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PERSONALITY CHARACTERISTICS OF  
FORENSIC PATIENTS, INCARCERATED  
OFFENDERS, AND NONOFFENDING  
PSYCHIATRIC PATIENTS.

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PERSONALITY CHARACTERISTICS OF  
FORENSIC PATIENTS, INCARCERATED OFFENDERS,  
AND NONOFFENDING PSYCHIATRIC PATIENTS

by

© Barbara J. Schmalz

M.A., University of Windsor, 1982

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Submitted to the Faculty of Graduate Studies  
Through the Department of Psychology  
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## ABSTRACT

The primary purpose of this study was to compare psychiatric, forensic, and inmate groups in an attempt to clarify the forensic distinction. The second purpose of this study was to examine the applicability of the Overcontrolled Hostility (O-H) scale of the MMPI and its corresponding typology (Megargee, 1967) to the forensic and inmate groups. This typology suggests that persons who commit severely assaultive crimes tend to overcontrol their hostility and score higher on the O-H scale than do persons who commit mildly/moderately assaultive crimes.

Sixty subjects per group from an inpatient psychiatry unit, a medium secure forensic assessment unit, and a medium secure Federal Correctional Institution were assessed at admission. Half of the forensic and inmate subjects had been charged with a severely assaultive crime (e.g., murder, attempted murder) and half had been charged with a mildly/moderately assaultive crime (e.g., theft, break and enter). Demographic information, IQ, and MMPI scores, including the O-H scale, were collected for these 180 subjects.

Severely assaultive forensic subjects obtained significantly higher O-H scale scores than did mildly/moderately assaultive forensic subjects. Similarly, severely assaultive inmates obtained significantly higher O-H scores than did mildly/moderately assaultive inmates. In addition, both severely assaultive forensic subjects and severely assaultive inmates obtained significantly higher O-H scores than did the group of nonoffending psychiatric subjects. These findings provided further support for the theoretical and clinical utility of the O-H

scale within offender populations. Suggestions for future areas of research with this scale were offered.

While forensic subjects shared characteristics with both psychiatric subjects and inmates, discriminant function analysis found the forensic group to be more similar to the psychiatric group than to the inmate group, based upon MMPI scores, IQ, age, and education. Certain MMPI scales were found to be more effective in this discrimination than were others and the clinical implications of these scales were discussed. The forensic subjects in this study were less often diagnosed psychotic as compared to the psychiatric subjects, and they tended to exhibit milder indications of psychopathology. Alcohol abuse was a frequently diagnosed problem for forensic subjects, as compared to the other two groups. The implications of these and other distinguishing forensic characteristics for the assessment and treatment of forensic subjects were discussed. Finally, recommendations for further investigation within the forensic specialty were offered.

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## TABLE OF CONTENTS

|   | Page |
|---|------|
| ABSTRACT  | ii   |
| ACKNOWLEDGEMENTS  | iv   |
| LIST OF TABLES  | vii  |
| LIST OF FIGURES   | viii |
| Chapter   |      |
| I INTRODUCTION  | 1    |
| Purpose of the Study  | 1    |
| The Law and Mental Health   | 3    |
| The Study of Aggressive Behavior                                  | 8    |
| The Overcontrolled/Undercontrolled Hostility Typology             | 11   |
| Literature Review   | 14   |
| The MMPI as a Predictor and Differentiator of Antisocial Behavior | 14   |
| The Overcontrolled Hostility Scale                                | 16   |
| The Overcontrolled Hostility Scale and Forensic Patients          | 20   |
| The O-H Scale and Other Measures of Aggression                    | 25   |
| Hypotheses  | 29   |
| II METHOD   | 31   |
| Design  | 31   |
| Subjects  | 31   |
| Procedure   | 34   |
| Scoring and Interpretation  | 36   |
| III RESULTS   | 40   |
| The Overcontrolled Hostility Scale                                | 40   |
| Hypothesis 1  | 40   |
| Hypothesis 2  | 40   |
| Hypothesis 3  | 40   |
| Hypothesis 4  | 42   |
| Hypothesis 5  | 42   |
| Additional O-H Analyses   | 43   |
| Analysis of Demographic Data                                      | 49   |
| Continuous Variables  | 43   |
| Categorical Variables   | 44   |

| Chapter       | Page  |     |
|---------------|---|-----|
| III           | RESULTS (continued)   |     |
|               | Additional Variables: Psychiatric and Forensic                                  | 47  |
|               | Additional Variables: Forensic and Inmate                                       | 49  |
|               | Analysis of IQ Data   | 49  |
|               | Analysis of MMPI Data   | 52  |
|               | Discriminant Function Analysis  | 54  |
|               | Discriminant Analysis with Psychiatric, Forensic, and Inmate Groups             | 54  |
|               | Discriminant Analysis: Offenders versus Nonoffenders                            | 60  |
|               | Discriminant Analysis: Psychiatric and Forensic Subjects versus Inmates         | 61  |
| IV            | DISCUSSION  | 64  |
|               | The Overcontrolled Hostility Scale  | 64  |
|               | Demographic Differences Between Groups  | 67  |
|               | Three Groups  | 67  |
|               | Psychiatric and Forensic  | 70  |
|               | Forensic and Inmate   | 71  |
|               | IQ and MMPI Differences Between Groups  | 71  |
|               | IQ  | 71  |
|               | MMPI Scales   | 72  |
|               | Discrimination of Psychiatric, Forensic and Inmate Groups on Combined Variables | 76  |
|               | Three Groups  | 76  |
|               | Offenders versus Nonoffenders   | 79  |
|               | Psychiatric versus Nonpsychiatric   | 80  |
|               | Implications and Recommendations  | 81  |
|               | O-H Scale   | 81  |
|               | MMPI Scales   | 83  |
|               | The Forensic Distinction  | 84  |
|               | Summary   | 88  |
| APPENDIX A    | Item List for the O-H Scale   | 90  |
| REFERENCES    |   | 93  |
| VITA AUCTORIS |   | 101 |

LIST OF TABLES

| Table |   | Page |
|-------|---|------|
| 1     | Mean O-H Scale Scores and t-Values for Psychiatric, Forensic, and Inmate Groups | 41   |
| 2     | Age and Education: Means, Standard Deviations, and F Values for Three Groups    | 45   |
| 3     | Chi Square Analysis of Demographic Variables for Three Groups                   | 46   |
| 4     | Diagnostic Classification of Psychiatric and Forensic Subjects                  | 48   |
| 5     | IQ Scores; Means, Standard Deviations, and F-Value for Three Groups             | 50   |
| 6     | MMPI Scores: Means, Standard Deviations, and F-Values for Three Groups          | 53   |
| 7     | Canonical Discriminant Functions Evaluated at Group Means (Group Centroids)     | 56   |
| 8     | Standardized Canonical Discriminant Function Coefficients (Three Groups)        | 57   |
| 9     | Classification Results for Psychiatric, Forensic, and Inmate Groups             | 59   |
| 10    | Classification Results for a Nonoffending Group and a Group of Offenders        | 62   |
| 11    | Classification Results for a "Psychiatric" Group and a Nonpsychiatric Group     | 63   |

LIST OF FIGURES

| Figure |   | Page |
|--------|---|------|
| 1      | Frequency of Intelligence Classifications<br>for Psychiatric, Forensic, and Inmate Groups | 51   |
| 2      | Contribution of Predictors to<br>Canonical Discriminant Functions                         | 58   |

## CHAPTER I

### INTRODUCTION

#### Purpose of the Study

Criminal law is designed to protect us from each other. "Criminals" must assume responsibility for their unlawful actions and submit to some degree of restricted liberty and freedom. But there is an exception to this process: in some cases a person is not responsible (or has diminished responsibility) for actions while incapable of behaving in a mature and logical fashion. When a person is experiencing psychopathological processes the criminal justice system is obligated to treat him/her differently.

Forensic patients are these persons who have allegedly committed crimes and exhibit some degree of psychopathology. On one level they are criminals (by virtue of antisocial behavior), on another they are psychiatric patients (by virtue of psychopathological processes). The primary purpose of this study was to ascertain what differences in personality structure and environmental influence exist between a group of criminals, forensic patients, and psychiatric patients. Are the differences between forensic and psychiatric patients defined solely by one legally-defined behavioral act? Are institutionalized offenders clearly a psychologically healthier and/or less treatable group than forensic patients, as our current system suggests? The intersection of these groups is likely psychologically more complex than their distinctions imply. Measurable psychological differences and/or

similarities may help clarify psychology's role in the lap of the law as well as enhance the clinician's ability to distinguish personality characteristics of each group.

Research indicates that distinct subgroupings can be formed within criminal populations. Megargee and his associates (1962, 1966, 1967, 1975, 1979) have proposed a typology of the overcontrolled and undercontrolled hostile offender. Using the Minnesota Multiphasic Personality Inventory, demographic, and life history data, they have developed a scale to assess this typology among prison populations. Prior to the development of this scale, overcontrolled offenders (who exhibit a violently aggressive behavior pattern) had been difficult to detect by psychometric evaluation (Gearing, 1979). More recently, investigators have extended and verified the scale's utility with forensic populations (Arnold, Quinsey, & Velner, 1977; Lane & Kling, 1979; Lane & Spruill, 1980; Rice, Arnold, & Tate, 1983; Quinsey, Maguire, & Varney, 1983; Walters, Greene, & Solomon, 1982; Walters, Solomon, & Green, 1982), though evidence has been scant compared to prison populations. The second purpose of this study was to test the applicability of the overcontrolled/undercontrolled hostility typology (Megargee, 1966; Megargee, Cook, & Mendelsohn, 1967) within a sample of forensic patients. Applying this typology to forensic populations, in addition to prison populations, would assist the clinician in detecting and treating overcontrolled persons.

The sections to follow attempt to clarify and develop the rationale for this study. The criminal law/mental health overlap is described in the first section. Next a brief theoretical account of the personality construct of aggression is offered, followed by a description of the

overcontrolled/undercontrolled typology. The section entitled Literature Review traces the development and utility of the Overcontrolled Hostility (O-H) scale of the MMPI. Results of empirical studies with prison populations and then forensic groups are reviewed. Other relevant MMPI measures of aggression are then introduced. Finally, this study's hypotheses are stated.

#### The Law and Mental Health

"No conduct should be defined as criminal unless it represents a serious threat to society, and unless the act cannot be dealt with through other social or legal means" (Ouiment Report, 1969, p. 12).

The interface of criminal law and mental health fosters an awkward relationship. On a technical level both have operationally defined but variant constructs of behavior and these often create confusion. For instance, legal definitions of "insanity" (there are two within the Criminal Code of Canada) have long troubled the "experts" on insanity. Functionally, however, this relationship is not a senseless one, for example mental health professionals serve numerous roles within the criminal justice process.

The Criminal Code of Canada and Provincial Mental Health Legislation ensure that persons who are psychologically distressed are detected and treated appropriately. Mental Health Acts typically distinguish two avenues of patient care (specifics vary from province to province): Involuntary and Voluntary/Informal admission to hospital. In the first case, the patient must be judged to be a danger to self or others, while the latter seek professional help on his/her own accord. Most facilities also have outpatient care, on a voluntary basis, to deal with persons able to function within the community while participating

in treatment.

Within the Canadian Criminal Code (R.S.C. 1970, c.C-34) an accused person can be: (a) remanded for a psychiatric examination (not to exceed 30 days) at a time of the preliminary inquiry (Criminal Code, s. 465 (1) (b) to determine whether the accused is mentally ill, or (c) remanded before or after entering a plea for a period of observation not less than 30 days and not more than 60 days (s. 543) when appropriate, to determine whether the accused is "fit to stand trial" or to determine whether the accused was "insane" at the time of the criminal act or omission of an act. A person found to be unfit to stand trial (s. 543(6)) or insane at the time of the offence (s. 16) is ordered to a secure psychiatric facility at the discretion of the Lieutenant Governor of that province (s. 542(2)). "Fitness" issues are usually readdressed at a later date when the individual is judged capable of standing trial. Those found not guilty by reason of insanity however, are kept in custody indefinitely until a time when the Lieutenant Governor decides otherwise, based upon the recommendations of a provincially appointed advisory review board. Just as a person can be shifted from being an "inmate" to a "patient" by way of the Criminal Code, a serving prisoner can be ordered to a psychiatric hospital for treatment if there is reason to believe he/she is mentally ill (s. 546) and requires intensive treatment.

Secure psychiatric facilities (often referred to as forensic facilities) have evolved to house individuals who have acted contrary to the Criminal Code of Canada and exhibit psychopathological processes. Forensic psychology, psychiatry, social work, etc. are terms used to depict an interdisciplinary specialty that attends to these



court-referred psychiatric patients. Forensic facilities are, in effect, a compromise between psychiatric and correctional facilities.

As with corrections, the individual was ordered to detention. The internal staffing and environment, however, are presumably conducive to psychological change, as on a psychiatric ward. Though psychiatric patients can be housed involuntarily as well, their facilities are typically void of the less pleasant "prison" atmosphere of both forensic and correctional facilities. This restricted environment is necessary to control dangerous persons and to protect society from criminal behavior.

Forensic facilities are usually affiliated with psychiatric institutions. In Canada, some are separate buildings on the grounds of psychiatric hospitals (e.g., Oakridge Division, Mental Health Centre, Penetanguishene, Ontario; Alberta Hospital, Edmonton), and others are secure units situated within the actual psychiatric hospital (e.g., Metropolitan Toronto Forensic Services). A unique forensic service exists within a general hospital setting in Calgary, Alberta. A security guard monitors electronically controlled entrances to an otherwise typical psychiatric/medical ward. Individuals are remanded to this unit for a 30-day observation period, following the (alleged) commitment of a crime. Unit staff (psychology, psychiatry, social work nursing, occupational therapy, recreational therapy) all do assessments on these individuals and later condense their reports into a summary letter directed to the Court. This assessment with recommendations then assists the remanding judge in formulating decisions regarding the accused's disposition (e.g., fit/unfit to stand trial; not guilty by reason of insanity) and subsequent detention and/or recommended

treatment. The impact of the mental health professionals' assessments on the forensic patients will vary from case to case depending upon legal strategy of lawyers, case law, the trial judge, community standard, etc. The professionals typically, however, expend a great amount of time and effort in evaluating many facets of the forensic patient's level of functioning.

On one level, then, we can suggest that the psychiatric-forensic-prison distinctions are legally determined. Mental health disciplines have researched and applied their expertise within all three realms. While the forensic specialty has evolved to examine a special class of criminals with psychiatric problems, the global relationship between criminal behavior and emotional disturbance has long been debated. Whether criminals are simply "bad" or "mad" has been questioned and most seem to favor the former descriptor (Jones & O'Toole, 1981). The forensic specialty seems to capture the intersection of the two.

How are psychiatric patients different from forensic patients, and how do forensic patients differ from inmates? The latter two groups of people have acted in an antisocial and perhaps aggressive manner. But are psychiatric patients, by the nature of their decreased ability to behave in an adaptable fashion, dangerous as well? Research had long been cited in support of the conclusion that psychiatric patients are no more dangerous than other people (e.g., Cocozza, Melick, & Steadman, 1978; Giovannoni & Gurel, 1967). More recent studies conclude, however, that these patients as a group have higher arrest rates than the general population (Adams, 1983). Contradictory results on this issue may be a function of methodological differences in studies (Siomopoulos, 1978) or perhaps to the shift toward deinstitutionalization in recent years.

Are there clear psychological distinctions between these groups of people? Psychiatric and forensic patients are usually offered a diagnosis with corresponding treatment implications. In a national study, Menzies, Webster, Butler, and Turner (1980) found that only 4% of 248 cases remanded for pretrial fitness assessments exited without an official psychiatric label. "The predisposition of the medical profession to identify pathology is apparent in the overwhelming percentage of patients who receive a diagnostic label (Menzies et al, 1980, p. 477). This study found remarkable inconsistencies in ratings between and within six Canadian cities on fitness criteria, treatment issues, and predictions of dangerousness.

The tendency to diagnose criminal behavior is likely related to the setting: hospital or prison. More severe psychopathology is reflected in diagnoses from hospital (forensic) settings and less severe diagnoses from prison settings (Siomopoulos, 1978). Any label - be it criminal (or rapist, murderer, etc.) or psychiatric patient (or schizophrenic, psychopath, etc.) - presumably has implications for that individual.

One particular diagnosis has received much attention as being suspended between the labels of criminal and the mentally ill. Psychopathy, sociopathy, and antisocial personality disorder are used to describe presumably similar processes. Some investigators advocate definable and treatable differences between them (e.g., Schlesinger, 1980) while others prefer to identify subcategories within one diagnosis (e.g., primary/secondary psychopath, Hare 1970). While the details of these diagnostic categories are not relevant to this discussion, debate is ongoing with respect to the prognostic value of diagnosing criminals and overdiagnosing psychiatric patients. And that leaves forensic

patients, in my opinion, saddled with the uncertainties of both sides.

Forensic facilities serve two functions: detention and assessment/treatment. While their mandate is a legal one, the criminal justice system attempts to maximize the resources of mental health and the inmate/patients in order to serve its moral obligation to society. An unstated assumption of this criminal law/mental health relationship is that in the process of procuring justice, the patient/inmate's psychological well-being is being enhanced. Yet in the words of John Stuart Mill:

...the sole end for which mankind are warranted, individually or collectively, in interfering with the liberty of action of any of their numbers is self-protection. That is the only purpose for which power can be rightfully exercised over any member of a civilized community, against his will, is to prevent harm to others. His own good, either physical or moral, is not a sufficient warrant. (cited in Sartorius, 1972).

The Study of Aggressive Behavior

The study of aggressive behavior has been of social and scientific concern for decades. Since 1975 alone a social sciences bibliography has produced almost 5,500 references on the topic (Crabtree & Moyer, 1977, 1981). Psychology has traditionally looked for individual behavior patterns that can be subjected to rigorous inquiry within acceptable levels of validity and reliability of all measures and definitional constructs. Concomitantly, sociologists sometimes perceive the discovery of individual differences as error variance in their search for heuristic explanations of social behavior (Megargee & Bohn, 1979).

Aggression has long been considered a basic human emotion.

Aristotle acknowledged the concomitant physiological and psychological changes when a person perceives something as good or bad, something that will give pleasure or pain. A person seeks to overcome real or imagined obstacles which stand in the way of achieving or avoiding an emotion. In striving to uncover these obstacles, aggressive behavior may promote a pleasurable or painful emotional experience (Arnold, 1960). Freud considered affect to be the consciously experienced discharge of an instinct or drive. Aggression, therefore, is the instinct, aggressive behavior the outward expression of the instinct, and hostility is the felt emotion. Metaphorically speaking, aggressive and sexual instincts act together to provide energy for goal-directed action. Later theorists (e.g., Allport, 1954) argued that aggression is not an instinct demanding an outlet, but rather a reaction to some provocation. Dollard et al (1939) suggested that aggression is the reaction to a frustration of goal-directed behavior. Frustration instigates a hierarchy of response tendencies, one of which is aggression, and an overt aggressive act will occur if frustration continues and nonaggressive tendencies are extinguished. The expression is a catharsis which reduces the instigation to all other acts of aggression.

Psychoanalytic formulations argue that mere expression of aggression is not sufficient to relieve the tendency for further aggressive acts. Only when an angry attack removes the source or obstacle of the emotion can there be genuine relief (Arnold, 1960). As the source is often infantile and remote, other ways must be found to deal with the emotion. Mere expression will only intensify the emotion.

Most theorists of aggressive behavior agree that antisocial violent

types somehow lack adequate and mature outlets for expression of anger and aggression. Whether it be the result of faulty learning, unresolved oedipal conflict, or cultural mores, only a minority of the population can express anger freely. Most people resort to mechanisms such as rationalization, denial, displacement, or sublimation. Megargee (1967) maintains that all assaultive individuals have maldeveloped mechanisms of expression. The undercontrolled type is equipped with minimal internal controls, and when control is possible it more often comes outside. The overcontrolled type, on the other hand, has excessive inhibitions despite extreme frustration. In the absence of outlets, instigation to aggression may build up over time to the point where even the most massive defenses are overwhelmed and the aggressive act takes place.

Ken Wilber (1982) describes a similar process by suggesting that: violent anti-social aggressive acts are a result not of integrated aggression but of suppressed and alienated aggression, for by "holding it in" the force of aggression greatly increases, just as the tighter you clamp on the lid of a pressure cooker the greater the force of steam becomes, until it finally results in violent explosion. (p. 210)

The rest of us, he contends, don't integrate our aggressive tendencies either, but rather deny them and push them out of consciousness. And finally we project them and experience them from without in the form of fear.

Most clinical research (including the present study) is concerned with understanding and treating destructive aggressive behavior. For the purposes of simplicity and social concern let us assume that

aggressive behavior is aberrant if it falls within the definition of offences contained within the Criminal Code of Canada. This is not to say that the average citizen's expression of aggression is psychologically healthy and morally justified. This assumption merely provides us with a behavioral framework which has been accepted as one society's set of rules.

Volumes of psychological research have identified differences between criminals and noncriminals, outlined predictors of antisocial behavior, and quantified individual differences between types or groups of offenders (Laufer, Johnson, & Hogan, 1981). One particular line of research initiated in 1962 by Megargee and Mendelsohn has proven to be effective. Following eight years of work within the Federal Correctional system in Florida, Megargee and Bohn (1979) have offered a classification system for criminal offenders which has both diagnostic and prognostic value. Following a slightly different vein, Megargee has also proposed a theory and measure of aggression which has enjoyed increasing attention from the scientific community.

#### The Overcontrolled/Undercontrolled Hostility Typology

An underlying assumption of most research and theoretical suppositions of violent behavior is that people vary with respect to their response in a provocative situation. Megargee originally based his study on the work of Buss (1961) who formulated a distinction between types of aggressive acts committed against persons.

"Instrumental aggression" is initiated either by competition or in the process of gaining a desired reinforcer such as money or prestige. The motive is not necessarily an aggressive one, as in the stabbing of a shop owner during the execution of a robbery. The second type of

aggressive act has been termed "angry aggression" where the prime intent is to inflict suffering on the victim. Most aggressive acts are instrumental ones, according to Buss (1971) Angry aggression, on the other hand, is reserved for those more sadistic actions of less frequency.

Megargee (1971) described four factors that must be considered in determining the likelihood of an aggressive act: (a) motivation to engage in aggressive behavior, labelled as "hostility", "anger", "instigation for aggression", etc. (Buss's angry and instrumental aggression have different sources of motivation); (b) inhibitory mechanisms within the personality that are opposed to overt aggressive behavior, labelled as "superego", "conscience", etc.; (c) stimulus of situational variables in the environment that may either facilitate or interfere with aggressive behavior; (d) strength of competing responses that are incompatible with aggressive behavior (i.e., if habit or drive strength of alternative responses are stronger than that of the aggressive response, then they may be selected instead). Researchers have traditionally focused on one of these components of the aggressive response (e.g., Berkowitz, & LePage, 1967 - stimulus factors; Brown & Elliot, 1965 - rewarding nonaggressive (competing) responses; and Dollard et al., 1939 - instigation to aggression; cited in Megargee, 1971). Megargee reminds us that the clinical psychologist attempts to predict aggressive behavior with respect to the assessment of instigation and inhibition. While many scales of motivation for aggression and hostility exist, much less was known about inhibitions against aggression. Megargee put forth the possibility that, in some people, violent actions may stem from excessive inhibitions, and not



from inadequate control.

Megargee (1965) theorized that angry aggression can be further subdivided and considered the result of either undercontrolled or overcontrolled hostility on the part of the aggressor. He contends that undercontrolled persons experience little inhibition against acting out, and respond frequently with verbal and physical aggression when there is little provocation. The overcontrolled person, in contrast, has massive inhibitions against aggressive behavior and would respond violently less often, but with more intensity. For instance, in a study of assaultive and nonassaultive criminals, Megargee and Mendelsohn (1962) found a pattern of reversals in that the extremely assaultive subjects had more control and less hostility than the nonassaultive criminals or normals. This led them to suggest that:

the extremely assaultive person is often a fairly mild-mannered long-suffering individual who buries his resentment under rigid but brittle controls. Under certain circumstances he may lash out and release all his aggression in one, often disastrous act.

Afterwards he reverts to his usual overcontrolled defenses. Thus he may be more of a menace than the verbally aggressive "chip-on-the-shoulder" type who releases his aggression in small doses (Megargee, 1970, p. 111).

According to Megargee (1970) the undercontrolled aggressive type corresponds to the typical conception of an aggressive personality found in the literature, and diagnosed as sociopathic personality. This person responds with aggression whenever frustrated or provoked. Since inhibitions are situation-specific, however, he will on occasion be inhibited from expressing his aggression (for instance, not attacking

his mother or a judge even though they frustrate him). In such cases the undercontrolled person will readily use the mechanism of displacement and find a substitute target for his aggression, or resort to response generalization and make a less drastic response to the original frustrating agent.

The chronically overcontrolled type behaves quite differently. Given his extremely rigid inhibitions against the expression of aggression, he rarely, if ever, responds no matter how great the provocation. These inhibitions are not focused on a few specific targets, as with the undercontrolled aggressive type, but instead are quite general. He is, therefore, unable to utilize the mechanisms of displacement or response generalization. His "instigation to aggression" exceeds his excessive defenses. If this occurs when there are sufficient cues to aggression in the environment, an aggressive act will result. Megargee eventually showed that extremely aggressive acts such as homicide or assault with a weapon were more often committed by chronically overcontrolled types. Moderately aggressive behavior, such as fights, were more often carried out by undercontrolled persons.

#### Literature Review

##### The MMPI as a predictor and differentiator of antisocial behavior.

The Minnesota Multiphasic Personality Inventory (MMPI) is a standardized personality test consisting of 566 true-false items. It is used as a descriptive instrument or criterion measure in a vast array of clinical and research investigations. The MMPI is comprised of 14 commonly used scales, including three validity scales. The development of additional scales has been a rather popular pastime for psychologists, and there are presently more MMPI scales than there are items on the inventory

(Butcher & Tellegen, 1978)!

The 14 commonly used MMPI scales include: Validity Scales--Cannot Say score (?), Lie (L), Infrequency (F), and Correction (K); Clinical Scales - 1:Hypochondriasis (Hs), 2:Depression (D), 3:Conversion Hysteria (Hy), 4:Psychopathic Deviate (Pd), 5:Masculinity-Femininity (Mf), 6:Paranoia (Pa), 7:Psychasthenia (Pt), 8:Schizophrenia (Sc), 9:Hypomania (Ma), and 10:Social Introversion (Si) (Dahlstrom, Welsh, & Dahlstrom, 1972).

The MMPI is probably the most widely used personality test in criminal justice settings today (Gearing, 1979). It is relied upon in a number of settings as an important tool in the classification and treatment of offenders, juvenile delinquents, and other categories of subjects. This widely used instrument is supported as a valid and reliable tool in discriminating behavioral traits among groups of offenders and psychiatric patients (Blackburn, 1968; Butcher & Pancheri, 1976; Dahlstrom & Welsh, 1960; Gearing, 1979; Gilberstadt & Duker, 1965; Graham, 1977; and Megargee et al., 1967).

Gearing (1979) provided an extensive review and methodological evaluation of research conducted with criminal populations incarcerated in correctional facilities or secure psychiatric facilities. He offered welcomed guidelines for more adequate research strategies. After critiquing 71 studies he detected several important methodological flaws and recommended the following areas for consideration: (a) sampling procedures: matching or partial matching should be used if complete randomization is impractical, in order to increase generalizability of results; (b) sources of variance: the variables of sex, age, IQ, educational achievement, and race should be consistently controlled for

in analyses, as they are primary sources of variance. In addition, the variables of age, IQ, and race should be examined post hoc in order that these sources of variance be better understood in their own right; (c) protocol validity: only random profiles need be detected and discarded from analyses, rather than applying conventional validity cutoffs (F T-score more than 80). Research indicates that a high F-score may be associated with a generally nonconforming, hostile, and aggressive approach to life, and not necessarily an attempt to fake-bad; (d) profile interpretation: while researchers utilize the method of interpretation which will enhance their results (i.e., conventional scale elevations, mean profile configurations for each group, actuarial high point coding systems, sequential linear-sums model, and experimental scales using cutoff scores) careful consideration should be made regarding the implications of their chosen method. The utility of their findings needs to be assessed by obtaining appropriate base rate figures from the overall sample population.

Gearing (1979) applauds Megargee and his associates for their most extensive work in developing and validating the Overcontrolled Hostility (O-H) scale (Megargee, Cook, & Mendelsohn, 1967) which is based on the overcontrolled/undercontrolled hostility typology described earlier. The scale, consisting of 31 items, has met with much success. Gearing endorses the scale as being of great potential value in identifying violent inmates to aid in treatment plans, administrative decisions, and parole considerations. He suggests that while this strong preliminary research is in need of cross-validation, its utility is likely to enhance the MMPI's precision in rehabilitative planning in corrections.

The Overcontrolled Hostility Scale. Megargee and his associates

(1967) wanted to develop an MMPI scale which would successfully discriminate assaultive criminals from nonassaultive criminals from normals. An earlier Study (Megargee, 1962) with 12 MMPI scales purporting to measure hostility and impulse control, failed to discriminate between extremely assaultive, moderately assaultive, nonviolent criminals, and normals. But an unexpected significant reversal was clear - that extremely assaultive criminals were better controlled and less hostile than moderately assaultive criminals, nonviolent criminals, or normals. Following from Megargee's (1964, 1965, 1966) hypothesis of degree of internal control and intensity and frequency of a violent act, he was especially concerned that overcontrolled potentially dangerous persons be detected and treated appropriately.

The O-H scale successfully discriminated between extreme assaulters and moderate assaulters and others (Megargee et al., 1967). The four criterion groups were: group 1-extremely assaultive (conviction for murder, voluntary manslaughter, mayhem or assault with a deadly weapon); group 2-moderately assaultive (conviction for battery); group 3-nonviolent (conviction for nonassaultive crimes e.g., theft, homosexual behavior); group 4-normals (no convictions). Megargee and his associates chose to label this new experimental scale "overcontrolled hostility" for several reasons. First, these discriminating items are extremely passive and nonaggressive, with no obvious relation to aggressive behavior. They sometimes suggest conventional social behavior such as "I like mechanics magazines" and "At times I feel like swearing", both scored false on the O-H scale (see Appendix A for the 31 O-H scale items). Second, the extremely

assaultive group were clustered with higher scores while the moderately assaultives and nonviolent group overlapped, which coincided with Megargee's earlier hypothesis. Finally, the normal subjects scored lower than the three criminal groups.

Several studies have enhanced the validity of the O-H scale by comparing it with other psychometric data. Haven (1972) reported much greater conformity and better socialization in youthful offenders classified as overcontrolled on the basis of O-H scores and offence reports. Blackburn (1968) found that extremely violent (psychiatric) offenders less often had a criminal record, were less frequently diagnosed as personality disordered, more often knew their victims, and scored higher on MMPI scales related to overcontrol than moderately assaultive offenders. He later (1972) used 17 hostility and personality scales to find that overcontrolled offenders have strong inhibitions toward aggressive behavior. Similar patterns were found with Deiker's (1974) cross-validation of 38 scales of hostility and control.

White, McAdoo, & Megargee (1971) utilized the 16 PF inventory (which does not share a common test construction method or item pool with the MMPI) to see whether other construct validity studies correlating the O-H scale with other MMPI measures of hostility and control might reflect common methods of variance rather than trait validity. A group of high O-H youthful offenders scored significantly higher on factors tapping emotional maturity, superego strength, and self control than did their low O-H peers. Also, high O-H scorers were lower on factors of boldness, mistrust, and unconventionality than their low O-H peers. White (1975) later found that high O-H offenders were significantly more impulsive than low O-H offenders, whereas the low

O-H group were more extrapunitive (based upon the Rosenzweig Picture Frustration Study).

Research has generally supported the validity of the O-H scale and the overcontrolled/undercontrolled typology. Studies with negative findings have typically erred by: (a) administering the O-H scale out of context of the entire MMPI, (b) basing construction of criterion groups on vague atheoretical grounds, or (c) inaccurately defining criterion groups by using only the severity of the most recent offence. The chronicity of past offences is an important factor in assessing one's tendency to aggressive behavior (Lane & Kling, 1979).

Mallory and Walker (1972) found that the O-H scale did not discriminate adequately between a group most likely to exhibit hostile overcontrol (assaultive offence with no previous felony conviction) and other prisoner groups. These authors suggested that inaccurate prison records may have resulted in improper assignment of groups. Subjects in this study, however, were administered the O-H and validity scales out of context of the MMPI. Biographical data (such as race and occupation) also failed to discriminate between the groups. This finding is contrary to others (e.g., Haven, 1969; Fischer, 1970) which have found race to be a confounding factor in predicting overcontrolled aggression (i.e., blacks obtain higher O-H scores).

Deiker (1974) suggested that a negative response set (naysaying) accounted for Megargee's (1967) results which discriminated overcontrolled criminals in the predicted direction (the O-H scale has 21 keyed false and 10 keyed true). Megargee and Cook (1975) quickly responded by constructing two shortened and two lengthened O-H scales, all with equal numbers of scorable true and false items. They

reanalyzed their cross-validation group and these scales discriminated the groups as well as the regular imbalanced O-H scale. They concluded that the validity of the O-H scale was not dependent on naysaying.

Since faking good or bad adjustment is done successfully by prison inmates (Gendreau, Irvind, & Knight, 1973), Rice, Arnold, and Tate (1983) wanted to ascertain whether it was possible to "fake" the O-H scale. Forensic psychiatric patients were instructed to either fake good adjustment, bad adjustment, or be honest. They found that patients were able to fake both good and bad adjustment but that various faking indices were reasonably accurate in detecting both. High O-H scores seemed to indicate a desire to appear normal on psychological testing. This finding is consistent with Megargee et al.'s (1967) description that the chronically overcontrolled type is characterized by very high inhibitions against the expression of aggression in any form.

Megargee (1967) addressed the possibility that the O-H scale might be measuring something in addition to the typology upon which it was based. In his initial study he noticed the nonviolent and moderately assaultive criminal groups showed a marked increase in O-H scores with the incidence of psychiatric diagnosis. He suggested that the O-H scale, in addition to measuring attitudes of conformity and control, is also sensitive to "serious breakthroughs of unconscious or id impulses which might be expressed either in an extreme assaultive act or in a psychosis" (p. 526). Since the majority of O-H studies have been conducted with prison samples where the incidence of psychosis is not as great as for forensic samples, this issue has not often been addressed.

The Overcontrolled Hostility Scale and forensic patients. Vast amounts of research have examined the predictive power of the MMPI and,



to a lesser degree, the O-H scale, with juvenile delinquents and adult offenders. Investigations concerned with personality and life history variables of judicially referred psychiatric (forensic) patients have, by comparison, been scant.

Blackburn (1968) attempted to discover whether there are different typologies of assaulters among mentally ill offenders. Like Megargee (1967), he found an inverse relationship between the frequency and intensity of assaults. He postulated that subgroups may exist within the category of overcontrolled psychiatric offenders: one group showing denial of anxiety or hostility and strong impulse control, and the other, although equally controlled, showing some degree of anxiety and hostility (Blackburn, 1972). This interpretation implies that inhibitions against aggressive behavior should be distinguished from denial of hostile feelings about the self or others. Perhaps future extensions of the O-H typology might address this issue, since treatment considerations for these subgroups might be useful.

Arnold, Quinsey, and Velner (1977) compared O-H scores of psychiatric patients detained in a maximum security facility with patients in minimum security. The maximum security patients, detained as such after having been found "not guilty by reason of insanity", scored significantly higher on the O-H scale than the other patients. This group were also more often diagnosed as psychotic, with more previous admissions to psychiatric hospitals. The higher O-H scorers among this maximum secure group had significantly fewer admissions to correctional facilities, as Megargee's theory would predict. Finally, the authors noted that O-H scores had increased over the 39 months stay for the maximum secure patients. They speculated, as Megargee had done

(1965), that incarceration may be detrimental for the overcontrolled person and may result in greater overcontrol and the increased probability of committing a violent offence after release.

Lane and Kling (1979) supported the construct validity of the O-H typology with forensic patients. They divided the patients into criterion groups based upon the severity of the present offence and chronicity of prior offences. Megargee's theory was supported in that the O-H scale discriminated between the groups: the men who committed murder but had no prior charges obtained higher O-H scores than groups with a criminal history with a current lesser assault charge or a nonviolent control group. When the entire sample was combined, the O-H scale correlated positively with other MMPI scales relating to rigidity, excessive control, repression of conflict, and a reluctance to express psychiatric symptoms. Conversely, the O-H correlated negatively with measures of introversion, impulsiveness, and acting out of hostility. The authors concluded that this scale, in conjunction with other methods, can be used to identify overcontrolled patients from undercontrolled ones and thereby aid in diagnosis and selection of appropriate treatment programs.

Lane and Spruill (1980) found overcontrolled forensic patients to appear "healthier", be morally rigid, and reveal low levels of impulsivity. In contrast, the undercontrolled type was found to be more impulsive and evidence more psychopathology. Empirical support was also found for the hypothesis that when overcontrolled individuals do express aggression, the result is generally an extreme act of violence. The authors stressed the need for further studies within different forensic populations so that the typology might be implemented for classification

purposes.

Investigators of the overcontrolled/undercontrolled typology have assumed that distinguishing between the types could lead to differential and more effective treatment programs. For instance, traditional programs teaching inhibitions and a new set of norms to the extremely assaultive offender are suited to the undercontrolled personality and not the overcontrolled offenders (Lane & Spruill, 1980). Alternately, the latter group may, in fact, be overlooked as suitable for treatment programs since this person appears "healthier" on personality inventories and history data. Premature release without appropriate followup could be detrimental to both the offender and the public.

Lane and Spruill (1980) offered suggestions for a unique therapeutic program for the overcontrolled type. These include:

1. encouraging patients to uncover and assume responsibility for their personal psychological concerns;
2. increasing interpersonal skills such as discrete assertiveness;
3. outlining different response options to counter frustrating situations and reinforcing alternative ways of dealing with feelings of hostility;
4. changing expectancies (e.g., via cognitive restructuring) regarding the social appropriateness and the social/interpersonal consequences of expressing not only aggression but also other feelings and needs. (p. 266).

The authors suggest that small homogenous treatment groups be used to achieve these goals.

Quinsey, Maguire, and Varney (1983) provided support for the

Megargee description that overcontrolled individuals have assertive deficits. High O-H murderers or attempted murderers in a maximum security psychiatric institution were significantly less assertive than low O-H murderers, non-person offenders, and control subjects. The authors assessed assertiveness with structured role playing tasks and on a questionnaire that asked subjects how aggressive they would be in extremely provocative situations. The results of this study indicate that assertive deficits may be a meaningful target for intervention, as Lane and Spruill (1980) suggested.

Attending to assertive deficits of the high O-H individuals within a secure institutional setting could be problematic, however. Assertive behaviors may tend to be punished by institutional staff (Quinsey et al., 1983). Consequently, assertion training may be more appropriate following the period in maximum security (when the individual is transferred to medium/minimum security or is an outpatient). At this time the patient is also more likely to practice and transfer therapeutic gains within real life situations. Perhaps during the period of secure institutionalization the psychologist might intervene at a different nonbehavioral level aimed at examining and restructuring the emotional defence system.

Evidence for the validity of the O-H scale within forensic and psychiatric populations has only recently begun to accumulate (Arnold et al., 1977; Brooks, 1983; Lane & Kling, 1979; Lane & Spruill, 1980; Rice et al., 1983; Walters, Greene, & Solomon, 1982; Walters, Solomon, & Greene, 1982). Some investigators have used the O-H scale in conjunction with other measures of aggression, hostility, and psychopathology.

The O-H Scale and other measures of aggression. Brooks (1983)

found that forensic patients rated as extremely assaultive on Megargee et al.'s (1967) ten-point scale of aggressiveness scored significantly higher on the O-H scale than did forensic patients rated as moderately assaultive. While this finding lends support to the validity of the O-H scale within forensic populations, a comparison of forensic patients with non-judicial psychiatric patients produced no significant differences with O-H scores. Differences were not detected on most other MMPI scales either, excepting the scales hypochondriasis (Hs) and depression (D). The author suggested that while forensic patients on occasion exhibit dynamics similar to prisoners (like overcontrolled hostility), their defenses of control are subject to cyclical breakdown (as are psychiatric patients') and may not be as chronically overcontrolled. This study's failure to find overall support for the O-H typology may be due, in part, to sampling and testing procedures:

- (a) the author utilized outpatient forensic patients who had been found not guilty by reason of insanity and were no longer being detained. The length of time since hospitalization (which may be important for the O-H typology) was not specified;
- (b) the psychiatric group was not a "non-offending" group as was presumed, but rather had a high arrest rates;
- (c) subjects were required to have had received a diagnosis of psychosis to be included in the study. They were subsequently grouped and analyzed according to three distinctions - schizophrenia, paranoid or chronic, and manic-depressive. Predicting that the O-H (and other scales) would differentiate between a global group of outpatient psychotics or between fine diagnostic distinctions seems improbable; and
- (d) approximately half of the subjects completed a shortened version of

the MMPI (the author typed the 11 O-H items which fall after item 300 on a separate sheet of paper). A response set may be more likely with these items in succession.

Other investigators have found intriguing relationships with the O-H scale and a specific MMPI profile. Both Gearing (1979) and Green (1980) noted the anticipated similarity between the behaviors characteristic of persons with the "4-3" high-point pair (MMPI profile peak on the Pd scale with the second elevation on the Hy scale) and high scores on the O-H scale. Greene (1980) commented that the relationship of scale 3 (Hy) to scale 4 (Pd) serves as an index of an individual's tendency to control or inhibit aggressive/hostile impulses.

Davis and Sines (1971) noted a consistent behavioral pattern of hostile-aggressive outbursts in usually quiet men with 3-4 profiles from a state hospital, prison, and medical center. Person and Marks (1971) successfully replicated these results and noted the higher incidence of violent crimes by 4-3 types than among other MMPI code types in prison. Theoretically, these earlier studies seemed to support Megargee et al.'s (1967) overcontrolled hostility pattern.

Walters, Solomon, and Greene (1982) investigated the relationship between the 4-3 high-point pair and the O-H scale in samples of state penitentiary inmates, state hospital psychiatric patients, and university clinic outpatients. They found that the penitentiary and psychology clinic 4-3 patients earned significantly higher O-H scores relative to groups of matched controls (a similar trend was obvious in the state hospital sample but the restricted sample size seemed to interfere with significance being obtained). The authors concluded that since the O-H scale and 4-3 high point pair seem to be measuring similar

types of behavior, clinicians should be alerted to the potential for aggressive and assaultive behaviors with these elevations.

Walters, Greene, and Solomon (1982) compared a list of behavioral correlates of the 4-3 high-point pair and the O-H scale in a sample of university psychology clinic outpatients. The 4-3 and O-H groups were more similar to each other than they were to the control group. The authors concluded that these results suggest that the 4-3 high-point pair and O-H scale are measuring the same general personality pattern which is characterized by denial, chronic anger, and rigidly controlled hostility. Differences were noted as well. For instance, O-H patients were significantly less depressed and less dependent than 4-3 patients. The 4-3 patient was described as a more "distinct" personality descriptor, since more behavioral correlates were able to be linked with it than with the high O-H scale scorers. They concluded that further research was necessary to delineate whether the O-H is, in fact, a less clearly defined personality pattern or a separate yet related one. Finally, these results seemed to suggest that a high O-H score and a 4-3 elevation may present a clearer pattern of denial, rigid overcontrol, and potential assaultiveness than do any of these scales alone.

While many investigations have produced experimental MMPI scales of aggression and hostility (Deiker, 1974) some have introduced combinations of the standard scales as measures of aggression (as with the 4-3 high-point pair). Huesmann, Lefkowitz, and Eron (1978) proposed a composite measure of aggression based upon the sum of T scores for scales F, 4, and 9 (infrequency validity scale, Pd, and Hypomania, respectively). They maintained that this combination was a better discriminator between delinquents and general populations than any of

these scales alone.

Mungas (1983, 1984) developed a comprehensive behavioral rating method for violent behavior among neuropsychiatric outpatients. The F-Pd-Ma combination successfully discriminated between three groups identified by these behavioral parameters. The authors acknowledge considerable overlap between the groups and cautioned the clinical utility of this measure alone. Furthermore, subjects in this study had not displayed "criminal" aggression, which might create a different pattern altogether, as exemplified below.

Holland, Beckett, and Levi (1981) found the F-Pd-Ma composite unable to differentiate between inmates who had been classified as violent or nonviolent according to the nature of their most recent offence. A small but positive correlation was found, however, between the composite and the number of lifetime offences (though results indicated that Pd alone was able to discriminate just as well). The authors noted that while the F-Pd-Ma index may be sensitive to repetitive undercontrolled mild to moderate aggressive behavior, it may not be appropriate for discriminating offenders who have displayed one occasion of extremely aggressive behavior but have a minimal history of criminal behavior. They suggested that a parallel seemed to be evident between the violent offenders in their study and Megargee's (1966) overcontrolled Hostile type. The implication of this research is that the F-Pd-Ma composite may be measuring a tendency to aggress easily and more often as opposed to the tendency not to aggress and maintain excessive control over hostile feelings. Since high O-H scores identify overcontrolled types and low O-H scores do not necessarily identify undercontrolled types (Lane & Kling, 1979) other measures may, in fact,



already do this. For instance, a peak elevation on scale 4 (Pd) of the MMPI tends to describe persons who are impulsive, immature, and prone to act out frustrations easily in aggressive ways (Gilberstadt & Duker, 1965; Lachar, 1980). Further research with the O-H scores in conjunction with other MMPI scales and combination of scales is needed to ascertain whether we can detect the theoretically undercontrolled type with empirically developed scales.

### Hypotheses

This study compared psychiatric patients, forensic patients, and prison inmates on selected demographic and MMPI variables, including the O-H scale. The primary purpose of this study was to determine clinically relevant differences and/or similarities between these three groups.

The second purpose of this study was to examine the applicability of the Overcontrolled Hostility scale to the forensic patients and inmates in this study. Based upon the literature review just presented, the research hypotheses concerning the O-H scale in this study were:

Hypothesis 1: Forensic patients who have committed a severely assaultive crime will score significantly higher on the O-H scale of the MMPI than will a group of non-offending psychiatric patients.

Hypothesis 2: Forensic patients who have committed a severely assaultive crime will score significantly higher on the O-H scale of the MMPI than will forensic patients who have committed a mildly or moderately assaultive crime.

Hypothesis 3: Prison inmates who have committed a severely assaultive crime will score significantly higher on the O-H scale of the MMPI than will prison inmates who have committed a mildly or moderately

assaultive crime.

Hypothesis 4: Prison inmates who have committed a severely assaultive crime will score significantly higher on the O-H scale of the MMPI than will a group of non-offending psychiatric patients.

Hypothesis 5: Forensic and psychiatric patients who have been diagnosed as psychotic will score significantly higher on the O-H scale of the MMPI than will patients not diagnosed as psychotic.

## CHAPTER II

### METHOD

#### Design

The purpose of this study was to compare psychiatric patients, forensic patients, and prison inmates on selected demographic and MMPI variables, including the O-H scale. An ex post facto design of the causal comparative type was used to fulfill this purpose. This design was chosen in order to examine relationships between past behavior, demographic variables, and obtained scores on the MMPI. While this study examined multiple variables which are not amenable to experimental manipulation, partial control over moderator variables and assignment of subjects into comparative groups was done. All subjects were matched according to the minimum criteria described below. A split matching was subsequently done to allow the hypotheses to be examined.

#### Subjects

Subjects were selected from three clinical samples: (a) 60 voluntary inpatients from the general psychiatry unit of the Calgary General Hospital, Calgary, Alberta, (b) 60 inpatients from the forensic unit of the Calgary General Hospital, and (c) 60 inmates detained at the Drumheller Institution, Drumheller, Alberta.

The Calgary Hospital is a 933-bed facility with 71 of these reserved for short-term psychiatric care. These patients display moderate to severe psychopathology and are usually offered outpatient care following their stay in hospital. Diagnoses and treatment recommendations are formulated according to the Third Edition of the

Diagnostic and Statistical Manual of Mental Disorders (DSM-III)  
(American Psychiatric Association, 1980).

The 20-bed forensic unit at the Calgary General Hospital serves as an assessment centre for referrals from southern Alberta. The majority of these patients are detained in this medium secure unit for 30 days, with some remaining for 60 days. An interdisciplinary team of mental health professionals addresses pretrial and presentence issues of fitness and insanity, and submits recommendation to the Court.

The Drumheller Institution is located in the town of Drumheller in southern Alberta. It is a Federal Correctional facility which offers medium security for approximately 350 offenders. These male inmates have been convicted of indictable offences and are serving terms ranging from two years to life imprisonment.

The minimum criteria for inclusion of subject in this study was:

1. Subjects were not younger than 18 years and not older than 55 years.
2. All subjects had been assigned an IQ estimate of 70 and above, according to a standardized method of intellectual assessment.
3. All subjects were male caucasians.
4. Subjects from the psychiatric unit had no known criminal history.
5. Half of the subjects from the forensic unit and half of the subjects from the Drumheller Institution had a current charge or past conviction for a severely assaultive crime (i.e., murder, attempted murder, manslaughter, sexual assault with a weapon or causing bodily harm, aggravated sexual assault, assault with a weapon or causing bodily harm, aggravated

assault, and robbery with injury).

6. Half of the subjects from the forensic unit and half of the subjects from the Drumheller Institution did not have a current charge or past conviction for a severely assaultive crime (i.e., this category included offences other than those listed above—crimes against property, summary convictions, theft, and offences under the Narcotic Control Act (R.S.C. 1970, c.M-1)).
7. Subjects from the psychiatric and forensic units had been assigned a diagnosis on either or both of Axes I and II of DSM-III (Axis I: Clinical syndromes, conditions not attributable to a mental disorder that are a focus of attention or treatment, and additional (V) codes; Axis II: Personality disorders and specific developmental disorders).

Psychiatric subjects (who met the above criteria) were randomly selected from all new admissions to hospital over a six-month period. A significant number of regular admissions were not included in this study because they were female. The decision to exclude females, despite their obvious role in psychiatric illness, was made in order that the psychiatric group could serve as a control group of men who had not committed a crime. Since criminal and forensic populations include very few females in comparison to males (Drumheller houses no female inmates) it was felt that studying only males would provide more clinically relevant information.

Forensic subjects and inmates who had committed mildly and moderately assaultive crimes were randomly selected from new admission over an approximate three-month period. Severely assaultive offenders

from the forensic and inmate groups were not randomly selected nor was the time period consistent with the other groups. Because of a lower incidence of severe crime, these subjects were obtained by going from the present back in time. With both groups this included all severely assaultive criminals over an approximate two-year period. All 180 subjects had, however, been assessed at the time of their admission. Information from re-assessments was not used.

#### Procedure

All subjects were asked to complete the MMPI Form R as part of their routine clinical assessment. An estimate of intellectual functioning was obtained through administration of the Wechsler Adult Intelligence Scale-Revised (WAIS-R) (Wechsler, 1981) or from the Shipley Institute of Living Scale (Shipley, 1940). Scores from the Shipley Scale were translated into Wechsler equivalents, as provided by Shipley-Boyle (1967). Testing was done by myself, a trained psychometrist, or another psychologist, following standard guidelines as outlined in the test manuals.

Demographic and life history information was obtained from subjects' self report. In some cases (inmates) casebooks were examined in order to verify information (e.g., criminal history). Psychiatric and forensic subjects reported most of the information verbally, while all inmates were asked to complete life history forms at the time of admission. All information used in this study is routinely collected in some fashion during the admission process. This information is then combined with clinical data to formulate diagnoses and develop treatment strategies.

The following information was obtained for all 180 subjects: age,

education, marital status, occupation, history of alcohol abuse, history of drug abuse, family psychiatric history, family legal history, history of suicide attempts, and criminal history. A Socio-Economic Index was calculated for each subject according to the method derived by Blishen (1967). He classifies six levels of socio-economic status according to occupation. These levels and occupational examples are: I--lawyer, engineer; II--accountant, sales manager; III--draughtsmen, insurance agent; IV--medical technicians, cashiers; V--typist, bartender; VI--labourer. An additional level VII was included in this study for analysis. This category included students and subjects who reported they had been unemployed for a long period of time.

Several variables were categorized for analysis. Age was divided into four groups: 18 to 22; 23 to 29; 30 to 39; and 40 to 55. These groups represented clinically relevant distinctions in terms of maturity, criminal behavior, and the age frequencies found after preliminary analyses were done (see results). Education was divided into five groups: no high school; part high school; high school diploma; some college/university; and college/university diploma obtained. Occupation was divided as follows: labourer (unskilled); semi-skilled (including, for example, cook, drywaller, etc.); tradesman (electrician, carpenter, etc.); professional; and other (student, unemployed, and do not know).

Psychiatric diagnoses were recorded for psychiatric and forensic subjects. These were coded as being a psychotic diagnosis versus a non-psychotic diagnosis, in addition to being classified as a psychosis, personality disorder, or neither of the two. These subjects' previous psychiatric history was recorded as well as their current intake of

antipsychotic medication.

Information about forensic subjects' and inmates' current charge/conviction was obtained. The severity of this criminal act (mild/moderate assaultiveness vs. severe assaultiveness) was recorded initially as part of the inclusion criteria. Crimes were rated as being against person or property, and involving a victim or not. The familiarity of the victim to the accused was also recorded. Criminal sexual behavior was only evident within the forensic groups. Though forensic settings do tend to house a considerable number of sexual offenders, the low incidence of sexual offenders in the prison in this study was a function of the mandate of the Institution. Most sexual offenders who are sentenced to Federal Institutions are housed together in protective custody in another Federal Institution, not in Drumheller. It is interesting to note that of the 60 forensic subjects, 14 had been remanded for criminal sexual behavior.

Scoring and interpretation. Completed MMPI's were hand scored, K-corrected, and converted to T-scores as suggested by Marks and Seeman (1963). Numerical IQ estimates were obtained according to standard manual instructions. IQ classification levels were assigned according to Wechsler's (1981) rules: Borderline--70 to 79; Low Average--80 to 89; Average--90 to 109; High Average--110 to 119; Superior--120 to 129; and Very Superior--130 and above.

All MMPI profiles were screened for validity, based upon the following guidelines. First, the MMPI profiles of subjects whose IQ was between 70 and 80 and/or had less than a sixth grade education were examined closely. An estimate below 80 (either Verbal or Full Scale) may suggest that the subject found the task too difficult and therefore



invalidated the test because of poor understanding (Dahlstrom, Welsh, & Dahlstrom, 1972). Only three subjects required oral administration in this study because of reading difficulty, so concerns about the effect of this method (as described in Gearing, 1979) were not an issue.

Megargee and Bohn (1979) have offered guidelines for detecting and rejecting invalid MMPI profiles. In this study profiles were next screened for random response patterns. This is detected by first identifying profiles with extremely high F-scale scores ( $\geq$  a T-score of 100, raw score  $\geq$  25). If a subject answers the items in a truly random fashion, then all the raw scores should be near the midpoint of each scale. The K-corrected T-scores expected from a random male profile are: L=62, F=112, K=55, Hs+.5K=85, D=82, Hy=75, Pd+.4K=79, Mf=60, Pa=85, Pt+1K=83, Sc+1K=111, Ma+.2K=73, and Si=62 (Megargee & Bohn, 1979). Suspect profiles in this study were examined for this pattern. Three subjects were excluded for this reason (two forensic subjects and one inmate).

The rationale for including profiles with high F-scale T-scores (some clinicians question validity after a T-score of 80) is that this high elevation is fairly typical among the severely mentally ill and common in forensic and criminal justice settings. In this study, F-scale T-scores of 80 or above were obtained by 23% (14) of the psychiatric subjects, 28% (17) of the forensic subjects, and 20% (12) of the inmates. Mean F-scale T-scores for the psychiatric, forensic, and inmate groups were 69, 72, and 66, respectively. While many investigators have offered clinical interpretations of high F-scale scores in criminal populations (Gearing, 1979), Megargee (1979) quite simply states that "F is second only to Pd+.4K in its relation to

antisocial or criminal behavior", p. 112. The item content of the F-scale indicates that an offender will obtain an elevated F-score if he: (a) feels that people are out to get him or that he has been victimized by others, (b) does not express warm feelings of love and admiration for his parents, and (c) has admitted to having stolen things or having been in trouble in school or with the law.

Other validity indicators are often considered in addition to high F-scores, but these weren't strictly applied in this study. In nonclinical populations an F-K Dissimulation Index (Gough, 1950) (F raw score minus K raw score) between 9 and 12 is generally viewed as a "fake bad" profile, where the subject has deliberately tried to exaggerate his problems (Lachar, 1980). In clinical settings the difference is accepted as higher, for example at 19, (Dahlstrom et al., 1972), before malingering is suspected. In this study profiles were examined when F-K equalled 19 or more. Nine subjects obtained an F-K Index of 19 or more. Faking "bad" may reflect a motivational set within forensic and criminal populations to gain eligibility for treatment or transfer, for example.

Attempts to "fake good" and deny problems are more difficult to detect (Graham, 1977). A high F-K in the negative direction usually supports this response style. This index (and more generally the K score) is significantly elevated by intellectual and socioeconomic levels of the subjects, however (Dahlstrom et al., 1972). Very few subjects (6) in this study were rated with high socioeconomic levels and only one of these subjects obtained a K-score above 70. The mean K scores for psychiatric, forensic, and inmate groups were 49, 52, and 53, respectively.

The L scale, K scale, and F-K Dissimulation Index are all concerned

with attempts to make an impression and do not usually make a strong case for gross signs of faking or responding randomly. Megargee and Bohn (1979) maintain that unless the faking is drastically obvious (and supported by other data), these response sets should be noted as an item of test behavior. How a particular profile was obtained is secondary to a concern for relationships between particular test profiles and overt behavior. This study, therefore, adhered strictly to a search for random profiles, and interpreted other validity indicators more liberally. This approach assumes that all MMPI data, inflated validity scales included, provides clinically relevant data to be used in assessing individuals.

A transparent template displaying the O-H scale items for Form R of the MMPI (see Appendix A) was designed to hand score the MMPI protocols in this study. Raw scores were then converted to male T-scores, as calculated by Megargee and his colleagues at the time of the scale's derivation (1967). He reported a coefficient of internal consistency (Kuder-Richardson Formula 21) of .56 for a combined group of normal and criminal subjects. This figure provides a satisfactory comparison to the median split-half reliability coefficient of .58 for the nine basic MMPI scales (Megargee et al., 1967).

Most O-H studies to date have used raw scores rather than O-H T-scores. This study used both in order to examine any statistical preference of one over the other. All other MMPI scales were analyzed using T-scores only, because of the clinical relevance of this approach.

## CHAPTER III

### RESULTS

The primary purpose of this study was to compare psychiatric subjects, forensic subjects, and inmates on demographic, IQ, and MMPI variables. An additional purpose of this study was to examine the applicability of the O-H scale of the MMPI to the forensic and inmate groups. Presented below are the results of: (a) analyses of O-H scale scores (including the five hypotheses), (b) analyses of demographic variables, (c) analyses of IQ scores, (d) analyses of MMPI scores, and (e) discriminant analysis of demographic, IQ, and MMPI information. All analyses were conducted using the Statistical Package for the Social Sciences (SPSS) (Nie, Hull, Jenkins, Steinbrenner, & Bent, 1975).

#### The Overcontrolled Hostility Scale

The five hypotheses offered in Chapter I were intended to determine whether previously established O-H scale relationships were supported by subject samples in this study. One-tailed t-tests were used to test these hypotheses. Table 1 contains mean O-H scale scores (raw scores and T-scores) and appropriate t-values.

Hypothesis 1. This hypothesis stated that forensic subjects who had committed a severely assaultive crime would score significantly higher on the O-H scale of the MMPI than would a group of nonoffending psychiatric subjects. This hypothesis was upheld,  $t(88)=2.56, p<.01$ , one-tailed.

Hypothesis 2: This hypothesis stated that forensic subjects who

Table 1.  
Mean O-H Scale Scores and t-Values for Psychiatric, Forensic,  
and Inmate Groups

| Group               | O-H Scores |                    |         |                   |
|---------------------|------------|--------------------|---------|-------------------|
|                     | Raw        | t                  | T-score | t                 |
| <u>Psychiatric</u>  | 13         | 2.56 <sup>*a</sup> | 54      |                   |
|                     |            | 4.60 <sup>*b</sup> |         |                   |
| <u>Forensic</u>     | 14         |                    | 58      |                   |
| Severe Assaulters   | 17         |                    | 66      |                   |
| Mild/Mod Assaulters | 12         | 3.47 <sup>*</sup>  | 50      | 3.25 <sup>*</sup> |
| <u>Inmate</u>       | 15         |                    | 61      |                   |
| Severe Assaulters   | 19         |                    | 73      |                   |
| Mild/Mod Assaulters | 12         | 7.26 <sup>*</sup>  | 49      | 7.15 <sup>*</sup> |

Note. N=60 for each main group  
N=30 for each severe and mild/mod group

<sup>a</sup>versus severely assaultive forensic subjects

<sup>b</sup>versus severely assaultive prison inmates

\* $p < .01$ , one-tailed.

had committed a severely assaultive crime would score significantly higher on the O-H scale than would forensic subjects who had committed a mildly or moderately assaultive crime. Again, as Table 1 reports, this hypothesis was confirmed,  $t(58)=3.47, p<.01$ , one-tailed.

Hypothesis 3. This hypothesis stated that prison inmates who had committed a severely assaultive crime would score significantly higher on the O-H scale than would prison inmates who had committed a mildly or moderately assaultive crime. This hypothesis likewise was confirmed,  $t(58)=7.26, p<.01$ , one-tailed.

Hypothesis 4. This hypothesis stated that prison inmates who had committed a severely assaultive crime would score significantly higher on the O-H scale than would nonoffending psychiatric subjects. As Table 1 indicates, this hypothesis was upheld,  $t(88)=4.6, p<.01$ , one-tailed.

Hypothesis 5. This hypothesis stated that forensic and psychiatric subjects who had been diagnosed as psychotic would score significantly higher on the O-H scale than would forensic and psychiatric subjects not diagnosed as psychotic. Eighty-two subjects were diagnosed as not psychotic in this study (34 psychiatric and 48 forensic) and 38 were diagnosed as psychotic (26 psychiatric and 12 forensic). The mean O-H scores between these two groups were not found to be significantly different. Hypothesis 5, therefore, was not confirmed.

In summary, four of the five hypotheses were upheld. Significant differences on the O-H scale were found between: (1) severely assaultive forensic subjects and nonoffending psychiatric subjects; (2) severely assaultive forensic subjects and mild/moderately assaultive forensic subjects; (3) severely assaultive prison inmates and mild/moderately assaultive prison inmates, and (4) severely assaultive prison inmates

and nonoffending psychiatric subjects. No significant difference was found between psychotic and non-psychotic subjects (from psychiatric and forensic groups).

Additional O-H Analyses. Inmates were grouped according to their number of previous convictions. These categories were: no previous convictions, one to three, four to eight, and more than eight previous convictions. The first two categories were collapsed to define a short criminal history, while the last two defined a long criminal history. Inmates with a short criminal history (N=29) obtained significantly higher O-H scores ( $M=17.34$ ) than did inmates with a long criminal history (N=31) ( $M=13.51$ ),  $t(58)=2.16, p<.05$ , one-tailed.

An attempt was made to compare severely assaultive inmates who had a short criminal history with severely assaultive inmates who had a long criminal history. Mean O-H scores were not significantly different for these two groups. This was not surprising since only seven severely assaultive inmates had a long criminal history, as compared to 23 severely assaultive inmates who had a short criminal history.

Severely assaultive inmates who had a short criminal history (N=23) were compared with mild/moderately assaultive inmates who had a long criminal history (N=24). The severe assaulters scored significantly higher on the O-H scale ( $M=18.78$ ) than did the mild/moderate assaulters with the long history ( $M=2.96$ ),  $t(45)=6.43, p<.01$ , one-tailed. This finding is consistent with the significance found with Hypothesis 3, comparing all severely assaultive inmates with all mildly and moderately assaultive inmates.

#### Analysis of Demographic Data

The purpose of this study was to compare psychiatric, forensic, and

inmate groups on demographic, IQ, and MMPI variables. The results of demographic analyses are presented first, followed by analyses of the other data.

Continuous variables. Table 2 shows that the mean age of subjects in each group was psychiatric, 33 years; forensic, 28 years; and inmate, 27 years. The analysis of variance indicated a significant difference between group means,  $F(2,177)=6.86, p < .01$ . The Tukey method of multiple comparisons confirmed subsequently that psychiatric subjects were significantly older than both the inmates ( $p < .01$ ) and the forensic subjects ( $p < .05$ ). The age difference between psychiatric subjects and inmates has, however, a lower probability of error.

Psychiatric subjects had obtained a mean education of 11 years, forensic subjects, 10 years, and inmates, 9 years. An analysis of variance found these means to be significant,  $F(2,177)=5.186, p < .01$ . Subsequently, the Tukey method of multiple comparisons found that psychiatric subjects had a significantly higher level of education than did inmates ( $p < .01$ ). There was not a significant difference between the continuous educational levels of forensic subjects and inmates.

Categorical variables. Chi square analyses were done to determine whether the psychiatric, forensic, and inmate subjects differed on categorical demographic data. Results, as presented in Table 3, indicate that the following variables yielded significant chi square values: marital status,  $\chi^2(8, N=180)=60.98, p < .01$ ; occupation,  $\chi^2(12, N=180)=41.18, p < .01$ ; alcohol history,  $\chi^2(2, N=180)=12.47, p < .01$ ; drug history,  $\chi^2(2, N=180)=18.37, p < .01$ ; suicide history,  $\chi^2(2, N=180)=50.98, p < .01$ ; family psychiatric history,  $\chi^2(2, N=180)=11.61, p < .01$ ; age range,  $\chi^2(6, N=180)=16.31, p < .05$ ; and



Table 2

Age and Education: Means, Standard Deviations, and F Values  
for Three Groups

|           | Group.      |          |        | F     |
|-----------|-------------|----------|--------|-------|
|           | Psychiatric | Forensic | Inmate |       |
| Age       |             |          |        |       |
| M         | 33          | 28       | 27     | 6.86* |
| SD        | 10.51       | 9.24     | 8.01   |       |
| Education |             |          |        |       |
| M         | 11          | 10       | 9      | 5.19* |
| SD        | 2.54        | 2.17     | 1.96   |       |

\*  $p < .01$

Table 3

Chi Square Analysis of Demographic Variables for Three Groups

| Variable               | Group       |            |          |            |        |            | $\chi^2$ |
|------------------------|-------------|------------|----------|------------|--------|------------|----------|
|                        | Psychiatric |            | Forensic |            | Inmate |            |          |
|                        | N           | % of Group | N        | % of Group | N      | % of Group |          |
| <u>Age Range</u>       |             |            |          |            |        |            |          |
| 18 - 22                | 13          | 22         | 21       | 35         | 19     | 32         | 16.31*   |
| 23 - 29                | 10          | 16         | 20       | 33         | 21     | 35         |          |
| 30 - 39                | 24          | 40         | 9        | 15         | 14     | 23         |          |
| 40 - 55                | 13          | 22         | 10       | 17         | 6      | 10         |          |
| <u>Education</u>       |             |            |          |            |        |            |          |
| no High School         | 10          | 17         | 11       | 18         | 20     | 33         | 17.43*   |
| part High School       | 22          | 37         | 28       | 47         | 45     | 42         |          |
| High School            | 19          | 31         | 12       | 20         | 14     | 23         |          |
| part Univ/College      | 5           | 8          | 8        | 13         | 0      | 0          |          |
| Univ/College           | 4           | 7          | 1        | 2          | 1      | 2          |          |
| <u>Marital Status</u>  |             |            |          |            |        |            |          |
| Single                 | 33          | 55         | 42       | 70         | 24     | 40         | 60.98**  |
| Married                | 15          | 25         | 8        | 13         | 2      | 3          |          |
| Divorced               | 8           | 13         | 9        | 15         | 9      | 15         |          |
| Commonlaw              | 1           | 2          | 0        | 0          | 24     | 40         |          |
| Widowed                | 3           | 5          | 1        | 2          | 1      | 2          |          |
| <u>Occupation</u>      |             |            |          |            |        |            |          |
| Unskilled              | 13          | 22         | 35       | 58         | 20     | 33         | 23.65**  |
| Semiskilled            | 21          | 35         | 10       | 17         | 15     | 25         |          |
| Tradesman              | 9           | 15         | 6        | 10         | 5      | 8          |          |
| Professional           | 5           | 8          | 1        | 2          | 2      | 3          |          |
| Other                  | 12          | 20         | 8        | 13         | 18     | 30         |          |
| <u>Social Class</u>    |             |            |          |            |        |            |          |
| I                      | 0           | 0          | 1        | 2          | 0      | 0          | 41.18**  |
| II                     | 1           | 2          | 0        | 0          | 0      | 0          |          |
| III                    | 3           | 5          | 0        | 0          | 1      | 2          |          |
| IV                     | 10          | 17         | 2        | 3          | 3      | 5          |          |
| V                      | 21          | 35         | 15       | 25         | 5      | 8          |          |
| VI                     | 14          | 23         | 36       | 60         | 33     | 55         |          |
| VII                    | 11          | 18         | 6        | 10         | 18     | 30         |          |
| <u>Alcohol History</u> |             |            |          |            |        |            |          |
| No                     | 32          | 53         | 19       | 32         | 14     | 23         | 12.43**  |
| Yes                    | 28          | 47         | 41       | 68         | 46     | 77         |          |
| <u>Drug History</u>    |             |            |          |            |        |            |          |
| No                     | 53          | 88         | 37       | 62         | 32     | 53         | 18.36**  |
| Yes                    | 7           | 12         | 23       | 38         | 28     | 47         |          |
| <u>Suicide History</u> |             |            |          |            |        |            |          |
| No                     | 10          | 17         | 32       | 53         | 49     | 82         | 50.98**  |
| Yes                    | 50          | 83         | 28       | 47         | 11     | 18         |          |
| <u>Family Psych Hx</u> |             |            |          |            |        |            |          |
| No                     | 37          | 62         | 46       | 77         | 53     | 88         | 11.61**  |
| Yes                    | 23          | 38         | 14       | 23         | 7      | 12         |          |

\*p&lt;.05. \*\*p&lt;.01

education group,  $\chi^2(8, N=180)=17.43, p < .05$ .

Additional variables: psychiatric and forensic. Psychiatric and forensic subjects were compared on four additional variables, three of which obtained significance. (a) There was a significantly higher incidence of psychotic diagnoses in the psychiatric group,

$\chi^2(1, N=120)=6.51, p < .05$ . Only twenty percent of the forensic subjects were diagnosed as psychotic, as compared to forty-three percent of the psychiatric subjects. (b) Psychiatric and forensic subjects were further classified as receiving a diagnosis of personality disorder (Axis II), psychosis (Axis I), or "other" diagnoses (including no diagnosis, substance abuse, and "V" codes--specific problems not attributable to a mental disorder). A significant difference was found between the two groups on these diagnostic categories,

$\chi^2(2, N=120)=14.66, p < .01$ . Table 4 suggests that forensic subjects received fewer psychotic diagnoses and more "other" diagnoses.

Inspection of the data suggests that more forensic subjects received a diagnosis of substance abuse (alcohol, drug, or mixed) than did psychiatric subjects. Also, more forensic subjects' diagnoses included only "V" codes, a condition not attributable to a mental disorder.

(c) Significantly more psychiatric subjects were found to have had a psychiatric history (67%) than forensic subjects (40%),

$\chi^2(1, N=120)=7.53, p < .01$ . (d) Finally, over two-thirds of the forensic subjects (70%) were not on medication for a psychiatric illness at the time of assessment. In comparison, approximately half (48%) of the psychiatric subjects were taking medication. This difference did not, however, reach statistical significance.

Table 4

Diagnostic Classification of Psychiatric and Forensic Subjects

| Diagnosis            | Psychiatric |    | Forensic |    | $\chi^2$ |
|----------------------|-------------|----|----------|----|----------|
|                      | N           | %  | N        | %  |          |
| Personality Disorder | 27          | 45 | 24       | 40 | 14.66*   |
| Psychosis            | 26          | 43 | 12       | 20 |          |
| Other                | 7           | 12 | 24       | 40 |          |

\*  $p < .01$

Additional variables: forensic and inmate. (a) Thirty percent of the forensic subjects' most recent crime did not (directly) involve a victim. In comparison, forty percent of inmates had committed victimless crimes. Of those crimes which did involve a victim, significantly more forensic subjects (55%) knew their victim than did inmates (25%),  $\chi^2(2, N=120)=12.41, p < .01$ . More inmates, therefore, tended to commit crimes upon strangers.

(b) Significantly more inmates (78%) than forensic subjects (47%) had a criminal history,  $\chi^2(1, N=120)=7.26, p < .01$ . More inmates did, as well, have family members with a criminal history (50%) than did forensic subjects (23%),  $\chi^2(1, N=120)=8.07, p < .01$ . No psychiatric subjects reported that family members had been convicted of criminal code offences.

#### Analysis of IQ Data

An investigation into IQ differences between psychiatric subjects, forensic subjects, and inmates was performed. An analysis of variance indicated a significant difference between group mean IQ scores,  $F(2, 177)=13.69, p < .001$  (see Table 5). A post hoc (Tukey) test confirmed that inmates' mean IQ scores were significantly higher than both the psychiatric subjects' and forensic subjects' IQ scores ( $p < .01$ ). IQ scores of forensic and psychiatric subjects did not significantly differ.

An additional analysis was done between the groups using the intelligence classification levels provided by Wechsler (1981). Figure 1 shows that more inmates were classified within the higher levels of intelligence (high average and superior) than were the other two groups of subjects. Chi square analysis with these IQ levels between groups

Table 5

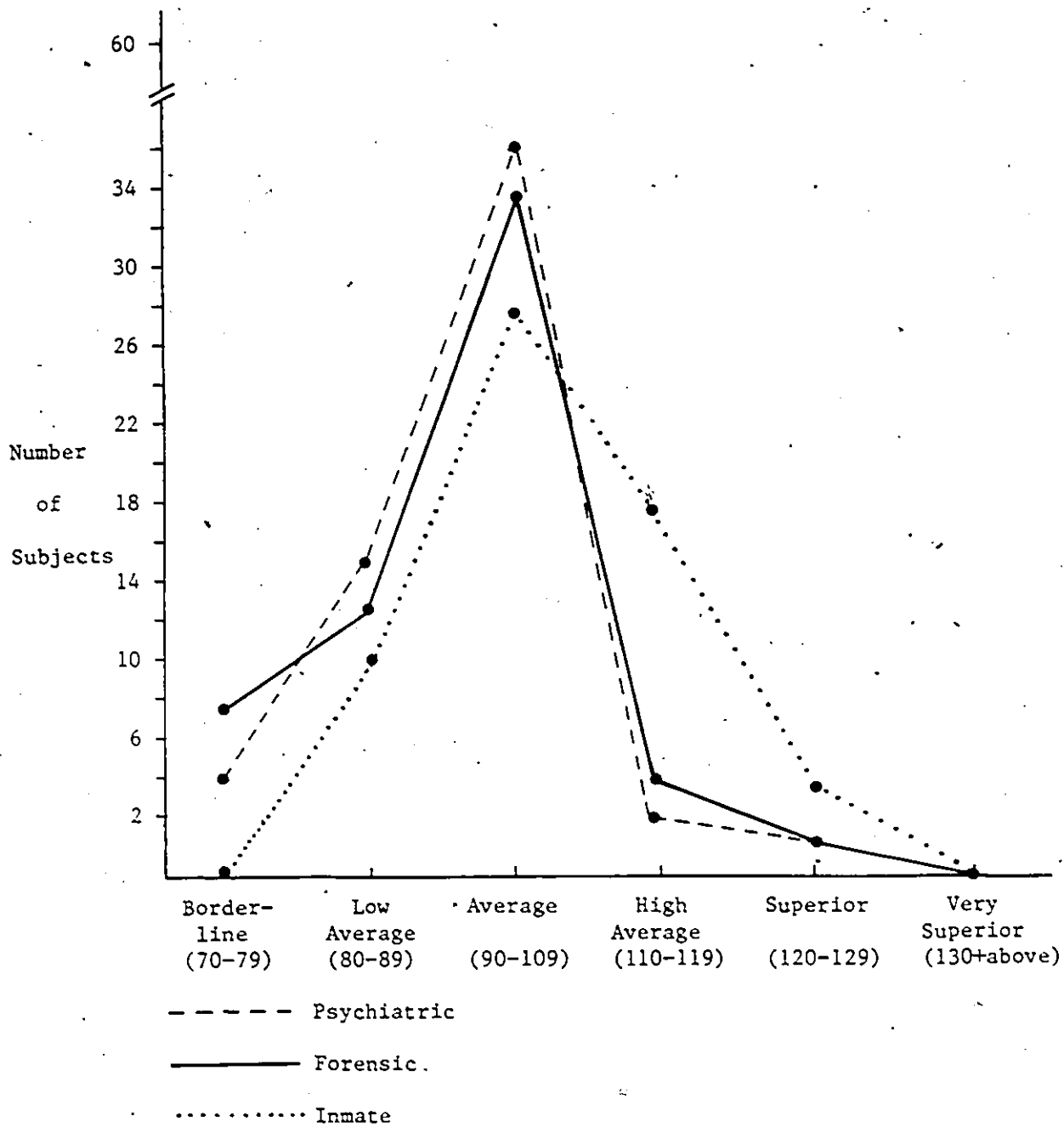
IQ Scores: Means, Standard Deviations, and F-Values for Three Groups

|    | Group       |          |        | F      |
|----|-------------|----------|--------|--------|
|    | Psychiatric | Forensic | Inmate |        |
| IQ |             |          |        |        |
| M  | 96          | 94       | 105    | 13.69* |
| SD | 10.80       | 11.85    | 12.27  |        |

\*  
p < .001

Figure 1

Frequency of Intelligence Classifications for Psychiatric,  
Forensic, and Inmate Groups



was significant,  $\chi^2(8, N=180)=27.31, p < .01$ .

#### Analysis of MMPI Data

A multivariate analysis of variance was performed using only MMPI data. A significant difference was found between the psychiatric, forensic, and inmate groups for this combined model of MMPI scale scores,  $F(15, 326)=3.59, p < .01$ . Univariate F-tests were then performed to compare the mean scores for each group on each MMPI scale. Table 6 reports the means, standard deviations, and F-values for each MMPI scale. Megargee (1979) suggests that an alpha level of .01 be adopted when conducting multiple significance tests with MMPI scales in order to reduce the probability of rejecting the null hypothesis when it is, in fact, true.

Post hoc (Tukey) comparisons were subsequently done for mean scores associated with significant MMPI scales. The psychiatric subjects obtained significantly higher MMPI scores than did inmates on the following scales: Hypochondriasis, Depression, Hysteria, Masculinity-Femininity, Paranoia, Psychasthenia, Schizophrenia, and Social Introversion ( $p < .01$ ). Inmates, in contrast, obtained significantly higher O-H scores than did the psychiatric subjects ( $p < .01$ ).

Psychiatric subjects obtained significantly higher MMPI scores than did forensic subjects on the following scales: Depression, Hysteria, Masculinity-Femininity, and Psychasthenia ( $p < .01$ ).

Forensic subjects obtained significantly higher MMPI scores than did inmates on the following scales: Paranoia, Schizophrenia ( $p < .01$ ), and Psychasthenia ( $p < .05$ ).



Table 6

MMPI Scores: Means, Standard Deviations, and F Values for  
Three Groups

| Scale                    | Group       |          |        |        |
|--------------------------|-------------|----------|--------|--------|
|                          | Psychiatric | Forensic | Inmate | F      |
| Lie                      |             |          |        |        |
| M                        | 54          | 54       | 55     | .202   |
| SD                       | 8.69        | 11.38    | 9.45   |        |
| Infrequency              |             |          |        |        |
| M                        | 69          | 72       | 66     | 1.59   |
| SD                       | 15.95       | 17.56    | 17.06  |        |
| K (Correction)           |             |          |        |        |
| M                        | 49          | 52       | 53     | 1.94   |
| SD                       | 10.62       | 12.63    | 8.92   |        |
| Hypochondriasis          |             |          |        |        |
| M                        | 69          | 64       | 59     | 6.01*  |
| SD                       | 15.82       | 15.41    | 12.46  |        |
| Depression               |             |          |        |        |
| M                        | 83          | 73       | 65     | 17.48* |
| SD                       | 15.39       | 17.97    | 15.02  |        |
| Hysteria                 |             |          |        |        |
| M                        | 70          | 65       | 60     | 13.24* |
| SD                       | 11.25       | 10.89    | 10.16  |        |
| Psychopathic Deviate     |             |          |        |        |
| M                        | 72          | 75       | 71     | 1.68   |
| SD                       | 11.59       | 12.21    | 15.13  |        |
| Masculinity-Femininity   |             |          |        |        |
| M                        | 67          | 61       | 57     | 12.71* |
| SD                       | 9.46        | 10.70    | 9.60   |        |
| Paranoia                 |             |          |        |        |
| M                        | 70          | 71       | 62     | 7.29*  |
| SD                       | 12.62       | 13.43    | 13.88  |        |
| Psychasthenia            |             |          |        |        |
| M                        | 81          | 71       | 64     | 19.89* |
| SD                       | 14.90       | 15.92    | 13.42  |        |
| Schizophrenia            |             |          |        |        |
| M                        | 85          | 81       | 68     | 13.63* |
| SD                       | 18.96       | 19.45    | 18.47  |        |
| Hypomania                |             |          |        |        |
| M                        | 63          | 67       | 66     | 1.51   |
| SD                       | 13.82       | 12.73    | 12.29  |        |
| Social Introversion      |             |          |        |        |
| M                        | 63          | 58       | 55     | 6.92*  |
| SD                       | 11.08       | 11.96    | 10.72  |        |
| Overcontrolled Hostility |             |          |        |        |
| M                        | 54          | 58       | 61     | 4.68*  |
| SD                       | 10.41       | 11.96    | 13.65  |        |

\*p&lt;.01

### Discriminant Function Analysis

The primary purpose of discriminant function analysis is to find dimensions along which groups are maximally different and then to predict group membership based upon these dimensions (Tabachnick & Fidell, 1983). This study's aim was synonymous with this purpose: How best can psychiatric, forensic, and inmate groups be distinguished, and, using these distinctions, how well can subjects in this study be classified into their respective groups?

Discriminant analysis with psychiatric, forensic, and inmate groups. A stepwise discriminant function analysis was done with these three groups, using eighteen predictor variables (age, education, IQ scores, MMPI scores for three validity scales—L, F, & K, ten clinical scales, O-H T-scores, and O-H raw scores). The stepwise procedure begins by selecting the single best predictor, then the next best, in combination with the first, and so on. At each step predictors already selected may be removed if they are found to reduce discrimination when combined with more recently selected predictors (Nie et al., 1975). Fifteen predictors were selected in this stepwise fashion. These were (in descending order of importance): Psychasthenia, Education, IQ, age, Psychopathic Deviate, Masculinity-Femininity, Paranoia, O-H T-score, Hysteria, Hypochondriasis, Schizophrenia, F (Infrequency), K (Correction), L (Lie), and O-H raw score.

On the basis of these fifteen predictors, two discriminant functions were calculated, with a combined  $\chi^2(30)=158.56, p < .01$ . After removal of the first function, statistically significant discriminating power remained,  $\chi^2(14)=32.733, p < .01$ . The first discriminant function accounted for 84% of the variance between groups and the second

accounted for 16% of the variance. Table 7 reports the canonical discriminant functions evaluated at group means, which suggests that the major (first) discriminant function distinguished between inmates and the other two groups. This distinction (with forensic and psychiatric groups more similar than any other combination of groups) was, therefore, statistically the strongest one, based upon these predictors. The second discriminant function discriminated forensic subjects from the other two groups.

The standardized canonical discriminant function coefficients for each predictor are presented in Table 8 and displayed in Figure 2 (Note: The sign indicates whether the variable is making a positive or negative contribution, but does not affect the relative importance of the coefficient). Examination of these values suggests that the relative importance of the predictors to each function is as follows: (in descending order of importance) Function 1 - Schizophrenia, IQ, F, Hypochondriasis, Education, Hysteria, Age, and Masculinity-Femininity; Function 2 - Psychasthenia, O-H, Psychopathic Deviate, Paranoia, K, and L. Some predictors contribute almost similarly to both functions, for example, IQ and education, while others are more heavily loaded on either function.

The second stage of discriminant analysis is classification. Classification function coefficients are derived for each group on each predictor. These coefficients were used to "re-classify" subjects in this study, based upon the derived discriminant functions. Table 9 presents the accuracy with which subjects in psychiatric, forensic, and inmate groups were able to be assigned to their respective group, based upon the functions derived from the predictors used in this study.

Table 7

Canonical Discriminant Functions Evaluated at Group Means(Group Centroids)

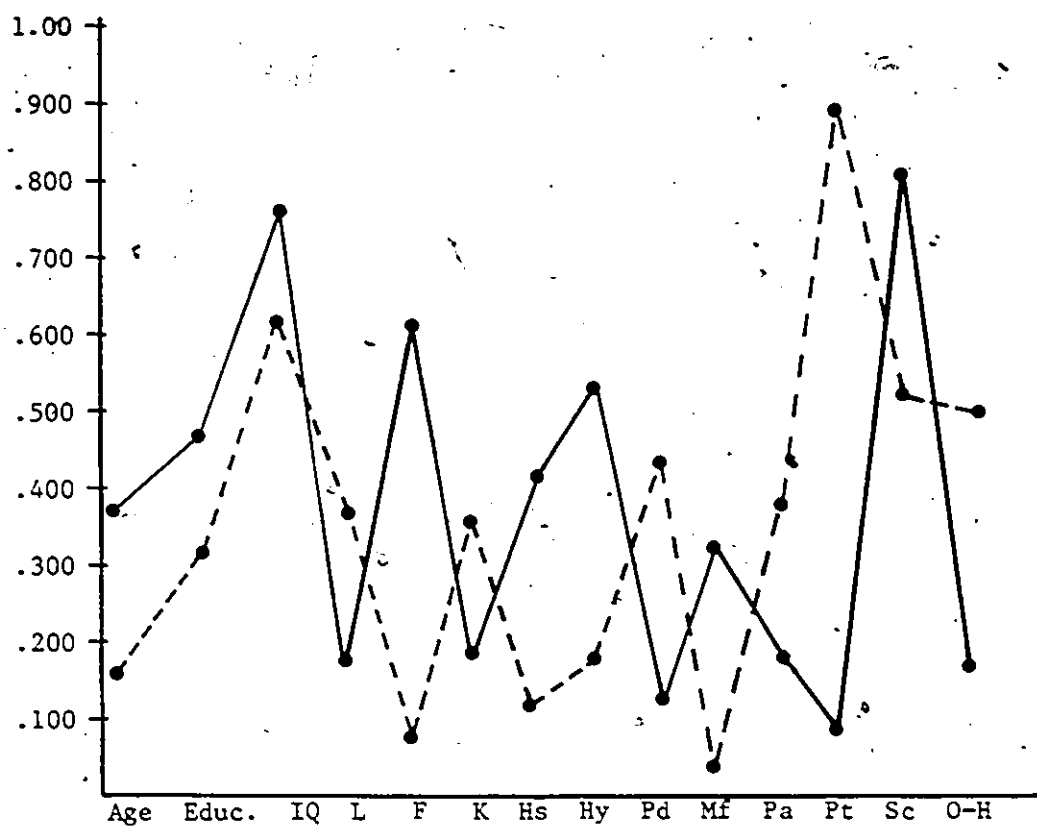
| Group       | Function 1 | Function 2 |
|-------------|------------|------------|
| Psychiatric | -1.20      | 0.37       |
| Forensic    | -0.13      | -0.64      |
| Inmate      | 1.33       | 0.27       |

Table 8

Standardized Canonical Discriminant Function Coefficients(Three Groups)

| Predictor Variables | Function 1 | Function 2 |
|---------------------|------------|------------|
| Age                 | -0.369*    | 0.169      |
| Education           | -0.460*    | -0.307     |
| IQ                  | 0.771*     | 0.608      |
| L                   | -0.107     | 0.365*     |
| F                   | 0.604*     | 0.067      |
| K                   | 0.194      | -0.368*    |
| Hs                  | 0.410*     | -0.103     |
| Hy                  | -0.530*    | 0.174      |
| Pd                  | 0.116      | -0.441*    |
| Mf                  | -0.321*    | 0.017      |
| Pa                  | 0.177      | -0.399*    |
| Pt                  | -0.094     | 0.891*     |
| Sc                  | -0.803*    | -0.520     |
| O-H                 | 0.169      | -0.501*    |
| O-H Raw             | -0.126     | 0.489*     |

Figure 2

Contribution of Predictors to Canonical Discriminant Functions

Note. Based upon Standardized Discriminant Function Coefficients

———— Function 1

----- Function 2

Table 9

Classification Results for Psychiatric, Forensic, and Inmate  
Groups

| Actual Group | N    | Predicted Group Membership |             |             |
|--------------|------|----------------------------|-------------|-------------|
|              |      | 1                          | 2           | 3           |
| Psychiatric  | 1 60 | 42<br>70.0%                | 14<br>23.3% | 4<br>6.7%   |
| Forensic     | 2 60 | 11<br>18.3%                | 37<br>61.7% | 12<br>20.0% |
| Inmate       | 3 60 | 5<br>8.3%                  | 9<br>15.0%  | 46<br>76.7% |

Note. Overall correct group classification: 69.44%

Inmates were correctly classified most often (77%), then psychiatric subjects (70%), and finally forensic subjects (62%). Subjects from the forensic group were not able to be classified with as much accuracy as were subjects from the other two groups. As expected, the forensic subjects appear to be a mixture of characteristics of both psychiatric and inmate group, but, this analysis suggests that forensic subjects are more closely aligned with psychiatric subjects, at least with this study's predictor variables.

Discriminant analysis: offenders versus nonoffenders. The forensic and inmate groups were collapsed into one group, and compared to the psychiatric group. The purpose of this approach was to determine whether the predictor variables used in this study could distinguish between offenders and nonoffending subjects, and, once determined, how well the offenders in this study could be classified. A stepwise discriminant function analysis was done (identical to the previous one, excepting the number of groups). Fifteen predictors were selected in the derivation of the discriminant function. Since this analysis compared two groups, only one discriminant function could be derived, and this was significant,  $\chi^2(15)=89.36, p < .01$ . The relative contribution of each predictor to this function, based upon standardized canonical discriminant function coefficients, was (in descending order of importance): O-H T and Raw, Hysteria (-ve), Psychasthenia (-ve), F, Schizophrenia (-ve), IQ, Hypochondriasis, Age (-ve) Paranoia, K, Psychopathic Deviate, Masculinity-Femininity (-ve), L (-ve), and Education (-ve). The canonical discriminant functions evaluated at group means (group centroids) for the discriminant function were -1.167 for group one (nonoffending psychiatric group) and 0.584 for group two (forensic



and inmate groups). Table 10 presents the classification results for the two groups. Classification was consistently good for each group as well as a strong overall classification of 82.22%.

Discriminant analysis: psychiatric and forensic subjects versus inmates. The forensic and psychiatric groups were collapsed in order to compare a group who had been identified as displaying some degree of psychopathology with a group who had not been identified as such. The purpose of this approach, like the previous analysis, was to determine whether the predictor variables used in this study could distinguish between a group who has presumably displayed psychiatric symptomatology with a group who has presumably not.

A stepwise discriminant function analysis was done, with the same predictor variables as the previous discriminant analyses. The discriminant function was significant,  $\chi^2(10)=107.24, p < .01$ . Ten predictors were selected as maximally distinguishing these groups. These predictors, in descending order of relative importance, as indicated by standardized canonical discriminant function coefficients, were: IQ (-ve), Schizophrenia, Education, F (-ve), Hysteria, O-H (-ve), Hypochondriasis (-ve), Masculinity-Femininity, Age, and Depression (-ve). The canonical discriminant functions evaluated at group means (group centroids) were 0.651 for group one (psychiatric and forensic) and -1.303 for group two (inmate). Table 11 presents the classification results for the two groups. Once again, a strong overall classification of 83% was calculated.

Table 10

Classification Results for a Nonoffending Group<sup>a</sup> and a Group  
of Offenders<sup>b</sup>

| Actual Group | N     | Predicted Group Membership |             |
|--------------|-------|----------------------------|-------------|
|              |       | 1                          | 2           |
| Nonoffenders | 1 60  | 51<br>85.0%                | 9<br>15.0%  |
| Offenders    | 2 120 | 23<br>19.2%                | 97<br>80.8% |

Note. Overall correct group classification: 82.22%

<sup>a</sup> Psychiatric Group

<sup>b</sup> Forensic plus Inmate Groups

Table 11

Classification Results for a "Psychiatric"<sup>a</sup> Group and a  
Nonpsychiatric Group<sup>b</sup>

| Actual Group     | N   | Predicted Group Membership |       |
|------------------|-----|----------------------------|-------|
|                  |     | 1                          | 2     |
| Psychiatric 1    | 120 | 100                        | 20    |
|                  |     | 83.3%                      | 16.7% |
| Nonpsychiatric 2 | 60  | 10                         | 50    |
|                  |     | 16.7%                      | 83.3% |

Note. Overall correct classification: 83.33%

<sup>a</sup>Psychiatric plus Forensic Groups

<sup>b</sup>Inmate Group

## CHAPTER IV

### DISCUSSION

The primary purpose of this study was to compare psychiatric, forensic, and inmate groups on demographic, IQ, and MMPI variables. This comparison was done in several ways and the interpretation of results is offered in the next section. While the general assumption that forensic subjects reflect characteristics of both psychiatric subjects and inmates was upheld, the clinical information used in this study suggests that the forensic group was more similar to the psychiatric group than it was to the inmate group.

The second purpose of this study was to examine the applicability of the O-H scale of the MMPI to the forensic and inmate groups. The results indicated that the O-H scale and its corresponding Overcontrolled Hostility typology (Megargee, 1966) was, indeed, upheld with forensic and inmate subjects in this study. Elaboration of this finding is offered below.

#### The Overcontrolled Hostility Scale

Five hypotheses were put forth as an attempt to examine the applicability of the O-H scale to the forensic and inmate groups in this study. Four of the five hypotheses were upheld, suggesting that Megargee's (1967, 1970) typology and scale was applicable to forensic subjects and inmates in this study.

Forensic subjects who had committed a severely assaultive crime (murder, attempted murder, manslaughter, sexual assault or assault causing bodily harm) scored significantly higher on the O-H scale than

did forensic subjects who had committed a mildly or moderately assaultive crime (theft, break and enter, mischief, trespassing, possession or trafficking of an illegal substance) (Hypothesis 2). This finding is consistent with others (Brooks, 1983; Lane & Kling, 1979; Rice et al., 1983, Quinsey et al., 1983, and Walters et al., 1982) and provides more support for the use of the O-H scale with forensic subjects. Similarly, prison inmates who had committed a severely assaultive crime scored significantly higher on the O-H scale than did inmates who had committed a mildly or moderately assaultive crime (Hypothesis 3). This finding provides further support for Megargee's original theory (1964, 1965, 1966, 1967, 1975, & 1979) and subsequent studies with prison inmates.

Forensic subjects and inmates who had committed a severely assaultive crime scored significantly higher on the O-H scale than did the nonoffending psychiatric subjects (Hypotheses 1 and 4). This relationship had been found by others (Arnold et al., 1977; Megargee, 1967), and provides support for the overcontrolled hostility typology. Psychiatric subjects scored similarly on the O-H scale as did the mildly/moderately assaultive forensic subjects and inmates. Their mean scores were slightly lower than what most have considered to be an undercontrolled or "not overcontrolled" score (e.g., Megargee et al., 1967; Rice et al., 1983). The theoretical implications of low O-H scores continue to be puzzling, and this study would suggest that the tendency not to overcontrol may not be related to any criminal behavior, in particular. I suspect that O-H scores of normals would be within this low range as well. Should this be the case, then low O-H scores could be reflecting criminal impulsivity, certain aspects of psychiatric

illness, or extroversion within a normal population.

Megargee, in his original study (1967), noted that O-H scores increased with incidence of psychiatric diagnoses. He subsequently suggested that the O-H scale may be sensitive to breakthroughs of unconscious impulses (psychosis) and that this may be expressed much like an extremely assaultive act. Hypothesis 5 in this study stated that psychotic subjects (from forensic and psychiatric groups) would score significantly higher than nonpsychotic subjects. No significant difference between mean O-H scale scores was found between these two groups. Both Megargee (1967) and Arnold et al. (1972) had, however, noted this psychotic versus nonpsychotic O-H difference within forensic groups alone. The use of a nonoffending psychiatric group as a comparison group in this study suggests that the antisocial or criminal element may be a factor in obtaining high O-H scores. Psychosis alone may not be sufficient to cause the O-H scores to be high.

This study found that inmates with short criminal histories obtained higher O-H scores than did inmates with long criminal histories. Lane and Kling (1979) reported the same relationship in their study and similar trends have been noted by others (Arnold et al., 1977; Blackburn, 1968), and put forth as speculation by Megargee (1967). Most of the inmates in this study who had short criminal histories had, in fact, committed extremely assaultive crimes, so this finding is not surprising. This trend is, however, noteworthy in light of Megargee's (1970) typology. He suggests that since overcontrolled types have rigid inhibitions against the expression of anger, they will tend to overcontrol this hostility and rarely act out. When they do, however, it will be with such energy and aggression that a severely assaultive

act will likely ensue. Inmates in this study appear to have reflected this pattern.

#### Demographic Differences Between Groups

The primary purpose of this study was to compare psychiatric, forensic, and inmate groups on demographic, IQ, and MMPI variables. The interpretation of these results is discussed in this and subsequent sections, below.

Three Groups. Psychiatric subjects were significantly older and had more education than did forensic subjects and inmates. The psychiatric distinction implies symptomatology which interferes in some way with everyday functioning. While criminal (antisocial) behavior typically begins early in life (adolescence), most psychiatric symptoms which cause people to seek acute inpatient treatment are not evident until later. For example, symptoms of a bipolar illness usually do not surface in severe form until the early thirty's. Since forensic subjects have been remanded for criminal act(s), it is not surprising that they are closer in age to inmates. Any severe symptoms of psychiatric illness may not, as yet, have presented themselves (as is confirmed with diagnostic comparison of psychiatric and forensic subjects, below). Educational differences could be a function of age (i.e., psychiatric subjects have had more time to go to school), in addition to the possibility that antisocial behavior leaves little time for, and interest in, academic pursuits. Inmates, incidentally, are likely to upgrade their educational level while incarcerated.

More psychiatric subjects were married than were other subjects. Forensic subjects tended to be single, while inmates reported the most common-law relationships of the three groups. If one can assume for a

minute that the majority of inmates and forensic subjects reflect at least some traits usually associated with antisocial personality disorder, then fewer married subjects in these groups may be reasonable. Predominant characteristics of the antisocial personality include the inability to form meaningful relationships, self-centredness, and emotional immaturity. These characteristics may have contributed, therefore, to the decreased number of committed relationships within these two groups. Psychiatric subjects were, as well, older and this likely contributed to more marriages within their group.

More forensic subjects reported unskilled (laborer) occupations than did subjects in the other two groups. It is possible that these subjects may possess the poorest work skills for several reasons: (a) they had a higher incidence of substance abuse than did the other two groups, (b) antisocial tendencies such as a poor work record and repeated conflict with the law can interfere with more responsible work behavior, and (c) possible psychiatric symptomatology, even in a subtle form, may interfere at times, with work. A combination of these factors would create a tendency to not develop more advanced work skills.

More inmates reported that they were students or unemployed than did the other subjects. Despite instructions to list their most recent occupation, inmates were found to list unemployed because of their current incarceration. Occupational and social class results may, therefore, be biased because of this. Psychiatric subjects fell within a higher socio-economic level than did other subjects. Their age suggests that they have had more time to improve their situation and have, perhaps, gone to school as a way of doing this. The likelihood of psychiatric subjects being saddled with the antisocial tendency to have



poor work records, reduced responsibility, and poor impulse control is lower than for the forensic and inmate groups.

More forensic subjects and inmates had a history of alcohol abuse than did psychiatric subjects. These forensic subjects had been diagnosed as suffering from alcohol abuse (DSM-III, 1980) while inmates had only reported that they had abused alcohol. Differing criteria for abuse were, therefore, used within the inmate group. Nonetheless, in at least the forensic case where criteria were consistent and more stringent, one can speculate that the intake of alcohol may have been related (directly and indirectly) to the offence.

Patterns of drug abuse between groups was similar to that of alcohol. Within all groups, however, more subjects tended to abuse alcohol than they did drugs, likely because of the availability of alcohol and its legal status, as compared to drugs.

Considerably more psychiatric subjects reported a history of suicide attempts than did subjects in the other two groups. Forensic subjects fell in between the other two groups for number of subjects attempting suicide. Suicidal ideation can be considered a reflection of internalized anger, and this tendency is likely more common within the psychiatric population than within the general population or, in this case, within the antisocial population. Antisocial (criminal) types will tend to express their anger toward their world through their antisocial behavior. Suicide attempts within the inmate group often occur later, during incarceration, sometimes as a gesture to gain attention and gain transfers to a mental health section of the institution.

More psychiatric subjects reported having family members who have

had identified psychiatric problems than did subjects in the other two groups. Once again, forensic subjects fall between the other two groups on this variable. One could speculate on the genetic and early environmental connections to psychiatric (and forensic) subjects' psychiatric illness as explanation for this trend. Psychiatric subjects may have, as well, been more honest and knowledgeable in reporting this familial history. Inmates, regardless of actual family psychiatric history, often have poor familial contact and may simply not be aware or accepting of past and current family psychiatric problems.

Psychiatric and forensic. More psychiatric subjects received a psychotic diagnosis than did forensic subjects. Approximately the same number of psychiatric (N=27) and forensic (N=24) subjects were diagnosed as suffering from a personality disorder. Forensic diagnoses were mostly antisocial types, while the psychiatric group received diagnoses of antisocial, borderline, and mixed types, more often than the forensic group. More forensic subjects received a primary diagnosis of substance abuse and/or a condition not attributable to a mental disorder. The psychiatric group appeared to display more symptoms of severe psychopathology, based upon this demographic information alone. A major problem with the forensic group appears to be alcohol abuse and the problems in living that result from this abuse (e.g., interpersonal problems, conflict with the law, poor work record, etc.).

Significantly more psychiatric subjects had a history of psychiatric problems than did forensic subjects. This latter group did not, based upon diagnostic findings, suffer from the same severity of psychiatric illness which would have caused them to receive formal attention in the past. These demographic findings with subjects in this

study provide some contradiction to the myth that psychiatric, or "crazy" people are the ones who commit crimes and are dangerous. Any psychiatric link to forensic types appears to be much more subtle (e.g., substance abuse, personality disorder, and problems not attributable to a mental disorder) than the overt psychotic symptoms (hallucinations, delusions) popularly associated with the mentally ill.

Forensic and inmate. Forensic subjects' crime more often involved a victim and they tended to know their victim more often than did inmates. Inmates were more likely to strike out against a stranger. Significantly more inmates had a personal criminal history than did forensic subjects. Inmates did, as well, more often have family members who had a criminal history. These differences between groups, especially the latter one, suggest that forensic subjects differ from inmates even when compared on the one characteristic they share--both groups have committed a crime. The majority of forensic subjects do not seem to have the background reflective of criminal exposure. Perhaps something about their link with the psychiatric group may support why these forensic subjects are different from the inmates. As speculation, they may not, for example, function within personalities stable enough (e.g., alcoholic personality disorder) to behave in a consistent and directed fashion (criminal or otherwise).

#### IQ and MMPI Differences Between Groups

IQ. Inmates obtained significantly higher mean IQ scores than did psychiatric and forensic subjects. Some of this difference may be explained by the fact that inmates were administered a different intelligence test than the other two groups. The Shipley Institute of Living Scale is widely used, especially in Corrections, but has been

noted clinically to overestimate equivalent WAIS-R scores. The inmates, therefore, may have obtained a slightly lower mean IQ score had they been given the WAIS-R like the other subjects. I suspect that they would, however, had continued to score slightly higher than the others had this been the case. Their increased numbers within the high average and superior levels of intelligence would not have dropped to the extent required to fall within lower levels.

Wechsler (1981) constructed the Full Scale IQ distribution to have a mean of 100 and a standard deviation of 15 IQ points. Most subjects in this study were within one standard deviation of the mean, which, with their scores, was 12 IQ points. Variability of scores from the overall mean IQ was, therefore, low with subjects in this study. It is imperative to note that all three mean IQ scores fell within the average range, thereby reflecting no difference between groups using this level of interpretation. Altering test administration with the inmate group would not likely have changed this average classification level for the three groups.

MMPI scales. The psychiatric, forensic, and inmate groups were distinguishable on the basis of their MMPI scores. The relative contribution of scales to this overall distinction is, for statistical reasons, best interpreted in the next section, based upon discriminant analysis. In this section post hoc comparisons of univariate F-tests will be discussed in relation to interpretation of single scales differences between these groups. General clinical implications for the MMPI scales are discussed in the Clinical Implications section, below.

As expected, psychiatric subjects and inmates differed on the most single MMPI scales. These two groups are not usually considered to be

clinically related (except for the idea that inmates may be functioning within the limits of an antisocial personality disorder). It is not surprising, then, that psychiatric subjects obtained significantly higher mean scores on eight of the ten clinical scales of the MMPI. The scales which did not result in significant differences appear to be more relevant to the present discussion than those that did. Those which failed to reach significance were: scale 4— Psychopathic Deviate, scale 9— Hypomania, and the three validity scales — Lie, Infrequency, and K (Correction).

The psychopathic deviate (Pd) scale of the MMPI was "...developed to measure the personality characteristics of the amoral and asocial subgroup of persons with psychopathic personality disorders", p. 195 (Dahlstrom et al., 1972). Clinicians have come to realize however, that the Pd scale taps characteristics of persons well outside the realm of antisocial behavior. Noncriminal groups frequently have elevated Pd scales (e.g., defensive and/or highly educated normals, psychiatric subjects). Harris and Lingoes (1955) indicate five subclusters of items reflecting the Pd scale contents: familial discord (11 items), authority problems (11 items), social imperturbability (12 items), social alienation (18 items), and self alienation (15 items). Pd elevations within psychiatric populations can be related, for example, to an inability to express anger, shallow interpersonal relations (especially family), a tendency to project blame, and resentment of authority. Finally, Lachar (1980) suggests that an elevated Pd scale, with other elevated scales (as was the case with psychiatric subjects in this study) indicates that pathology will be manifested in action; that is, pathology is likely to be more visible. This interpretation is

likely applicable to the psychiatric subjects used in this study.

Scale 9, Hypomania (Ma), was designed for the personality pattern of hypomania, characterized by overactivity, emotional excitement, and flight of ideas (Dahlstrom et al., 1972). Four content clusters have been identified (Harris & Lingo, 1955): amorality (6 items), psychomotor acceleration (11 items), imperturbability (8 items) and ego inflation (9 items). The fact that psychiatric subjects and inmates in this study did not differ on this scale is not a surprising one. Forensic and inmate groups often obtain an elevated scale 9, which suggests excitability, feelings of superiority, and generally a high energy level.

There were no significant differences between the groups on any of the three validity scales. Only the forensic group's mean F scale score of 72 was elevated above 70 (the cutoff for clinical scrutiny). The F scale standard deviations for all three groups were considerably higher than for other validity scales. F scores tend to be wide ranging within any given population, as was evident in this study. The higher F scores within the psychiatric group may have reflected their psychopathology while elevations within the inmate group at admission to prison could have been an attempt to present oneself in a troubled fashion or an indication of poor initial adjustment to prison life. Forensic subjects seem to achieve elevated F scale scores for several reasons: psychopathology, an effort to appear "sick" and therefore unfit to stand trial or insane in relation to the offence, or, sometimes they simply have trouble understanding the items. I suspect that all three explanations are viable in this study.

Inmates obtained a significantly higher mean O-H T-score than did

psychiatric subjects. As a group (severe and mild/moderate assaulters together) it appears that inmates will tend to overcontrol their hostility significantly more so than will psychiatric subjects. This difference was not evident between forensic and psychiatric subjects.

Psychiatric and forensic subjects would be expected to have more similar MMPI scores than would subjects from psychiatric and inmate groups. This was found to be true in this study, with the psychiatric and forensic groups differing significantly on only four MMPI scales, Depression, Hysteria, Masculinity-Femininity, and Psychasthenia. As expected, the psychiatric group differed significantly from inmates on these scales as well.

The decreasing mean T-scores across groups (from psychiatric to forensic, to inmate) for the Depression, Hysteria, and Psychasthenia scales generally suggest that there is a decreased sense of personal difficulty, poorer emotional insight, less anxiety and concern for problems or situations, and less withdrawal. Decreasing Mf scores across groups is an interesting and clinically useful finding. The Masculinity-Femininity scale was originally designed to identify personality features of male sexual inversion (Dahlstrom et al., 1972). It has come to be interpreted in quite a different fashion, however. Harris and Lingo (1955) formed five content subscales of the Mf scale. These are: "feminine" interests and occupations, sensitivity and shyness, acceptance and trust, worry and fearfulness, and sexual identification. Lower scale scores often suggest a "Macho" and relatively inflexible person who lacks insight into himself. This description is most characteristic of the inmate population, though their mean score (57) is higher than is often obtained within this

group. The rigid "Macho" character is more likely to obtain a score below 50. The significant mean Mf score differences between groups suggests, then, that the psychiatric males may tend to be more sensitive, less rigid, and have more esthetic interests than do the forensic and inmate males.

Forensic subjects differed significantly from the inmates on only one MMPI scale, that being the Paranoia scale. Psychiatric subjects also differed from inmates on this scale. The psychiatric and forensic subjects obtained essentially the same mean Pa score (70 and 71, respectively). This suggests that psychiatric and forensic subjects in this study tended to be more sensitive to the effect others have on them and perhaps be more prone to worry than the inmates.

#### Discrimination of Psychiatric, Forensic, and Inmate Groups on Combined Variables

Three groups. The main purpose of this study was to compare psychiatric, forensic, and inmate groups on demographic, IQ, and MMPI information. A discriminant analysis was done to fulfill this purpose. Clinicians routinely consider their patients' age, education, IQ, and MMPI scores in combination to form a clinical impression. The present analysis examined this clinical information for a group, not an individual, and determined what clinical information was most useful in describing a group, as compared to other groups. Two groups were seemingly discrete from the outset-- psychiatric and inmate groups-- while one group has usually been considered to fall somewhere between the other two groups, clinically. The overcontrolled hostility scale was included in the pool of clinical variables since its clinical applicability was under scrutiny in this study as well. Described below



is the interpretation of relevant aspects of discriminant analysis.

A set of fifteen out of eighteen clinical variables was selected as contributing to the discrimination of psychiatric, forensic, and inmate groups. The strongest discrimination between these three groups was, as expected, between the psychiatric and inmate groups. The forensic group more closely resembled the psychiatric group than they did the inmate group on a combination (the best combination) of these clinical variables.

The following variables and trends created the best discrimination between psychiatric subjects and inmates, and caused the forensic subjects to be more alike the psychiatric group than the inmate group: (in descending order of importance) Sc, IQ, F, Hy, Education, Hs, Age, and Mf. Scores on all variables except IQ were higher for the psychiatric and forensic groups than they were for inmates. Clinically, the combination of these variables generally describes the likelihood of an element of psychopathology with higher scores (Sc, F), concern and anxiety about self (possibly physical), and sensitivity/passivity (Hy, Hs, Mf). The inclusion of IQ, education, and age are not surprising based upon the demographic findings described previously. Whether these trends reflect actual population differences or are more a function of this study's samples is unresolvable at this point. Regardless, they did contribute significantly to explaining differences between groups in this study.

The second set of discriminating variables was exclusive of the first set. Though this function did reach significance, interpretation must be done with caution and not compared in strength to the first function (recall that function one accounted for 84% of the variance,

and function two accounted for only 16% of the variance). The following variables and trends created this second function which discriminated the forensic group from the psychiatric and inmate groups: (in descending order of importance), Pt, O-H, Pd, Pa, K, and L. The Pt and O-H contributed considerably more than the others, so the Pd, Pa, K, and L variables would be best interpreted as not making a contribution to the main (first) function, rather than seeing them as making a major contribution in the second function. Forensic subjects' scores on the O-H and Pt scales were between the other two groups' mean scores. This function, therefore, appears to be providing more information about how psychiatric and inmate groups tend to be polarized, with forensic falling between the two.

Sixty-nine percent of all 180 subjects were able to be classified into their correct group on the basis of these discriminant functions. The approximate one-third who were not correctly classified included 18 psychiatric subjects, 23 forensic subjects, and 14 inmates. Psychiatric "misses" were 14 incorrectly placed within the forensic group, and four into the inmate group; forensic "misses" included 11 into psychiatric and 12 into inmate; and inmate "misses" included five into psychiatric and nine into forensic. Correct classification for each group was 70% of psychiatric subjects within the psychiatric group, 62% of the forensic subjects into their proper group, and 77% of inmates into their respective group. Those subjects who were incorrectly placed may be a valid representation of the actual situation. For example, a prison such as Drumheller has a special unit which regularly houses inmates with psychotic symptoms. These are few, at any one time, but do occur on a regular basis.

It would appear, from this study, that clinicians within psychiatric and inmate populations may have reason to be more confident about the boundaries of the psychopathology and/or personality types that they deal with. Forensic settings, on the other hand, do appear to house a more varied population, some of whom may be more like the antisocial personalities and others (perhaps more) presenting much like nonoffending psychiatric subjects.

The discriminant analysis produced Classification Function Coefficients (Fisher's Linear Discriminant Functions) for each group on each of the 15 predictor variables. These coefficients (and a given constant) can be used for crossvalidation purposes. A new subject or subjects with scores on the same variables could be assigned to one of the three groups, based upon the linear combination of the weighted variables. Crossvalidating this study's findings with a different set of cases would test the adequacy of these derived discriminant function.

Offenders versus nonoffenders. Fifteen variables were selected as contributing to a discriminant function which correctly classified 82% of offenders (inmates and forensic subjects) and nonoffenders (psychiatric subjects). These variables were: (in descending order of importance) O-H scale, Hy, Pt, F, Sc, IQ, Hs, Age, Pa, K, Pd, Mf, L, and Education. These variables are the same as those selected in the first discriminant function between three groups (with the two functions combined). The difference, however, is in the relative importance of each variable. In this analysis, the O-H scale was found to be more important. The forensic and inmate groups' O-H scores as compared to the psychiatric scores, are likely higher because of the high scores from the severely assaultive subjects. As a combined group, then,

forensic and inmate subjects obtained higher O-H scores than do a group of psychiatric subjects. This suggests that the O-H scale may be useful in discriminating offenders (or likely offenders) from nonoffenders, in conjunction with other clinical scales of the MMPI.

Eighty-five percent of the nonoffending (psychiatric) subjects were correctly classified into their group, based upon the discriminating variables. The others were incorrectly placed into the offender group. In comparison, eighty-one percent of the offenders were correctly classified, and nineteen percent were placed into the nonoffending group. These misclassified cases would, presumably, be forensic subjects who displayed more psychiatric symptoms based upon MMPI scores.

Psychiatric versus nonpsychiatric. Ten predictor variables were selected as contributing to the discrimination between these two groups (recall that forensic and psychiatric subjects made up group one). These were: (in descending order of importance) IQ, Sc, Education, F, Hy, O-H, Hs, Mf, Age, and Depression. These combined variables resulted in a function which correctly classified 83% of these subjects, overall. Correct classification for each group was identical at 83%, with 17% of each group being misclassified.

The results of this discriminant analysis warrants comparison to the previous one, which discriminated offenders from nonoffenders. While both resulted in essentially the same classification results (82% and 83%), this latter analysis was more powerful. Only ten predictor variables were required to discriminate psychiatric types from nonpsychiatric types, as compared to fifteen for the previous analysis which compared offenders from nonoffenders. Less information was required to achieve the same results. The "psychiatric" element may,

therefore, be more easily detected by these predictor variables than a "criminal" element. More importantly, this last analysis confirms the result of the first discriminant analysis with three groups: the forensic subjects in this study were more similar to the psychiatric subjects than they were to the inmates. There was more efficient discrimination when the forensic group was treated as a psychiatric group than when they were treated like a group of inmates.

The predictor variables which contributed consistently to derived discriminant functions in all three analyses included all three demographic variables of IQ, education, and age, with IQ being the most important. The MMPI scales which contributed consistently and significantly to discriminate between all three groups, between offenders and nonoffenders, and between psychiatric and nonpsychiatric, were Sc, Mf, Hy, Hs, F, and O-H. The clinical implications of these MMPI scales are discussed in the next section.

#### Implications and Recommendations

O-H scale. Forensic subjects and inmates who had committed a severely assaultive crime obtained significantly higher O-H scores than did forensic subjects and inmates who had committed mildly or moderately assaultive crimes. These severely assaultive forensic subjects and inmates also obtained significantly higher O-H scores than did a group of nonoffending psychiatric subjects. Finally, the O-H scale was found to contribute significantly to the discrimination of offenders and nonoffenders.

The significant O-H results within the forensic and inmate groups supports Megargee's (1967) theory and provides more support for the utility of the O-H scale within these settings. In addition to

continued research with the O-H scale, clinical confidence in using this scale as a part of assessment and treatment planning should be enhanced with the continued support of studies such as the present one. Lane and Spruill (1980) and Quinsey et al. (1983) outlined treatment strategies (described earlier) to deal with overcontrolled individuals. They suggest that the assertive deficits of the overcontrolled individual is the most meaningful target for intervention. This approach should be implemented, and outcome studies (with O-H retests) conducted in order to assess this method of intervention.

The O-H scale may be a useful tool in detecting the overcontrolled type before a severely assaultive crime is committed. In this study the O-H scale provided good discrimination between severely assaultive offenders and nonoffenders. This scale may have prognostic value, within a forensic group in particular. This study showed that severely assaultive inmates will tend to get higher O-H scores than will forensic subjects, and forensic subjects higher than psychiatric subjects. High O-H scores within a forensic population may be a warning signal that an individual could be a potentially very assaultive criminal. Similarly, high O-H scores within a psychiatric setting may indicate a propensity toward assaultive behavior, based upon the results of this study.

Further investigation of the O-H scale with nonoffending psychiatric subjects and the nonoffending normal population is warranted. If, in fact, these groups consistently obtain lower O-H scores, as this study found with the psychiatric subjects, then the prognostic value of the O-H scale would be enhanced. High O-H scorers, then, would represent a group more likely to act out in a severely assaultive manner. §

This study used both raw and T O-H scores in analyses. Both provided identical significance levels, excepting a univariate F-test when the raw score statistic failed to reach significance at the required .01 level of confidence. For research purposes, the raw scores may, therefore, be a more stringent test of significant difference, because of reduced variability of scores. The T-scores appear to be appropriate for clinical use, in the same fashion as other MMPI T-scores. It is recommended that the O-H scale be incorporated as another clinical scale to be used within forensic and inmate settings. This study suggests that it may be as good, or better, than other MMPI scales (see below) in assessing criminal behavior and a tendency to overcontrol and strike out in an assaultive manner.

MMPI scales. Six MMPI scales (Sc, Mf, Hy, Hs, F, and O-H) were consistently effective in discriminating groups of psychiatric, forensic, and inmate subjects in this study. The most efficient discrimination occurred when forensic subjects were treated like psychiatric subjects. This suggests that forensic subjects' patterns of MMPI scores (combined with IQ) are more like those of psychiatric subjects' than they are like inmates'. In addition, the MMPI scales may have been more sensitive, in this study, to the psychopathology of psychiatric and forensic subjects than to the personality dynamics of inmates.

The MMPI scales which were found to discriminate groups in this study may be clinically useful in detecting and distinguishing a tendency toward psychopathology from an antisocial/criminal tendency. This distinction would be most useful in assessing forensic subjects, who will tend to display characteristics of both. Identifying a

combination of relevant MMPI scales which are as effective as all scales together would have clinical and practical implications within these populations. Further research into these particular MMPI scales is needed to confirm this study's findings.

This study found that the Pd scale had very little effect in distinguishing offenders from nonoffenders, contrary to popular clinical conception. Clinicians should, perhaps, be careful not to overemphasize elevated Pd scales as indication of only antisocial tendencies. The significance of the Mf scale in this study implies that this scale may be useful in providing more clinical information about psychiatric, forensic, and inmate subjects. The Mf scale, as compared to most other MMPI scales, shares relatively little common variance with the other scales (Dahlstrom et al., 1975). The Sc scale, in comparison, is heavily loaded with variance from scales in the remainder of the profile. The Mf may, therefore, be tapping useful information that is being neglected by other scales. For example, Sendbuehler, Kincel, Nemeth, and Oertel (1979) found the Mf scale to be crucial in distinguishing serious suicide attempters from others. Psychiatric subjects in this study obtained significantly higher Mf scores than the others and had a significantly higher incidence of suicide attempts. Results of this study would suggest that further research on the contribution of the Mf scale may be useful in detecting criminal versus noncriminal styles as well as suicidal tendencies.

#### The Forensic Distinction

This study compared groups which have, in part, been defined by a socio-political system exclusive of psychology. The standards set by the Criminal Code of Canada (R.S.C. 1970, c.C-34) have determined the



mandate for prisons and forensic settings. Clinical psychologists (and other disciplines) have been called from more traditional realms (e.g., psychiatric settings) to study and treat people in forensic and correctional settings. A better understanding of forensic subjects was the primary target of inquiry in this study. Results suggest that while forensic subjects in this study had some unique characteristics and some which resembled both inmate and psychiatric groups, they appeared to be more similar in several ways to the psychiatric group than they did to the inmate group.

Forensic subjects, like inmates, were significantly younger and had less education than subjects in the psychiatric group. More forensic subjects were single than subjects in the other two groups, and not as many had a family psychiatric history, as did psychiatric subjects, nor did as many have criminal histories as compared to inmates. Forensic subjects knew their victim (more forensic crimes had a victim than inmate crimes) more often than did the inmate group.

Significantly fewer forensic subjects had attempted suicide than had psychiatric subjects. Fewer forensic subjects were diagnosed as suffering from psychotic illness than were subjects in the psychiatric group. Forensic subjects were more often diagnosed with a personality disorder, substance abuse, or no psychiatric condition. Alcohol abuse appeared to be a major problem for many of the forensic subjects in this study. Their drinking habits were significantly more often diagnosed as a primary psychiatric condition than was the case with the psychiatric group. It is possible that forensic subjects' offences involved alcohol in some way, and this relationship warrants further investigation.

Should alcohol abuse be confirmed in other studies as a primary

maladaptive characteristic of forensic subjects, then the implications for remand, assessment, and treatment procedures with this group would be great.

Forensic subjects more closely resembled psychiatric subjects than they did inmates with the clinical variables used in this study. While they did not appear, as a group, to suffer the severity of psychopathology that was evident in the psychiatric group, their combined MMPI and IQ scores more closely resembled patterns obtained by psychiatric subjects than those obtained by inmates. They were, it appears, psychologically less disturbed than psychiatric subjects, or, perhaps they have not yet displayed as many overt signs of psychiatric illness. Perhaps they have found ways to camouflage psychiatric problems such as acting out antisocially (as opposed to internalizing) and/or abusing alcohol to prevent potentially severe symptomatology from escalating.

The forensic distinction was designed to serve a function defined by the legal system. Forensic subjects in this study (and almost all patients on this particular forensic unit) had been remanded to assist the court in determining whether the subject should be treated as an inmate (convicted and sentenced) or whether his/her disposition requires an alternate form of treatment (e.g., psychiatric hospitalization through the Mental Health Act, or a Warrant of the Lieutenant Governor with indefinite detention in a secure forensic facility). The subjects in this study were, by the nature of the Criminal Code, still in the screening process. Depending upon the court's decision, these subjects will either become inmates and undergo correctional detention and rehabilitation or remain as forensic patients, and undergo forensic

detention and psychiatric treatment. At this latter point the "forensic" distinction may imply something different than it does at this study's assessment phase. The forensic assessment phase responds to the court's opinion on emotional stability. The forensic treatment phase responds to the court's and mental health's opinion on emotional stability. Forensic treatment centres should, then, have a more homogeneous (and treatable) group than the forensic assessment centres. A study, similar to the present one but with a group of forensic subjects being detained under a Warrant of the Lieutenant Governor, would be useful to compare the types of subjects at these two stages of the process.

This study found that the forensic assessment subjects did, as a group, display characteristics more similar to psychiatric subjects than to inmates. These subjects did, then, as a group, represent at least some characteristics which psychology might define as problematic for that individual. The law has chosen to extend psychology's definition and assume that this psychopathology was somehow related to the commission of an offence. Psychology must function with this assumption and realize that the law is providing us with their definitions of what they feel our role should be, based upon their perception of our expertise. It may be useful for psychology (and other disciplines) to be involved in defining, for instance, what "forensic" does and should mean. This study attempted to begin such an investigation and further studies may help psychology understand whether this distinction is, in fact, a psychological distinction or strictly a legal one. Further energy in this area may, alternately, assist this profession in deciding whether we serve a unique and justifiable function in this area.

At this point, forensic subjects (based upon the group used in this study) appear to be similar in age but not quite as resourceful as inmates. The forensic subjects who have committed assaultive crimes appear to overcontrol their hostility like inmates who have committed severely assaultive crimes. They appear to suffer from at least mild psychopathology, to a lesser degree but similar in type to psychiatric subjects. Finally, forensic subjects appear to suffer from the effects of alcohol (and other substance) abuse more than inmates and psychiatric subjects. One final characteristic not to be neglected is the fact that all forensic subjects have, allegedly or actually, committed a crime. In the eyes of the law and society this behavior is a crucial element in decision-making. Psychology must play an auxiliary, but not necessarily subordinate, role in choosing the most effective method through which to protect society from these offending members.

#### Summary

The results of this study lend further support for the clinical and theoretical utility of the O-H scale. As described previously, this scale discriminated severely assaultive offenders from both mildly/moderately assaultive offenders and nonoffending psychiatric subjects. This discrimination was significant within both the inmate and forensic groups. These significant findings suggest that more intensive investigation into the overcontrolled personality is warranted. Further research with a specific focus on the O-H typology is, therefore, recommended.

This study also sought to examine the characteristics which might define a group of forensic subjects. Using psychiatric and inmate groups as comparison, the forensic group did, as expected, share

characteristics with both of these groups. Forensic subjects' scores on the O-H scale were similar, for example, to inmates, when grouped according to degree of assaultiveness of their crimes. In contrast, multivariate analyses of MMPI scales, with age, IQ, and education, found the forensic subjects to be more similar to psychiatric subjects than to inmates. Crossvalidation research using similar groups and clinical information is warranted to confirm this study's findings. Finally, further investigation of the forensic distinction and its subjects at various stages of the legal process is recommended. Forensic clinicians would do well to expend more energy toward an understanding of this patient group on a clinical level. Developing a definable forensic psychology specialty in Canada may require more extensive research in this area:

APPENDIX A  
ITEM LIST FOR THE O-H SCALE

## Appendix A

Item List for the O-H Scale\*

| <u>Booklet No</u> | <u>Item</u>  | <u>Key</u> |
|-------------------|--|------------|
| 1                 | I like mechanics magazines   | False      |
| 30                | At times I feel like swearing  | False      |
| 78                | I like poetry  | True       |
| 81                | I think I would like the kind of work a forest ranger does   | False      |
| 90                | Once in a while I put off until tomorrow what I ought to do today  | False      |
| 91                | I do not mind being made fun of  | True       |
| 102               | My hardest battles are with myself   | False      |
| 109               | Some people are so bossy that I feel like doing the opposite of what they request, even though I know they are right | False      |
| 129               | Often I can't understand why I have been so cross and grouchy  | False      |
| 130               | I have never vomited blood or coughed up blood   | False      |
| 141               | My conduct is largely controlled by the customs of those about me  | False      |
| 165               | I like to know some important people because it makes me feel important  | False      |
| 181               | When I get bored I like to stir up some excitement   | False      |
| 183               | I am against giving money to beggars   | False      |
| 229               | I should like to belong to several clubs or lodges   | True       |
| 290               | I work under a great deal of tension   | False      |
| 319               | Most people inwardly dislike putting themselves out to help other people   | True       |
| 329               | I almost never dream   | False      |
| 338               | I have certainly had more than my share of things to worry about   | True       |
| 381               | I enjoy gambling for small stakes  | False      |
| 425               | I dream frequently   | True       |
| 436               | I feel sure that there is only one true religion   | True       |
| 439               | It makes me nervous to have to wait  | False      |
| 461               | I wish I could get over worrying about things I have said that may have injured other people's feelings              | False      |
| 475               | When I am concerned I tell that portion of the truth which is not likely to hurt me                                  | False      |
| 488               | I pray several times every week  | True       |
| 501               | I usually work things out for myself rather than get someone to show me how  | False      |
| 521               | I frequently ask people for advice   | True       |
| 534               | Several times I have been the last to give up trying to do a thing   | False      |

Item List for the O-H Scale\*

| <u>Booklet No</u> | <u>Item</u>   | <u>Key</u> |
|-------------------|---|------------|
| 549               | Often, even though everything is going fine for me, I feel that I don't care about anything | False      |
| 559               | I have often been frightened in the middle of the night                                     | True       |

\* MMPI Form R

Note. From "Development and validation of an MMPI scale of assaultiveness in overcontrolled individuals" by E. I. Megargee, P. E. Cook, and G. A. Mendelsohn, 1967, Journal of Abnormal Psychology, 72, p. 522.



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