particular body parts away with him and decapitation. Therefore, *body parts missing* and *decapitation* are included. Considered to be a professional at his crimes, the variables *body covered post-mortem*, *body in isolated spot*, *body concealed*, and *murder weapon missing* have been used, on the assumption that this killer has thought through ways to avoid detection. *Tampering with the evidence* would be seen as part of this 'professional' process too.

Insert table 1 about here

Results

A data matrix was prepared in which the presence or absence of each of the 34 variables listed in Table 1 was noted for all 100 cases. This matrix was then used to derive an association matrix, using Jaccard's coefficient, to show the degree of co-occurrence between every variable and every other. This association matrix was then subjected to a three-dimensional SSA-I. The degree of fit between the association matrix and the geometrical solution of the SSA is given by the Guttman-Lingoes' coefficient of alienation. In this case it was 0.155 in 26 iterations indicating a good fit for this type of data. The two-dimensional solution had a slightly better fit but showed essentially the same results. However, these results are clearer when looking at the projection of the first

vector against the second vector for the 3-D solution. It is therefore this configuration that is presented here.

Testing the regional hypotheses

Figures 1, 2, 3, 4, and 5 are all the same SSA configuration. Each figure has the particular variables highlighted that were identified for each of the offender types, *visionary*, *mission*, *lust*, *thrill*, and *power/control*, respectively. Five distinct regions, in support for all five Holmes and Holmes serial murder types, is not found in these figures as will be discussed below.

Insert Figure 1 about here

The *visionary* killer

The bottom right hand corner of the plot does bring together seven features that Holmes and Holmes mention as indicative of *visionary* killings (see figure 1). The characteristics that relate to a trail of clothing and bludgeoning the victim do form a reasonably distinct region, lending credence to these being aspects of a distinct type of crime. However the other variables that were drawn from Holmes and Holmes as aspects of *visionary* killing, notably leaving the weapon in the victim, and scattering the belongings are close to other variables. Furthermore the facial disfigurement that was proposed as an aspect of *lust* killing is found in this *visionary* area.

So although some sense can be made of a region in which bludgeoning and ransacking occurred, with clothing being scattered, lending some weight to the idea of this set of action forming a dominant style of offending in some cases, it is difficult to see this a distinct type that has the obvious *visionary* qualities claimed for these actions by Holmes and Holmes. It would appear that the criteria cited for this particular type of offence are more precise than for other types. An analysis of the variable frequencies in this category emphasizes this point. All of the *visionary* variables occurred in less than 30% of the cases, whereas in other categories, the majority of variables occurred with greater frequency.

Holmes and Holmes do suggest that the visionary killer variables are outward signs of the offender's psychosis or psychological 'break with reality'. Other types such as the lust killer and the thrill killer are defined using more criteria and broader definitions. It may therefore be the case that the particular actions that form the bottom right hand region of the configuration do reflect important characteristics of the offender and would be worthy of further study to test this possibility.

Insert figure 2 about here

The *mission* killer

Figure 2 is the SSA configuration with the identified *mission* variables highlighted. Very few features of crimes scenes could be objectively identified that would indicate a *mission* killing. The main distinct features did focus on the mode of killing, bludgeoning,

cutting the throat or using a firearm. In all cases it was proposed the weapon would be taken away from the scene. In some cases more than one form of weapon may have been used but the results show that this was relatively rare as these variables are somewhat removed from each other in the configuration. They do, indeed, encompass the region defined by the *visionary* killing variables. This serves to show the difficulty of utilizing a mix of weapons to define a type of killing. Each weapon carries with it different implications for the associated actions, bludgeoning, for example, probably being more likely to lead to facial disfigurement; a gun being more likely to be taken away from the crime scene. It is perhaps therefore not too surprising that the variables identified for *mission* killing do not form a distinct region, and thus do not imply a clear type.

Insert figure 3 about here

The *lust* killer,

A large number of variables could be identified as characterizing *lust* killings. Therefore their distribution across the SSA as shown in Figure 3, may reflect to some extent their variety. There is a sub-group that form a distinct region in the middle of the top half of the plot. These include a mixture of mutilations and the related action of body parts being missing from the scene. Evidence being tampered with, that was assumed to form part of the *power/control* type, is apparent within this region of mutilations.

The other variables proposed as part of the *lust* type are, however, intermingled with many other variables. So, for example, *multiple sexual activities* and *posing the body* are not distinct aspects of any region.

These results, therefore, indicate that although lust killing as described by Holmes and Holmes does not form a distinct type, there is nonetheless an identifiable sub-set of offences in which various forms of mutilation and assault on the victim's body co-occur. This 'mutilation' style of offending may therefore be a more productive way of examining crime scenes in future research than focusing on the inferences about motivation that is inherent in the *lust* category.

Insert figure 4 about here

The *thrill* killing variables are predominant in the lower left region of the SSA as shown in Figure 4. *Burning* the victim is found closer to the 'mutilation' region and *strangulation* is closer to the variables identified in Figure 1 as being part of the *visionary* type. Also a number of the variables that Holmes and Holmes mention as characteristic of thrill killing such as *missing weapon* and the *victim being alive during the sex act* are also mentioned as characteristic of other forms of serial killing. The SSA supports this overlap by showing these variables as close to those proposed as being for other types of killing. The SSA results therefore reveal that such variables can be of little value for determining specific types or contributing to the definition of thrill killing.

What emerges from the SSA is that rather than defining a killing in terms of the inferred *thrill* it provides the killer, it is more fruitful to consider the range of restraints the offender uses. *Gagging*, the use of *restraints*, a *ligature* and *covering the body post-mortem*, do all form a reasonably distinct region in the SSA. Again this points to a style of offending that is distinct from the both the ‘mutilation’ and ‘ransacking’ styles that have already been identified.

Insert figure 5 about here

The power/control killing variables are well within the regions that have already been described. This implies that those variables tend to co-occur with many of the others. In other words, power and control appear to be at the heart of these serial killings. They are not typical of any one type of serial killing but of serial killings in general. The sense of this can be seen from the fact that by the time and offender has managed to complete three killings and still not be caught he must have developed some way of so organizing his activities that he can get away with these extreme crimes. Controlling his victims and avoiding detection, inherent in the Holmes and Holmes definition of power, would seem to be natural ways of maintaining the opportunity to commit murder.

Further support for this can be seen from the comparison with the analysis carried out by Salfati (2000) in her study of one-off murders. In her MDS analysis the focal, or ‘central’, part of the configuration is made up of impulsive acts typical of an unplanned violent outburst. These contrast directly with the considered actions here of posing and *concealing the body*, in an *isolated spot* and *removing the weapon* from the scene.

Insert figure 6 about here

Patterns of co-occurrence

If the variables of power and control are central to the actions, as indicated, then it would be hypothesized that their dominance would also be revealed in the frequency with which they occur across the sample. Figure 6 shows the original SSA configuration with frequency contours added. The circle in the center of the plot contains those variables with the highest frequency of occurrence the present study. As found in earlier studies (e.g. Canter and Heritage 1990) this overlap of the higher frequency variables on the 'core' of the action structure lends support to their dominant role in making possible, and defining, the nature of the crimes being studied.

The high frequency variables (those occurring in more than 50% of the cases) are as follow: victim alive during sex acts (91%); multiple sex acts (66%) vaginal rape (74%); beaten (61%); torture (53%) body positioned (75%); overkill (70%); murder weapon missing (67%); multiple crime scenes (61%); body in isolated spot (54%) and body concealed (58%). These variables reveal the sexual and serial aspects of this crime. Avoiding detection, thereby allowing the offender to continue offending is increased by not leaving the murder weapon at the scene, moving the body from the assault site to a disposal site (multiple crime scenes) and concealing the body in an isolated spot. It is not surprising that the commission of sexual acts with a live victim and vaginal rape are amongst these core aspects of the crime, as the data consisted of serial sexual murders.

It is also found that radiating outwards from this conceptual center towards the outer edges of the plot are variables that are less likely to co-occur. The differentiations that have been identified in considering the types of killings are therefore shown to be a consequence of how rare those aspects of the crime scenes are. In general it is those actions that occur in less than 30% of offences that point most clearly to difference between offences. However, the framework that emerges is not really one of distinct 'types' of offences but of identifiable 'styles' or as Canter and Heritage (1990) call them 'themes' that give different emphases to the crimes.

Discussion

The typology

Examination of the Holmes and Holmes (1998) typology reveals that the characteristics describing each of the types; visionary, mission, lust, thrill, and power/control, range from being described in much detail for some (such as the lust type) to being very sparse for other types (such as mission). It has been found to be difficult to use these descriptions to relate directly to crime scene information. However, an operationalization of the relevant crime scene actions did provide a basis for carrying out an empirical test of the typology proposed by Holmes and Holmes.

An MDS analysis of data from the crime scene information of 100 US serial killings showed that the higher frequency characteristics of the crime scenes could not be used to distinguish between offences or support the proposed types. Instead these high frequency

variables appeared to be typical of serial killing in general and had most in common with those features specified by Holmes and Homes as typical of *power/control* type. Thus for this sample of serial killings, at least, rather than power and control forming a separate type it is more appropriately considered as a way of describing a crucial feature of these offences.

The *mission* killing type proved extremely difficult to relate to identifiable crime scene variables other than those associated with the form of weapon used to kill. The MDS analysis also did not help to distinguish these variables from others, notably those associated with *visionary* killing. This may be because the *mission* killing is premised on the information the offender gives about his actions, explaining them in terms of his 'mission'. Or it may be because of particular features of the victim that are not always apparent from the information initially available to an investigation.

The three other types of killing *visionary*, *lust* and *thrill* were found to have limited support from the MDS analysis, by drawing the emphasis away from an interpretation of the motivations of the offender and focusing on the nature of his transactions with the victim. The *visionary* killing is best distinguished in terms of the ransacking of the victim's residence and the scattering of her clothing. The *lust* killings features that formed a distinct region in the SSA were dominated by mutilations to the victim's body. For the *thrill* killings it was the restraints under which the victim was put that formed a distinct region.

Thus by testing the Holmes and Holmes proposals through an empirical analysis of crime scene information some of the strengths of their careful consideration of many serial killers can be seen. However a model of serial killing emerges that places much more emphasis on how the offender interacts with the victim than on inferences about the motivations of the offender. It is tempting to see the offender's interactions with the victim as reflecting the role the offender assigns to the victim as Canter (1995) has proposed. Mutilation being typical of the 'victim as object', ransacking of the 'victim as vehicle' and restraints of the 'victim as person'. But this possibility only has the status of speculation without further research.

One final note of caution is important. By examining the crime scene material for the third offence in the series we have been studying serial killings not serial killers. This is thus only the first step in developing a model that allows differentiation between serial killers. The next step is to determine what is consistent in such offenders' actions across a series of crimes. Then it may be possible to show the relationship between those actions and characteristics of the offenders (cf Canter 2000). However, such a complex task is not possible until the first step is taken of producing a reliable classification of these horrific crimes. The results presented here, build upon the pioneering work of Holmes and Holmes to take this first step.

References

Borg, I. & Shye, S. (1995) *Facet Theory: Form and Content* London: Sage

Burgess, A.W., Hartman, C.R., Ressler, R.K., Douglas, J.E, and McCormack, A. (1986)

- 'Sexual Homicide: A Motivational Model' *Journal of Interpersonal Violence*. Vol.1. pp.251-272.
- Bennell, Alison, Stein, Alison, & Canter (2001) Sexual offences against children as the Abusive exploitation of conventional adult-child relationships. *Journal of Social and Personal Relationships*. Vol. 18 (2) pp.155-171
- Canter,D. (1995) *Criminal Shadows* London: HarperCollins
- Canter, D. (2000) Offender profiling and criminal differentiation. *Journal of Criminal and Legal Psychology*. Accepted for publication. Canter, D. (1994) *Criminal Shadows: Inside the mind of the serial killer*. London: Sage.
- Canter, D., Reddy, S., Alison, L., Bennell, C. (2001) Levels and Variations of Violation in Rape. Canter, D. and Alison, L. (Eds.) *Profiling Rape and Murder*. Offender Profiling Series, Vol. 4. Aldershot: Ashgate.
- Canter, D. Alison, E. & Alison, L. (2001) *A test of the organised/disorganised serial killer typology*. Paper presented at the 6th International Investigative psychology conference. Liverpool, England. January 8-10.
- Canter, D., Coffey, T., Huntley, M., & Missen, C. (2000). Predicting serial killers home base using a decision support system. *Journal of Quantitative Criminology*, Vol. 16 No. 4
- Canter, D., & Fritzon, K. (1998). Differentiating Arsonists: a models of firesetting actions and characteristics. *Legal and Criminological Psychology*, Vol. 3. 73-96.
- Canter, D.V. & Heritage, R. (1990) A Multivariate Model of Sexual Offence Behavior: Developments in 'Offender Profiling', *The Journal of Forensic Psychiatry*, Vol.1 No.2. London:Routledge
- Egger, S.A. (1990) Linkage Blindness: A systematic myopia. In Egger (ed.) (1990) *Serial Murder: An Elusive Phenomenon*. New York: Praeger.
- Egger, S.A. (1984) A working definition of serial murder and the reduction blindness. *Journal of Police Science and Administration*. Vol. 12. pp.348-357.
- Hazelwood, R. and Douglas, J.E. (1980) The Lust Murderer. *FBI Law Enforcement Bulletin*. April:1-5. pp.18-42
- Hickey, E.W. (1991) *Serial Murderers and their victims*. California: Brooks/Cole.
- Hodge, S. (1998) *Spatial patterns in serial murder: A conceptual model of disposal site location choice*. Ph.d Thesis, University of Liverpool. Unpublished

- Holmes, R.M., & DeBurger, J. (1985) Profiles in Terror: The Serial Murder. *Probation*. Vol.49. pp.29-34.
- Holmes, R.M. & Holmes, S.T. (1998) *Serial Murder (second edition)*. Thousand Oaks, California: Sage
- Jaccard, P. (1908). Nouvelles recherches sur la distribution florale. *Bull. Soc. Vaud. Sci. Nat.*, 44, 223-2.
- Keppel, R. & Weiss, J. (1993) HITS: Catching Criminals in the Northwest. *FBI Law Enforcement Bulletin*, April, pp.14-19
- Keppel, R. (1992) *An analysis of the effects of time and distance relationships in murder Investigations*. Unpublished doctorate dissertation, University of Washington.
- Leyton, E. (1987) *Hunting Humans: The Rise of the Modern Multiple Murderer*. Middlesex: Penguin Books
- Lingoes, J.C. (1973) 'The Guttman-Lingoes non-metric program series' Masters thesis, University of Michigan
- Megargee, E. (1982). Psychological determinants and correlates of criminal violence. In *Criminal Violence*. (ed) M.E. Wolfgang and N.A. Weiner. Beverly Hills, CA: Sage
- Missen, C. (1998). Taking Life: A behavioural approach to the classification of serial sexual killers. Unpublished Ph.D. dissertation. University of Liverpool.
- Ressler, R.K., Burgess, A.W., and Douglas, J.E., Hartman, C.R., and D'Agostino, R.B. (1986) Sexual Killers and their Victims: identifying patterns through crime scene analysis. *Journal of Interpersonal Violence*. Vol. 1 pp. 288-308.
- Salfati, G. (2000) The nature of expressiveness and instrumentality in homicide. *Homicide Studies*. Vol. 4 (3) pp.265-293.
- Stote, R. and Standing, L. (1995) Serial and Multiple Homicides: Is there an Epidemic? *Social Behavior and Personality*. Vol. 23(4). pp.313-318.

Appendix A

Variable definitions

1. **multcs**-multiple crime scenes
The victim's body was moved from the assault or murder site to the disposal site.
2. **sex**- multiple sex acts
3. **ransk**- ransacking
Personal belongings of the victim found torn apart as if the offender were looking for something specific.
4. **restr**- restraints
5. **tortr**- torture
6. **ovrkill**-overkill
7. **bscattr**- belongings scattered (*the victim's personal items*)
8. **cscatter**- clothing scattered (*referring to the victim's clothing*)
9. **gag**- gagging
10. **alive**- victim alive during sex acts
11. **rape**- vaginal rape
12. **obpen**- object penetration
13. **bite**- bitemarks
14. **genmut**- genital mutilation
15. **thormut**- thoracic mutilation
16. **abmut**- abdominal mutilation
17. **face**- facial disfigurement
18. **cut**- tease cuts
19. **beat**- beaten
20. **bldg**- bludgeoned
21. **strngl**- manual strangulation
22. **ligatr**- ligature strangulation
23. **gun**- firearm
24. **noweap**- murder weapon missing
25. **cvrPM**- body covered post-mortem
26. **isolate**- body found in isolated spot
27. **pose**- body positioned
28. **missing**- body parts missing
29. **evide**- tampered with evidence
30. **decap**-decapitation
31. **concl**- body concealed
The body could not be viewed with ease and visibility was obstructed by any trees of other barriers
32. **burns**- burns on victim
33. **throat**- throat cut or slashed
34. **Vgen**-violence directed at genitalia
35. **Vweap**- weapon left in victim
36. **weapop**- improvised murder weapon
37. **cloth**-trail of clothing leading to/from crime scene

Table 1. Serial murderer types with variables selected for each

Visionary	Mission	Lust	Thrill	Power/Control
-ransacking -belongings scattered -clothing scattered -bludgeoned -weapon left in victim -weapon of opportunity -trail of clothing leading to/from crime scene	-bludgeoned -firearm used -murder weapon missing -throat cut	-multiple crime scenes -multiple sex acts -torture -overkill -alive during sex acts -vaginal rape -object penetration -genital mutilation -thoracic mutilation -abdominal mutilation -facial disfigurement -beaten -manual strangulation -murder weapon missing -body covered PM -body posed -body parts missing -body concealed -body in isolated spot -burns on victim -violence at genitalia	-multiple crime scenes -restraints -torture -gagging -alive during sex acts -vaginal rape -object penetration -bitemarks -manual strangulation -ligature strangulation -murder weapon missing -body covered PM -body concealed -body in isolated spot -burns on victim	-multiple crime scenes -restraints -torture -gagging -alive during sex acts -vaginal rape -tease cuts -beaten -ligature strangulation -murder weapon missing -body covered PM -body parts missing -tampered with evidence -decapitation -body concealed -body in isolated spot -burns on victim

Figure 1. 3D SSA of crime scene behaviors: *visionary killer variables* highlighted
COA = 0.155 in 26 iterations

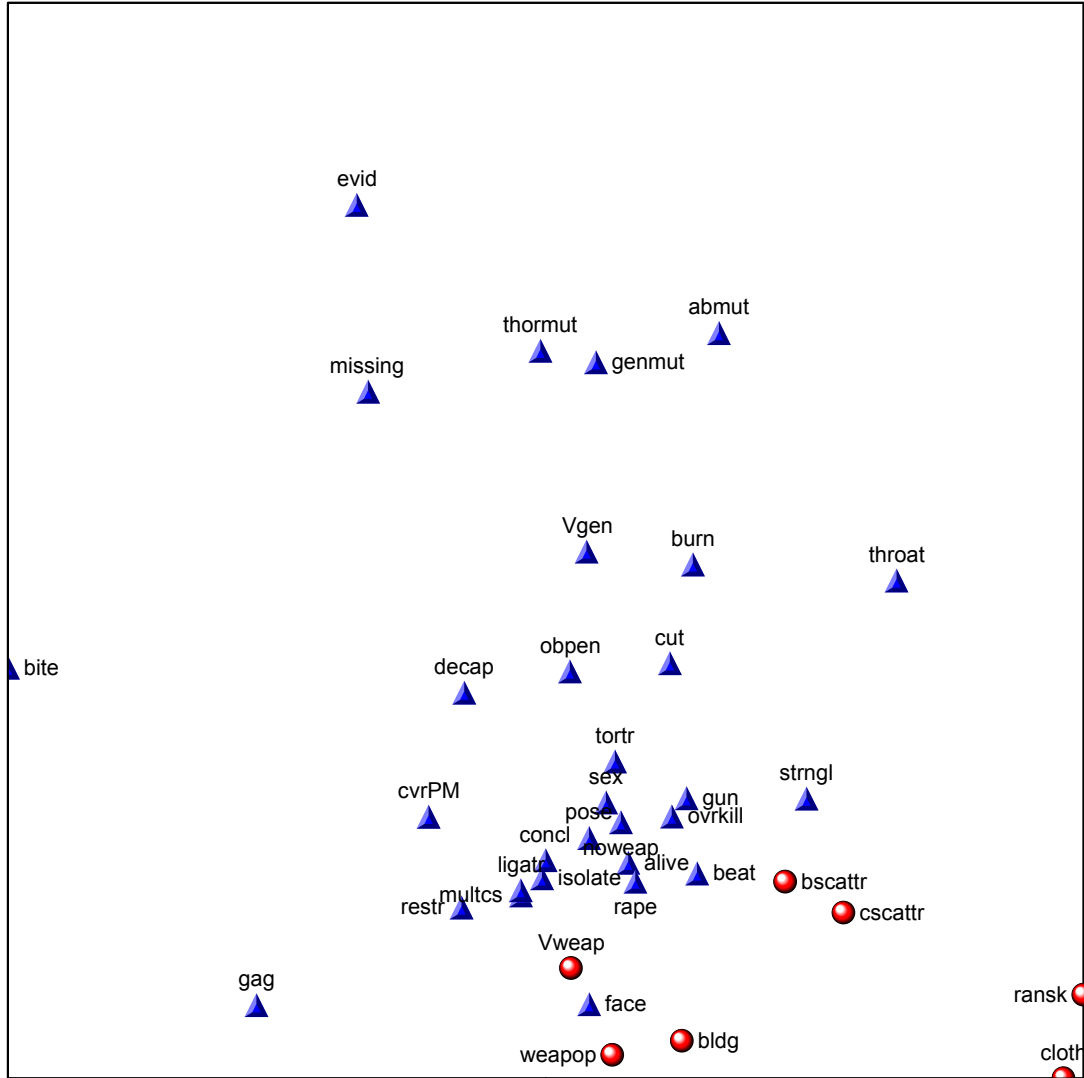


Figure 2. 3D SSA of crime scene behaviors: *Mission killer* variables highlighted

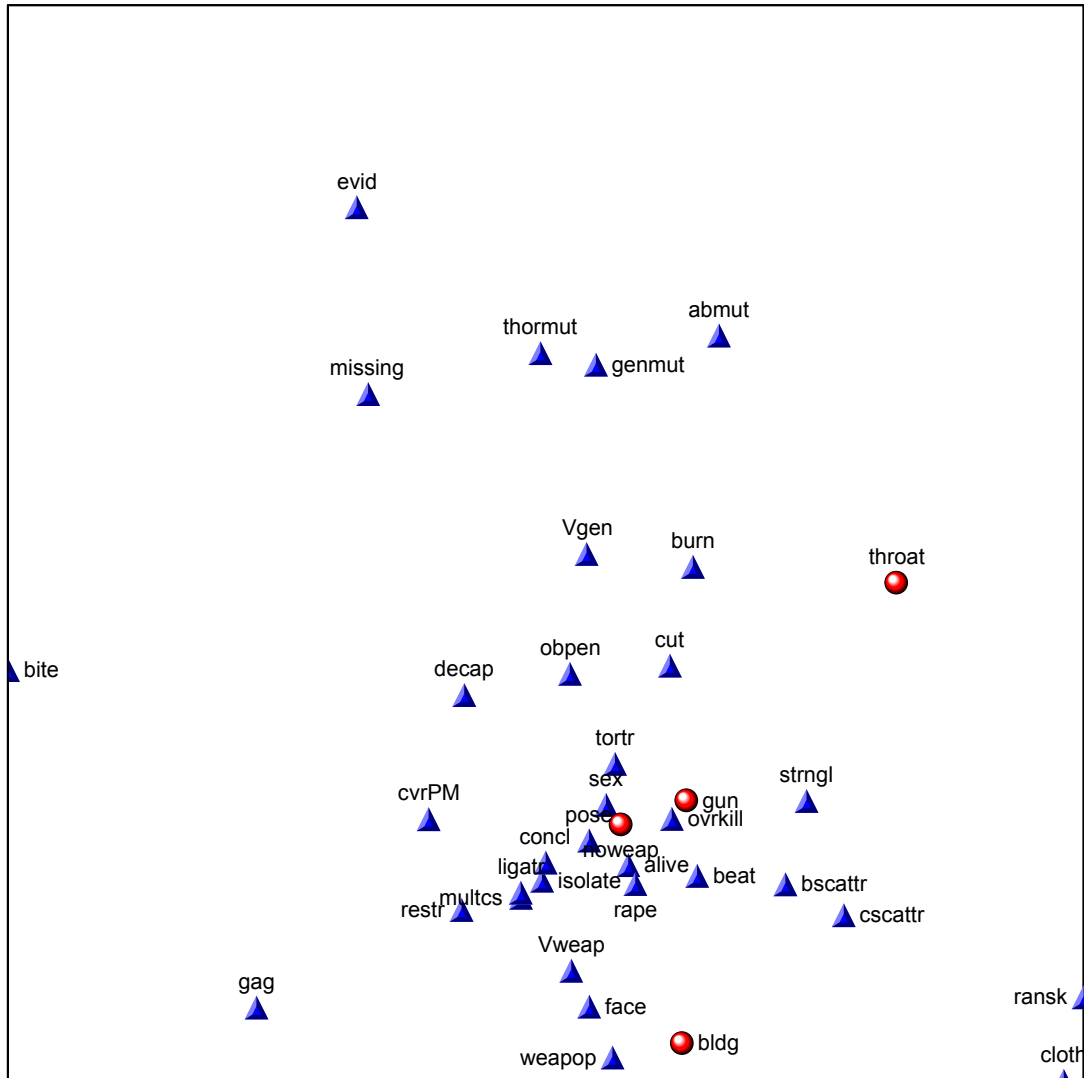


Figure 3. 3D SSA with *lust* killer variables highlighted

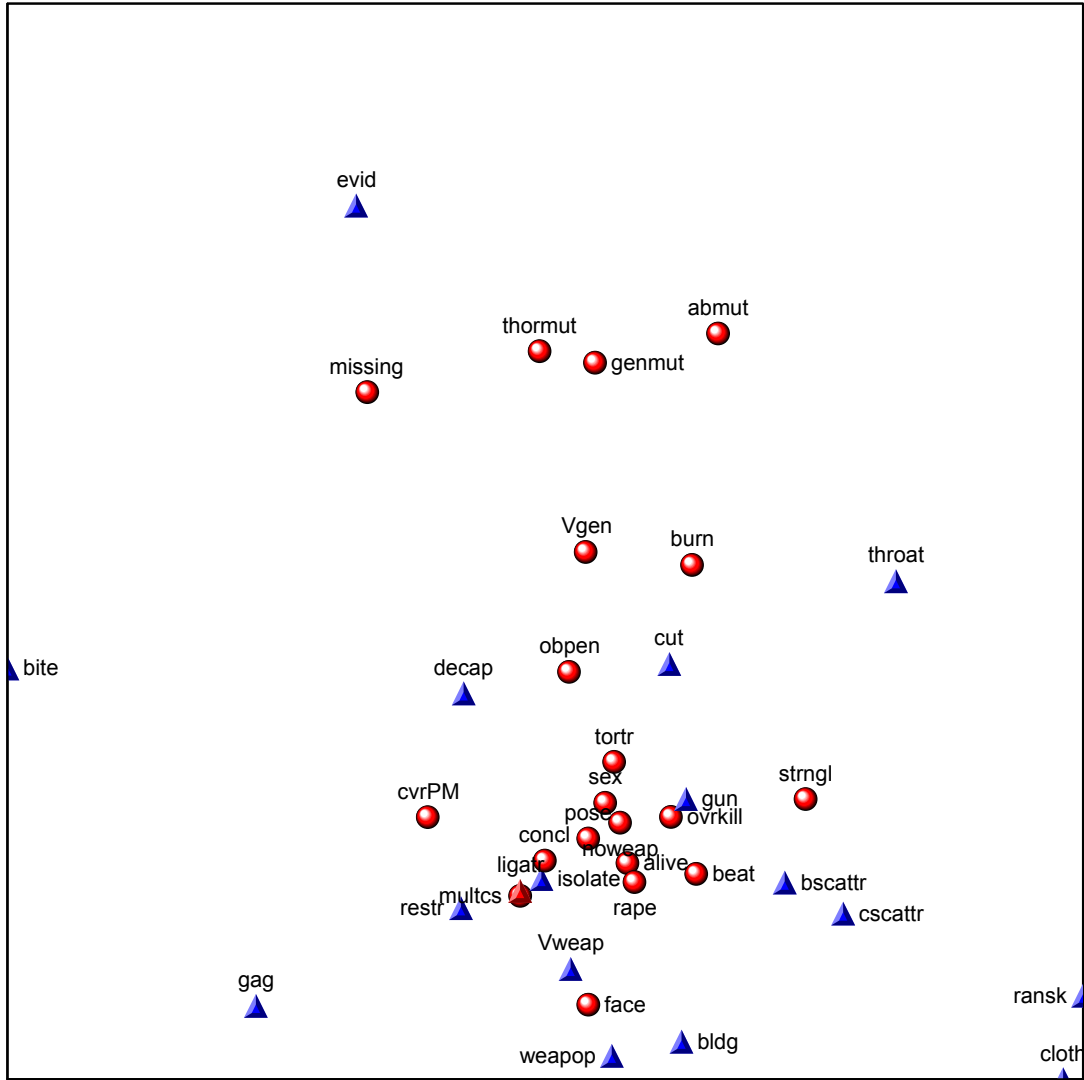


Figure 4. 3D SSA of crime scene behaviors: *Thrill killer* variables highlighted

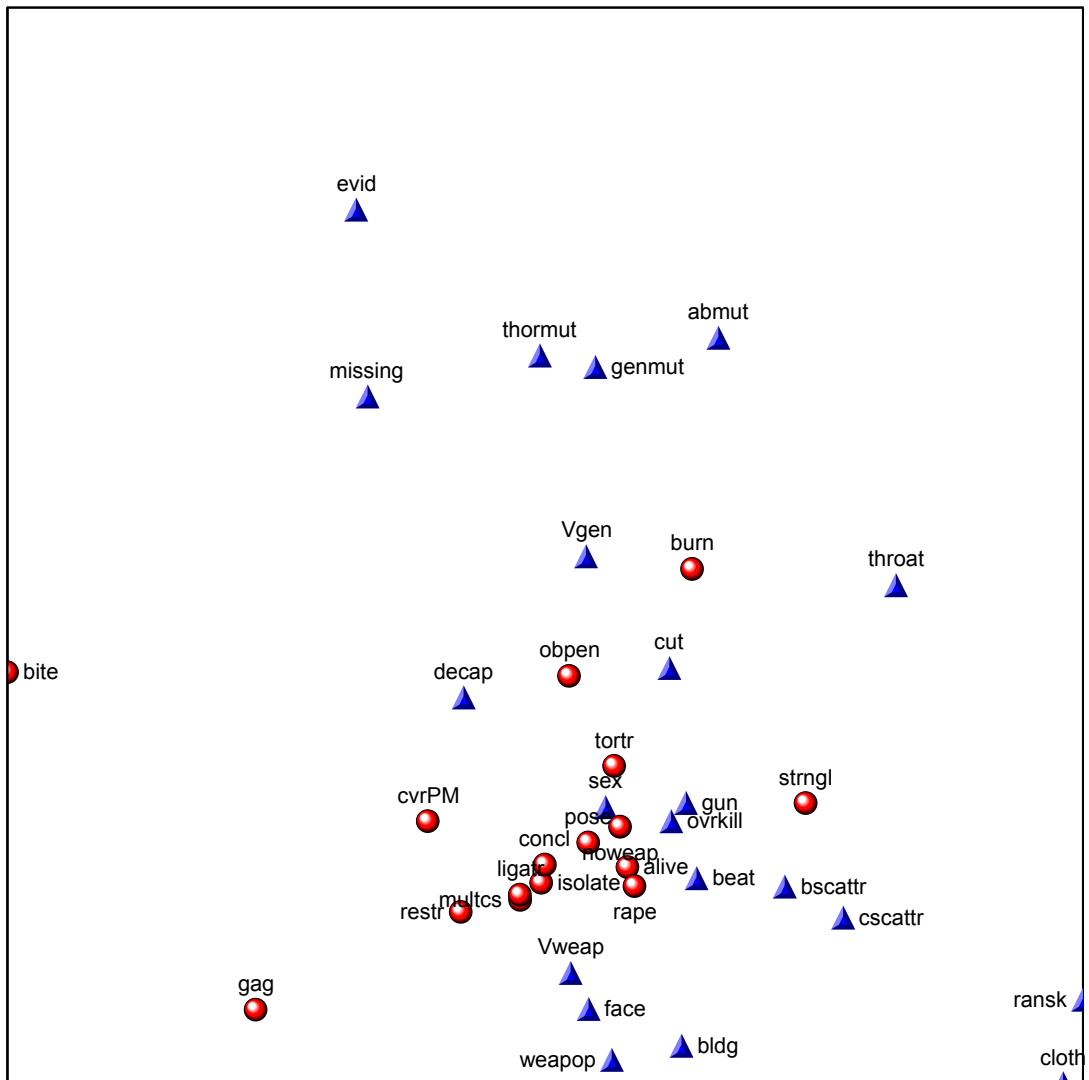


Figure 5. 3D SSA of crime scene behaviors: *Power/control variables highlighted*

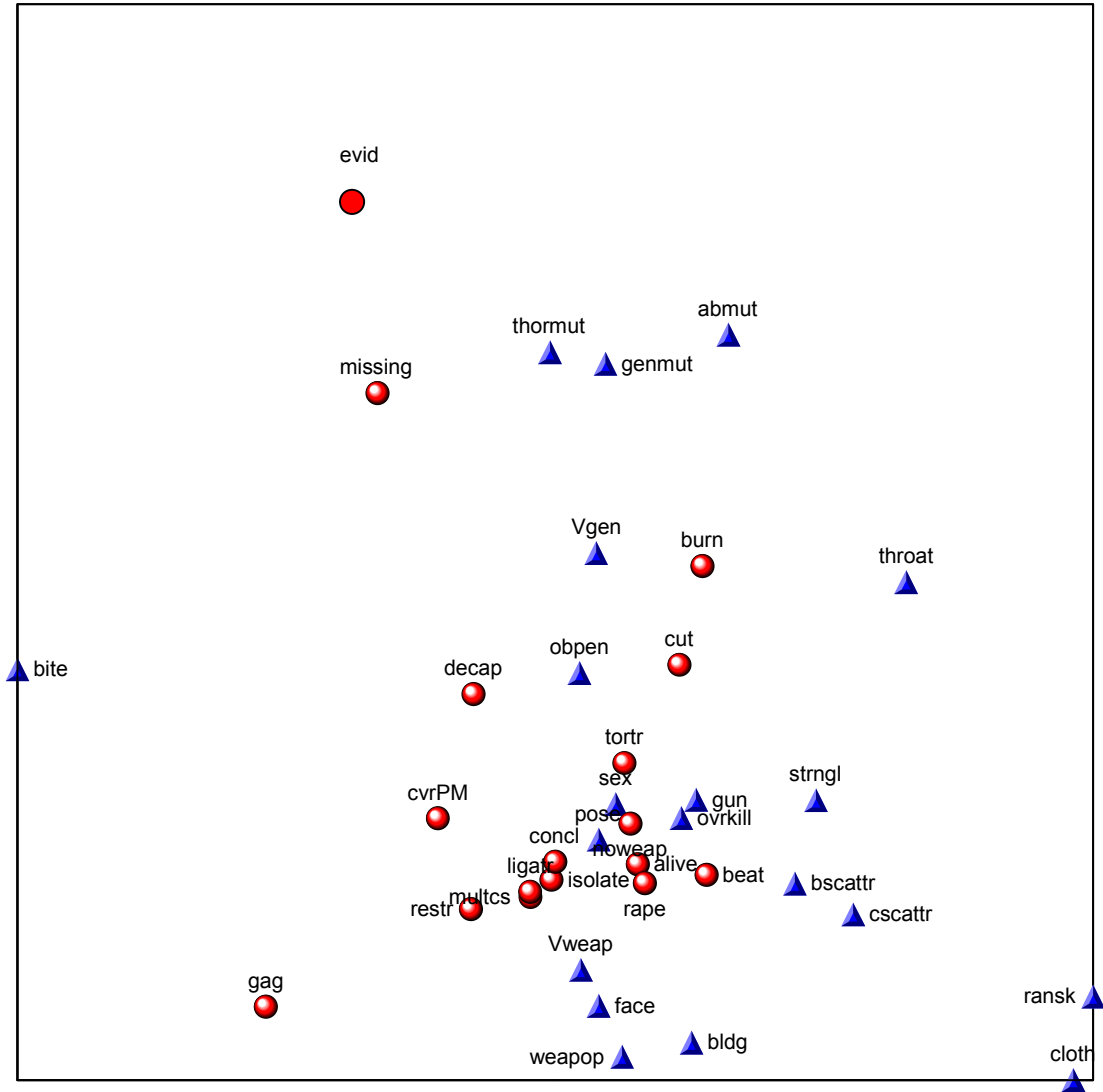


Figure 6. 3D SSA of crime scene behaviors with frequency contours

