INSTITUTIONAL VIOLENCE AMONG THE MENTALLY ILL

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During the mid-1960s I worked as an attendant on the admission ward of a psychiatric hospital. An Ojibway boy about my age was admitted from a local jail where he had been held following an arrest for drunkenness. After admission, he was started on a standard detoxification routine. However, his behaviour grew increasingly bizarre. He assumed a crucified posture in front of the ward door, reported that he saw the devil in the darkness, and became afraid to go to sleep at night. He was also very intelligent, challenging my assertion that his hallucinations had no basis in external reality using sophisticated arguments fashioned with his limited English vocabulary. He was also very sad to be missing the wild rice harvest on the Indian reserve.

One day this patient walked down the long corridor and, without a word, attacked me. He punched and I blocked while being forced slowly backwards down the corridor. We passed a laundry room where two of my colleagues were folding clothes. These surprised attendants came to my aid, and, after great difficulty, we subdued the patient. This event drew attention to the fact that this acutely psychotic schizophrenic was being treated with vitamins instead of antipsychotic drugs. The patient responded very well to appropriate medication and, while he missed the wild rice harvest, was soon discharged.

The aggression of this patient appeared to be related to acute psychosis, not antisocial personality disorder or criminality, and it disappeared with the psychotic symptoms when he received antipsychotic medication. His attack appeared to arise literally out of the blue, with no possible recent provocation by me.

Was this a typical aggressive act committed by a psychiatric patient? Is aggression closely associated with the intensity of psychiatric symptoms, or is it tied more closely to antisocial personality? How well does aggressive behaviour respond to various medications? Are assaults by psychiatric patients generally unprovoked, and are they directed towards particular individuals or are they random? Before dealing with these and related questions, we must concern ourselves with the measurement of the phenomenon we hope to explain and control, together with some preliminary methodological issues.

Methodological Issues

There is a large literature on institutional violence. Sources for the older literature include Lion and Reid (1983), Rice, Harris, Varney, and Quinsey (1989), and Tar-
diff (1989), for the more recent literature, Bjorkly (1995). Unfortunately, most of the literature, even the most recent (e.g., Day, Franklin, & Marshall, 1998; Raja, Azzoni, & Lubich, 1997), is descriptive; very few studies examine either the prediction or the reduction of violence. Moreover, the conclusions that can be drawn from the descriptive literature are limited in scope, because the study of violence among the institutionalized mentally ill is bedevilled with methodological problems. Haller and Deluty (1988) identified some of those commonly occurring in the earlier literature: under-reporting of assaults; incomplete operational definitions of aggression and predictor variables; and lack of distinction between major and minor assaults, verbal and physical aggression, and victim types.

However, selection effects are involved in the less tractable methodological difficulties. Because violent acts frequently lead to psychiatric hospital admission, hospitalized patients are more likely to have a history of violent behaviour and to be more violent than an unselected sample of the mentally ill. Because discharge is associated with improvement in clinical symptoms, including a reduction in aggressive behaviour (e.g., Steinert, Hermer, & Faust, 1996), the tragedy of the psychiatric hospitals comes into play. The tragedy is that length of psychiatric hospitalization is directly correlated with patient refractoriness to available treatments. Thus, psychiatric hospitals always end up caring for the untreatable unless they can transfer their intractable cases to other hospitals, such as security or “special” hospitals.

These selection processes cause violence to be associated with different patient characteristics according to length of stay. For example, Noble (1997) concluded, on the basis of a literature review, that on acute wards violence is associated with acute schizophrenia, substance abuse, and personality disorder, whereas on chronic wards it is associated with chronic refractory schizophrenia and mental impairment and organic syndromes.

Differential admission and discharge of psychiatric patients means that the generalizability of results from inpatient studies is difficult to characterize. This problem is worsened by the relationship of dual diagnosis to institutional placement. Both developmentally handicapped and mental illness have some relationship with aggressive behaviour. Jurisdictions vary in their policies regarding the disposition of persons with dual diagnoses; they may be placed in psychiatric facilities, institutions for the developmentally handicapped, or both, to varying degrees (Quinsey, Skilling, & Rougier-Chapman, 1997). Finally, jurisdictions vary in the liberality with which they use the insanity defence and thus in the proportion of mentally ill individuals in prison or in hospital.

Psychiatric units are thus analogous to the “islands” beloved of biogeographers. The analogy to species is diagnostic group. The proportion of patients in various diagnostic groups is determined by rates of immigration (admission) and extinction (discharge). These rates in turn are determined by the bureaucratic closeness of other islands (psychiatric units) or continents (the correctional system and the developmentally handicapped system) and the mutation rate (changes in the legal policies governing admission to the various geographical entities). To mix the metaphor, because immigration and extinction are both related to assaultiveness in a manner that varies over islands, the correlation of assaultiveness and diagnosis can be expected to vary in substantively uninteresting ways.
Measurement

There has been significant progress over the past 20 years in the measurement of institutional assaults. Researchers more often establish inter-observer reliability in the measurement of assaults now than in the past, and there is an increasing tendency to use the same measures in different studies (for a critical review of "aggression" in psychiatric patients, see Gothelf, Apter, & Van-Praag, 1997). Nevertheless, there are problems in measuring assault frequency. The most important difficulty is the failure to control for opportunity. Confinements or lengthy time outs are often contingent upon serious assaults, and frequency estimates that do not control for confinement-related curtailed opportunity will be too low, and very likely differentially too low, with more serious assaults and assailters.

The most widely used instrument, the Overt Aggression Scale (Silver & Yudofsky, 1987; Yudofsky, Silver, Jackson, Endicott, & Williams, 1986), measures verbal aggression, physical aggression against objects, physical aggression against self, and physical aggression against others. A rating scale of severity is provided within each of the four categories. A fifth category deals with interventions and has a severity scale ranging from talking to the patient to using restraints. A Total Aggression Score is obtained by adding the weighted score for the most severe degree of aggression within each category to the weighted score for the most restrictive intervention. Because the Total Aggression Score completely confounds staff and patient behaviour, I strongly recommend not calculating it. In a study of the Overt Aggression Scale on three wards at each of two psychiatric hospitals, the scale documented more aggressive incidents than did official hospital documents. It is not clear whether this discrepancy was caused by staff filling out the scale (i.e., preferring the rating scale to the regular documentation).

Less commonly employed measures include a modification of the Overt Aggression Scale (Kay, Wolkenfeld, & Murrill, 1988a, 1988b) and the Scale for the Assessment of Aggressive and Agitated Behaviors (Brizer, Convit, Krakowski, & Volavka, 1987). Hallsteinsen, Kristensen, Dahl, and Eilertsen (1998) have developed an extended form of the Staff Observation Aggression Scale, the SOAS-E. This instrument is designed to record violent and non-violent aggressive behaviours of psychiatric inpatients together with the warning signals and provocations that may precede them.

The nature of the outcome measure deserves more attention that it receives. Rating scales that incorporate severity ratings may or may not be what investigators want to interpret. Scales like the Overt Aggression Scale conflate severity and frequency. This approach sensibly weights more serious assaults more than less serious ones but at the cost of asserting that, say, 20 verbal threats are equivalent to one physical assault.

A more labour-intensive system for measuring a more restricted but more easily interpreted domain was developed by Quinsey and Varney (1977) for recording physical assaults. In this method, a researcher visited each ward daily and identified potential incidents by talking to ward staff and patients and reviewing the ward log. Each likely incident involving actual or attempted forceful physical contact was recorded by interviewing each of the staff and patient participants and, where possible,
a witness. A description of the antecedents to and consequences of the assault were recorded together with what happened during the incident. Informants were also asked why the assault occurred. Good inter-rater agreement was found in the original and subsequent studies (Rice et al., 1989).

An even more laborious method of recording assaults has been developed by Brizer, Crowner, Convit, and Volavka (1988), in which assaults are identified through continuous videotaping, for subsequent analysis. This method has many advantages, chief among them the ability to recode assault data from videotaped archives. This relatively unobtrusive method of recording assaults, unencumbered by the vagaries of recall and reporting practices, allows for a number of questions to be resolved more clearly than by using trained observers or relying on front-line staff to record incidents. For example, in both the original study and a subsequent investigation (Crowner, Peric, Stepcic, & Van-Oss, 1994), incident reports were found to underestimate actual assaults. The 1994 investigation demonstrated that the more serious the physical assaults, the more likely they were to be included in incident reports.

The following review deals primarily with aggression as defined by physical assaults. Where other, more general, measures of aggression are discussed, the nature of the measure is described.

**Characteristics of Assaulters**

A small minority of patients are involved in the majority of assaults (e.g., Bjorkly, 1999; Cheung, Schweitzer, Tuckwell, & Crowley, 1997; Convit, Isay, Otis, & Volavka, 1990; Harris & Varney, 1986; Noble, 1997; Quinsey & Varney, 1977; Rasmussen & Levander, 1996a). Assaultive patients are more likely to be younger (e.g., Convit et al., 1990), to have prior histories of intra-institutional assaults, and to be lower-functioning than non-assaultive patients (Harris & Varney; Quinsey & Varney).

Rasmussen and Levander (1996b) studied physical aggression in a maximum security psychiatric institution. Over 6.5 years, 55% of the 94 patients were involved in at least one of 1,945 incidents. However, 87% of the incidents were caused by six patients. More females than males were assaultive, including one woman who contributed 58% of the assaults. Assaults were more frequent on weekdays but no other temporal patterns emerged. The most common precipitating event was attempting to calm an upset patient. Patients who attacked less often caused less harm than those who attacked more often, although serious injury was very rare. Positive psychiatric symptoms, borderline symptoms, and assistance in daily care were positively related to assault frequency in a regression equation, while age, modified PCL-R score, and depressive symptoms were negatively related.

Krakowski, Jaeger, and Volavka (1988) followed 44 consecutive admissions to a unit for the treatment of violent patients. Psychopathology, as measured by the Brief Psychiatric Rating Scale (BPRS) (Overall & Gorham, 1962), was positively related, both cross-sectionally and longitudinally, to unfocused violence (primarily against property) but not as strongly as activity therapists' ratings of social dysfunction (level of functioning). Although BPRS ratings were not related to verbal aggression
or physical assault, social dysfunction was correlated with physical assault among patients with functional psychiatric disorders during the first week post-admission. Patients with diagnoses of personality disorder or mental retardation and those with younger ages at first hospitalization were more persistently violent than those with a diagnosis of schizophrenia or major affective disorder.

In a subsequent study, Krakowski, Convit, Jaeger, Lin, and Volavka (1989a) compared 77 admissions to a unit for the treatment of violent patients, divided into a transiently and a persistently violent group, with a comparison group of 44 non-violent patients. The comparison group was matched on age, race, chronicity, and diagnosis (except that no non-assaultive personality disorder patients could be found for the comparison group). Violent behaviours included physical assaultiveness, verbal threat, and destruction of property. Logistic regressions indicated that persistently violent patients were more neurologically impaired and had experienced greater overall family disturbance than either of the other two groups. Both violent groups had more frequently been convicted for a violent crime than comparison subjects. EEG recordings did not differentiate among the groups.

The relationship of diagnosis and sex of patient to aggression has been mixed (Rasmussen & Levander, 1996b), probably because of the selection effects described earlier. For example, the relationship of psychopathy to institutional assaultiveness can be expected to vary because of selection. Some of the items that contribute to a psychopathy score, such as failure on prior conditional release, criminal versatility, juvenile delinquency, glibness, and so forth, are primarily relevant to patients who have had opportunities to commit crimes in the community and have a minimum degree of verbal skills. In unit populations where there is a substantial proportion of highly assaultive but very low-functioning individuals, psychopathy may be found to correlate negatively with institutional violence.

Despite the negative findings reviewed above for the BPRS, there is some evidence that acute psychotic symptoms are related to assaultiveness (Junginger, 1996). In a series of studies of a matched group of 31 aggressive and 31 non-aggressive schizophrenics (Cheung, Schweitzer, Crowley, & Tuckwell, 1997a, 1997b, 1997c; Cheung, Schweitzer, Crowley, Yastrubetskaya, & Tuckwell, 1996), it was found that assaultiveness was associated with both positive and negative symptoms and with general psychopathology. Cheung et al. (1997a) interpreted their results as indicating that three sets of symptoms were related to assaults: symptoms with verbal or physical aggression being part of their definition, symptoms reflecting frontal lobe impairment, and excitement. General psychopathology, personality traits, and history of aggression were related to assaultiveness but not so highly as negative affective responses to delusions or hallucinations. Assaultive patients tended to have persecutory delusions and non-aggressive patients tended to have grandiose delusions. Neuroleptic side effects and command hallucinations were not significantly correlated with assaults. Command hallucinations were also found to be unrelated to assaultiveness by Hellerstein, Frosch, and Koenigsberg (1987).

Further findings supporting the idea that acute symptoms bear a stronger relation to assaultiveness than diagnosis come from a longitudinal study of 34 patients diagnosed as schizophrenic or schizoaffective (Harrow, Rattenbury, & Stoll, 1988). In focused interviews, the researchers studied patients' belief-conviction about their
delusions, perspective about whether other people would regard their ideas as aberrant or unrealistic, and emotional commitment (immediacy, importance, urgency) to their delusions. The same themes were evident from the premorbid period, through hospitalization, to the post-hospital phase. There was a relatively high level of belief-conviction throughout, but somewhat more (although poor) awareness of others' likely perceptions. The acute phase was marked primarily by increased emotional commitment that was in turn related to the likelihood of aggressive behaviour (cf. Buchanan, 1997).

A limited amount of data suggests that symptoms associated with antipsychotic medication are related to assaults. Using videotape technology, patients and victims (but not bystanders) in a unit for chronically violent psychiatric patients were found to have higher akathisia scores in the 5-minute period preceding nine physical assaults (Crowner et al., 1990).

Suicidal and self-injurious behaviour has been linked to assaultiveness. Hillbrand (1995) compared Overt Aggression Scale scores of 103 male forensic patients assigned to one of four groups defined by their history of suicidal behaviour and their current level of self-injurious behaviour. Patients who had both characteristics were more assaultive than both patients who had neither and patients who exhibited previous suicidality but no current self-injurious behaviour. These group differences remained after controlling for age, diagnosis, length of hospitalization, and amount of medication.

**Characteristics of Assaults**

Staff are usually more likely than co-patients to be assaulted (Benjaminsen, Gotzsche-Larsen, Norrie, & Harder, 1996; Cheung, Schweitzer, Tuckwell, & Crowley, 1997; Harris & Varney, 1986; Quinsey & Varney, 1977). Those assaulted are usually nursing or attendant staff (Bjorkly, 1999; Carmel & Hunter, 1993; Lanza, 1992; Tam, Engelsmann, & Fugere, 1996) and are assaulted in the context of setting limits on patients or requesting activity from them (Benjaminsen et al.; Harris & Varney; Quinsey & Varney). Increasing proportions of inexperienced nursing staff have been associated with increases in assaults (James, Fineberg, Shah, & Priest, 1990); similarly, Rasmussen and Levander (1996b) found that untrained staff and female staff were differentially likely to be assaulted.

Staff and patients often give very different reasons for assaults. Staff often state that there was no reason for the assault or that the assault was a result of the patient’s psychopathology. Patients, on the other hand, cite teasing by patients or staff, staff provocation in the form of giving them orders, and so forth (Harris & Varney, 1986; Quinsey & Varney, 1977). Crowner, Peric, Stepic, and Ventura (1995) found very similar results in a study of 134 videotaped physical assaults committed by 40 psychiatric patients. Most patients refused to be interviewed, but those who did cooperate often claimed to have been playing with the victim, complained of verbal abuse, or said they wanted to stop objectionable behaviours by the victim. Taken together, these studies suggest that patients frequently perceive victim behaviours as provocative.
The injuries associated with assaults tend to be minor (Bjørkly, 1999; Harris & Rice, 1986; Noble, 1997; Reid, Bollinger, & Edwards, 1989). However, more serious injuries are associated with restraining patients, sprains, and the effects of falling (Harris & Rice, 1986).

Assaults often occur when patients are engaged in unstructured activity (Deitz & Rada, 1983; Harris & Varney, 1986; Quinsey & Varney, 1977). Silver and Yudofsky (1987) found that aggression increased at medication time and during shift changes and decreased at lunchtime.

Crichton (1997) summarizes the findings of British studies, most of which echo the rest of the literature. Minor violence is very common, particularly in low-security institutions where violence is a criterion for admission; serious violence is rarer but is more common in special security hospitals. Active psychotic symptoms, but not diagnoses, are associated with assault frequency. Female patients in secure facilities are more assaultive than male patients. A few patients cause the majority of assaults. Poor staffing levels and temporary staff are associated with assaults, as is patient idleness.

**Neurobiology**

Neurobiological correlates and potential causes of aggression have been investigated for decades (for a general review, see Stoff & Cairns, 1996). Part of the motivation for these investigations is the obvious: The proximal causes of all behaviours reside in the brain. Past experience and current environmental events also cause behaviours but do so through a neural route, not directly. A more specific and powerful impetus for this line of investigation has been the success of the dopamine hypothesis in schizophrenia with the associated psychopharmacological interventions. The literature on neurobiological correlates is vast. Some recent studies on institutional violence are reviewed below.

Balaban, Alper, and Kasamon (1996) conducted a meta-analysis of 39 studies examining the relationship of the serotonin metabolite 5-hydroxyindoleacetic acid (5-HIAA) to human aggression. Psychiatric patients were lower in 5-HIAA than non-psychiatric groups, but there was not a significant correlation between 5-HIAA and aggression. Maguire et al. (1997) likewise found no difference on serotonin function measured by $^3$HT-Paroxetine binding to platelet membranes between aggressive and non-aggressive schizophrenic patients matched on age, sex, and duration of illness.

Convit, Czobor, and Volavka (1991) recorded the EEGs of 21 men treated on a unit for the management of violent behaviour. Both the number of instances of violence (including verbal and physical violence towards staff and assaults against property) and the number of staff interventions were related to increased delta and decreased alpha band activity in the parieto-occipital and temporal areas, independently of medication or length of stay on the unit. Increased levels of violence were associated with relatively greater power of delta band activity in the left hemisphere.

In a large study of neurobiological correlates of assaultiveness, Krakowski et al. (1997) followed 102 hospital admissions for 4 weeks. Of these, 33 had been arrested
for a violent crime. Sixty-nine patients who were physically assaultive in the hospital were matched on age, race, sex, diagnosis, and length of hospitalization with 33 who were not. Patients who exhibited multiple assaults were divided into the persistently violent ($N = 9$), the transiently violent (those whose frequency of inpatient assaults markedly declined, $N = 20$), and the sporadically violent (those with one assault, $N = 13$). Patients with a history of community violence (but not crime in general) did not differ from other patients on the WAIS-R but were more impaired on indices of frontal lobe impairment, the Wisconsin Card Sorting Test, the Finger Tapping Test, and the Purdue Pegboard Test. Patients were more likely to be sporadically or persistently violent (i.e., not show clear post-admission deceleration) if they had a history of community violence and showed frontal lobe impairment. Transient post-admission violence appears to reflect an acute psychotic episode with different neurobiological correlates than persistent violence.

**Prediction of Assaults**

Hillbrand, Spitz, Foster, Krystal, and Young (1998) examined the relationship between serum creatine kinase elevations (caused by muscle activity) and Overt Aggression Scale scores of 164 consecutive male admissions to a forensic hospital. Among patients who received neuroleptic medication, high creatine kinase on admission was positively related to subsequent physical aggression, even when prior assaultedness and restraint were controlled. Creatine kinase was a better predictor of assaultedness than prior assaultedness. It was of interest that creatine kinase functioned well as a static but not a dynamic predictor; changes in it were unrelated to temporal variations in assaultedness.

Convit, Jaeger, Lin, Meisner, and Volavka (1988) developed a model based on neurological (EEG) abnormalities, history of violent crime, history of violent suicide attempts, and deviant-family childhood environment that significantly predicted which psychiatric patients would be physically assaultive during the first 3 months after their admission. In the prospective study, 79 male schizophrenics under 36 years of age were followed. Fifty-two of the 79 subjects were correctly classified by the model.

Heilbrun et al. (1998) correlated the Psychopathy Checklist (PCL) with physical aggression during the first and last 2 months of hospitalization among 218, mostly male, mentally disordered offenders. Twelve percent of the patients exhibited physical aggression in the first 2 months and 7% in the last 2 months. The PCL correlated significantly with physical aggression in the first period, although the magnitude of the correlation was very small ($r = .12$), but not in the second period.

From a previous study, McNiel and Binder (1994) selected five predictors of inpatient aggression to calculate a unit-weighted actuarial score: history of physical attacks and/or fear-inducing behaviour within 2 weeks prior to admission, absence of suicidal behaviour within 2 weeks prior to admission, schizophrenic or manic diagnosis, male sex, and—surprisingly, given the direction of its usual relation with aggression—currently married or living with a partner. The validation sample consisted of 338 patients of a locked, university-based inpatient unit. The Overt Aggression Scale was completed retrospectively from file data. Twenty-four percent of the
sample physically attacked someone. The checklist resulted in a 25% relative improvement over chance in predicting which patients would exhibit physical aggression. This is an important demonstration of the power and utility of actuarial methods, particularly inasmuch as the predictors employed are customarily available to clinicians at the time of patient admission. The Violence Risk Appraisal Guide, a more difficult-to-complete instrument designed to predict post-release violent recidivism, also predicts violent re-offending of supervised mentally disordered offenders (Quinsey, Coleman, Jones, & Altrows, 1997) and institutional misconduct among prison inmates (Kroner & Mills, 1997).

DYNAMIC RISK INDICATORS

Dynamic risk indicators can be categorized according to whether they can be employed to estimate the long-term likelihood of violent acts. Temporally fixable dynamic predictors are those that can change or be made to change, such as the provision of treatment or the response to treatment, but that end at an identifiable point in time. These predictors become historical when they occur and can be used to predict a behaviour of interest over subsequent follow-up periods of any desired length. Temporally fixable dynamic predictors thus compete with static predictors for outcome variance.

In contrast, fluctuating dynamic predictors are those that change continuously in time, such as mood and sobriety. In particular, these predictors can change in the course of a follow-up period. The practical use of these predictors, therefore, is quite different from that of static or historical predictors. Because they change continuously, they are not appropriately used to forecast the likelihood of violent behaviour over long follow-up periods and do not compete for outcome variance with static or historical predictors; rather, they are best used to indicate imminence. In brief, static and historical predictors are suitable for indicating how much risk a person presents over the long term, and fluctuating dynamic predictors for indicating when risk changes within an individual over a short period. The shortness of the period is determined by the speed with which the predictor changes and the frequency of measurement.

Few studies have investigated fluctuating dynamic predictors of violence. In order to do so, it must be demonstrated that a change in the predictor is contemporaneously associated with violent acts. In an explicit investigation of dynamic prediction of serious violence, Quinsey, Coleman, et al. (1997) examined the aggression of institutionalized psychiatric patients directed at members of the community at large. They compared 60 mentally disordered male offenders who had eloped from hospital or re-offended while under supervision with 51 male offenders who had done neither. Re-offenders or elopers were identified by asking staff in forensic units at all 10 Ontario provincial psychiatric hospitals to provide the name of any forensic patient who had eloped or re-offended outside of the hospital in the previous 10 years, together with the date and nature of the incident. All identified re-offenders (n = 33) were included. Every re-offender had committed an offence off the ward where he resided that was serious enough that criminal charges were or could have been laid. Every eloper had been absent without leave and the incident was serious enough to warrant informing the police.
Of the 111 mentally disordered male offenders included, 60 had eloped or re-offended outside their hospital unit while living under supervision and 51 were comparison subjects. Re-offenders were categorized as violent \((n = 19)\) or non-violent \((n = 14)\) based on the most severe offence they had committed during the incident. In terms of the most serious re-offence among the 19 violent re-offenders, three committed murder, five attempted murder, one wounding, two assault causing bodily harm, three common assault, four rape, and one indecent assault.

Because there were many more elopers than re-offenders, 27 elopers were chosen randomly to bring the total number of elopers/re-offenders up to 60. If a subject had been involved in more than one incident of interest, the most serious was chosen as the index event. If there was more than one event in the same category, the earliest was chosen. Thus, if several violent, non-violent, and simple elopement incidents occurred for a given individual, the earliest violent incident was chosen as the index event.

Comparison subjects were matched with eloper/re-offender subjects on diagnosis (psychotic, not-psychotic), age (within 10 years), and level of supervision (secure custody, direct staff supervision, or indirect supervision). In addition to an actuarially based estimate of risk of violent re-offending, the Violence Risk Appraisal Guide (Quinsey, Harris, Rice, & Cormier, 1998) proximal dynamic variables were coded from clinical file information recorded either in the month before the elopement/re-offence or the control date for all subjects as well as from a control period (usually a year earlier) for the elopers/re-offenders. Seven dynamic variables statistically differentiated elopers/re-offenders from other patients after controlling for actuarial risk level, and also differentiated the period preceding elopement or re-offence from an earlier period among elopers/re-offenders. These robust predictors of eloping/re-offending involved primarily two kinds of items: those involving non-compliance with supervision and antisocial attitudes and those pertaining to emotional dysphoria and psychiatric symptoms.

Violent re-offenders were best differentiated from their controls by a proximal factor labelled "Dynamic Antisociality." Dynamic Antisociality included items concerning lack of remorse and empathy, procriminal sentiments, and unrealistic discharge plans. The finding that Dynamic Antisociality is a dynamic predictor may at first appear paradoxical because it contains some items that are very similar to those on the Psychopathy Checklist–Revised, or PCL-R (Hare, 1991), a well-known static predictor. The PCL-R, however, is scored on the basis of a person's lifetime history by searching for exemplars of the items. Thus, once an item is scored "certainly present" it can no longer change during that person's lifetime, and, in practice, the PCL-R is extremely stable over time when scored according to the manual. Dynamic Antisociality is potentially a dynamic indicator because it is scored for a month-long observation period, not a lifetime. The robust within-patient effect found in this study demonstrates that Dynamic Antisociality is dynamic within a limited time period. Its dynamic nature is compatible with the observations that procriminal sentiment is related to criminal recidivism and is modifiable by supervisory staff (Andrews, 1980).

The third factor, Poor Compliance, comprised only three items: escape attempts, exhibiting few positive coping skills, and poor compliance with rules. In contrast to Dynamic Antisociality, it was not related to violent or non-violent recidivism but was related to elopement.
Psychiatric Symptoms contained items reflecting both positive and negative schizophrenic symptoms. Psychiatric Symptoms was not significantly correlated with violent re-offending and was inconsistently correlated with nonviolent re-offending, but was strongly related to eloping. The finding that Psychiatric Symptoms failed to predict violent re-offending is consistent with the finding that a diagnosis of schizophrenia is associated with lower risk of violent re-offending (Gardner, Lidz, Mulvey, & Shaw, 1996; Quinsey et al., 1998; Villeneuve & Quinsey, 1995) because schizophrenic diagnosis is a static variable. In the present study, schizophrenic symptoms were treated as a dynamic variable. The question being addressed was conditional: "Given a schizophrenic patient, does the exacerbation of symptoms relate to eloping or re-offending?" The answer was positive with respect to elopement and negative with respect to very serious violent re-offending, suggesting that early intervention in response to psychotic symptoms and non-compliance with medication may reduce the likelihood of elopement. Violent re-offenders were more likely to be personality disordered and elopers more likely to be psychotic.

Somewhat similar findings are reported by Beauford, McNiel, and Binder (1997), who investigated situational risk factors associated with violence among 328 patients hospitalized on a locked ward. Information from physicians’ admitting notes was coded on the Therapeutic Alliance Scale (Clarkin, Hurt, & Crilly, 1987). The scale was coded from 1 (patient is actively involved in therapy, explores problems, etc.) to 6 (patient sees no need for hospitalization and is constantly demanding discharge...totally denies emotional problems, etc.). The BPRS was filled out on admission as well, yielding scores for thinking disturbance, agitation-excitement, hostile-suspiciousness, anxious-depression, and withdrawal-retardation. Outcome data for the week following admission were gathered with the Overt Aggression Scale scored for no aggression, fear-inducing behaviour, and physical attacks.

Twelve percent of the patients physically attacked someone and 21% engaged in fear-inducing behaviour during the first week of admission. In descending order of their predictive value, the predictors were: pre-admission violence, initial Therapeutic Alliance score, age, and BPRS Agitation-Excitement. Therapeutic Alliance remained significantly associated with outcome after the effects of pre-admission violence were controlled. Recalling the classification of predictors presented earlier, pre-admission violence and age on admission are historical or static variables. Therapeutic Alliance and Agitation-Excitement are surely fluctuating and dynamic, although no prediction was made from the change in either of these variables in this study. Therefore, based only on this study, we cannot estimate the extent to which the predictive power of these two variables resulted from some static feature. For example, it could be that psychopaths are litigious and form a poor Therapeutic Alliance, so that Therapeutic Alliance, although in principle dynamic, serves in this instance as a proxy for a static variable, psychopathy. However, the similarity of the Therapeutic Alliance items with some items from the Dynamic Antisociality Scale, such as complains about staff and has unrealistic discharge, inspires confidence that changes in Therapeutic Alliance are related to violence.2

As noted earlier, psychotic symptoms have sometimes been associated with inpatient assaultiveness. In contrast to the findings of the Quinsey, Coleman, et al. (1997) investigation, these associations have been found in on-ward contexts where
the assaults seldom cause serious injury. For example, Ross, Hart, and Webster (1998) studied 82 male and 49 female consecutive admissions to a 10-bed unit. The Overt Aggression Scale was completed biweekly. There were 234 incidents over 47 weeks. Thirty percent of the patients were physically assaultive. Correlations with physical aggression were .21 for the Psychopathy Checklist-Short Version, Part 2, and .20 for the clinical items of the HCR-20. The Psychosis Factor of the BPRS correlated .36 with physical aggression.

Management and Treatment

This section will deal only with studies employing measures of assault frequency or staff injury, not with descriptions of unevaluated programmes (e.g., Thackrey, 1987) or studies employing only patient self-report or clinician ratings (e.g., Renwick, Black, Ramm, & Novaco, 1997; Stermac, 1987). Neither will reports of single cases or small series of patients be reviewed. The literature on the management and treatment of aggressive mentally ill patients remains primitive. Despite the variety of interventions that have been tried, there are no meta-analytic reviews that permit the effect sizes of various treatments to be quantitatively compared. Of necessity, the review that follows is qualitative in nature, with all of the interpretative problems that entails.

DRUG TREATMENT

There exist many narrative reviews of the pharmacological literature. Most of these agree that the treatment of aggression in psychiatric patients should not rely on the sedative effects of antipsychotic medication. For example, Yudofsky, Silver, and Schneider (1987) conclude:

A review of the literature reporting anticonvulsant, lithium, and propranolol treatment of aggression in over 300 patients reveals that most of these patients had been treated unsuccessfully with antipsychotic medications. While antipsychotic agents are certainly appropriate and effective when aggression is related to active psychosis, the use of neuroleptic agents to treat chronic aggression—especially that due to organic brain injury—is often ineffective and entails significant risks of serious complications. (p. 400)

One of these complications is the distraction of clinical staff from non-pharmacological interventions by the continual adjustments of antipsychotic medications. As documented by Harris (1989), these adjustments generally do not affect patient progress because patients tend to respond to medication either quickly or not at all.

Reviewers of this literature come to different conclusions about the most promising drugs for reducing aggression. Yudofsky et al. (1987) favour beta-blockers such as propranolol for organic brain diseases or injuries and other patients whose aggression is not tied directly to psychotic ideation, lithium for aggression related to mania, carbamazepine for aggression related to complex partial seizure disorder, and
antipsychotics for aggression related to psychotic ideation and for the acute management of violence. Hughes (1998) is much more sanguine than Yudofsky et al. (1987) about the use of lithium for aggressive persons who are not manic.

Glazer and Dickson (1998) favourably review the evidence for the effectiveness of clozapine in reducing persistent aggression in schizophrenia. Menditto et al. (1996), for example, found evidence that the substitution of clozapine for standard antipsychotic medication among chronic schizophrenics who responded slowly to a rigorous social learning programme reduced the frequency of assaults and threatened assaults.

There is also a literature on specialty drugs related to various neurotransmitters. For example, Volavka et al. (1990) tested the effectiveness of tryptophan in the treatment of 20 aggressive psychiatric inpatients. Injections of antipsychotics and sedatives were administered as needed to control agitated or violent behaviour. In comparison to placebo, TRP treatment had no effect on the number of violent incidents nor on the hostility-suspiciousness factor of the BPRS, although it significantly reduced injections of antipsychotics and sedatives.

BEHAVIOURAL TREATMENT

The most impressive reductions in assaults among very seriously schizophrenic patients using any treatment type were achieved by Paul and Lentz (1977), who employed a 48-hour time-out contingency imbedded in a sophisticated token economy programme. The same time-out procedure was less effective in a milieu therapy programme, where it did not totally eliminate assaults. This impressive reduction in assaultiveness produced by the behavioural social learning programme was not related to antipsychotic medication. Similar dramatic reductions in assaultiveness were achieved by Beck, Menditto, Baldwin, Angelone, and Maddox (1991), who implemented a social learning programme with a 24-hour time-out period for aggressive psychotic patients held in a maximum security psychiatric facility.

Unfortunately, the demonstration of complete programme control of staff behaviour in the Paul and Lentz (1977) social learning programme is unique in the literature. Behavioural treatment is usually not nearly as well implemented as it was in Paul and Lentz's programme and is, therefore, not as effective. For example, a behavioural programme developed at the maximum security Oak Ridge psychiatric facility awarded points for off-ward and on-ward work, room care and self-care, and ratings of mood and cooperation. These points were accumulated weekly, and the weekly net totals determined patients' privilege levels for the next week. Points were subtracted for misbehaviours according to a fixed fine schedule from the accumulating total as well as the current total, so they could, if large enough, result in an immediate drop in privilege level and an increase in staff surveillance. This programme has been described in several sources (Harris, 1989; Quinsey, 1981).

The programme appeared to increase the fairness and consistency with which privileges were awarded and taken away by staff. There was also evidence that the programme was a good assessment instrument because assaults were unlikely in locations in which the patients had to have exhibited success in the programme in order to obtain access and most likely in situations that patients were eligible to be
in regardless of their privilege level (Harris & Varney, 1986; Quinsey & Varney, 1977; Rice et al., 1989).

An evaluation of this programme was conducted by examining predictors of high point earnings in weeks 7 through 12 after admission (N = 113) and the prediction of violent and general recidivism over a 6.5-year average follow-up period (N = 92) (Rice, Quinsey, & Houghton, 1990).

Intercorrelations among mood, cooperation, room care, self-care, work scores, and point earnings for the second week of treatment were all very high. Number of days confined was also highly negatively correlated with other programme variable predictors. Point earnings significantly increased over the 12-week period. Points earned in weeks 7 through 12 were predicted by point earnings in week 2, less confinement in the first 2 weeks, having criminal charges leading to admission, and having been found unfit for trial or Not Guilty by Reason of Insanity. Considering only those patients who started off poorly in the programme, those who improved were less likely to have been referred from another psychiatric hospital and less likely to have been married.

Length of stay in Oak Ridge (mean of 11 months and median of 4 months) was predicted by having charges leading to admission, being referred from another psychiatric hospital, having been confined more frequently in weeks 7 through 12, and having been more assaultive in the first 12 weeks in the programme. Following release, 51% of the patients were arrested and/or re-admitted to Oak Ridge. This form of failure was predicted by number of previous months in institutions, youthfulness, not having been found unfit for trial or Not Guilty by Reason of Insanity, and having been referred from another psychiatric hospital. Twenty-four percent of the patients were arrested or returned to Oak Ridge for committing a violent offence against persons. Violent re-offenders had spent more total previous months in institutions, were less likely to be psychotic, were less likely to have been employed prior to admission, and were more likely to have been confined during weeks 7 through 12.

The best predictor of future point earnings was past point earnings. At least half of the patients started off very well in the programme and continued to do well. Patients who did not improve were most often referrals from other hospitals who were assaultive and posed a management problem. Months until discharge was related to programme variables but added little to pre-admission predictors. Men found Not Guilty by Reason of Insanity or unfit for trial did better in the programme but were held for longer periods of time. Programme variables were very weakly related to general or violent recidivism.

There are a variety of explanations for these troubling but instructive results. First, there were issues of treatment design: The programme seldom involved immediate tangible reinforcements; the programme was neither individualized nor focused on the risk factors or “criminogenic needs” of the patients, and, in fact, the contingencies did not even make contact with the behaviour of almost half of the patients (who were performing well from the outset).

Similar difficulties were found in an earlier evaluation. Quinsey and Sarbit (1975) showed that patients were responsive to small alterations in the point system that allowed patients to buy commissary items or rent certain privileges with their points (in the form of tokens). Increases were found in points earned for on-ward work,
mood and cooperation ratings, and total points earned, but no significant differences were observed in room care and self-care ratings or in fines incurred. Although the group data were quite consistent in showing orderly improvements in point earnings over a 4-month period, individual data indicated that only some patients were responsive to this change in contingency. There is very good reason to believe that patients in these programmes were not actually learning new behaviours. A large number of unpublished observations indicate that when additional contingencies were arranged for individual patients using the method ordinarily used for awarding points in this programme (e.g., tokens for particular behaviours), these behaviours increased in a step function. These all-or-none increases in what were often complex behaviours suggest strongly that the programme functioned primarily as a motivational system. The fact that modelling, shaping, and chaining were seldom used in the programme increase the plausibility of this interpretation.

Second, there were problems concerning programme intensity, integrity, and fidelity of implementation (Rice, Quinsey, & Houghton, 1990). Although inter-rater reliabilities were quite acceptable for most of the rated behaviours, their high inter-correlations indicate that they all reflected either a halo phenomenon or a measure of general psychiatric disturbance. Inter-rater reliabilities on the mood and cooperation ratings were variable. These data speak to the lack of specificity of measurement and, thus, reward. Although the programme was in effect continuously, it was targeted at only a small proportion of the patients' behaviours, particularly those involving compliance and security issues.

In a subsequent study, Harris and Rice (1992) documented ever-increasing fines and increasing numbers of punishable acts specified by this programme over a 15-year period, despite strenuous efforts of psychology staff to resist this punitive trend. The increasing punitiveness of the programme was correlated with increasing assaultiveness of the patients. In general, it appeared that whatever clinical utility the programme may have had was eroded over time by drift from behavioural principles of treatment.

STAFF TRAINING

Training programmes have to be either compatible with staff attitudes towards assaultive patients and their management or designed to modify them. An old literature on the "aide culture" amply documents punitive and moralistic attitudes among nursing staff (Ellsworth, 1968). Crichton (1997) used videotape vignettes to show that nursing staff tend to perceive patient assaults in moral terms. More specifically, Harris, Rice, and Preston (1989) examined the perceptions of staff and patients in a maximum security psychiatric institution concerning the least restrictive alternatives for the short-term control of disturbed behaviour. Staff and patients ranked the interventions in the same order of intrusiveness: mechanical restraint with constant observation, seclusion, sedative injection, loss of clothing, a sedative pill, and manual restraint. Experienced staff and patients rated the interventions as less aversive than inexperienced staff and patients. Staff, especially inexperienced staff, expected that the heavier techniques would prevent future occurrences but nevertheless had a greater preference than the patients for the heavier techniques. There was a large
discrepancy between staff and patients in the relative frequency with which the various techniques were employed: patients reported that staff more frequently used heavy techniques, and staff reported that they more frequently used light techniques (though preferring to use heavier ones).

Careful documentation provides evidence that the aggression of mentally ill patients does not emanate solely from their psychopathology. Rather, aggressive incidents arise out of interactions among patients and between patients and staff. Some studies have found that staff are the recipients of patient aggression more frequently than patients, despite their smaller numbers. In a 10-year study of assaults in a maximum security psychiatric hospital, Rice et al. (1989) found that staff were the victims of assaults about half the time. These observations and a review of the literature on police-civilian disputes led Rice et al. (1989) to develop a 5-day course designed to train front-line staff in assault prevention as well as effective management of assaults when they occurred. The course covered the prevention of violence through security measures and calming interventions, dealing with explosive situations through defusing techniques, manual restraint, seclusion, and self-defence, and follow-up interventions including interviewing and conflict-resolution techniques. Training methods relied heavily on practice in simulated situations.

Restraint and self-defence techniques were chosen not only because of their effectiveness but also on the basis of their “learnability.” A careful examination of trainees’ spontaneous responses to simulated physical situations sometimes led to the identification of effective techniques that were easy to learn because they required only slight modifications to spontaneous reactions; in other instances, such an examination identified ineffective habits that could be corrected with practice (Quinsey, Marion, Upfold, & Popple, 1986; Rice et al., 1989). Practice in these techniques was designed not only to teach their mechanics but also to demonstrate the conditions (such as weight disparities between trainee and simulated patient) that influenced their effectiveness.

Evaluation of this programme focused on four sets of measures: (1) measures of knowledge and skills obtained from simulated crises, (2) measures of programme acceptance, including a 15-month post-course questionnaire, (3) measures of patient affect and morale, and (4) incidents of violence and injury (Rice, Helzel, Varney, & Quinsey, 1985). Eighty-nine staff who received the training improved more than control staff on tests of crisis-related skills and knowledge. Measures of programme acceptance indicated strongly favourable responses, and patient affect and morale increased relative to control wards. Assault frequency declined immediately after implementation of the course, and staff injuries were reduced.

Most, but not all, evaluations of staff training programmes have been positive. Infantino and Musingo (1985) evaluated a 3-day training programme in aggression-control techniques. The curriculum was based on criterion-referenced performance standards pertaining to verbal defusing and non-offensive physical action. Ninety-six attendant staff were followed for between 9 and 24 months. Thirty-seven percent of the 65 untrained staff were assaulted, of whom 19 were injured, and one of the 31 trained staff was assaulted and not injured. Contrary results were obtained by Parkes (1996) in an evaluation of training in control and restraint techniques in a medium security facility. Staff were more likely to be injured during restraint after
training than before, possibly because the training programme taught staff to approach a patient from in front rather than from behind.

Taken together, these studies indicate that staff training can be effective in reducing staff injury if the training focuses on verbal interventions and sound physical techniques, has ethological validity, and ensures that staff acquire the techniques being taught. Future course development can benefit from Crowner, Douyon, Convit, and Volavka's (1991) videotape method of observation (especially if supplemented by audiotape recording). For example, Crowner, Stepcic, Peric, and Czobor (1994) found that 25 of 35 videotaped assaults were preceded by a warning, a provocation, or both. Of the 16 that were preceded by warnings, the nature of the warning was, in descending order of frequency: threatening gestures, approaching the victim and standing before him/her, pacing in front of the victim, intrusive gestures, and yelling at the victim. This kind of videotape can be profitably employed in staff training using methods developed by Rice et al. (1989).

Lastly, Flannery et al. (1998) report declines in assault frequency in three state hospitals following implementation of the Assaulted Staff Action Program previously shown to reduce assaults in a single institution. The programme involves peer support for staff who have been involved in an assault. Similarly, Quinsey (1977) report a reduction of assaults against staff in a maximum security psychiatric institution following the introduction of a peer and management staff debriefing and support task force that met with attendant staff after they had been involved in assaultive incidents.

Conclusions and Future Research

I last reviewed the literature on institutional violence in the mid-1980s, and it is apparent that we know quite a bit more now than we did then. For example: (1) Actuarial methods can estimate the long-term likelihood that individuals will be assaultive. (2) Dynamic variables signal the imminence of very serious assaults. (3) Certain medications can reduce assaults among patients with particular diagnoses. (4) Behavioural methods can eliminate or markedly reduce assaults among chronic schizophrenics. (5) Staff training in interviewing, security, and physical management can reduce assaults and staff injury.

Nevertheless, our understanding of institutional violence remains unsatisfactory. In the large literature on institutional violence among the mentally ill, only a few studies rise above simple description. Even some of the intervention research has a "medication of the month" flavour. Further improvement in our understanding will require theory. To date, much of the theory that has been applied to understanding institutional violence pertains strictly to proximal causal mechanisms. Proximal mechanisms, however, are best identified and understood in a functional context (for a discussion of these issues see McGuire & Troisi, 1998). Such a context could be provided by an ethological analysis of human aggression buttressed by a theory of ultimate cause. For example, a good portion of institutional assaults appear to result from dominance or status disputes of the type commonly seen among young men (e.g., Daly & Wilson, 1988). This interpretation is supported by assailters' reports
that their aggression resulted from teasing or provocation and by the success of staff training programmes that emphasize “face saving” verbal interventions. Of course, not all institutional aggression results from inter-male status competition with its link to the ultimate cause of intrasexual selection; there are undoubtedly other, functionally different, forms of institutional violence. It is also likely that aggression that may have been motivated originally by status competition comes to be controlled by reinforcement contingencies (as implied by the findings of Paul & Lentz, 1977). The point of this is that we require a functional typology of aggressive behaviour rooted in theories of ultimate causation that can inform our search for proximal causal mechanisms. The videotape technology developed by Crowner and associates appears admirably suited for an ethological analysis of institutional violence.

So, how about my Ojibway friend? From the literature, he appears to be among those patients whose assaultiveness was directly related to psychotic symptomatology and, therefore, one whose aggression could be controlled with antipsychotic medication. He would not be expected to be a persistently assaultive individual. Patients with character disorder and lower-functioning individuals are more likely to be chronically assaultive, with the former exhibiting markedly more serious assaults. The lack of some provocation to this assault was unusual, but the provocation may simply have not been observed.

Notes

1. The abstract of the Harris and Varney paper incorrectly states that psychotic patients were more likely to be assaultive than non-psychotic patients. In fact psychotic patients were less likely to be assaultive than non-psychotic patients.

2. Another item that has similar content to the Therapeutic Alliance Scale is denies all problems from the Management Problem Scale of the Problem Behavior Checklist (Quinsey et al., 1998). This item is related to static risk and number of clinical problems as rated by staff. It is also closely related to a known dynamic predictor of violence, the Inappropriate and Procriminal Social Behaviors Scale, a file version of the staff-rated Management Problem Scale (Quinsey, Coleman, et al., 1997).

3. For a review of the early behavioural literature on aversive techniques, see Harris and Ersner-Hershfield (1978).

References


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