VIOLENCE AND MAJOR MENTAL ILLNESS

by

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A Thesis submitted in conformity with the requirements
for the Degree of Doctor of Education,
Department of Adult Education, Community Development and
Counselling Psychology
Ontario Institute for Studies in Education of the
University of Toronto

Violence and Major Mental Illness

Doctor of Education 1997

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The purpose of the current investigation was to examine the relationship between major mental illness and violent behaviour. In order to investigate this association, two studies were conducted. The first investigated the criminal histories of psychiatric patients, and the second investigated index charges. Both studies were conducted following a review of 709 files from Metropolitan Toronto Forensic Service (METFORS). Information extracted from the chart review included, current diagnosis (Axis I-Paranoid and Non-Paranoid Schizophrenia, Affective, Delusional, Substance Abuse, and Schizoaffective Disorders; Axis II-Antisocial, Mixed, Paranoid and Borderline Personality Disorders), number of violent, non-violent and indeterminate offenses (past and present), age, age at initial diagnosis, age at first conviction, and gender.

The research data were analysed employing multivariate, univariate and post hoc comparisons. Results indicated that: 1) Individuals with Paranoid Schizophrenia and those with Substance Abuse had incurred more convictions for violent offenses than individuals with Delusional or Affective Disorders. 2) Persons diagnosed with Paranoid and Non-Paranoid Schizophrenia did not differ with respect to the number of previous convictions or index charges. 3) Individuals with co-occurring Substance Abuse Disorder and Antisocial Personality Disorder were found to have significantly more violent convictions than individuals diagnosed with a singular Axis I mental disorder. Further, it was found that persons suffering from an Axis I disorder with a co-occurring Substance Abuse or Antisocial Personality Disorder had committed more nonviolent crimes than persons with a singular Axis I or II disorder.

Results were discussed in terms of idiosyncratic aspects of different forensic populations, and the need to obtain local norms before relying on available reports with forensic groups. Methodological limitations and suggestions for future research are noted.

ACKNOWLEDGEMENTS

Without the encouragement and support of some very special people, this dissertation would not have been completed. I would like to thank, Dr. Lana Stermac, my thesis supervisor, for her patience, guidance and availability; Dr. David Nussbaum, for his insight, dedication and for believing in me; Dr. Phil Nagy for his honesty and statistical expertise.

I am indebted to my family for their unconditional love and support during this long and sometimes arduous process.

I am forever grateful for the emotional support of all my friends, particularly, my two room-mates, Nicola Lyle and Denise Richard who had to live with me even when I was intolerable.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF APPENDICES

CHAPTER I

INTRODUCTION

1.1 OVERVIEW

Despite considerable empirical investigation and theoretical argument, the relationship between mental illness and criminal behaviour continues to be debated (Link & Stueve, 1995; Monahan, 1992b; Hodgins, 1994). An extensive literature review suggests that research in the area of mental illness and crime, although relevant, continues to be limited.

The present study attempted to expand the scope of current literature. The study investigated the relationship of criminal behaviour and mental illness by investigating the criminal careers of individuals suffering from various forms of mental disorders. An extensive retrospective file search was conducted at The Metropolitan Toronto Forensic Services (METFORS) and specific hypotheses were tested.

1.2 HISTORICAL PERSPECTIVES ON VIOLENCE AND MENTAL ILLNESS

Throughout history, the mentally ill have been rejected and ridiculed by society(Davis, 1992). The layman's perception of the mentally ill as violent has often been recorded in historical documentations (Monahan, 1992a). Monahan's (1992a) review of historical perspectives of mental illness indicated that even literature dating back five hundred years made reference to the violent potential of the mentally disordered. He quoted Rosen (1968) as noting that in early history, "two forms of behaviour were considered particularly characteristic of the mentally disordered, their habit of wandering about and their proneness to violence" (p.98).

According to Monahan (1992a) the general perception of the mentally ill as violent, has continued into modern times. Monahan (1992a) indicated that in a poll conducted by the Field Institute for the California Department of Mental Health in 1984, 61 % of the 1,500 participants stated that they "definitely or probably agreed" with the statement that "A person who is diagnosed as schizophrenic

is more likely to commit a violent crime than a normal person" (p. 192).

In earlier times, the mentally disordered were institutionalized on the premise that society must be protected (Davis, 1992). Later, as institutionalization became prohibited, it appeared that persons suffering from mental disorders were being "criminalized". This view of the "criminalization" of the mentally ill, is that the criminal justice system, by default, became the preferred mode of managing the mentally ill (Bloom, Williams & Bigelow, 1992; Davis, 1992; Monahan, Calderia, & Friedlander, 1979). Davis (1992) stated that in 1955 the rate of hospitalization of the mentally ill in Canada was 4.25 patients per 1,000 and decreased drastically to 0.7 per 1,000 in the 1980's. Davis'(1992) review also indicated that commitment criteria have become more stringent, noting that there has been a move toward determining "dangerousness" and away from the "need for treatment". With increasing numbers of mentally ill persons in the community, the police by default have been awarded the responsibility to "do something".

1.3 CURRENT DEBATE

Much of the current literature concerning mental illness debates the association between mental illness and crime. Some assert that mentally ill persons are no more likely to commit a violent act than persons without a mental illness (Cohan, 1980; Monahan & Steadman,1983; Tardiff, 1992; Weiler, 1994). A popular and often cited study supporting this viewpoint was conducted in Germany by Hafner and Boker (1983). Looking at violent crime in Germany between 1955 and 1964, they found that individuals with mental disorders were no more likely to have committed violent crimes than the general population. Others however claim that men and women suffering from major mental illnesses such as schizophrenia or bipolar mood disorders are 2.5 and 5 times more likely than the non-mentally disordered to be convicted of criminal behaviour (Hodgins, 1992).

Davis' (1992) polemic assessing the "criminalization" of the mentally ill indicates that arrest rates have been high for this population since the 1960's. Although he asserted that the mentally ill are often charged for

nuisance behaviour, empirical studies (Glancy & Regehr, 1992; Hodgins, 1992, 1993; Lindqvist & Allebeck, 1990; Mednick, Parnas & Schulsinger, 1987; Taylor, 1993) suggest that the mentally ill are being arrested at relatively high rates for more serious, violent crimes.

Even the Diagnostic and Statistical Manual of Mental Disorders-IV (DSM-IV; APA, 1994) suggests that those with particular mental illnesses such as Paranoid Schizophrenia and Antisocial Personality Disorder, are prone to aggressive acting out. The DSM is utilized by most mental health care providers for diagnostic purposes, as it lists the criteria and symptoms required for the diagnosis of a mental disorder. As the DSM is based on a multiaxial classification system, it is relevant to note that major mental disorders are classified as Axis I disorders and that Personality Disorders are classified as Axis II disorders. The DSM-IV suggests that individuals with Paranoid Schizophrenia are more prone to aggressive acting out than other forms of schizophrenia. It also suggests that aggression and violence are often characteristic of

particular personality disorders, such as Antisocial and Borderline Personality Disorders.

1.4 MAJOR MENTAL ILLNESS AND VIOLENCE

Hodgins (1993) cited a study by Link, Andrews, and Cullen (in press) that compared the criminal behaviours of psychiatric patients with non-psychiatric individuals within the community. Link et al. (in press) divided the subjects into four groups: (1) patients who received psychiatric treatment for the first time in the year preceding the study; (2) patients who were in treatment during the previous year and once before; (3) former patients who received no treatment in the previous year; and (4) a community sample with no history of psychiatric treatment. Within the psychiatric sample, 34% had received a diagnosis of major depression, 19% had been diagnosed with schizophrenia, 10% with another psychotic disorder, and 37% suffered from another mental disorder. Results indicated that 6.7% of the control group had been arrested; 6.0% of the first time patients had arrests; 12.1% of the repeat patients, and 11.7% of the former patients had been arrested. Hodgins (1993) explained that

the patients were arrested more often than the community sample for felonies and violent behaviour. The patient sample was not arrested more often than the non-patient sample for petty crimes.

Lindqvist and Allebeck (1990) followed 644 psychiatric patients from Stockholm county for 14 years. The subjects were born between 1920 and 1959 and discharged from a psychiatric facility in 1971. On discharge, each of the subjects was re-diagnosed using the Diagnostic and Statistical Manual of Mental Disorders (DSM-III). Reportedly, 85% met criteria for schizophrenia. Compared to the general population of Sweden, Lindqvist and Allebeck (1990) found the risk of all criminal behaviour for the mentally disordered cohort to have increased by a factor of 1.2 for men and 2.2 for women. The patient group was also found to have committed four times more violent crimes than the general population. The authors also discovered that 55% of the convicted schizophrenic sample had a co-occurring substance abuse problem.

Several other studies have found similar results. Hodgins (1992) investigated data collected from 15,117 Swedish men whose criminal careers had been followed for more than 30 years. Like Lindqvist and Allebeck (1990), Hodgins (1992) discovered that men who had been diagnosed with a major mental disorder were four times more likely to be convicted for a violent act than men who did not have a psychiatric disorder.

Wessely, Castle, Douglas and Taylor (1994) conducted a longitudinal study exploring the criminal careers of 538 schizophrenics in London, England between 1964 and 1984. They hypothesized that individuals with schizophrenia are more prone to criminal behaviour than individuals with other mental disorders. They found that the rate of conviction for most offenses was increased for women with schizophrenia compared to other mental disorders. They also found that men with schizophrenia were more likely to be convicted of violent offenses than those with other mental disorders. Much like previous studies, Wessely et al. (1994) also found that subjects with schizophrenia

were more likely to acquire a criminal record than those with other mental disorders.

Similarly, Teplin, McClelland and Abram (1993) compared the criminal careers of mentally and non-mentally ill jail detainees over a three year period, to investigate whether arrest rates for violent crime differed as a function of psychiatric diagnosis. They discovered that individuals with an Affective Disorder had lower arrest rates for violent acting out than did persons with Schizophrenia.

Gottlieb, Gabrielsen, and Kramp (1983) studied individuals in Denmark who had been convicted of murder. In their sample of 251 offenders, 20% of the male subjects were diagnosed as suffering from a psychotic mental disorder. Thirty percent of these men had a co-existing history of substance abuse. Similarly, Lindqvist (1986) found that 53% of the male subjects convicted of homicide in Sweden (N=63) had been diagnosed as having a major mental disorder. Twenty three percent had a dual diagnosis of mental disorder and substance abuse.

In Canada, few studies have investigated the violent behaviour of mentally ill offenders (Beaudoin, Hodgins, Lavoine, 1993). Beaudoin et al. (1993) investigated relationships between homicide, schizophrenia and substance abuse. They compared 14 schizophrenics found not criminally responsible (NCR) for homicide (murder or manslaughter) with 12 schizophrenics convicted of homicide. The control group was composed of 15 offenders convicted of homicide without any major mental disorder. Drug and alcohol use, previous history of aggression against others, and mental health were assessed using standardized instruments such as the Diagnostic Interview Schedule and the "Grille d'histoire d'aggression physique contre la personne'. Results indicated that 60% of the control sample was found to have a history of substance abuse, whereas 35.7% of the NCR schizophrenics had a substance abuse history. They also found that both samples of convicted offenders were more likely to have committed the offense under the influence of drugs or alcohol than the NCR group. Results revealed that within the two schizophrenic groups, those found NCR tended to

abuse substances more, although they did not commit crimes as often as the non-NCR group during intoxication. During their investigation, Beaudoin et al. (1993) also discovered that the NCR schizophrenics behaved aggressively more often than the other two groups but had fewer convictions. Beaudoin et al. (1993) asserted that offenses perpetrated by those with mental disorders are most often officially excused, under-reported, and under-evaluated.

Asnis, Kaplan, Praag and Sanderson (1994) also employed the use of psychometrics to investigate aggression in psychiatric patients living in the community. Asnis et al. (1994) examined the prevalence of homicidal behaviour in psychiatric patients living in Bronx, New York, by requesting 517 out-patients of a medical centre to complete the Harkavy-Asnis Suicide Survey, the Homicidal Behaviours Survey, and the revised Symptom Checklist-90. Comparison of demographic and clinical characteristics of patients revealed that 4% of subjects reported a past homicide attempt. It was indicated that subjects with histories of homicidal

behaviour also presented with other aggressive behaviours such as suicidal ideation, suicidal attempts, as well as elevated interpersonal sensitivity, hostility and paranoid ideation. It was suggested that outward aggression is often also inwardly directed as 19 of the 21 subjects who had attempted homicide had also attempted suicide. Asnis et al. (1994) concluded that the relationship between past and current acting out behaviours cannot be overlooked and that clinicians should investigate past histories of aggressive behaviours during evaluations.

Taylor (1993) stated that although mentally ill offenders appear in both mental health and criminal systems, the proportion entering each venue remains uncertain. She stated that serious crimes such as homicide, are likely to be recorded as a crime, regardless of the person's mental health. Less serious crimes however, have a lower conviction rate, with more not criminally responsible findings. Taylor (1993) reported that in London, England, the conviction rate for mentally ill offenders was only one in seven, approximately 50% for assault, 12% for criminal damage, and less than 10% for

burglary. It was unclear whether unrecorded crime discriminated between non-mentally ill or mentally ill persons. It was postulated that relatively healthy individuals are more likely able to conceal their crimes than mentally-ill individuals. Robertson (1988) found that among those arrested, only 45% of the non-mentally disordered persons were arrested by uniformed police officers. He suggested that the others needed further investigation by detectives. Ninety percent of the mentally ill offenders were arrested by uniformed police, 86% on the day of the offense, and 75% at the scene of the crime. Up to 75% of the offenses committed by mentally ill persons were witnessed, compared to less than a third for the healthy group. The author asserted that although it appears that more mentally ill are arrested than healthy individuals, many mentally disordered persons are remanded to hospital care and are not charged. As stated earlier, Beaudoin (1993) indicated that often aggressive schizophrenic offenders are deemed not criminally responsible for their actions, are hospitalized, and consequently have their criminal status lapsed.

A study conducted by Taylor (1993) in England investigated whether any qualities of the psychotic offender are distinctive. Taylor (1993) studied 1,467 men charged with serious offenses, including homicide, arson, and other violent offenses. Of the large group, she studied the 203 men who were remanded to custody for criminal offenses in greater detail. The files of the larger group were examined in order to provide a context for the in-depth analysis of the smaller group. The investigation included three divergent methods of data collection: a psychiatrist's direct observations of the offender, the offender's assessment of himself, and facts documented by others. Of the 203 subjects, 121 were diagnosed with a mental disorder, 90 were found to be schizophrenic, 25 had an affective disorder, and 6 had another paranoid psychosis. Results revealed that mentally disordered men were more likely to have committed property offenses than the non-psychotic men, and regardless of offense had less serious repercussions.

An interesting and relevant investigation of the biological basis of criminality was conducted by Coid,

Lewis, and Reveley (1993). Lifetime criminal and psychiatric histories were examined in 280 twins with at least one twin having a diagnosis of a major mental disorder (schizophrenia or affective disorder) during 1948-1988. Results indicated that by the end of the study period, 16.9 % of the sample had a conviction. They found that the schizophrenic twins had significantly more convictions than the twins with an affective disorder. Schizophrenic twins were found to be charged with violent offenses, vandalism, theft, drinking and drug-related offenses more so than the other groups. No evidence for a genetic basis for criminal behaviour was ascertained.

Brennan, Mednick and Mednick (1993) however, found evidence for a genetic link for criminal behaviour. To assess this relationship, they studied 144 children with a parental history of mental illness or personality disorder. Criminal convictions accumulated between the ages of 20 and 22 for the sample were investigated. Brennan et al. (1993) found that children with parents who had histories of psychopathology were more likely to be involved in criminal behaviour than children who had

parents without a mental illness. They did note that in their sample, only a small percentage of children with a family history of mental illness were arrested for violent offenses.

1.5 CO-EXISTING SUBSTANCE ABUSE

A common argument against the position that mental illness predisposes individuals to acts of violence is that violence among this population may be due to the increased use of drugs and alcohol (Weiler, 1994). Weiler (1994) stated that even within the general population, the incidence of aggression and criminal behaviour is increased among substance abusers. He argued that if research in this area removed the substance abusers from subject pools, the rate of crime among the mentally disordered would be lower than the general population.

Hodgins (1994) commented on Weiler's (1994) argument, stating that the relationships between mental disorders, substance abuse, and criminality are complex. She argued that the relationships cannot be seen as linear. Hodgins (1994) agrees that individuals with major mental disorders are at an increased risk for substance abuse, but relates

that the relationship between substance abuse, criminal behaviour, and mental illness however is not clear. Four hypotheses are suggested by Hodgins (1994) regarding this association: (1) substance abuse is one aspect of antisocial behaviour which is seen during adolescence in boys who are developing bipolar disorder, (2) substance abuse may be one symptom of antisocial personality disorder, which is often diagnosed in offenders with major mental disorders (Hodgins, 1994), (3) substance abuse may be a coping mechanism for individuals with mental disorders, and (4) substance abuse may not be related to offending behaviour. She suggested that mentally ill offenders have been seen responding to hallucinations during acts of aggression, which was indicated to be unrelated to a substance abuse problem (Hodgins, 1994). Hodgins (1994) noted that these hypothesis are not mutually exclusive, but could be co-occurring.

Smith and Hucker (1994) agree with Hodgins' (1994) third hypothesis, stating that individuals with major mental illness display increased amounts of drug and alcohol abuse than the general population. They postulated

that the mentally ill do so in order to cope with the stresses and symptoms of the illness. They state that society tends to reject mentally ill persons, so they drift into economically poor areas, where drug and alcohol usage is common. Lamb (1982) suggested that the use of drugs and alcohol may be an effort to develop an identity that is more acceptable than that of a mental patient, as well as allowing for social contact and interaction.

Smith and Hucker's (1994) review of the association of schizophrenia and substance abuse also concurs with Hodgins' (1994) fourth hypothesis. They support the position that much of violent crime is perpetrated while the offender is intoxicated (Gillies, 1976; Gottlieb and Gabrielsen, 1992). Researchers presume that substances such as alcohol and drugs have a disinhibiting effect, release aggressive impulses, and reduce frustration tolerance during provocative situations (Hodgins, 1992; Smith and Hucker, 1994). Among psychiatric patients however, few commit their offenses while intoxicated. Hodgins'(1993) look at homicide, schizophrenia, and substance abuse, discussed earlier, found that 24% of the

aggressive acts by schizophrenics were during acute psychotic phases. Taylor (1993) also found that a high percentage of mentally ill men committed offenses during psychotic periods (40%). Taylor (1985), in a study of violent mental patients, found that 19% had a definite, and 24% had a probable delusional motivation to commit aggression.

1.6 PERSONALITY DISORDERS

The relationship between Antisocial Personality Disorder and criminal behaviour has been documented (Hare, 1980; Robins, 1994; Webster, Harris, Rice, Cormier, and Quinsey, 1994). Even the Diagnostic and Statistical Manual of Mental Disorders-IV (DSM-IV), stipulates that criminal activity and aggressiveness are characteristic of the disorder (p.650). However, few researchers have investigated the relationship between Antisocial Personality Disorder, major mental illness, and criminal behaviour.

Unlike many researchers, Hodgins and Cote (1993) attempted to examine the link between criminal behaviour, mental illness, and personality disorders. They proposed

that mentally disordered persons with a co-occurring Antisocial Personality Disorder were more likely to commit criminal acts than persons with a singular major mental illness. A random sample of 456 inmates revealed that 71 had co-occurring Axis I and Antisocial Personality Disorders (APD), and 36 had singular Axis I diagnosis. Their results revealed that the offenders with dual diagnoses had significantly more convictions and more convictions for nonviolent offenses than those with a singular diagnosis. They noted that the diagnosis of APD was not related to violent offending among the mentally disordered group.

Recent findings of a study conducted in Finland suggest individuals diagnosed with Antisocial Personality Disorder are at greater risk for violent acting out. Eronen, Hakola and Tiihonen's (1996) review of 910 psychiatric reports of incarcerated offenders revealed that a diagnosis of Antisocial Personality Disorder or alcoholism increased the risk for homicide by over 10 times in men, and 40 to 50 times in women. A diagnosis of Schizophrenia increased the risk for homicide 8 times in

men and up to 10 times in women. A diagnosis of Major Depression was not found to elevate the risk of homicide.

1.7 SOCIAL STIGMA AND POLICE BIAS

Criminologists assert that social factors are a definite factor in the association of mental illness and violence. As stated earlier, it has been postulated that once someone is diagnosed with a major mental disorder, there is often a downward move socially causing many mentally ill individuals to live in poverty and despair (Smith & Hucker, 1994). Much of the homeless population is comprised of people with a diagnosis of a major mental illness. Gottlieb and Gabrielsen (1992) found that the combination of low economic status and alcohol often leads to violence among schizophrenics. Maintaining drug and alcohol habits can often increase the probability of conflict with others, especially if money is not readily available. Gottlieb and Gabrielson (1992) also suggest that the stresses encountered by a mentally ill person attempting to maintain a drug habit and cope with the corresponding antisocial lifestyle, could lead indirectly to violence by exacerbating symptoms.

Steadman and Felson (1984) utilized what they called the Labelling Theory to explain the high arrest rates among mentally disordered persons. They suggested that the mentally ill and ex-criminal offenders have a higher chance of being arrested than the general population for similar behaviour. The theory proposes that these individuals are often automatically viewed as dangerous because of stereotypes, and are brought to the attention of police more often than non-mentally ill offenders. They also suggest that if the arresting officers are aware of the perpetrators psychiatric history, they are more likely to make an arrest. In the same light, a person with a history of criminal behaviour or mental illness is likely to be convicted more often than someone who does not have such a history.

Steadman and Felson (1984) tested the theory by investigating the degree of self-reported aggression and violence shown by ex-mental patients, ex-criminal offenders, and the general population. They suggested that based on studies of arrest rates (Ribner & Steadman, 1981; Steadman, 1981), one would expect that ex-offenders are

the most violent, and that the general population is the least violent. Steadman and Felson (1984) examined how often the 3 groups reported engaging in serious arguments, slapping and hitting, and the use of weapons. They also examined whether the police were involved and whether an arrest was made in the more serious situations. They hypothesized that these would determine whether arrest rates were biased towards the ex-offenders and the mentally ill. Interviews were conducted between October 1979 and June 1980, with a total of 534 subjects (general pop. N=245; ex-patients N=148; ex-offenders N=141). Results indicated that ex-offenders engage in violence more often than ex-patients and have a greater tendency to physically injure their victims. Ex-patients appeared to use weapons more frequently than the general population, but were not more likely to injure their victims. In contrast to the Labelling Theory, the police were not biased in becoming involved in incidents or making arrests.

Methodological problems however are apparent in the Steadman and Felson (1984) study. It is unclear from their

study how they defined "mental patient"; it is not known whether the sample was comprised of individuals with a major mental disorder or another disorder; and the history of offenses for the ex-offender group was not specified. If the sample was mainly comprised of individuals with violent offenses, it is possible that the results reflected this bias. With this in mind the labelling theory is not applicable, for if the mental patients had non-psychotic disorders, it is not likely that the police would be as non-discriminatory as they appeared. There are definite differences in social stigma associated with major mental disorders and other disorders (Davis, 1992; Hodgins, 1993).

Others have also investigated possible police bias when arresting persons with mental illness. Arboleda-Florez and Holley (1988) investigated this issue by comparing police identified mentally disordered persons with police identified non-mentally ill individuals, across sociodemographic, legal, clinical, and outcome variables. They hypothesized that the two groups would differ in terms of important socio-clinical

characteristics. The total sample was comprised of 350 individuals who came into contact with police in Calgary, Alberta over a two week period. Participating police officers were asked to rate a subject's observable behaviour on a likert scale from normal to severely abnormal and also postulate the cause of the behaviour. Possible causes of the criminal behaviour included alcohol, drugs, mental illness, or other. The police officers were also asked to indicate whether they believed a psychiatric evaluation was in order. Results indicated that only 89 of 350 persons were identified as acting abnormally during an arrest. Police-identified mentally disordered persons were not found to have a significantly higher number of charges involving crimes against persons, property, or miscellaneous crimes when compared to police-identified "normals". It was also found that police-identified mentally disordered were charged with fewer victimless crimes and slightly more motor traffic violations than police-identified "normals". Police-identified mentally disordered were significantly more likely to be recommended for detention than the "normal"

group, but it was noted that the difference was slight. They were however, no more likely to be detained than the "normal" group. Arboleda-Florez and Holley (1988) concluded that the two groups did not differ across social, clinical, or legal grounds, adding that any differences found were small.

Again, like Steadman and Felson's (1984) study, Arboleda-Florez and Holley's (1988) investigation presented some methodological questions. It is not clear how Arboleda-Florez and Holley (1988) defined "abnormal behaviour", nor is it explained how the participating police officers were recruited for the study. It is possible that more "open-minded" officers agreed to participate, which could have influenced the direction of the findings. A random sampling of all police officers in the community would have provided a more appropriate and realistic perspective.

The role of police intervention in the diversion of the mentally ill into the criminal justice system was also studied by Bonovitz and Bonovitz (1981). This USA based study investigated the implications of the Pennsylvania

Mental Health Procedures Act passed in 1976. It was hypothesized that the police would become much more involved in controlling the behaviour of mentally disordered individuals after the passage of the Act, and that they would employ the Criminal Code to remove such individuals from the community. Pennsylvania police department files from 1975-1979 in which individuals had been identified as clearly "mentally disturbed" comprised the subject pool. Bonovitz and Bonovitz (1981) however, did not report the total sample size. Results revealed that mental illness related incidents increased 227.6% from 1975-1979 and that non-mental illness related incidents actually decreased 9% during the same time period. Felonies were noted to have increased 5.6%. An 82% increase in disorderly conduct offenses was attributed to the change in classification of these offenses. A look at outcomes of 248 incidents in 1979 revealed that only 13 persons were actually arrested. It was concluded that their findings did not support the hypothesis that mentally ill individuals would be arrested and jailed as a means of removing them from the community. No comments

were forthcoming regarding the substantial increase in number of police and mentally ill incidents after passing of the Pennsylvania Mental Health Procedures Act. Although this study lacks methodological details, it does provide some support of the position that police are often called upon to handle socially disruptive behaviours of the mentally ill, and that they often influence who is brought into the criminal justice system. It should be noted that police in this particular community had taken specialized training to recognize signs of mental illness and had been taught techniques for resolving such situations. This specialized training may have decreased the actual incidents of arrest and incarceration, as it is possible that the police officers may have not wanted to arrest these individuals for minor criminal offenses (Health Canada, 1996).

1.8 SUMMARY

Despite decades of debate, the relationship between mental illness and criminal behaviour continues to be questioned. Although it has been suggested that the presence of substance abuse mediates the relationship,

others maintain that the presence of psychotic symptoms is the catalyst (Hodgins, 1988; Taylor, 1985). Some even suggest that negative social stigmas and police bias are the cause of the high rates of arrests among the mentally ill (Bonovitz & Bonovitz, 1981; Steadman & Felson, 1984).

A review of germane research indicates that many of the studies typically neglect to name the different forms of mental disorders under investigation, often focusing on Schizophrenia and placing all other forms in a single separate category. The review also revealed that very few studies consider the presence of a co-occurring personality disorder. Even fewer have attempted to investigate the relationship between mental illness and criminal behaviour across different diagnostic categories. Further, most studies examining links between mental disorder and crime focus primarily on violent crime, ignoring possible relationships with other types of offenses. The current study investigated the relationship between violent, nonviolent, and indeterminate offenses in groups of individuals diagnosed with 10 classes of mental and personality disorders:

Paranoid Schizophrenia, Non-Paranoid Schizophrenia, Affective Disorders, Delusional Disorder, Schizoaffective Disorder, Substance Abuse Disorder, Antisocial Personality Disorder, Borderline Personality Disorder, Paranoid Personality Disorder, and Mixed Personality Disorder. The study utilized archival data from the preceding five years at METFORS to further understand the relationship between mental illness and violent behaviour.

1.9 THE PRESENT STUDIES

In order to investigate the association between specific major mental disorders and violence, a retrospective review of files of mentally disordered individuals was conducted. The investigation was performed in two separate studies. The purpose of study one was to provide a description of the offenses committed by different diagnostic categories. Study one therefore examined the number of convictions for violent, nonviolent, and indeterminate offenses accumulated by the patient population.

The index charges were investigated separately in study two, as they would provide a "snapshot" of an individual's criminal profile. This would help determine whether a relationship exists between previous and index offenses. Study two examined the number of index charges incurred by different diagnostic categories for the three offense types.

The following research hypotheses were addressed in both studies with respect to past convictions for study one and index charges for study two:

1: Individuals with major mental disorders (eg. Schizophrenia, Paranoid Schizophrenia, Substance Abuse, Affective Disorders, Delusional Disorder, Schizoaffective Disorder) will display varying prevalence rates of violent and nonviolent offending.

Rationale: Each mental disorder differs in etiology, symptomatology, course, and treatment. One cannot assume that all are equally associated with criminal acting out (Hodgins, 1993).

2: Individuals diagnosed with Paranoid Schizophrenia will display higher incidences of violent behaviour than persons diagnosed with a Non-Paranoid Schizophrenia.

Rationale: The Diagnostic and Statistical Manual of Mental Disorders (DSM-IV), suggests that persons diagnosed with Paranoid Schizophrenia are more prone to violence than the other types of Schizophrenia.

3: Individuals diagnosed with Antisocial Personality Disorder will display a higher prevalence rate of violent offending than persons diagnosed with other personality disorders.

4: Individuals diagnosed with Antisocial Personality Disorder will display a higher prevalence rate of violent offending than persons diagnosed with a major mental disorder.

Rationale For #3 and #4: Antisocial Personality Disorder has been associated with criminal behaviour (Eronen et al., 1996; Hodgins and Cote, 1993). The diagnostic criteria required for the diagnosis include involvement in criminal activity (APA, 1994).

5: Co-Morbidity of Substance Abuse and a Major Mental Disorder Will Significantly Increase the Average Incidence of Violent Crime.

Rationale: Co-existing substance abuse has often been cited as present in offender populations (Hare, 1991). It is believed that the substance abuse acts as a disinhibitor, which often reduces tolerance during

irritating or stressful situations (Gottlieb & Gabrielsen, 1992; Smith & Hucker, 1994)

CHAPTER II

METHOD

2.1 SETTING

Patient files of adults (individuals over the age of eighteen) referred for psycholegal assessments were reviewed at Metropolitan Toronto Forensic Service (METFORS), a sub-unit of The Clarke Institute of Psychiatry. METFORS consists of two complementary units. The first, a "Brief Assessment Unit" or BAU, screens approximately 700 "outpatients" annually, primarily for Fitness to Stand Trial. Virtually all BAU outpatients are in custody at the time of their assessments and return to their facility on the same day that they appear at METFORS.

METFORS' Inpatient Unit houses up to 23 patients at any one time and represents a wide spectrum of diagnostic, situational, and human diversity. Recommendation for patient entry to the Inpatient Unit often follows questions with respect to Fitness for Trial, coupled with a reasonable prognosis of fitness following a relatively

brief (2-3 week) voluntary medication treatment regimen. Alternately, diagnostic uncertainty or dispositional issues may warrant a referral to the inpatient unit.

Other psycholegal issues addressed on the inpatient unit include Criminal Responsibility (formerly known as Sanity), Future Dangerousness, and Waiver to Adult Court. The latter two arise only infrequently.

2.2 ETHICS AND PROCEDURE

The study obtained scientific and ethical approval from Ontario Institute of Studies in Education at The University of Toronto and the Clarke Institute of Psychiatry.

Seven hundred and nine consecutive files, dating from 1992 to January 1996, of individuals over the age of eighteen who had been referred for psycholegal assessments, were reviewed for both criminal charges at their most recent admission and past criminal convictions. Current charges were obtained from the police synopsis and RCMP conviction records. Diagnosis of each individual was determined through psychiatric reports utilizing The Diagnostic and Statistical Manual Of Mental Disorders

criteria (DSM-III and DSM-IV). The files of patients with any of the following were included in the research sample:

1. Any of the seven identified Axis I diagnoses (Paranoid Schizophrenia, Non-Paranoid Schizophrenia, Delusional Disorder, Bipolar Mood Disorder, Major Depression, Schizoaffective Disorder, and Substance Abuse).
2. Any of the four identified Axis II personality disorders (Paranoid, Antisocial, Borderline, and Mixed Personality disorders).
3. Any with a dual diagnoses involving any combination of the above.

Subject files were reviewed from the Inpatient files at METFORS due to a more reliable classification of diagnostic categories seen in that unit. File information was gathered by the researcher and two research assistants who had been trained in the procedures involved in the current data collection. In order to ensure reliability, the researcher reviewed every 15th file that each assistant had completed. It was determined that all files had been reviewed according to the pre-determined procedures.

2.3 MEASURES

The files were reviewed for violent, non-violent, and indeterminate convictions accumulated since the age of eighteen. Charges at the time of their most recent admission were also reviewed, and categorized according to the three offense categories, which were formulated based on the crown policy manual. Consistent with the Crown Policy Manual (Attorney General, 1996), class three offenses were categorized as violent. Class three offenses include Murder, any offense involving wife assault, Assault Causing Bodily Harm, any offenses involving explosives, Sexual Assault, Manslaughter, Robbery, Aggravated Assault, and Criminal Negligence. Simple Assault, Assault Peace Officer and Arson, although classified as Class two offenses, were categorized as violent. Examples of Class two or non-violent offenses include, Theft, Break and Enter, Possession of stolen property, Shoplifting, Mischief, and Possession of Narcotics. Indeterminate offenses were defined as offenses that could not be categorized as violent or non-violent, for example, Threatening, Criminal Harassment,

Gross indecency, Possession of a Weapon, and Carry a Concealed Weapon. A comprehensive list of all possible charges and their classifications is available in Table 2.1. Demographic information such as age, age at initial diagnosis, age at first conviction, and gender were also collected.

Table 2.1 Classification of the Sample Offenses by Degree of Violence

NON-VIOLENT	INDETERMINATE	VIOLENT
Theft	Possession of Weapon	Murder
Break and Enter	Carry Concealed Weapon	Manslaughter
Loitering	Criminal Negligence	Robbery
Shoplifting	Drive while intoxicated	Assault of any kind
Mischief	Careless Driving	Wounding
Possession of Narcotic	Driving while ability Impaired	Sexual Assault
Cultivation of Narcotic	Indecent Exposure	Grievous Bodily Harm
Trafficking Narcotic	Gross Indecency	Obstruct a peace officer
Prostitution		Unlawful Confinement
Fraud		Hijacking
Uttering		Abduction
Fail to Appear		Arson
Breach of Recognizance		Dangerous Driving
Breach of Bail		Pointing a Firearm
Fail to Comply		Use a Firearm
Breach of Probation		

CHAPTER III

RESULTS

3.1 OVERVIEW OF DATA ANALYSES

The major classification (independent) variables in this study included relevant Axis I and Axis II diagnoses. The Axis I diagnoses considered included Paranoid Schizophrenia, Other Schizophrenia, Affective Disorder, Delusional Disorder, Substance Abuse Disorder, and Schizoaffective. Relevant Axis II disorders included, Antisocial Personality Disorder, Paranoid Personality Disorder, Borderline Personality Disorder, and Mixed Personality Disorder.

The present study used three dependent measures: the number of violent offenses committed, the number of non-violent offenses committed and the number of indeterminate offenses committed (previously described in chapter II). These were examined independently for previous offense history (past convictions) in study one and Index (Current charges) offense type in study two.

Analyses in each study were conducted in four ways: (1) by comparing the three dependent variables across the different Axis I diagnostic groupings, (2) by comparing individuals suffering from Paranoid or Non-Paranoid Schizophrenia on the three independent variables (3) by comparing the Axis II (personality disorders) across the three dependent variables and (4) by comparing those with dual diagnoses with those with singular diagnosis on the three offense types.

All statistical analyses were performed using the SPSS (for Windows) statistical package.

Results will be presented to reflect the individual hypotheses generated by the literature review. The order of presentation will reflect the centrality of the individual hypotheses to this dissertation.

3.2 Description of the Sample

The total file sample collected consisted of 709 individual charts. Table 3.1 presents the number of subjects included in the sample from each of the five years and the reasons for referrals. The thirteen cases extracted in 1996 represent the admissions for the month of

January only and not the entire year. These were employed to bring the total number of subjects to 700.

Table 3.1 Number of Medical Files Utilized and The Reasons for Referral

Assessment Order	*1992*	*1993*	*1994*	*1995*	*1996*	*Total*
Fitness To Stand Trial	132	106	143	114	9	504
Criminal Responsibility	2	5	8	17	0	32
Both FT and CR	15	35	41	67	4	162
Dangerous Offender	1	0	0	3	0	4
Other	2	0	0	5	0	7
Total	152	146	192	206	13	709

Eighty-one percent of the sample were male (n=574) and 19% female (n=135). The total sample ranged in age from 18 to 75, with the mean age equalling 35.5 and a standard deviation of 10.5. Table 3.2 presents the average ages of both males and females at their most recent admission, at initial diagnosis, and at first conviction, broken down by the different diagnostic categories. The table also displays the average number of years of illness for each diagnostic category.

Table 3.2

Average Years of Illness, Mean Age at Most Current Admission, Mean Age at First Conviction, and Mean Age at First Diagnosis

AGES									
DIAGNOSIS		YEARS OF ILLNESS		MEAN AGE AT CURRENT ADM.		MEAN AGE AT 1ST CONVICTION		MEAN AGE AT 1ST DIAGNOSIS	
AXIS I	*N*	*Mean*	*Std. Dev*	*Mean*	*Std. Dev.*	*Mean*	*Std. Dev.*	*Mean*	*Std. Dev.*
Paranoid Schiz.	216	9.3	7.1	34.7	9.3	29.0	9.8	24.9	7.5
Non-Paranoid Schizophrenia	187	8.6	8.5	34.5	10.0	29.5	10.4	25.6	7.3
Delusional Dis.	35	3.9	4.4	41.7	9.7	38.5	11.8	37.8	9.2
Affective Dis.	101	7.9	8.4	39.0	11.5	36.7	12.5	30.9	12.5
Schizoaffective	41	8.5	6.1	36.3	8.6	31.8	10.0	29.0	9.0
Substance Abuse	103	7.1	8.2	33.9	10.1	26.2	10.8	26.7	11.5
No MMI	26	4.8	7.1	29.8	9.8	23.5	7.0	23.7	6.8
Total	709	8.0	8.0	35.5	10.5	30.4	11.3	27.2	9.9
AXIS II									
Antisocial PD	36	6.8	7.9	30.3	7.7	20.6	4.8	23.1	9.6
Paranoid PD	12	4.0	5.2	36.3	11.2	30.3	11.8	31.7	11.5
Borderline PD	18	4.9	6.4	30.3	9.3	25.0	7.9	25.5	9.5
Mixed PD	60	7.2	8.6	32.8	12.1	27.3	12.1	25.1	11.2
NO PD	583	8.4	7.9	36.3	10.3	31.5	11.2	27.7	9.7
Total	709	8.0	7.9	35.5	10.5	30.4	11.3	27.2	9.9

Tables 3.3 and 3.4 display the descriptive statistics for the diagnostic categories in terms of number of subjects in each group, the number of males and females in each group, and the average number of violent, nonviolent, and indeterminate offenses (in terms of Previous and Index offenses). Due to the small number of persons diagnosed with Major Depression (n=16), it was deemed appropriate to combine the group with individuals diagnosed with Bipolar Mood Disorder; the new diagnostic category was labelled Affective Disorders.

Table 3.3

Windsorized Mean Number of Previous Offenses and Standard Deviations For Each Diagnosis.

PREVIOUS OFFENSES									
DIAGNOSIS		GENDER		VIOLENT		NON-VIOLENT		INDETERMINATE	
AXIS I	*N*	*M*	*F*	*Mean*	*Std.Dev*	*Mean*	*Std.Dev*	*Mean*	*Std.Dev*
Paranoid Schiz.	216	183	33	1.3	1.9	2.2	3.7	0.3	0.6
Non-Paranoid Schizophrenia	187	151	36	0.9	1.5	2.2	4.2	0.2	0.6
Affective Disorder	101	76	25	0.6	1.2	1.1	2.4	0.3	0.6
Delusional Disorder	35	23	12	0.3	0.5	0.9	2.7	0.1	0.4
Substance Abuse	103	94	9	1.6	2.5	3.0	5.0	0.4	0.9
Schizoaffective	41	28	13	0.8	1.5	2.2	3.9	0.3	0.6
No Major Mental Dis	25	19	6	1.1	1.9	0.7	1.3	0.0	0.4
Total	709	574	135	1.0	1.8	2.1	3.9	0.3	0.6
AXIS II									
Antisocial PD	36	35	1	2.2	2.7	4.1	6.2	0.4	0.8
Paranoid PD	12	9	3	1.7	2.5	2.5	5.2	0.3	0.8
Borderline PD	18	12	6	0.7	1.2	1.9	4.1	0.2	0.7
Mixed PD	60	48	12	0.9	1.6	2.7	4.6	0.3	0.7
NO PD	583	470	113	1.0	1.7	1.6	3.6	0.2	0.6
Total	709	574	135	1.0	1.8	2.1	3.9	0.3	0.6

Table 3.4

Windsorized Means and Standard Deviations of Index Offenses (current charges) For Each Diagnosis

INDEX OFFENSES									
DIAGNOSIS		GENDER		VIOLENT		NON-VIOLENT		INDETERMINATE	
AXIS I	*N*	*M*	*F*	*Mean*	*Std.Dev*	*Mean*	*Std.Dev*	*Mean*	*Std. Dev.*
Paranoid Schizo.	216	183	33	1.2	1.3	0.9	1.3	0.4	0.7
Non-Paranoid Schizophrenia	187	151	36	1.1	1.3	0.9	1.2	0.3	0.7
Affective Disorder	101	76	25	1.0	1.1	1.0	1.3	0.3	0.6
Delusional Disorder	35	23	12	0.8	1.0	0.8	1.1	0.5	0.9
Substance Abuse	103	94	9	1.7	2.0	1.1	1.4	0.6	0.9
Schizoaffective	41	28	13	0.8	1.1	0.9	1.1	0.7	0.8
No Major Mental Dis	26	20	6	1.4	1.8	0.9	1.4	0.7	1.1
Total	709	574	135	1.2	1.4	0.9	1.3	0.4	0.8
AXIS II									
Paranoid PD	12	9	3	1.2	1.1	0.5	0.8	0.5	0.8
Antisocial PD	36	35	1	2.00	2.1	0.9	1.1	0.6	0.9
Borderline PD	18	12	6	1.33	2.1	1.2	1.8	0.7	1.0
Mixed PD	60	48	12	1.30	1.9	1.2	1.4	0.5	0.9
No PD	583	470	113	1.14	1.3	0.9	1.2	0.4	0.7
Total	709	574	135	1.20	1.4	0.9	1.3	0.4	0.8

STUDY #1

INVESTIGATING CRIMINAL HISTORIES (previous convictions)

3.3 Hypothesis I: Individuals with Different Axis I Diagnoses will Display Varying Prevalence Rates of Past Violent and Nonviolent Convictions.

The central hypothesis under consideration concerns the link between mental disorder and violent offending. Specifically it was hypothesized that individuals diagnosed with different Axis I mental disorders would have committed different numbers of violent (and perhaps other) offenses. To empirically evaluate this hypothesis, the 709 METFORS cases were classified by primary Axis I diagnosis and the number of previous violent, nonviolent and indeterminate offenses served as the dependent variables. Eighteen cases were rejected because of missing data in the previous offense category. Consequently 693 cases were analysed to test the hypotheses. Because descriptive statistics revealed "outliers", the dependent variables were "Winsorized" to minimize the effect of the extreme values. The transformed data were first analysed by using a

Multiple Analysis of Variance procedure (MANOVA) to evaluate the "experimentwise" significance levels (i.e. to protect against spurious significance levels occurring by performing multiple significance tests). Wilk's Lambda is reported as the multivariate estimator of the multivariate F, as it is sensitive to differences in central tendencies of groups. Significant MANOVAs were followed by univariate ANOVAs to elucidate which specific dependent variables demonstrated overall between (diagnostic) group differences. Tukey HSD post hoc tests were employed to "pinpoint" which specific diagnostic groups differed for those variables found to show overall reliable differences by the ANOVA.

Descriptive statistics displaying the number of previous offenses committed by the eight Axis I diagnostic groups and by those not suffering from a major mental illness (No MMI) were previously presented in Table 3.3. The MANOVA demonstrated that Axis I Diagnostic category was associated with statistically reliable differences for all three offense categories considered together. The univariate analyses revealed that the diagnoses

demonstrated a significant effect on the violent and non-violent forms of offending. A significant effect was not found for the number of indeterminate offenses, based on Axis I diagnostic category. Table I in Appendix A contains the multivariate and univariate F-tests for the effects of the three offense categories.

Table 3.5 presents the mean number of violent offenses, standard errors terms and the Tukey comparisons of the Axis I disorders. The table displaying the Tukey comparisons displays the mean number of violent and nonviolent convictions for each diagnostic category in ascending order, so that the significant differences, can be clearly visualized (Tabachnick and Fidell, 1996).

As hypothesized, the eight diagnostic categories differed with respect to the number of previously accumulated violent offenses. As indicated on Table 3.5, individuals diagnosed with Paranoid Schizophrenia were found to have significantly more violent offenses than individuals with either Delusional Disorder or Affective Disorder. The second column under the Tukey comparison heading within the table, displays the finding that those

diagnosed with Substance Abuse Disorder had significantly more violent offenses than individuals with Delusional Disorder, Affective Disorder, or those diagnosed with Non-Paranoid Schizophrenia.

Table 3.5

Mean Number of Violent Offenses, Standard Error Terms and the Significant Tukey Comparisons for the Axis I Diagnoses

PREVIOUS VIOLENT OFFENSES					
AXIS I-DIAGNOSIS	N	MEANS	STD. ERROR	TUKEY Comparisons	
Delusional Disorder	35	0.26	0.085	A	A
Affective Disorders	101	0.57	0.119	A	A
Schizoaffective	41	0.79	0.244		
Non-Paranoid Schizophrenia	187	0.85	0.109		A
No Major Mental Illness	26	1.06	0.379		
Paranoid Schizophrenia	216	1.25	0.128	B*	
Substance Abuse	103	1.59	0.247		B**

Note:B>A

*p<0.05 , **p<0.01

The Tukey analyses also revealed that individuals with a Substance Abuse Disorder had significantly more convictions for nonviolent offenses than those with an Affective Disorder. This comparison is presented on Table 3.6.

Table 3.6

Mean Number of Nonviolent Offenses, Standard Error Terms and the Significant Tukey Comparisons for the Axis I Diagnoses

PREVIOUS NON-VIOLENT OFFENSES				
AXIS I-DIAGNOSIS	N	MEANS	STD. ERROR	TUKEY COMP.
No Major Mental Illness	26	0.71	0.259	
Delusional Disorder	35	0.91	0.451	
Affective Disorders	101	1.13	0.247	A
Schizoaffective	41	2.20	0.629	
Non-Paranoid Schizophrenia	187	2.20	0.315	
Paranoid Schizophrenia	216	2.20	0.259	
Substance Abuse	103	3.02	0.499	B**

Note: B>A, *p<0.05 , **p<0.01

The influence of the recency or latency of diagnosis on the opportunity or proclivity to commit criminal acts was examined. Consequently, the number of years each individual had been suffering from their respective mental illness was calculated, and was used as a covariate in a MANCOVA analysis. The average length of illness for each diagnostic category was presented previously in Table 3.2.

The multivariate and univariate F-tests for the effects of the offense types across the diagnostic

categories, with years of illness partialled out covariate are displayed in Table II (Appendix A).

Even with years of illness, a significant covariate partialled out, the multivariate main effects of the diagnostic categories continued to be significant. The univariate ANCOVAs indicated that the diagnostic categories continued to have an effect on the number of previous violent and nonviolent offenses. The Axis I diagnostic categories continued to display no reliable influence on the number of previous indeterminate offenses.

In summary, the hypothesis concerning the differences between the diagnostic categories was supported with regard to the number of previous violent and nonviolent convictions. The Paranoid Schizophrenia and Substance Abuse groups had accumulated more convictions for violent offenses than had individuals with Delusional Disorder or Affective Disorder. The Substance Abuse group was also found to have had more nonviolent convictions than the Affective Disorder group.

3.4 Hypothesis #2: Individuals Diagnosed with Paranoid Schizophrenia will Display Higher Incidences of Past Violent Convictions than Persons Diagnosed with a Non-Paranoid Schizophrenia.

Although the Tukey analysis performed for the first hypothesis did not reflect a significant difference between the Paranoid and Non-Paranoid Schizophrenic groups, it was deemed appropriate to analyse the two groups in a more sensitive fashion than a post-hoc test. Further testing was conducted because the difference between the two groups was suggested in a specific a priori directional hypothesis. In order to test whether Paranoid Schizophrenics commit proportionally more violent crimes than Non-Paranoid Schizophrenics, an independent sample t-test was performed. The t-test analyses revealed that individuals with Paranoid Schizophrenia had not committed more violent, nonviolent, or indeterminate crimes than those diagnosed with Non-Paranoid Schizophrenia. The hypothesis regarding a difference between the two groups was not supported in the METFORS sample.

In order to determine whether combining the two Schizophrenia groups would influence the finding that individuals with Paranoid Schizophrenia had significantly

more convictions than persons with Delusional and Affective Disorders, additional Tukey analyses were performed. These analyses revealed that individuals with any form of Schizophrenia did not differ from individuals suffering from any of the other diagnostic groups in terms of the number of convictions incurred for violent, nonviolent and indeterminate offenses.

3.5 HYPOTHESIS #3: Individuals Diagnosed with Antisocial Personality Disorder will Display Higher Incidences of Past Violent Convictions Than Persons Diagnosed with Other Personality Disorders.

HYPOTHESIS #4: Individuals Diagnosed with Antisocial Personality Disorder will Display Higher Incidences of Past Violent Convictions than Persons Diagnosed with a Major Mental Disorder.

It was expected that individuals diagnosed with Antisocial Personality Disorder would have more violent convictions than individuals diagnosed with other personality Disorders(Paranoid Personality Disorder, Mixed Personality Disorder, and Borderline Personality Disorder). It was also expected that persons diagnosed with Antisocial Personality Disorder would have accumulated more convictions for violent offenses than persons with only major mental disorders. Descriptive Statistics for the Axis II disorders are available in Table 3.3. Persons suffering from a major mental disorder are designated as the "No Personality Disorder" (NO PD) group.

Identical procedures used to test the first hypothesis were employed. The MANOVA revealed that the four Axis II disorders displayed significant differences for all three offense categories considered together. The Univariate

analyses further revealed that the different diagnostic categories displayed significant effects across each of the three offense types. Table III (Appendix A) presents the summary of the multivariate and univariate F-tests for the effects of the independent variables. It may be noted that the effect on previous violent offenses was the strongest of the three univariate effects.

Once again Tukey HSD post hoc analyses were performed to explore individual group differences. Table 3.7 displays the overall mean number of violent offenses, standard error terms and the significant Tukey comparisons. As hypothesized, the analyses indicated that persons diagnosed with Antisocial Personality Disorder had significantly more violent offenses than those without a personality disorder, with a Mixed Personality Disorder and with a Borderline Personality Disorder.

The analyses also revealed that persons diagnosed with Antisocial Personality Disorder had significantly more nonviolent offenses than those with no personality disorder. The significant Tukey comparisons are displayed in Table 3.8 for the nonviolent offenses.

Table 3.7 **Mean number of Violent Offenses, Standard Error Terms and Significant Tukey Comparisons for the Axis II Diagnoses**

PREVIOUS VIOLENT OFFENSES				
DIAGNOSIS	N	MEANS	STD. ERROR	TUKEY Comparisons
Borderline PD	34	1.18	0.280	A*
Mixed PD	60	1.64	0.214	A*
No PD	583	1.67	0.070	A**
Paranoid PD	12	2.53	0.731	
Antisocial PD	36	2.71	0.465	B

B>A, *p<0.05, **p<0.01

Table 3.8 **Mean Number of Nonviolent Offenses, Standard Error Terms, and Significant Tukey Comparisons for the Axis II Diagnoses**

PREVIOUS NON-VIOLENT OFFENSES				
DIAGNOSIS	N	MEANS	STD. ERROR	TUKEY Comparisons
No PD	583	1.86	0.149	A**
Borderline PD	18	1.88	0.952	
Paranoid PD	12	2.48	1.504	
Mixed PD	60	2.67	0.608	
Antisocial PD	36	4.10	1.066	B

Note: B>A, **p<0.01

Much like the comparison between the offense categories and the Axis I disorders, the covariate years of illness continued to display a significant effect in terms of the violent, nonviolent, and indeterminate offenses across the Axis II disorders. The MANCOVA indicated that Axis II disorders had a significant effect on the three offense categories placed together, even when the effect of years of illness was covaried. The Univariate ANCOVA similarly revealed that AXIS II disorders had a significant effect on the number of previous violent and nonviolent offenses. Table IV (Appendix A) presents the multivariate

and univariate F-tests for the effects of the Axis II disorders. As with Axis I classifications, the effect was strongly manifested for the previous violent offenses.

The hypothesis regarding the differences between the Axis II disorders was supported. Individuals with Antisocial Personality Disorder were found to have had more convictions for violent offenses than most of the other personality disorders. The hypothesis that persons diagnosed with Antisocial Personality Disorder would have committed more violent acts than persons with a major mental illness was also supported. Individuals with Antisocial Personality Disorder were also found to have committed more nonviolent acts than those with an Axis I diagnosis alone. These differences remained significant even after years of illness was covaried out.

3.6. HYPOTHESIS #5: Co-Morbidity of Substance Abuse Will Increase the Incidence of Past Violent Convictions.

The fifth hypothesis under consideration postulated that a co-occurring Substance Abuse Disorder would increase the number of previous violent offenses. The procedures described in testing of previous hypotheses were employed.

To investigate this hypothesis, the observations were grouped into eight categories reflecting each individual's dual diagnostic status. The subsequent groupings were formulated to separate the individual and co-joint effects of Axis I diagnosis, Substance Abuse, Axis II diagnosis and Antisocial Personality Disorder distinctly from other Axis II diagnosis. The descriptive statistics for the eight multiple diagnostic categories are presented in Table 3.9.

As seen in the table, the first group consisted of those suffering from a singular Axis I disorder - but not Substance Abuse Disorder (N=454); the second group consisted of those suffering from an Axis I disorder with a co-existing Substance Abuse Disorder (N=84); the third group was comprised of individuals diagnosed with both an Axis I Disorder and a Axis II disorder - but not Antisocial Personality Disorder(N=32); the fourth group included those suffering from an Axis I disorder with a co-occurring Antisocial Personality Disorder (N=10); the fifth group held those with only a Personality disorder (N=26); the sixth group was comprised of individuals diagnosed with only Substance Abuse Disorder (N=44); the seventh group

Table 3.9

Means and Standard Deviations for Previous Offenses, for Individuals With Singular and Dual Diagnosis.

PREVIOUS OFFENSES									
		GENDER		VIOLENT		NON-VIOLENT		INDETERMINATE	
DIAGNOSIS	*N*	*M*	*F*	*Mean*	*Std. Dev.*	*Mean*	*Std. Dev.*	*Mean*	*Std. Dev.*
Only Axis I	454	357	97	0.9	1.5	1.6	3.0	0.2	0.6
Axis I + Substance Abuse	84	72	12	1.1	1.8	3.2	5.2	0.3	0.6
Axis I + Axis II	32	23	9	0.9	1.7	2.8	4.9	0.3	0.7
Axis I + Antisocial PD	10	9	1	1.9	2.6	5.7	7.2	0.6	1.1
Only Axis II	26	20	6	1.1	1.9	0.7	1.3	0.1	0.4
Substance Abuse	44	41	3	1.6	2.8	2.3	4.2	0.4	0.9
Substance Abuse + Axis II	38	31	7	1.2	1.9	3.2	5.1	0.5	0.8
Substance Abuse + Antisocial PD	21	21	0	2.2	2.7	4.3	6.4	0.3	0.7

contained those diagnosed with both Substance Abuse and a Personality Disorder (N=38) and; the eighth group consisted of individuals with a Substance Abuse Disorder and Antisocial Personality Disorder(N=21).

Consistent with the procedures undertaken to test the previous hypotheses, the eight groups were first analysed by using a MANOVA to evaluate the significance levels of the three offense categories considered together. The MANOVA revealed that the eight diagnostic groupings were associated with statistically reliable differences for all three offense categories considered together. The Univariate analyses indicated that the eight combinations of Axis I and II groupings displayed significant effects across the violent, nonviolent, and indeterminate offense categories. A summary of the multivariate and univariate F-tests for the diagnostic combinations are presented Table V (Appendix A).

Tukey post hoc comparisons were tabulated in order to identify inter-group differences. The analyses revealed that there were group differences with respect to the number of previous violent and nonviolent offenses.

Although the number of previous indeterminate offenses displayed overall significance, the post hoc tests did not reveal specific inter-group differences. Tables 3.10 and 3.11 display the significant Tukey post-hoc comparisons for the violent and nonviolent offense types. The mean number of violent and nonviolent convictions were presented in ascending order with each category's respective standard error from the mean, so that the differences could be made apparent.

The post hoc comparisons between the number of violent offenses and the diagnostic groupings revealed that persons with co-occurring Substance Abuse and Antisocial Personality Disorders had significantly more previous convictions for violent offenses than those with a singular Axis I disorder. These findings suggest that the combination of Substance Abuse and Antisocial Personality Disorder increases the likelihood of violent behaviour.

With respect to the previous number of nonviolent offenses, the post hoc comparisons revealed that individuals with dual Axis I diagnoses (Substance Abuse as secondary diagnosis) had committed significantly more

nonviolent offenses than those with a singular Axis I diagnosis. Persons diagnosed with both an Axis I disorder and Antisocial Personalty Disorder were found to have committed more nonviolent offenses than persons with a singular Axis I diagnosis and individuals with a singular Axis II diagnosis. Individuals with co-occurring Substance Abuse and Antisocial Personality disorders were also found to have committed more nonviolent offenses than persons with a singular Axis I diagnosis or individuals with a singular Axis II diagnosis. These findings suggest that co-morbidity of substance abuse significantly increases the incidence of nonviolent crime.

Table 3.10

The Mean Number of Violent Offenses, Standard Error Terms and Significant Tukey Comparisons for the Dual Diagnostic Categories

PREVIOUS VIOLENT OFFENSES				
DIAGNOSIS	N	MEANS	STD. ERROR	TUKEY Comparisons
Axis I	454	0.86	1.48	A
Axis I + Axis II	32	0.88	1.71	
Axis II	26	1.06	1.89	
Axis I + Substance Abuse	84	1.12	1.83	
Substance Abuse + Axis II	38	1.24	1.96	
Substance Abuse	44	1.58	2.74	
Axis I + APD	10	1.88	2.58	
Substance Abuse + APD	21	2.20	2.68	B**

Note:B>A, **p<0.01

Table 3.11

The Mean Number of Nonviolent Offenses, Standard Error Terms and Significant Tukey Comparisons for the Dual Diagnostic Categories

PREVIOUS NON-VIOLENT OFFENSES					
DIAGNOSIS	N	MEANS	STD. ERROR	TUKEY Comparisons	
Axis II	26	0.71	1.268		A
Axis I disorders	454	1.57	3.038	A	A
Substance Abuse	44	2.31	4.146		
Axis I + Axis II	32	2.77	4.949		
Substance Abuse+ Axis II	38	3.15	5.068		
Axis I + Substance Abuse	84	3.24	5.184	B**	
Substance Abuse + APD	21	4.29	6.421		B*
Axis I + APD	10	5.69	7.188		B*

Note: B>A, *p<0.05 , **p<0.01

In order to control for the effect of years of illness, a MANCOVA was once again performed. The covariate years of illness, continued to display a significant effect. The MANCOVA revealed that these diagnostic groupings continued to have a significant effect on the offense categories analysed together. The univariate ANCOVA revealed that the diagnostic combinations resulted in significant differences in the number of previous violent and nonviolent offenses. The groups demonstrated a trend

with respect to the number of previous indeterminate offenses. The summary of the multivariate and univariate F-tests with years of illness covaried out are displayed in Table VI (Appendix A). It is notable that unlike the case with single diagnosis, where violent offenses demonstrated the strongest effect, for dual diagnostic categories it is nonviolent offenses that display that pattern.

To summarize, the hypothesis concerning the increase of convictions for violent behaviour as a result of dual diagnosis was not supported. It was discovered that only one group (those with Substance Abuse plus Antisocial Personality Disorders) had higher incidences of violent convictions. The presence of substance abuse did not significantly effect the number of violent convictions for other diagnoses. However, a co-existing Substance Abuse Disorder did increase the number of nonviolent convictions for individuals diagnosed with either an Axis I disorder or Antisocial Personality Disorder.

3.7 Investigating Gender Differences in Criminal Histories

In order to investigate sex differences across the violent, nonviolent and indeterminate offense categories, a one way ANOVA was performed. The univariate analysis is displayed on Table VII (Appendix A). The analysis indicated that there were significant differences between males and females in relation to violent, nonviolent and indeterminate offenses. Table 3.12 displays the descriptive statistics for the three offense categories differentiated by gender.

Table 3.12

Means and Standard Deviations for the Three Previous Offense Categories for Males and Females

OFFENSE TYPE	SEX	N	MEAN	STD. DEVIATION
Previous violent	Male	574	1.14**	1.81
	Female	135	0.47	1.34
Previous nonviolent	Male	574	2.33**	4.15
	Female	135	0.84	2.01
Previous Indeterm.	Male	574	0.28*	0.661
	Female	135	0.13	0.495

** p<0.001, *p<0.01

3.8 Relationships Between Variables

Pearson correlations between the number of previous and index violent, non-violent and indeterminate offenses, age, age at first diagnosis, age at first conviction, years of illness and all the dependent variables were computed for all subjects. Only the most salient findings are presented in Table 3.13. In order to explore the nature of the relationships among the various measures in the study a correlational analysis was performed and no directional hypotheses were made. Although only a few correlations were noted to be high, there were some interesting findings. As would be expected the four age categories were highly correlated; current age was highly correlated with age at first conviction (r=0.81, p=0.000), age at initial diagnosis (r=0.70, p=.000) and moderately correlated to years of illness (r=0.46, p=0.000). Age at first conviction was also highly correlated to age at initial diagnosis (r=0.66, p=0.00). Age at initial diagnosis was negatively correlated to years of illness (r=-0.32, p=.000).

The high correlation between the number of previous violent convictions and years of illness was also very interesting (r=0.88, p=0.000). However, when the effect of age was statistically removed by using the partial correlation technique, a statistically significant, but very weak association remained (r=0.097; p=0.017).

The correlation analysis also indicated that violent convictions were moderately correlated to nonviolent (r=0.48, p=0.000) and indeterminate convictions (r=0.30, p=0.000). Nonviolent offenses were also moderately correlated to indeterminate offenses (r=0.30, p=0.000). There was a low but still significant correlation between the number of previous violent offenses with the number of index violent charges (r=0.10, p=0.007) and nonviolent charges (r=0.10, p=0.005). The correlation between previous nonviolent offenses and nonviolent charges was also low but significant (r=0.17, p=0.000). Again there was a low but significant correlation between the number of previous indeterminate convictions and index indeterminate charges (r=0.08, p=0.039) and violent charges (r=0.10, p=0.011).

Table 3.19 Pearson Correlations for Previous and Index Offense Types and The Age Categories

VARIABLE	PREVOIUS NONVIOLENT	PREVIOUS INDET.	INDEX VIOLENT	INDEX NONVIOLENT	INDEX INDET.	AGE	AGE DIAGNOSIS	AGE CONVICTION	YEARS ILL
PREVIOUS VIOLENT	0.48**	0.30**	0.10*	0.10*	0.03	0.02	-0.065	-0.29**	0.88**
PREVIOUS NONVIOLENT		0.30**	-0.03	0.17*	-.067	0.06	-0.03	-0.29**	0.12*
PREVIOUS INDETERM.			0.10*	0.00	0.08*	0.07	0.00	-0.13**	0.10*
INDEX VIOLENT				-0.13**	0.10*	-0.05	-0.05	-0.068	-0.02
INDEX NONVIOLENT					-0.03	0.00	0.00	-0.04	-0.02
INDEX INDETERM.						-0.05	0.00	-0.05	-0.06
AGE							0.70**	0.80**	0.46**
AGE FIRST DIAGNOSIS								0.66**	-0.32**
AGE FIRST CONVICTION									0.25**

*p<0.05, **p<.001

STUDY #2

INVESTIGATING CURRENT CHARGES(INDEX OFFENSES)

3.9 HYPOTHESIS #1: Individuals with Different Axis I Diagnoses will Display Varying Prevalence Rates of Index Violent and Nonviolent Charges.

The central hypothesis, that different Axis I diagnostic groups commit different numbers of offenses was investigated in the second study in terms of the number of current violent, non-violent and violent charges (Index offenses). The same procedures were employed in investigating this hypothesis that were utilized in the first study. Descriptive statistics displaying the number of current violent, nonviolent and indeterminate charges (index offenses) committed by individuals with Axis I and Axis II diagnoses were presented in Table 3.4 (Section 3.2). As all subjects had current charges, no cases were missing; consequently, the following analyses were performed with all 709 cases.

The MANOVA demonstrated that the Axis I Diagnoses were associated with statistically reliable differences for all three index offense categories considered together. The

univariate analysis revealed that the violent and indeterminate forms of offending were significantly different with respect to the diagnostic categories. The Axis I diagnoses displayed the strongest effect on the number of current violent charges. The number of indeterminate charges also displayed an influence of diagnostic category. The Axis I diagnostic groups did not have a significant effect on the number of nonviolent charges. The multivariate and univariate F-tests for the three offense categories across the diagnostic categories are presented in Table VIII (Appendix A).

The Tukey HSD analyses comparing the groups on the number of current violent charges revealed that individuals with Substance Abuse Disorder had significantly more violent charges than persons with Paranoid Schizophrenia, Non-Paranoid Schizophrenia (mean=1.14), Affective Disorder, Delusional Disorder and Schizoaffective Disorder. Although the ANOVA indicated that the diagnostic groups differed with respect to the number of indeterminate offenses, the Tukey HSD analysis did not reveal any significant group differences. Table 3.14 displays the mean number of

violent offenses, standard error terms and the significant Tukey comparisons. The mean number of violent charges are presented in ascending order in order to display the differences clearly (Tabachnick and Fidell, 1996).

Table 3.14

Mean Number of Violent Charges, Standard Error Terms and Significant Tukey Comparisons of the Axis I Diagnoses

INDEX VIOLENT CHARGES				
AXIS I-DIAGNOSIS	N	MEANS	STD. ERROR	TUKEY Comparisons
Schizoaffective Disorder	41	0.78	0.17	A**
Delusional Disorder	35	0.83	0.17	A*
Affective Disorders	101	1.00	0.11	A**
Non-Paranoid Schizophrenia	187	1.14	0.09	A**
Paranoid Schizophrenia	216	1.20	0.09	A*
No Major Mental Illness	26	1.42	0.36	
Substance Abuse	103	1.74	0.20	B*

Note: B>A, *p<0.05, **p<0.01

Although MANCOVAs were performed with years of illness used as a covariate, the control variable was not found to be significant. Consequently the MANCOVA was not performed.

To summarize, the hypothesis suggesting that there are differences with respect to the number of violent charges

between different diagnostic categories was supported. Individuals diagnosed with Substance Abuse Disorder had more charges for violent offenses than all other Axis I diagnoses.

3.10 HYPOTHESIS #2: Individuals Diagnosed with Paranoid Schizophrenia will Display Higher Incidences of Index Violent Charges than Persons Diagnosed with a Non-Paranoid Schizophrenia.

In order to test the hypothesis that Paranoid and Non-Paranoid Schizophrenics differ with respect to criminal charges, t-test comparisons were again utilized. Much like the results found in Study I regarding the hypothesis, the analysis revealed that the two groups did not differ in the number of violent, nonviolent or indeterminate charges.

3.11 HYPOTHESIS #3: Individuals Diagnosed with Antisocial Personality Disorder will Display Higher Incidences of Index Violent Charges than Persons Diagnosed with Other Personality Disorders.

HYPOTHESIS #4: Individuals Diagnosed with Antisocial Personality Disorder will Display Higher Incidences of Index Violent Charges than Persons Diagnosed with A Major Mental Illness.

In order to investigate whether persons diagnosed with Antisocial Personality Disorder incur more violent charges than those diagnosed with other personality disorders, the procedures utilized in testing the previous hypotheses were employed. The same analyses were used to test the hypothesis that persons with Antisocial Personality Disorder commit more violent crimes than those with a major mental illness. Descriptive statistics for these groups were previously presented in Table 3.4. The "No Personality Disorder" (No PD) group represents individuals with major mental disorders.

The multivariate and univariate F-tests for the effects of the independent variables are displayed in Table IX (Appendix A). The MANOVA revealed that the Axis II disorders and the mentally ill group displayed significant differences for all three index offense categories

considered together. The Univariate analysis indicated that the Axis II disorders displayed a significant effect on the number of index violent charges category. The personality disorders were not significantly different with respect to the number of previous nonviolent and indeterminate offenses.

The Tukey HSD post hocs indicated that persons with Antisocial Personality disorder had significantly more violent charges than those without a personality disorder. The significant Tukey Comparisons along with the mean number of violent charges and respective standard error terms for the different groups are displayed on Table 3.15.

Table 3.15

Means Number of Index Violent Offenses, Standard Error Terms and The Significant Tukey Comparisons for The Axis II Diagnoses

INDEX VIOLENT OFFENSES				
DIAGNOSIS	N	MEANS	STD. ERROR	TUKEY Comparisons
Paranoid PD	12	1.16	0.32	
No PD	583	1.14	0.05	A
Mixed PD	60	1.30	0.24	
Borderline PD	18	1.33	0.50	
Antisocial PD	36	2.00	0.35	B**

B>A, **p<.01

Once again the MANCOVA analysis was conducted to determine whether the number of years each individual had been ill, would have an effect on the Axis II disorders and the three offense types. The covariate, however, was not found to have a significant effect.

In summary, although it was postulated that differences existed between the number of violent charges incurred by persons with Antisocial Personality Disorder and other personality disorders, the hypothesis was not supported. The hypothesis concerning the differences between those suffering from a major mental illness and

Antisocial Personality Disorder was supported. Individuals diagnosed with Antisocial Personality disorder were found to have more charges involving violence than persons with major mental illnesses.

3.12 HYPOTHESIS #5: Co-Morbidity of Substance Abuse Will Increase the Incidences of Index Violent Charges.

The fifth hypothesis presumed that a co-occurring substance abuse diagnosis would increase the prevalence of violent crime. In order to investigate this hypothesis, the eight Axis I and II diagnostic groupings outlined in section 3.6 were employed. The descriptive statistics of the eight groups with respect to the number of current violent, nonviolent and indeterminate charges are presented in Table 3.16.

The MANOVA indicated that the eight diagnostic groups were significantly different for all three offense categories considered together. The Univariate Analysis related that the eight Axis I and II groupings displayed significant effects on the number of violent and nonviolent charges. The eight groups did not display a significant effect on the number of indeterminate charges. Table X (Appendix A) presents a summary of the multivariate and

Table 3.16

Means and Standard Deviations for Index Charges, for Individuals With Singular and Dual Diagnosis.

INDEX OFFENSES									
		GENDER		VIOLENT		NON-VIOLENT		INDETERMINATE	
DIAGNOSIS	*N*	*M*	*F*	*Mean*	*Std. Dev.*	*Mean*	*Std. Dev.*	*Mean*	*Std. Dev.*
Only Axis I	454	357	97	1.1	1.2	0.9	1.2	0.4	0.7
Axis I + Substance Abuse	84	72	12	1.1	1.2	1.3	1.6	0.4	0.7
Axis I + Axis II	32	23	9	0.8	0.7	0.8	1.2	0.3	0.6
Axis I + Antisocial PD	10	9	1	1.5	1.4	1.0	1.2	0.5	0.9
Only Axis II	26	20	6	1.4	1.8	0.9	1.4	0.7	1.1
Substance Abuse	44	41	3	1.5	1.4	0.9	1.2	0.4	0.7
Substance Abuse + Axis II	38	31	7	1.7	2.2	1.4	1.6	0.7	0.9
Substance Abuse + Antisocial PD	21	21	0	2.4	2.5	0.9	1.1	0.7	1.0

univariate analyses with respect to the three types of charges across the dual disorder groups.

The Tukey HSD post hoc tests suggest that the presence of a co-occurring substance abuse disorder does not increase the number of violent charges for all groups. The mean number of violent charges, their respective standard error terms, and the significant Tukey comparisons are displayed in Table 3.17. The analysis revealed that persons diagnosed with both Substance Abuse and Antisocial Personality Disorders had more charges for violent behaviour than persons diagnosed with a singular Axis I disorder. The Substance Abuse and Antisocial Personality Disordered group also had more violent charges than persons with an Axis I disorder with a co-occurring Substance Abuse diagnosis. They were also found to have more violent convictions than persons with both an Axis I and Axis II disorder. Although the overall univariate analysis revealed that the groups had a significant effect based on the nonviolent charges, the post hoc tests did not reveal any individual group differences.

Table 3.17

The Mean Number Index Violent Charges, Standard Error Terms and The Significant Tukey Comparisons of the Dual Diagnostic Categories

INDEX VIOLENT CHARGES				
DIAGNOSIS	N	MEANS	STD. ERROR	TUKEY Comparisons
Axis I + Axis II	32	0.75	0.12	A
Axis I + Substance Abuse	84	1.05	0.14	A
Axis I	454	1.12	0.06	A
Axis II	26	1.42	0.36	
Substance Abuse	44	1.50	0.21	
Axis I + Antisocial PD	10	1.50	0.45	
Substance Abuse + Axis II	38	1.66	0.36	
Substance Abuse + APD	21	2.38	0.55	B**

B>A, **p<0.01

A MANCOVA analysis was once again performed with years of illness as a covariate. The analysis, however, indicated that the number of years an individual had been ill was not a significant covariate and subsequently did not influence the overall analysis.

The hypothesis suggesting that co-occurring substance abuse increased the incidence of violent charges was not supported. Individuals with co-occurring Substance Abuse

and Antisocial Personality Disorders were found to have more violent charges than three other diagnostic combinations.

3.13 Investigating Gender Differences in Index Charges

One way ANOVAs were performed in order to investigate possible gender differences against the number of current violent, nonviolent and indeterminate charges. The analysis revealed that males and females were significantly different with respect to the number of indeterminate charges ($F=5.72$, $df=1, 707$, $p=0.017$). Gender did not have a significant effect on the number of violent and nonviolent charges. The descriptive statistics for both males and females across the three charge categories is available in Table 3.18.

Table 3.18

The Means and Standard Deviations for the Three Index Charge Categories for Males and Females

OFFENSE TYPE	GENDER	N	MEAN	STD. DEVIATION
Index violent	Male	574	1.22	1.45
	Female	135	1.10	1.14
Index nonviolent	Male	574	0.96	1.27
	Female	135	0.87	1.23
Index	Male	574	0.47*	0.79
indeterminate	Female	135	0.29	0.61

* p<.01

CHAPTER IV

DISCUSSION

4.1 MAIN FINDINGS

4.1.1 Differences in Offense Histories of Individuals Suffering from Major Mental Disorders

The present study investigated the criminal careers of psychiatric patients at METFORS retrospectively. It was hypothesized that different diagnostic categories would differ with respect to number of convictions for violent, nonviolent and indeterminate offenses. A number of interesting findings were drawn from the investigation and will be discussed in more detail following a short re-cap of the overall conclusions.

1. The different diagnostic categories differed with respect to number of convictions for violent offenses. More specifically, Paranoid Schizophrenics and those with Substance Abuse had incurred more convictions for violent offenses than individuals with Delusional or Affective

Disorders. Those with Substance Abuse also had more convictions for nonviolent offenses.

2. Contrary to the original hypothesis, persons diagnosed with Paranoid and Non-Paranoid Schizophrenia did not differ reliably with respect to the mean number of previous convictions or index charges for violent offenses.

3. Individuals with co-occurring Substance Abuse Disorder and Antisocial Personality Disorder were found to have significantly more violent convictions than individuals diagnosed with a singular Axis I mental disorder. Further, it was found that persons suffering from an Axis I disorder with a co-occurring Substance Abuse or Antisocial Personality Disorder had committed more nonviolent crimes than persons with a singular Axis I or II disorder.

4. Individuals diagnosed with Antisocial Personality Disorder were found to have committed more violent crimes than persons with other personality disorders.

5. Years of illness was found to be highly correlated with the number of previous violent offenses but not with nonviolent or indeterminate offenses. However, when the effect of age was statistically removed by using the

partial correlation technique, only a weak, although statistically significant association remained.

4.2 GENERAL DISCUSSION

4.2.1 Differences in Violent and Nonviolent Convictions

As hypothesized, individuals with different Axis I diagnoses differed with respect to the number of previously accumulated violent and nonviolent offenses. The results further revealed that persons diagnosed with Paranoid Schizophrenia had committed substantially more violent offenses than persons diagnosed with a Delusional Disorder or an Affective Disorder. Individuals diagnosed with Substance Abuse Disorder were also found to have more convictions for violent offenses than persons with Delusional Disorder and Non-Paranoid Schizophrenia. It was also determined that persons with Substance Abuse Disorder had more convictions for violent and nonviolent offenses than individuals with an Affective Disorder.

These results concur with previous research. Others such as Grossman, Haywood, Caranavan, Davis and Lewis (1995) determined that persons with paranoid schizophrenia and persons with substance abuse were associated with

higher incidences of violent behaviour. Individuals diagnosed with Paranoid Schizophrenia and Substance Abuse have been found to be at higher risk for violence by many others (Beaudoin et al., 1993; Bradford, Greenberg, & Motayne, 1992; Hodgins, 1988, 1994; Klassen & O'Connor, 1988; Lindqvist, 1986; Lindqvist & Allebeck, 1990).

As stated earlier, individuals diagnosed with Paranoid Schizophrenia were found to be at greater risk for violent behaviour compared to persons suffering from a Delusional Disorder. It is possible that individuals with Paranoid Schizophrenia are more likely to act on their aggressive impulses than those with a Delusional Disorder because of cognitive deterioration that is symptomatic of schizophrenia (although it is less pronounced in Paranoid Schizophrenia than the other types; APA, 1994). Outside of a delusional belief, individuals diagnosed with a Delusional Disorder are usually more intact cognitively than Paranoid Schizophrenics, which suggests that those suffering from Delusional Disorder would have greater ability to control their aggressive urges than persons with Paranoid Schizophrenia.

Alternately, the difference in sample size between the two groups could have affected the outcome, as the Delusional Disorder group comprised only 5% of the present sample. However, the number of persons with the disorder in the present sample was well above the estimated prevalence rate of 0.03% in the general population and 1-2% in hospital settings (APA, 1994, p. 299). The prevalence rate of Schizophrenia is estimated to be approximately 1% in the general population (APA, 1994, p. 282). It appears that the Delusional Disordered group is actually over-represented in the METFORS sample compared to both the general population and general psychiatric hospital settings.

This relatively high prevalence of Delusional Disorders within the current sample raises the issue of why persons with Delusional Disorder are referred to METFORS at such high rates. Results indicated that the majority of the assessments conducted at METFORS were for Fitness to Stand Trial. According to the Criminal Code, a person is deemed unfit to stand trial, if on account of a mental disorder, s/he is unable to "understand the nature or

object of proceedings, understand the possible consequences of the proceedings, or communicate with counsel" (Watt and Fuerst, 1993; p.7). Consequently, cognitively intact individuals are rarely found unfit to stand trial. Since individuals with Delusional Disorders display little cognitive deterioration (APA, 1994), one is left wondering why these individuals are sent to METFORS at all.

To answer this, one must appreciate the route which individuals follow before arriving for an assessment at METFORS, and the discretionary decision points along the way. First, witnesses to or victims of an incident choose whether or not to call the police. Police officers have the discretionary right to ignore, warn, hospitalize, arrest, or arrest and divert an individual. By virtue of appearing more intact than schizophrenics, a greater proportion of delusional disorders may actually "wind up" arrested than others who appear obviously mentally ill.

Following arrest, a defendant is arraigned at a "show cause" hearing where a junior member of the judiciary decides whether there is sufficient evidence to bring an individual to trial, whether s/he is bail worthy,

divertible to the mental health system, or in need of a psychiatric examination to help determine the individual's Fitness to Stand Trial.

Conceivably, individuals with Delusional Disorders are not diverted to hospitals as often as schizophrenics following arrest but are sent to METFORS during judicial proceedings because of their less obvious, but often more disturbing symptomatology. Further research investigating grounds for decision making at every stage of the referral process could facilitate an understanding of the observed distribution of diagnoses in the METFORS sample.

Individuals suffering from Paranoid Schizophrenia were also found to have committed more violent acts than persons diagnosed with an Affective Disorder. Although few studies have investigated the violent behaviour of the different diagnostic categories, there is debate within the literature regarding the violent nature of individuals with an Affective Disorder. Various studies suggest that persons with an Affective Disorder, particularly Bipolar Mood Disorder, are as violent as persons with Schizophrenia (Monahan, 1993; Swanson, Holzer, Ganju and Jono, 1990).

The results of this study, however, suggest otherwise and are consistent with findings by Teplin et al.(1993).

There are three possible explanations for the above findings, which suggest that individuals with Affective Disorders have fewer convictions for violent offenses than those with Paranoid Schizophrenia. First, it is possible that pooling the Bipolar Mood Disorder group with the Major Depression mitigated the overall outcome, as individuals with Major Depression are not typically viewed as violent (Hodgins, 1988). Second, it is possible that the moderately higher percentage of women in the Affective group (24%) reduced the overall number of violent convictions. Only 19% of individuals diagnosed with Paranoid Schizophrenia were women. This is further substantiated by the finding that males had more violent convictions than women. The third possible explanation is the fact that the current data were collected from one particular facility and does not represent all forensic populations. It is possible that in the METFORS population, individuals with an Affective Disorder are not as violent as persons diagnosed

with Paranoid Schizophrenia, but may be in other forensic populations.

4.2.2 Paranoid and Non-Paranoid Schizophrenics: No Differences

Although it was hypothesized that persons diagnosed with Paranoid Schizophrenia and those diagnosed with a Non-Paranoid form of Schizophrenia would likely differ with respect to the number of convictions for violent, nonviolent and indeterminate offenses, the results revealed no such differences. This is however in contradiction to the DSM-IV descriptions of the different forms of Schizophrenia. According to the DSM-IV (1994, p.287), Paranoid Schizophrenia is characterized by a preoccupation with one or more delusions or frequent auditory hallucinations, anxiety, anger, aloofness and argumentativeness. It also states that " .....the combination of persecutory and grandiose delusions with anger may predispose the individual to violence" (p. 287). As the DSM-IV does not discuss the aggressive potential of other forms of Schizophrenia, this suggests that individuals with non-paranoid forms of Schizophrenia are not particularly prone to aggression. The present finding,

however, suggest that individuals with Non-Paranoid types of Schizophrenia are just as likely to commit violent acts as individuals diagnosed with Paranoid Schizophrenia.

These findings may be due to the specific nature of the present sample, which may be non-representative of all psychiatric patients in the criminal justice system. Alternately, it is possible that there is little difference in terms of aggressive acting out in different forms of Schizophrenia. Most studies investigating the nature of violence in schizophrenia have rarely separated the two groups, possibly because, as in the present sample, differences were not found between the groups. Further investigation is needed to fully understand the differences or the lack of differences between the different forms of Schizophrenia. Hypothetically, one could posit that individuals with Paranoid Schizophrenia have a heightened motivation (perceived malevolence) to commit violent acts relative to Non-Paranoid Schizophrenics. Alternately, Paranoid Schizophrenics typically evidence less cognitive deterioration than persons with Non-Paranoid forms of Schizophrenia and may therefore have more intact coping

resources at their disposal (APA, 1994, pp. 274-296). Perhaps the above two notions interact to cancel any potential differences in violent behaviours that might be due to the diverse motivation and control mechanisms.

4.2.3 The Presence of Substance Abuse and Antisocial Personality Disorder

Comparing the different dual combinations of Axis I and Axis II diagnoses revealed that individuals diagnosed with dual disorders had accumulated more convictions for violent and nonviolent offenses than those with a singular Diagnosis. Specifically, it was determined that individuals with both a Substance Abuse disorder and Antisocial Personality Disorder had more convictions for violent offenses than persons with a singular Axis I disorder. With respect to the number of accumulated convictions for nonviolent offenses, it was determined that persons diagnosed with both Substance Abuse Disorder and Antisocial Personality Disorder had more nonviolent convictions than persons with a singular Axis I diagnosis or a singular Axis II disorder. Individuals with both a Major Mental Illness and Antisocial Personality Disorder

also had more convictions for nonviolent offenses than persons with a singular Axis I disorder or with only an Axis II disorder. Individuals diagnosed with a dual Axis I diagnoses that included Substance Abuse as the secondary diagnosis were found to have accumulated more convictions for nonviolent offenses but not violent offenses, than persons with a singular Axis I diagnosis. These findings suggest that individuals with dual disorders are more likely to engage in criminal behaviour than those with a singular diagnosis.

Many researchers have highlighted and supported the link between criminal acting out and substance abuse (Abram, 1990; Barton, 1982; Hodgins, 1988,1994; Nicol, Gunn, Gristwood, Foggitt, & Watson, 1973). Others have documented the increase of criminal behaviour in mentally disordered persons who have a co-occurring Substance Abuse Disorder (Beaudoin et al., 1993; Gottlieb et al., 1983; Lindqvist, 1986; Lindqvist & Allebeck, 1990). A relationship between substance abuse, Antisocial Personality Disorder and criminal activity has also been studied and documented (Hare & Hart, 1993; Phil &

Patterson, 1993; Swanson, 1993; Teplin et al., 1993). Hodgins and Cote's (1993) paper, which was discussed in detail in chapter I, is one of a few studies that have investigated criminal careers of persons diagnosed with both major mental illness and Antisocial Personality Disorder. Like the present study, Hodgins and Cote (1993) also found that persons with the dual diagnosis had substantially more convictions for nonviolent offenses than persons with a singular Axis I diagnosis. Contrary to Hodgins and Cote's (1993) results, the present study found the presence of Antisocial Personality disorder also increased the number of previous violent convictions. The findings of the present study support the hypothesis that Antisocial Personality Disorder increases the risk of criminal behaviour, particularly nonviolent offending, in persons suffering from a major mental illness. More generally it can be presumed that the presence of substance abuse and/or Antisocial Personality Disorder increases the risk of criminal behaviour in the present sample.

4.2.4 Differences in Offense Styles of Persons with Personality Disorders.

Much like previous studies, differences were also found amongst the four personality disorders in terms of the number of previous convictions for violent as well as nonviolent convictions (Hodgins, 1996; Maughan, 1993; Robins, 1993). It was determined that individuals diagnosed with Antisocial Personality Disorder had a greater number of accumulated violent offenses than persons with an Axis I disorder, a Borderline Personality Disorder or with a Mixed Personality Disorder. Persons diagnosed with Antisocial Personality Disorder were also found to have more convictions for nonviolent offenses than individuals with Axis I disorders.

The literature suggests that the diagnosis of Antisocial Personality Disorder is one of the strongest predictors of aggressive acting out (Webster et al., 1994). Maughan (1993) indicated that Antisocial Personality Disorder is greatly represented in prison or jail populations, with rates approximating 45-50% (APA,

1987). Hare (1980) estimates prevalence rates of 79% for Antisocial Personality Disorder in the Canadian Federal Penitentiary system, but only 40% for psychopathy. These rates lie in stark contrast to the lifetime prevalence rates of the disorder among the general population which is estimated to be 7% (Robins, Tipp and Pryzbeck, 1990). Many violent prediction models such as the Violent Risk Assessment Guide or The Psychopathy Checklist also stipulate the diagnosis of Antisocial Personality Disorder as part of prediction scales for future acting out (Hare, 1991; Webster et al., 1994). This topic will be discussed in greater detail in section 4.4, after the remaining data have been placed in context.

4.2.5 Years of Illness and Previous Violent Convictions.

Although not a formulated hypothesis, the high correlation between years of illness and the number of previous violent convictions represented an interesting and notable finding. The high correlation between the two variables was initially vexing because years of illness was not found to be highly correlated with the number of previous nonviolent and indeterminate convictions. The

correlation suggests that as an individual's illness progresses, they accumulate more violent crimes but not nonviolent or indeterminate crimes. The literature review did not reveal any prior reports of this specific pattern. It would be expected that the relationship between age and number of convictions would be highly correlated. Obviously with increasing age, an individual has more opportunity for committing crimes. However, in the present sample, age itself did not correlate highly with number of previous offenses. Rather, it appeared that the number of years an individual has been ill is associated with the number of violent acts they commit. This finding suggests that there is a relationship between mental illness and violence in the present sample.

However, when age was statistically removed, this relationship was drastically weakened. Further investigation of how the duration of illness contribute to criminal behaviour would be in order.

4.3 ADDITIONAL FINDINGS

4.3.1 Differences in Violent and Nonviolent Index Charges

As Teplin et al. (1993) indicated in their discussion, "using current charge to measure violent behaviour yields only a "snapshot" of the detainee's criminal career" (p.89). However, snapshots can be informative. In the present study, investigation of the index offenses of all of the singular diagnostic groups revealed that persons with Substance Abuse Disorders were charged with many more violent offenses than any other diagnostic category. The results also indicated that individuals with dual diagnosis of Substance Abuse and Antisocial Personality Disorder had more violent charges than individuals with any singular or dual Axis I diagnosis. These patterns are consistent with the findings from the previous offense histories.

The lack of significant differences between the major mental illnesses in terms of index offenses is also worth discussing. Although Paranoid Schizophrenics had more convictions for previous violent offenses than individuals

with a Delusional Disorder or an Affective disorder, these differences were not found when the index charges were investigated. There are two possible explanations for this finding. First, persons with Paranoid Schizophrenia are not necessarily more violent than other diagnostic categories, but are just more likely to be convicted, and index offenses do not reflect conviction, but charges. The second possible explanation is that our "snapshot" of the sample does not reflect the true relationship between the diagnoses and violent offending.

Similar discrepancies between previous and index offenses were noted when examining sex differences. For previous offense categories, males were found to have substantially more violent, non-violent and indeterminate offenses than females. These differences were not apparent for violent and non-violent index charges. Again it can be postulated that women with mental illness are less likely to be convicted of criminal activity than are men with mental disorders.

In order to investigate the differences noted above between the previous offense histories and index charges,

further research is required. Although longitudinal research has been conducted in the area of criminal activity and mental disorder, much of the research has focused exclusively on either arrest or conviction data. A longitudinal study including not only the number of arrests, but also whether an individual is convicted, is essential in truly understanding the relationship between mental illness and its involvement in the Criminal Justice System. It is certainly possible that some diagnoses are convicted more often than others, or that females are less likely to be convicted than males for similar offenses.

4.4 IMPLICATIONS FOR PREDICTION OF DANGEROUSNESS

As noted above, there existed a general similarity between the current findings of increased violence associated with APD and Substance Abuse and other reports in the literature. However, before one can utilize these data, or any other data, to inform opinion concerning individuals before the courts, the limitations intrinsic to a particular method or development locale must be appreciated. To illustrate, the Violence Risk Assessment Guide (VRAG; Harris, Rice, Quinsey, 1993) will be

examined, as it represents perhaps the best validated statistical approach to assessing future dangerousness. According to Rice (1997) and, Rice and Harris (1995), when the 12 variables previously identified through a multiple regression analysis (Harris et al., 1993) are subjected to a signal detection model, they collectively were able to predict correctly the occurrence or non-occurrence of violent recidivism in 75% of 618 individuals released from the Oak Ridge Division of the Penetanguishene Mental Health Centre and followed post-release over a 10 year period.

In the Oak Ridge sample, Psychopathy Checklist (PCL) score, elementary school maladjustment, a DSM-III diagnosis of personality disorder, separation from parents under age 16, failure on prior conditional release, non-violent offense history, never having been married, and alcohol abuse were indicative of high risk. Alternately, age at index offense, diagnosis of schizophrenia, severity of victim injury and female victim in index offense were indicative of low risk of future violent recidivism.

The Oak Ridge indicators consistent with those found in the current study include DSM personality disorder, non-violent offense history, and alcohol/substance abuse. The present study did not have a PCL score available for these 709 individuals. Since the major focus of the study was on diagnostic considerations and violent offending, elementary school maladjustment, separation from parents under age 16, failure on prior conditional release, and marital status were not evaluated as possible high risk indicators; while severity of victim injury, and female victim in index offense were not evaluated as low risk indicators.

Of note in the METFORS sample was the opposite influence of a diagnosis of Paranoid Schizophrenia (relatively high risk) and an absence of an influence for age at index offense (no relationship). If the identical regression or signal detection model were to be employed at METFORS, a diagnosis of Paranoid Schizophrenia and/or increased age would tend to increase the likelihood of a false negative prediction. Although Schizophrenia as combined group did not differ significantly from other

diagnostic categories in terms of violent acting out, it still cannot be considered a low risk indicator in the present sample. This is consistent with the notion that individual forensic centres draw different types of forensic patients and models that very suitably apply to one population may subtly provide biased evaluations in other settings. This calls for local norms being developed for any statistical (or clinical) prediction scheme prior to reliance on that device for making decisions that affect people's lives.

The present findings also suggest that there is a need to compare different diagnoses and not combine them into singular categories. Combining Paranoid Schizophrenia and other forms of Schizophrenia obscures the differences found between Paranoid Schizophrenia, Delusional Disorder and Affective Disorders in terms of violent offending. Consequently, loosely aggregating distinct diagnostic groups may obscure subtle but important relationships between specific mental disorders and violent behaviour.

4.5 IMPLICATIONS FOR TREATMENT PROGRAMS

Although the findings discussed in the previous sections are tentative, a number of intervention or rehabilitation suggestions can be put forth.

1. Intervention aimed at the treatment of Substance Abuse in mentally disordered persons may be effective in reducing future criminal activity. This would be in conjunction with psychopharmalogical intervention aimed at controlling the symptoms of the mental disorder.

2. Intervention aimed at treating Antisocial Personality Disorder (increasing prosocial behaviours), possibly through Cognitive-Behavioural therapy may be effective in reducing the criminal acting out of individuals suffering from major mental disorders. Again, this would have to be implemented in conjunction with a psychopharmological treatment program.

4.6 LIMITATIONS OF THE STUDY

As with all studies, design and methodological flaws can limit the generalizability and interpretations of findings:

1. All data were collected from one facility, thus limiting generalizability to other forensic or hospital samples.

2. The small number of subjects in the Delusional and Schizoaffective groups could have affected their relationship to the other diagnostic categories in terms of the three offense styles.

3. Subjectivity in diagnostic procedures of different psychiatrists could have potentially affected the diagnoses found in the METFORS files employed in the present study.

4. As sited in all retrospective data, the severity of charges may be imprecise due to plea bargaining and possible amendments to original charges.

4.7 SUGGESTIONS FOR FURTHER RESEARCH

Further multisite forensic investigations are necessary to understand the "true" relationship between mental illness and criminal behaviour. Specifically, the following areas need further investigation:

1. There continues to be a need to compare different forensic populations in terms of previous offense histories, index charges, socio-economic, educational, cultural and intellectual factors.
2. Further research is required to understand the conviction rates of different diagnostic categories, to determine if certain diagnostic categories are viewed as more "violent" than others just because they have a tendency to be convicted more often than others.
3. Similar research is required to compare the conviction rates of males and females with mental health disorders who are arrested for similar offenses.
4. There is also a need for studies to follow first episode patients and investigate their involvement in criminal acts.

4.8 CONCLUSIONS

The present study suggests that there is a relationship between mental illness and criminal behaviour in patients assessed at METFORS. Individuals suffering from Paranoid Schizophrenia were determined to be more violent than persons diagnosed with Delusional Affective Disorders. Findings also suggest that the presence of Substance Abuse and/or Antisocial Personality Disorder increases violent and nonviolent criminal behaviour. Length of Illness was also determined to be a risk factor for criminal activity among the mentally disordered. These findings certainly suggest that practitioners working with this population need to be aware of the effects of co-occurring disorders and attempt to treat not only the mental illness but associated disorders, in order to reduce the risk recidivism.

The results however are tentative as they only attempt to explain the behaviours of a select group at METFORS and cannot be generalized to other forensic populations. This became salient as some of the present findings did not support findings from different

populations (Monahan, 1993; Webster et al., 1994). Certainly, further research is required to truly understand the relationship between mental illness and criminal behaviour across different populations.

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APPENDIX A

Table I Summary of Multivariate and Univariate F-tests for Effects of Axis I Diagnoses

Univariate	Axis I Diagnoses
Multivariate	2.54*
Previous violent offenses	5.05**
Previous nonviolent offenses	3.16*
Previous indeterminate offenses	1.73

Note: DF=18, 1929 DF=6,684
*p≤0.01, **p≤0.001

Table II **MANCOVA: Summary of Multivariate and Univariate F-tests for the Effects of Axis I Diagnosis**

Analysis	Axis I Diagnosis
Multivariate	2.16**
Previous violent offenses	4.66***
Previous nonviolent offenses	2.41*
Previous indeterminate offenses	1.16

Note: DF=18,1706 DF=6,605
*p≤ 0.05,**p≤ 0.01, ***p≤ 0.001

Table III **Summary of Multivariate and Univariate F-tests for Effects of Axis II Diagnoses**

Analysis	Axis II Diagnoses
Multivariate	2.00*
Previous violent offenses	4.60**
Previous nonviolent offenses	3.18*
Previous indeterminate offenses	0.65

Note: DF=12, 1809 DF=6,684
*p≤ 0.05, **p≤ 0.01

Table IV **MANCOVA: Summary of Multivariate and Univariate F-tests for the Effects of Axis II Diagnoses**

Analysis Diagnoses	Axis II
Multivariate	2.03*
Previous violent offenses	4.60**
Previous nonviolent offenses	2.73*
Previous indeterminate offenses	0.53

Note: DF=12,1600 DF=4,607
*p≤ 0.05,**p≤ 0.01

Table V Summary of Multivariate and Univariate F-tests for Effects of Dual Diagnoses

Analysis	Dual Diagnoses
Multivariate	2.75***
Previous violent offenses	3.01***
Previous nonviolent offenses	5.30**
Previous indeterminate offenses	2.09*

Note: DF=21, 1956 DF=7,683
*p≤ 0.05, **p≤ 0.01, ***p≤ 0.001

Table VI **MANCOVA: Summary of Multivariate and Univariate F-tests for the Effects Dual Diagnoses**

Analysis	Dual Diagnoses
Multivariate	2.53**
Previous violent offenses	2.40*
Previous nonviolent offenses	4.22**
Previous indeterminate offenses	1.86

Note: DF=21,1729 DF=7,604
*p≤ 0.05,**p≤ 0.001

Table VII **ANOVA: Summary Of Univariate F-tests for the Effect of Gender Across the Three Offense Types.**

Analysis	Gender
Previous violent offenses	16.02**
Previous nonviolent offenses	16.24**
Previous indeterminate offenses	6.36*

Note: DF=1, 691
*p≤ 0.05, **p≤ 0.000

Table VIII **Summary of Multivariate and Univariate F-tests for the Effects of Axis I Diagnoses Across the number Violent, Nonviolent and Indeterminate Charges**

Univariate	Axis I Diagnoses
Multivariate	2.76***
Index violent charges	4.16**
Index nonviolent charges	0.41
Index indeterminate charges	2.78*

Note: DF=18,1980 DF=6,702
*p≤ 0.05,**p≤ 0.01,***p≤ 0.001

Table IX Summary of Multivariate and Univariate F-tests for the Effects of Axis II Diagnoses

Univariate	Axis II Diagnoses
Multivariate	1.91*
Index violent offenses	3.39**
Index nonviolent offenses	0.97
Index indeterminate offenses	1.54

Note: DF=12,1857 DF=4,704

*p≤ 0.05,**p≤ 0.01,

Table X Summary of Multivariate and Univariate F-tests for the Effects of Dual Diagnoses

Analysis	Dual Diagnoses
Multivariate	2.51**
Index violent charges	4.11**
Index nonviolent charges	2.02*
Index indeterminate charges	1.44

Note: DF=21,2008 DF=7,701
*p≤ 0.05,**p≤ 0.001

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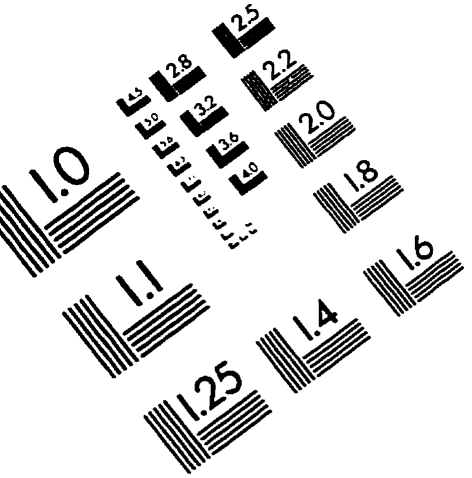

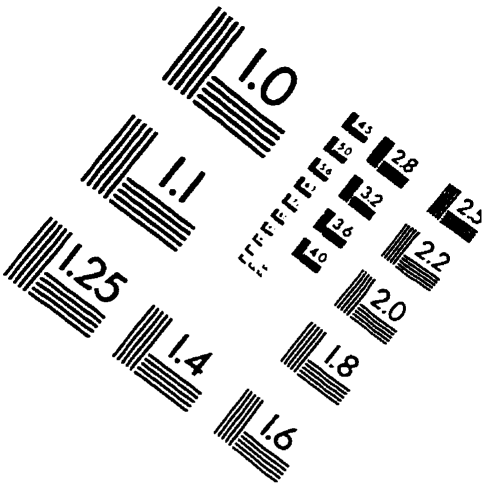

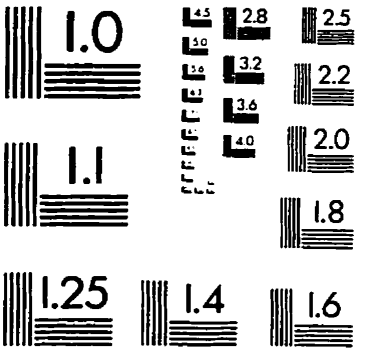

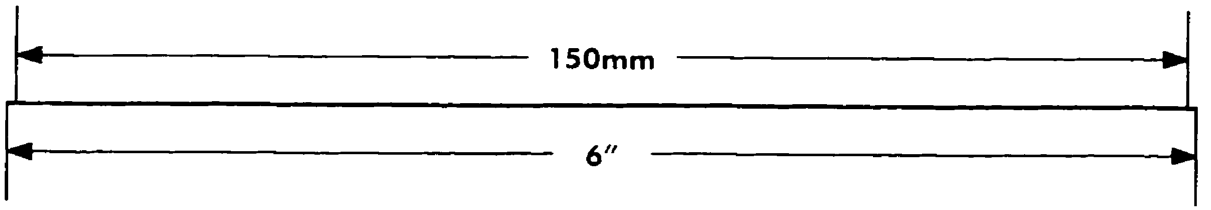

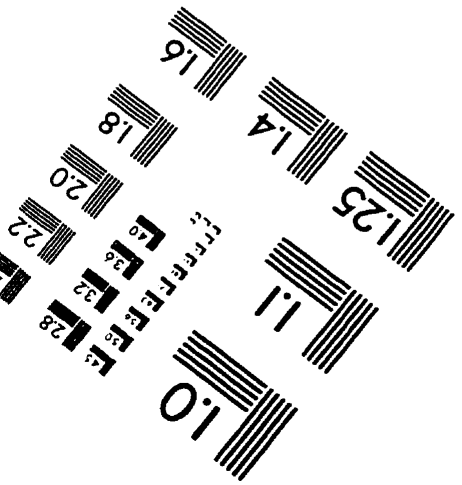

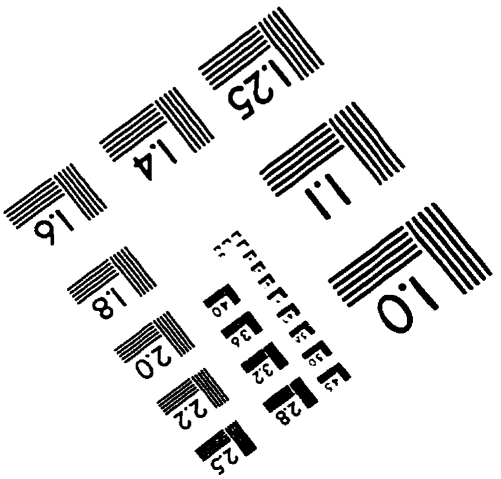

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