



## Internally Motivated Instrumental Homicide: Psychophysiological and Psychological Peri-Homicidal Reactions

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### Abstract

This study examined the psychophysiological and psychological mechanisms associated with two cases of internally-driven instrumental homicide; one where the goal was homicide itself and one where the goal was rape. Case material is presented. Standard psychological tests were administered. In addition, a five-stage, personalised guided imagery methodology was employed to assist in the recreation of the memory of each homicidal act so that psychological and psychophysiological responses to homicide could be measured. The responses to the homicidal acts were compared with responses to non-violent, aggressive imagery and emotionally neutral imagery. The patterns of response of these two cases were markedly different and highlighted the differential responses of homicidal individuals within the instrumental category. The use of this imagery methodology in the assessment of homicidal motive is discussed.

*Keywords:* Homicide; instrumental homicide;

### INTRODUCTION

Instrumental homicide is a homicidal action that is undertaken with the purpose of achieving some goal (Decker, 1996). That goal may be related to financial gain, such as when a homicide is committed in the perpetration of a theft or robbery, or may be internally-driven as would be the case with rape. It is clear that instrumental homicides with an external motive are easier to understand than those that are internally motivated.

Some information in the literature is available about instrumental, internally-driven homicides. For example, these types of homicide have been

linked to a diagnosis of psychopathy in the perpetrator (Cornell et al., 1996). In fact, a cold addiction to violent behaviour has been identified as a characteristic of a psychopathic individual (Alvarez, 1995). Predatory, exploitative, and impulsive traits have been identified as factors that contribute to the dangerousness of psychopathic offenders (Quinsey, 1995). Psychopathy has been considered to be a predictor of violence in general (Hare, 1996; Harris & Rice, 1997), and violent recidivism (Hare, 1996; Hart, 1995; Hemphill & Hare, 1995; Rice, 1997; Serin, 1996; Serin & Amos, 1995).

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An interesting finding about psychopathic individuals that may be relevant to their homicidal behaviour is the proposed inability to adequately process emotional information. For example, those who score highly on the interpersonal/affective component of psychopathy have been reported to have more difficulty processing fear content although they appear to be adequate in their ability to reject fear content (Kroner & Forth, 1995). Further, the attribution of guilt was demonstrated to be difficult for psychopathic individuals with these people endorsing happiness or indifference to scenarios designed to elicit guilty feelings (Blair et al., 1995). This disconnection between an action and a negative emotional consequence may be the reason why psychopathic homicide offenders are rarely traumatised by their homicidal behaviour (Pollock, 1999).

Psychopathy also has been linked to the perpetration of some sexual offences (Porter et al., 2000). For example, men who committed rape scored higher on measures of psychopathy than did men who had committed child sexual abuse (Serin, Malcolm, Khanna & Barbaree, 1994). Indeed, psychopathy is related to sexual aggression even in non-offender samples (e.g., Kosson, Kelly & White, 1997). Also, sexual offenders who have more psychopathic characteristics in conjunction with deviant sexual arousal have a higher risk of recidivism (Serin, Mailloux & Malcolm, 2001).

In fact, the perpetration of a sexual offence in the course of a homicidal act is an example of an internally-driven instrumental homicide (Hale, 1997). Opportunistic and vindictive rape is considered to be more violent and associated with greater risk to the victim than rape that is perpetrated because of sexual arousal (Barbaree, Seto, Serin, Amos, & Preston, 1994). Sexual sadism along with antisocial personality disorder were more likely to be evident in a group who had raped and killed in comparison with people who had raped but not killed, or those who had killed but not raped (Yarvis, 1995).

The literature has suggested that internally-driven instrumental homicide is associated with range of predictive characteristics. Therefore, it could be argued that such homicides share many features, are perpetrated for the same motives, and are associated with the same reactions. This argument would be based on the homogeneity of a range of pre-homicide and post-homicide variables. However, this argument fails to take into account a possible heterogeneity of peri-homicide reactions. Although consideration has been given to indicators of peri-homicide actions, such as crime scene organisation (Hazelwood & Warren, 2000; Keppel

& Walter, 1999; Miscoll, 2001), differences in the ways in which individuals react to the actual homicidal event have received little attention. It may be that examination of psychophysiological and psychological peri-homicide reactions may point to subtypes of homicidal action, even within the category of internally-driven, instrumental homicide. Two cases will be presented that highlight the diversity of response and indicate the need for peri-homicide assessment of the perpetrator's reactions. The single case study approach to the examination of homicide has been used elsewhere (e.g., Tunnell & Cox, 1995).

Of course, the examination of peri-homicidal reactions represents an assessment challenge. Although recall of events may be enhanced through hypnotism (e.g., Schefflin, Spiegel & Spiegel, 1999) or abreaction techniques that rely on the administration of disinhibiting drugs (e.g., Kopelman, Christensen, Puffett & Stanhope, 1994), the methods used mask the psychophysiological arousal that would normally occur in response to recollection. To overcome these problems, guided imagery has been used to recreate the memory of a past event so that psychophysiological reactions and psychological responses to such an event may be examined. Success with this type of procedure has been achieved, for example, in the examination of traumatic events (e.g., Blanchard, Hickling & Taylor, 1991; Holmes, Williams & Haines, 1998; Orr et al., 1998; Shalev, Orr & Pitman, 1993), acts of self-injury (Brain, Haines & Williams, 1998, 2002; Haines, Williams, Brain & Wilson, 1995; Wells, Haines, Williams & Brain, 1999), and dissociative phenomena (Williams, Haines & Sale, 2003).

The use of guided imagery is based on the propositions of Lang (1979) who identified that cognitive events (thoughts about a behaviour) result in measurable efferent outflow. It has since been established that personalised imagery depicting actual events that have been experienced by the individual result in a more appropriate response to imagery content than does standard imagery where individuals are asked to image an event that they have not experienced (e.g., Haines et al., 1995; Pitman et al., 2001; Shin et al., 2000). The function of personalised guided imagery is to recreate the memory of an event, present it to the individual in a structured way, and measure the efferent outflow and the psychological response. In addition, by structuring the imagery into identifiable stages, it is possible to examine the development of the reaction over the course of an event. This methodology has been successfully applied to the examination of homicidal behaviour

(e.g., Glading, Williams & Haines, 2001; Glading, Williams, Haines & Sale, 2001; Haines, Williams, Glading, & Sale, 2001; Haines, Williams, Sale, Glading & Davidson, 2001; Williams & Haines, 2001; Williams, Haines & Casey, 2001; Williams, Haines, Sale & Glading, 2001).

The data presented here were part of a larger study. Additional information about the results of a complete psychological assessment is available from the authors. The assessments were conducted post-trial and did not form part of the case for the defence or prosecution.

#### CASE ONE – TOM

Tom was 28 years of age at the time of assessment and had been incarcerated since 1990. He was reasonably attractive and was superficially friendly. Although he stated that he finds it difficult to understand the rules and regulations at the prison, he has never been punished for inappropriate behaviour while incarcerated.

Tom was raised in a working class family and is the second oldest of four sons. He grew up in a suburban area. He had commenced Year 11 at college but failed to complete his education. His childhood and adolescence were marred by poor anger control. This led to disciplinary problems at school and punishment for fighting. His aggressiveness and impulsivity had a detrimental effect in relation to his much loved sporting activities. He described many times when he was unable to control his anger in any other way than running through the bush, smashing plants and small trees, until he was exhausted.

Tom's criminal activities had been brought to the notice of the police. He was dismissed from his job in retail because of stealing. His employer strongly suspected him of dishonesty and theft and set a trap for him. Tom claimed that he knew that the trap was being set but was driven to steal despite of this.

Of most relevance to the homicidal act that he was ultimately to commit, this young man had previously engaged in two similar behaviours. At the age of 16 years and following a fairly minor unrelated triggering event that had made him angry and frustrated (failing to be collected and taken to football training), he followed and stabbed a young girl. He stabbed her only once and caused her relatively minor injury. The victim was unknown to him and seemingly randomly selected. He denied having planned the event. From here, this event will be referred to as Assault 1.

Less than one week later, Tom again randomly selected a young girl aged 12 years, followed her,

stabbed her repeatedly and dropped a rock on her head. He believed at the time that he had killed this child. Indeed, she was severely injured and she spent many weeks in a coma. From here this event will be referred to Assault 2. Tom denied premeditation and tried to ascribe motive by stating that he still must have been angry about the relatively minor event that had occurred the week before.

Through a series of events, Tom came under police scrutiny. In response, the family moved away from the area and, except for the incident of stealing, there was no further evidence of criminal behaviour until the time of the homicide.

The victim of the homicide was a young female schoolgirl who was known to Tom. He described their relationship as boyfriend-girlfriend although they were no longer seeing each other at the time of the homicide. On the day of the homicide when Tom was aged 17 years, he either contacted her (the preferred account) or she contacted him (depending on the version he gives) and an arrangement was made to meet. He met with this young girl and they walked in a bushy area in the early afternoon.

Tom claimed that they had consensual sexual intercourse although the pattern of bruising on the young girl that was examined post-mortem sheds some doubt on this version of events and indicates the use of force. Following the sexual act, he repeatedly hit her on the head with the sharp blade of a tomahawk until she was dead. He claimed that he was unsure about whether it was his intention to kill her when they set out on their walk although it is clear that he took the tomahawk with him, that he concealed the tomahawk from her, and that the possibility of killing her had crossed his mind.

He was soon apprehended. Tom pleaded guilty to murder and attempted murder and was given a sentence of the term of his natural life. Having been sentenced before truth in sentencing legislation was enacted, he currently has no fixed sentence duration.

#### METHOD

##### *Materials*

The Millon Clinical Multiaxial Inventory – III (MCMI-III; Millon, Millon & Davis, 1994) was administered to measure Axis I and Axis III psychopathology. In addition, the Hare Psychopathy Checklist: Screening Version (PCL:SV; Hart, Cox & Hare, 1995) was used to determine the presence of psychopathy in this individual. Two independent clinicians were used

to rate the presence of a range of variables indicative of the presence of psychopathy. A range of other psychological tests were administered as part of a larger study but will not be reported here. Visual analogue scales (VASs) (McCormack, de Horne & Sheather, 1988) were employed to record subjective reactions to imagery using bipolar dimensions of not angry-angry, not fearful-fearful, and not guilty-guilty. A higher score (0-100) indicates a more negative experience.

### *Imagery Scripts*

Personalised imagery scripts were used to guide the person through the images and scenes that helped him to re-experience the psychological and psychophysiological reactions that he had at the time of the act, be it neutral or violent acts. Scripts were drafted using information detailed by the participant in relation to the homicide and two assaults. Scripts relating to a non-homicidal aggressive interaction and an emotionally neutral event were used for control purposes. The script interviews consisted of descriptions of the scenes in terms of environment, cognitions, behaviours, emotions and psychophysiology. Personal reactions were included into the scripts to help trigger his own personal images of what was happening. The emphasis was placed on using the participant's own view of what happened. The interviews were audio-taped to aid the researchers in preparation of the scripts. Only information provided by the participant was used in developing scripts.

Each script was divided into five stages (setting the scene, approach, incident, consequence and resolution) that represent a temporal sequence from immediately prior to the event of interest, to the time immediately after the event of interest. The content of each of the scripts for Case One are outlined in Table 1.

### *Apparatus*

Psychophysiological recordings were made using an Acer TravelMate 514T computer linked to a PowerLab 4/20 portable data acquisition system using Chart 4.0.1. Although multimodal recordings were made, heart rate will be reported here. Heart rate was recorded using Unilect high resolution Ag/AgCl adhesive ECG electrodes at the 2<sup>nd</sup> rib on either side of the torso with an earth reference on the mastoid process.

### *Procedure*

The data were collected as part of a larger study that had the approval of the University Human Research Ethics Committee and the Department of Justice and Industrial Relations. Written informed consent was obtained from the participant. Separate consent was obtained for participation and for publication of results.

The participant was interviewed at the prison hospital to obtain the information required for script construction. This interview was audiotaped. The participant was given the MCMI-III to complete between sessions. One of the researchers prepared the scripts from the audiotaped interview. At the second session, electrodes were applied using standard electrode placements. A 60 second baseline recording was taken as the participant sat with his eyes closed. One researcher then administered each stage of each of the first script while a second researcher monitored the recording of the psychophysiological data. There was a 10 second pause between each stage during which the participant was allowed to open his eyes. At the end of the script, the participant was asked to rate his psychological response to each stage of the preceding script on the VASs. To facilitate these ratings, key elements of each stage were reiterated. Subsequent scripts were administered in the same way.

The participant was debriefed at the end of each session. Further, the participant was visited on one other occasion when the results of the assessment were described and additional debriefing occurred.

### *Data Transformation, Scoring and Analysis*

A 30 second scoring period from the baseline and each stage of each script was taken. This scoring period was taken from approximately 15 seconds into each stage. This scoring method has been successfully used elsewhere (e.g., Haines et al., 1995). A mean heart rate for the scoring period was obtained.

The data was handled in a number of ways. Descriptive data from psychological testing is presented with indication of clinical significance. Across stage responses to imagery are described relative to script content. Between script differences at each stage were determined to be significant if more than 3.29 standard deviations above the mean of the stages of the neutral script (See Tabachnick & Fidell, 1989 for discussion of the identification of outliers.)

For the heart rate data it was possible to use interrupted time series analysis to determine approximate 95% confidence intervals about the mean response to each stage of the scripts. The

analysis takes account of sequential dependencies in the data by means of autoregressive parameters which reflect the relationship between observed values of the series at different time lags, and moving average parameters which model the relationship between residual errors at different time lags. It also models intervention effects due to differences in the effects of the imagery at the various stages in terms of underlying step functions. Step functions were used as a first approximation to assess intervention effects, as the form of the actual effects is unknown and a wide variety of forms have been observed in similar studies. If there is a positive autoregressive effect, an underlying step function will produce an increase to an asymptotic level that is estimated in the time series model.

A time series model was constructed and tested for the response to imagery in each series, including statistically significant autoregressive and moving average parameters and any statistically significant steps between stages. The confidence intervals derived from the parameters are approximations that are influenced by the form of the intervention effects and departures from normality in the distribution of residuals. A further approximation is that in fitting the model to stages, the pauses between stages were ignored as they were too short to be assessed within the model. Despite these limitations, the derived confidence intervals provide some indication of the likely variability of the asymptotic mean response to imagery at a particular stage.

Table 1.  
*The Content of Each Stage of Each Script for Case One.*

Script	Stage	Content
Homicide	Scene	Tom meets the victim and walks through the bush.
	Approach	Sexual intercourse takes place.
	Incident	The victim is hit on the head with a tomahawk.
	Consequence	Tom attempts to hide the body.
	Resolution	Tom flees the scene.
Aggression	Scene	Sitting in fire truck deciding on next action.
	Approach	Getting the go ahead from HQ to proceed.
	Incident	Female firefighters become fearful and Tom becomes angry with them.
	Consequence	Proceed through fire.
	Resolution	Arrive at clearing and proceed to fight fire.
Neutral	Scene	Tom standing in prison yard waiting for lunch.
	Approach	Custodial officers preparing to give signal.
	Incident	Signal given and men line up for parade.
	Consequence	Names called then people file off to go to lunch.
	Resolution	Tom walking past custodial officer and out of yard towards lunch room.
Assault 1	Scene	At corner store. Notice victim.
	Approach	Follow victim.
	Incident	Stab victim.
	Consequence	Move away from victim.
	Resolution	Flee scene.
Assault 2	Scene	Kicking football with brother on front lawn.
	Approach	Leave for football training. Notice and follow victim.
	Incident	Repeatedly stab victim.
	Consequence	Move victim and drop rock on her head.
	Resolution	Flee scene

RESULTS

*Psychological Functioning*

On the PCL:SV (Hart et al., 1995), Tom obtained a score of 21 from one rater and a score of 19 from the other which placed him above the cut-off score of 18 indicating that clinically significant psychopathic tendencies were evident.

When final BR scores for the subscales of the MCMI-III were calculated, clinically pervasive personality pathology was evident for schizoid (87), avoidant (95), depressive (95), negativistic (88) and masochistic (90) personality traits. In addition, clinically prominent scores were obtained for the anxiety (75) and dysthymia (81) syndromes.

*Psychophysiological Response to Imagery*

Figure 1 presented the mean heart rate responses for baseline and each of the five stages of each of the scripts. There was a lack of variation in heart rate across the stages of the homicide script. It was interesting to note that the only evidence of psychophysiological reactivity were short-lived elevations to the mention of the word “tomahawk”.

The second script involved a description of a time when Tom had become angry with a female firefighter. Again, there is little variation across the stages of the script. If a comparison was made only between these two scripts, it may be speculated that this stable pattern represents elevated psychophysiological arousal to both scripts. However, this was not the case.

There was little differentiation between the homicide, aggression, and the neutral scripts. The neutral script described standing on parade in the yard at the prison. This happens up to six times a day and is a normal, somewhat boring part of the daily routine at the prison. It is interesting to note that the highest level of arousal was during the consequence stage of the neutral script. Contained in this stage was a description of the man in question leaving the yard and walking past a custodial officer. At this time he routinely made a comment to the custodial officer about what he believed to be the nonsensical nature of parade.

As mentioned, it was decided that it would be interesting to compare this person’s responses to the homicide with responses to the two previous assaults. The behavioural pattern was one of escalating violence, in a serial pattern. The differences in baseline represent an overall lower arousal level at the second recording session as the two assault scripts were administered on a separate day. Again, to the first assault, there was little evidence of major alteration of psychophysiological response over the course of the event.

The largest variation in heart rate occurred for the second assault with a reduction in arousal from the scene stage to the consequence stage, with an increase again as he was fleeing the scene. Despite these representing the greatest variation in response, they would not be considered clinically significant if a change of 20% of baseline heart rate is taken as an indication of the change being clinically relevant (Blanchard & Young, 1973).

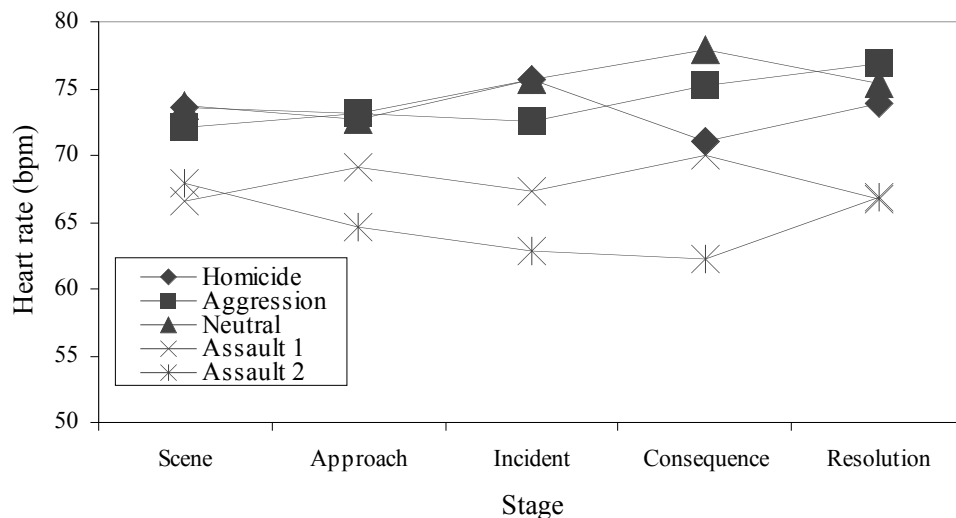


Figure 1. The mean heart rate for each stage of each script for Case One – Tom.

The results of the time series analysis are presented in Table 2 which shows respectively the best-fitting autoregressive and moving average model for each series, and the asymptotic means and their standard errors for each significant step. For the homicide script, there was an initial significant step from baseline to the scene stage with a further increase at the incident stage. The

significant increase at the incident stage was a reflection of the low heart rate variability as denoted by the small residual mean square. For the two assault scripts, there was no further variation in heart rate after an initial significant step from baseline to the scene stage.

Table 2.

*Statistically Significant Autoregressive, Moving Average and Step Parameters with Asymptotic Standard Errors (in parentheses) in the Interrupted Time Series Models of Heart Rate Scored for Sequential two-second Intervals for the Homicide Script (N=195), Aggression Script (N=201), Neutral Script (N=164), and Assault Scripts (N=223, 247) Excluding Baselines.*

	Homicide	Aggression	Neutral	Assault 1	Assault 2
p(1)					.90 (.05)
q(1)	-.75 (.05)	-.68 (.05)	-.60 (.05)	-.48 (.07)	.52 (.08)
q(2)				-.16 (.07)	.21 (.07)
Scene	73.12 (.85)	75.46 (.60)	75.59 (.66)	68.58 (.66)	66.24 (.89)
Approach					
Incident	2.84 (1.07)				
Conseq			4.06 (1.33)		
Resolution			-6.36 (1.71)		
Residual MS	17.96	26.10	18.04	35.78	25.92

### *Psychological Response to Imagery*

Table 3 presents the scores for each stage of each script for the VASs. Fear was rated as very high during the stages of the homicide script, with little variation across stages. Both assault scripts were associated with a similar pattern of response over the stages of the imagery scripts. There was an increase from the scene stage to the approach stage, with continuing escalation of fear to the consequence stage. Fear levels were maintained during the resolution stage. Greater variation in fear levels was evident in relation to the aggression

script than to the homicide script with a reduction of fear from a very high level at the scene stage to a moderate level throughout the rest of the script with the exception of a peak of fear at the incident stage to a moderately high level. Neutral imagery did not elicit ratings of fear. When comparisons were made between scripts, all stages of the homicide and aggression scripts were associated with elevated ratings of fear relative to the neutral script. For the two assault scripts, ratings were elevated at the approach, incident, consequence and resolution stages, but not the scene stage.

Table 3.  
*The Scores for Each Stage of Each Script for the VASs for Case One – Tom.*

Script	Scale	Scene	Approach	Incident	Conseq.	Resolut'n
Homicide	Fear	81	89	77	87	87
	Anger	60	91	53	14	12
	Guilt	90	88	87	90	90
Aggression	Fear	84	57	75	54	56
	Anger	53	24	73	84	24
	Guilt	56	15	21	28	79
Neutral	Fear	14	12	14	15	14
	Anger	14	12	13	15	15
	Guilt	13	12	14	13	14
Assault 1	Fear	16	66	75	88	84
	Anger	51	70	87	12	14
	Guilt	12	12	52	90	89
Assault 2	Fear	11	50	56	88	90
	Anger	14	29	92	89	52
	Guilt	11	11	55	73	91

Tom offered an explanation for this behaviour as being driven by feelings of anger and that the harmful act causes these angry feelings to dissipate. Clearly, this pattern of anger reduction, first occurring during the actual homicidal attack, fitted this description. By the consequence and resolution stages, anger had virtually disappeared. For the first assault, a similar pattern of anger reduction was evident as was noted for the homicide script except that the anger reduction did not occur until after this initial attack was completed. The anger response to the second assault was interesting. This assault occurred only one week after the initial assault and was not precipitated by the same anger-evoking event as the previous assault. Examination of his description of the event seemed to indicate that he calmly and deliberately targeted this child and became angry only as he perpetrated the crime. Once generated, the anger lasted longer than in relation to the previous and subsequent violent events but still resulted in anger reduction by the resolution stage. The pattern to the homicide script contrasted sharply with the pattern to the aggression script where anger escalated and was not reduced until Tom moved away from the person who was

annoying him and was distracted by other activities. Little variation in levels of anger was evident in relation to the neutral script and the overall level of the ratings is low. It is interesting that the penultimate and ultimate stages of the homicide script elicited as little anger as did the neutral script.

Between script comparisons indicated some substantial variations. In comparison with the neutral script, the homicide script elicited higher ratings of anger at the scene, approach and incident stages, but not the consequence or resolution stages. The ratings at the scene, approach and incident stages of the Assault 1 script also elicited higher ratings of anger than the neutral script but not at the consequence or resolution stages. For the Assault 2 script, higher ratings were evident at the approach and incident stages only.

Ratings of guilt were very high throughout the homicide script with little variation across stages. Ratings of guilt were increased from low levels at the scene and approach stages of the Assault 1 and Assault 2 scripts to moderate levels at the incident stage, and subsequently, to extreme levels at the consequence and resolution stages. In contrast to



the high ratings for the homicide script, and seemingly unrelated to the aggression script content, initial moderate levels of guilt at the scene stage gave way to low to very low ratings at the approach, incident, and consequence stages. The resolution stage was associated with an increase in guilt ratings to a high level. Neutral imagery did not elicit feelings of guilt. Between script comparisons indicated noteworthy differences. The ratings for the homicide script were elevated relative to the neutral script at all stages. Assault 1 and Assault 2 imagery were associated with elevated ratings of guilt at the incident, consequence and resolution stages but not the scene or approach stages.

## DISCUSSION

There was considerable evidence of problematic personality characteristics although there was no indication of severe personality disturbance in relation to borderline, schizotypal and paranoid traits. Two independent raters were satisfied that there was sufficient evidence to suggest the presence of psychopathy in this individual. Psychopathy is a chronic disorder with symptoms that manifest early and are relatively stable over time (Forth, 1995). It may be that when individual dysfunction in the form of psychopathy (a chronic condition) and environmental pressures (transient conditions) interact, the inhibitions towards violent behaviour are removed and homicidal behaviour occurs (McKenzie, 1995).

It has been determined that people who display psychopathic tendencies are predatory and exploitative and demonstrate marked impulsivity (Quinsey, 1995). All of these characteristics were evident in this perpetrator. The criminal sexual behaviour of these individuals may be characterised as vindictive and opportunistic rather than motivated by sexual arousal or desire (Barbaree et al., 1994). This fits with the description of Tom's sexual behaviour that occurred immediately prior to the homicide. The homicidal behaviour of young psychopathic perpetrators is associated with the selection of low risk victims, the use of knives as the instrument of homicide, and emotional and behavioural disturbance in the perpetrator (Myers & Blashfield, 1997). Again, these descriptions were evident in the characteristics of this perpetrator and the homicidal act.

The psychophysiological assessment demonstrated little variation in heart rate across the stages of the scripts, or between scripts. This pattern of response appears to be typical of the

hyporeaction that is evident in conjunction with psychopathy (Fowles, 2000; Pham, Philippot & Rime, 2000). Other research has identified a lack of change in electrodermal response to distress cues in both adults (Blair, Jones, Clark & Smith, 1997) and children (Blair, 1999) with psychopathy, although responses to threatening and neutral cues did not distinguish these people from matched control groups.

These results indicated that people with psychopathy do not process emotional information appropriately; their affective interpretation of events may be distorted. There is evidence for this being the case (Blair et al., 1995; Kroner & Forth, 1995). Of relevance to the perpetration of violent, criminal behaviour, it is apparent that there is a lack of connection between the actions of psychopathic individuals and the negative emotional consequences that would normally be experienced (Pollock, 1999). This is manifested in the fact that few psychopathic individuals become traumatised as a consequence of their violent behaviour.

The results of the current assessment demonstrated some consistency in response within scripts but not between scripts of a similar type. That is, the homicide, Assault 1, and Assault 2 scripts elicited different patterns of psychological response over the stages, despite the similarity in the behavioural content of the scripts. Interestingly, it would appear that the psychological responses to the aggression script, although showing some consistency between measures, did not seem to follow script content. It may be that accurate charting of emotional reactions is problematic for this individual. In some cases, such as with homicidal behaviour, a normative response is evident. That is, a person could identify that they were supposed to experience guilt if they had killed someone. However, the pattern of the guilt response to the aggression imagery would indicate that, without the norms for the experience of guilt, Tom is unable to appropriately label a situation as requiring a guilt-no guilt response.

This view is supported by the examination of remorse by this individual. In general, psychopathic individuals are driven by self-gratification and have little thought for the distress of their victims or the victims' families (Belmore & Quinsey, 1994). Tom seemed unable to spontaneously give an expression of remorse although he will provide a statement of remorse if clues are given as to when such a statement is required. His skills in this area have improved over time. It may be that he has learned that certain circumstances demand a remorseful response and is able to express remorse on these occasions.

The presence of psychopathy is a very good predictor of violent recidivism (Hare, 1996; Hart, 1996; Hemphill & Hare, 1995; Serin & Amos, 1995). Personality disorder is common among serial, repeat homicide perpetrators (Adler & Lidberg, 1995), and psychopathy is evident in some (Teles, 1995). It has been suggested that these people develop a cold addiction to violence (Geberth & Turco, 1997), over time developing into a serial pattern. It may be a learned response that is logical for the perpetrator (Hale, 1993). For example, the perpetrator may be sensation seeking (DeHart & Mahoney, 1994), a motivational explanation that is supported by the overall lack of psychophysiological arousal evident in relation to this individual. This perpetrator expressed no confidence that he would have been able to have resisted further homicidal behaviour had he not been apprehended.

#### CASE TWO – DANIEL

Daniel was 42 years of age at assessment and has been incarcerated since 1999. Physically, he is a large and imposing man. He was cooperative during the interviews although his presentation was somewhat dramatic. During his period of incarceration he has claimed to have significant psychological disturbance as a result of the homicide although this claim was regarded with some scepticism by a consultant psychiatrist who assessed his psychological functioning.

Daniel was raised in a working class family and is the eldest of six children. He childhood was marred by severe physical abuse by his father. He was raised in a city environment and left school after completing Year 9. At the time of the homicide he was employed as a storeman.

At a relatively young age, Daniel married an older woman although this relationship did not last. At the time of the homicide he was married with two children and was the father-figure to an 18 year old stepdaughter who he had raised since she was four years of age. He described general dissatisfaction with his marriage that may have been a reflection of current financial difficulties and the fact that he was working very long hours.

In terms of criminal history, there was a report of an early episode of shoplifting. Of more significance was a situation that developed when he was 15 years of age. He illegally entered the home of a woman while she was in residence. Although the information provided by Daniel about this incident was not detailed, it is clear that he tied her up and covered her head. As a consequence of his

actions, he was given 12 months probation for stealing.

The victim of the homicide was a young lady who was unknown to Daniel. She was described as an assertive young woman who seemed capable and confident. While Daniel's family was away on holiday, he went out drinking at night. When at a local bar, he met a friend who interacted with the victim although Daniel claimed not to have been aware of this. He subsequently abducted this young woman, raped her, and killed her.

It was apparent that Daniel became aware of the victim and followed her as she walked home. He parked his car, waited behind a bush, then grabbed her, put a coat over her head, pushed her into the back seat of his station wagon, and bound her hands. He then drove to a secluded area and stopped his car in what he believed was a country laneway. Daniel pulled the victim from the car, roughly removed her clothing and raped her while holding her on the bonnet of the car. This action was followed by an attempt to strangle the victim. In the struggle, the victim fell from the car onto the ground.

At this point, Daniel was disturbed by a man who needed to travel up the laneway. Daniel claimed that his car had broken down and the other man helped him to push the car a short way so that the second vehicle could get past. Offers of further assistance were declined by Daniel.

After this disruption and believing that the victim was dead, Daniel lifted the body and placed it in the back of the station wagon. When an attempt to reverse the car from the laneway resulted in the car becoming stuck in a small stream, he went to the back of the car to move the body. It was at this time that Daniel became aware that the victim was not dead. He pulled the victim from the car and walked the then conscious young woman through the woodland and over a wire fence. He then strangled the victim with his belt until she was dead and dropped a large rock on her head to ensure her death. He then returned to his car, removed it from the stream, and drove to his home.

He claimed that he had not planned to rape or kill this young woman although there was some evidence of premeditation. However, the period of premeditation was hours or less rather than days.

Daniel pleaded guilty to the charges and was sentenced to a minimum non-parole period of 25 years incarceration.

#### METHOD

The method is the same as for Case One. Table 4 presents the content of each of the imagery scripts for this participant. The imagery scripts used in this case related to the abduction of the victim, the

rape of the victim, and the homicide of the victim. Non-homicidal aggression and an emotionally neutral event were used for comparison purposes.

Table 4.  
*The Content of Each Stage of Each Script for Case Two - Daniel.*

Script	Stage	Content
Abduction	Scene	Daniel targets the victim and begins to follow her.
	Approach	Daniel parks car and hides behind tree.
	Incident	Daniel pounces on victim, throws a coat over her head and pushes her into the back of the car.
	Consequence	Daniel binds the victims hands and punches her in the head.
	Resolution	Daniel drives away, talking to the victim
Rape/Attempted Homicide	Scene	Daniel parks car in laneway and drags victim from the car.
	Approach	Victims raped on the bonnet of the car
	Incident	Perpetrator attempts to strangle the victim.
	Consequence	Daniel views body beside the car and makes plan to remove body.
	Resolution	Daniel disrupted by passer-by.
Homicide	Scene	Daniel puts body in back of car and attempts to drive away but gets stuck.
	Approach	Daniel removes body, realises victim is alive, and forces her into woodland.
	Incident	Daniel strangles victim and drops rock on her.
	Consequence	Daniel views body then returns to car.
	Resolution	Daniel frees car and drives away from scene.
Aggression	Scene	Daniel at home. Step-daughter refusing to go to school.
	Approach	Yelling at step-daughter to get out of bed.
	Incident	In a rage, Daniel banging on door and window.
	Consequence	Daniel slams door, gets in car, reverses out of driveway.
	Resolution	Daniel drives down street in reckless manner.
Neutral	Scene	Sweeping floor in prison hospital.
	Approach	Removes dust pan, then fills bucket with water and detergent.
	Incident	Washes floor.
	Consequence	Finishes washing floor and empties bucket.
	Resolution	Gets polisher, turns it on and polishes floor.

personality pathology scores were noted for

## RESULTS

### *Psychological Functioning*

Daniel scored 8 on the PCL:SV indicating that there was no evidence of psychopathy. When the final BR scores for the MCMI-III subscales were calculated, it was evident that clinically pervasive

schizoid (93), avoidant (106), depressive (101), dependent (96), negativistic (86), masochistic (101), schizotypal (106), borderline (98) and paranoid (105) personality traits. Further, clinically prominent syndrome scores were indicated for anxiety (98), dysthymia (105), alcohol dependence

(88), posttraumatic stress disorder (105), thought disorder (82) and delusional disorder (79) subscales. The scores indicated the presence of a clinical syndrome in relation to the major depression (105) subscale.

The validity index indicated a valid protocol. In addition, the Desirability index was within normal limits. However, there were elevations on the Disclosure index indicating reticence in responding and the Debasement index denoted a tendency to present his difficulties in a more negative way. The elevated score on the Disclosure index was not so high as to invalidate the protocol, although it would be necessary to interpret these results with caution.

*Psychophysiological Response to Imagery*

Figure 2 presents the mean heart rate for baseline and each stage of each script. The first script described the abduction of the victim. During the scene stage, seeing the victim at the service station was described. Elevated heart rate was noted at this time. The pattern of arousal did not differ over the

last four stages of imagery but was elevated relative to other scripts. Although at a lower level of arousal, the pattern of heart rate across the second script largely mirrored that of the abduction script. Although labelled the rape script, this script also contained information about the first attempt on the victim's life. The third script described the actual murder. There was an increase in heart rate at the incident stage when the actual homicide was described. The three scripts that were pertinent to the crime, were compared with the pattern of response to an aggression script that described the perpetrator's intense anger at his stepdaughter. Of particular interest is the difference in the level of arousal at the incident stage that described his most intense anger in response to his stepdaughter's refusal to do as she was told. His arousal level clearly was lower than to the crime-related scripts. Finally, the pattern of response to the neutral script indicated little variation across scripts and resulted in a lower level of arousal in comparison with all other scripts.

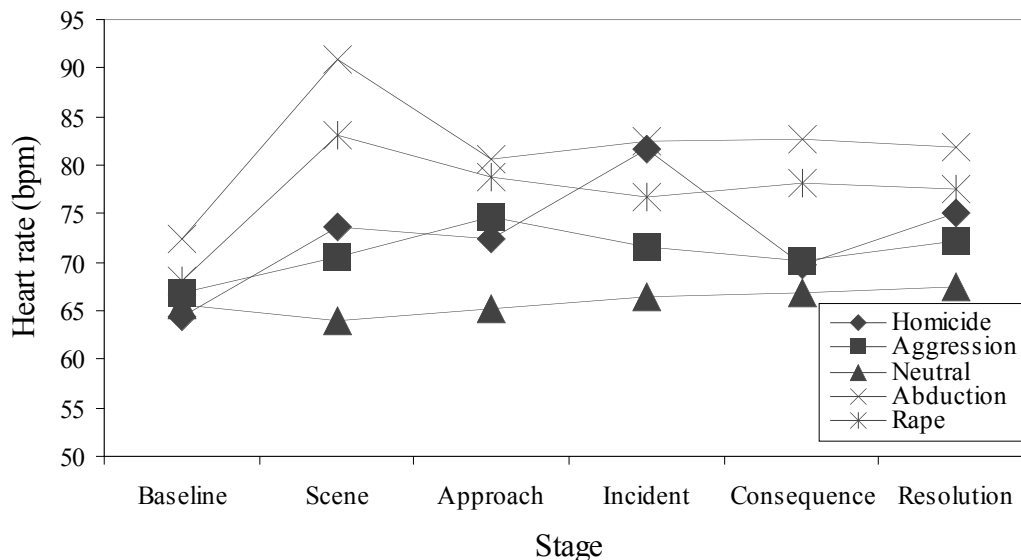


Figure 2. The Mean Heart Rate for the Baselines and Each Stage of Each Script for Case Two – Daniel.

The results of the time series analysis are presented in Table 5 which shows respectively the best-fitting autoregressive and moving average model for each series, and the asymptotic means and their standard errors for each significant step. For the Abduction and Rape/attempted murder scripts, there was an

initial increase in heart rate from baseline to the scene stage and a significant reduction in heart rate at the approach stage. In contrast, the initial increase in heart rate from baseline to the scene stage of the homicide script was maintained throughout the remaining stages.

Table 5.  
*Statistically Significant Autoregressive, Moving Average and Step Parameters with Asymptotic Standard Errors (in parentheses) in the Interrupted Time Series Models of Heart Rate Scored for Sequential two-second Intervals for the Abduction Script (N=256), Aggression Script (N=229), Homicide Script (N=258), Aggression Script (N=229) and Neutral Script (N=283) Excluding Baselines.*

	Abduction	Rape	Homicide	Aggression	Neutral
p(1)	.89 (.05)	.23 (.08)	.93 (.04)	.50 (.08)	.28 (.09)
p(2)				-.63 (.08)	-.54 (.06)
q(1)	.30 (.09)	-.52 (.07)	.20 (.07)	-.36 (.10)	-.23 (.10)
q(2)	.34 (.08)		.48 (.06)	-.35 (.09)	
Scene	85.61 (1.90)	81.56 (.99)	72.79 (.99)	70.56 (.57)	64.44 (.52)
Approach	-5.90 (2.06)	-4.33 (1.12)		2.08 (.79)	2.51 (.57)
Incident				-1.76 (.67)	
Conseq					
Resolution				1.89 (.73)	
Residual MS	22.28	15.62	13.66	6.58	15.19

#### *Psychological Response to Imagery*

Table 6 presents the scores for each stage of each script for the VASs. In relation to the abduction script, fear ratings increased from a moderately high level at the scene and approach stages when the victim was targeted and the preparation to abduct the victim was made to a very high level throughout the remainder of the script. The rape/attempted homicide script was associated with elevated ratings of fear with little variation across the stages. The homicide script also elicited very

high ratings of fear with the exception of the consequence stage when fear was rated as moderately low and related to the return to the car after the commission of the homicidal act. The aggression script elicited fear ratings at the same level as the rape/attempted homicide script with little variation across stages. Neutral imagery elicited little fear. When comparisons were made between scripts it was evident that the abduction, rape/attempted homicide, homicide, and aggression scripts all elicited higher fear ratings than the neutral imagery at all stages.

Table 6.  
*The Scores for Each Stage of Each Script for the VASs for Case Two – Daniel.*

Script	Scale	Scene	Approach	Incident	Conseq.	Resolut'n
Abduction	Fear	78	83	85	87	85
	Anger	58	17	84	21	25
	Guilt	79	86	87	86	87
Rape	Fear	88	88	88	86	87
	Anger	56	86	87	86	87
	Guilt	87	88	89	86	86
Homicide	Fear	89	91	86	28	88
	Anger	90	16	87	19	18
	Guilt	89	89	87	87	89
Aggression	Fear	87	89	90	89	89
	Anger	87	89	90	88	88
	Guilt	14	15	90	89	88
Neutral	Fear	15	14	14	13	14
	Anger	13	13	13	12	12
	Guilt	14	15	14	13	13

Although not generated by the victim, Daniel reported moderate levels of anger when he first targeted the victim for abduction. Anger was reduced when hiding and waiting for the victim at the approach stage, but markedly increased when she struggled while being pushed into the car. Daniel did not report being angry during the final two stages of the homicide script. In contrast, his anger ratings were elevated during the rape at the approach stage, and attempted homicide at the incident stage, and in relation to his experiences subsequent to the unsuccessful strangling. The pattern of response to the actual homicide was noticeably similar to the abduction script with the exception of an elevated level of anger at the scene stage when he discovered that the victim was not yet dead. Anger dissipated when walking the victim through the bush but increased again when Daniel actually killed the victim. Little anger was evident in the immediate aftermath of the homicide. The ratings of anger during the aggression script were markedly elevated and did not vary across the stages. These ratings were in keeping with Daniel's description of the intensity of his anger towards his step-daughter. His level of anger in response to the neutral script was minimal as anticipated. When

comparisons were made between scripts it was evident that the abduction, rape/attempted homicide, homicide, and aggression scripts all elicited higher anger ratings than the neutral imagery at all stages with the exception of the approach stage of the aggression script where the rating was comparable with the neutral imagery rating.

The abduction, rape/attempted homicide, and homicide scripts all elicited very high levels of guilt with little variation across the script stages. Low levels of guilt in the scene and approach stages of the aggression script gave way to very high levels of guilt at the incident stage and this elevation was maintained for the remainder of the aggression script stages. Neutral imagery did not elicit feelings of guilt. When comparisons were made between scripts it was evident that the abduction, rape/attempted homicide, homicide, and aggression scripts all elicited higher ratings of guilt than the neutral imagery at all stages except for the scene and approach stages.

## DISCUSSION

Daniel demonstrated a wide range of personality pathology. He has a tendency to be isolated, avoidant, depressive and dependent. His interpersonal response style is negativistic and he often engages in self-defeating behaviours. He is suspicious of others and is likely to have turbulent interpersonal relationships. He demonstrated a tendency to exaggerate his psychological difficulties. This was evident from formal psychological testing and also manifested in the extreme ratings given on the VASs. In contrast, there is no evidence of the presence of psychopathy.

In addition, there is evidence for the precursors of depressive symptoms prior to the incident in the form of ongoing life stressors such as difficulties with his marital relationship. The link between the experience of life stress and the development of depressive symptomatology is very well established (Garber, 2001; Kendler, Thornton & Gardner, 2001; Kendler, Thornton & Prescott, 2001; Maciejewski, Prigerson & Mazure, 2001; Mazure, Raghavan, Maciejewski, Jacobs & Bruce, 2001) although it is recognised that this relationship may be moderated by factors such as social support (Chou & Chi, 2001; Kalil, Born, Kunz & Caudill, 2001).

The problems experienced prior to the homicide and the resultant symptomatology may have significantly contributed to the eventual perpetration of the rape and homicide. For example, a comparison of men who raped and men who raped and killed indicated that the group who went on to kill following the rape were characterised by having difficulties with interpersonal relationships and suffering from social and emotional isolation (Grubin, 1994). Daniel was suspicious of others and had had turbulent interpersonal relationships.

Daniel reported a history of significant physical abuse by his father. This is common in the family backgrounds of young male homicidal populations (Bailey, 1996), and is also evident in relation to adult homicidal behaviour (Lewis, Yeager, Swica, Pincus & Lewis, 1997; McKenzie, 1995). Daniel reported that he was unhappy that he often manifested the same characteristics as his father. Felson (2000) reported that the expression of anger did not necessarily result in a resolution of those feelings; the expression may act as a catalyst for an escalation of an aggressive response. Frequent expression of anger may have contributed to Daniel's aggressive acts at the time of the homicide. Felson also reported that striking out can also be a habitual 'bad reaction' in certain

circumstances. Daniel may have formed a habit of expressing his anger at the slightest provocation.

The various components of the homicide as presented in the abduction, rape/attempted homicide and homicide scripts resulted in different patterns of psychophysiological arousal either in terms of relative level of arousal or the pattern of arousal changes across the stages. The magnitude of these changes were clinically significant if a marker of clinical significance is taken as a change of 20% or more of the baseline heart rate (Blanchard & Young, 1973). It is interesting to note that the psychological responses to the script content were not always a reflection of the psychophysiological arousal. Under normal assessment conditions, self-report of psychological response is the only information obtained. It is apparent that this information in isolation does not provide sufficient clarification to understand the forces that led to the person engaging in these behaviours.

It would appear that the characteristics of this perpetrator fit with the description of one type of sexually-motivated murderer (Donegan, 2000; Keppel & Walter, 1999; Myers, Burgess, Burgess & Douglas, 2000; Ressler, Burgess & Douglas, 1988). Meloy (2000) indicated that half of the sexually motivated homicides are perpetrated by people who leave disorganised crime scenes, typically have mood disorders and personality disorders, and feel an excessive need for attachment. These people are autonomically hyperreactive and typically have a history of physical or sexual trauma. Daniel fits this profile in that he made no attempt to hide the body or protect himself from discovery except in the most minimal of ways, had underlying depressive symptomatology, had avoidant personality characteristics, and a need to feel accepted. In addition, his psychophysiology suggested he was autonomically hyperreactive, especially to stress cues and he had a history of abuse.

There is evidence that perpetrators of sexual homicide tend to offend when their self-esteem is low. They plan their offence, usually asphyxiation or stabbing (Brittain, 1970). This pattern was evident in this perpetrator. He had been having difficulties with his wife and her absence seemed to cause him distress. He had a strong desire to connect with someone and in a pathological way, abducted, raped and killed his victim to achieve this connection. In descriptions of the abduction he used the term "we" that seemed to denote a mutual agreement or stronger relationship than could possibly have been evident (e.g., "We went for a drive"). By strangling her with his belt, he

achieved even a physically connected death as opposed to shooting which would be a more distant way of committing the homicide. Langevin and colleagues (1988) found that 71% of sexual homicides were committed by strangulation or asphyxiation whereas only 8% of non-sexual homicides were committed by strangulation. Langevin suggested the person who commits the homicide wants the closeness and the control that comes with this type of method. The brutality of this homicide was recognised by the court in the severity of the sentence.

## GENERAL DISCUSSION

This preliminary investigation considered the value of examining peri-homicidal processes and the utility of a personalised, staged guided imagery methodology in undertaking this. This study was able to demonstrate differences in peri-homicidal reaction within the instrumental homicide category. The first case highlighted a hyporeactive arousal pattern that is typically evident with psychopathy. There was virtually no increase or variability in arousal in response to the guided imagery of the homicide. In addition, there was a lack of autonomic response to imagery of two prior homicide attempts. In contrast, the other case resulted in a pattern of arousal to an abduction, rape and homicide that was different from the hyporeactive pattern. Nevertheless, although there was an increase in arousal to the homicidal imagery, it quickly dissipated as the immediate situation was resolved. The results of this study could be used to identify the risk of recidivism for individuals with these characteristics.

The results of this study suggest that future examination of instrumental homicide should firstly consider peri-homicidal reactions and then take into account the hyporeaction-hyperreaction distinction. Central to legal endeavours in such cases is the understanding of the psychological and motivational states operating at the time of the commission of the act. It is proposed that the current methodology should provide data relevant to such matters. Although an earlier variant of the guided imagery methodology was employed in the successful defence in a case of filicide (Williams & Haines, 2001; Williams, Haines & Casey, 2001), the utility of this methodology as a general forensic procedure should be further tested within the judicial system.

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