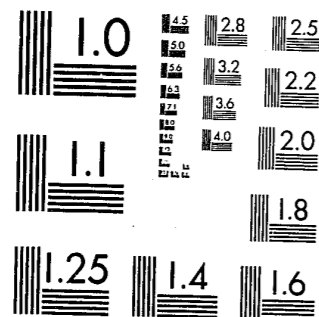


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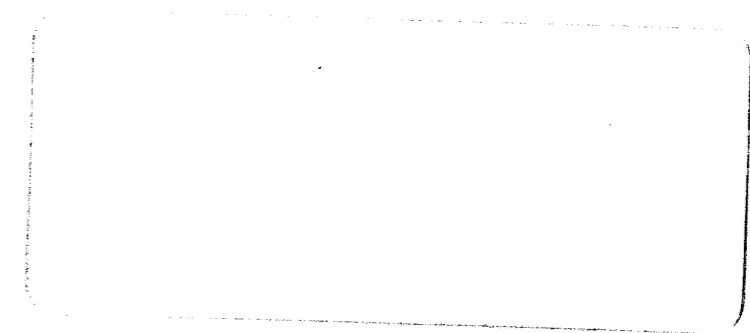
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# WORKING PAPERS IN FORENSIC PSYCHIATRY



## TROPOLITAN TORONTO

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Predicting Dangerous Behaviour:  
A Review of the Literature

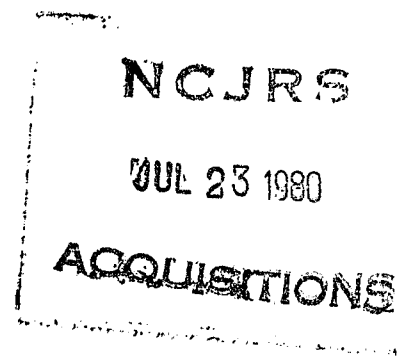
D.S. Sepejak

W.P. #17, 1979

This project was supported by Grant DM 395,  
"The Assessment of Dangerousness",  
provided by the Ontario Ministry of Health

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METFORS  
999 Queen Street West  
TORONTO, Ontario.  
M6J 1H4



Abstract

Over the past decade, the ability of the mental health professional to assess the likelihood of dangerous behaviour in the mentally disordered offender has been subjected to severe criticism. The accuracy of clinical judgement in this regard appears doubtful in light of several investigations which show a large number of false positive predictions.

In the present paper, investigations in the area of dangerous behaviour and its prediction are reviewed in order to examine, primarily, the methodology on which their results are based. A major contention of this review is that most of the empirical studies in this area, to date, exhibit serious methodological flaws (e.g., lack of appropriate contrast groups, use of inferred rather than stated clinical predictions, variable length of the follow-up period, failure to examine the inter-clinician reliability of predictions) which cast doubt upon the claim that mental health professionals very often fail in their attempts to predict dangerousness behaviour.

In a final note, recommendations are offered for use in the design of a methodologically-sound study which would permit stronger conclusions to be drawn with respect to the clinician's ability or inability to make predictions.

Introduction

Whether we prefer the concept of "dangerousness" (i.e., a quality of the individual) or that of "dangerous behaviour" (i.e., acts which are the result of situational, as well as personality factors.[1]), its prediction remains both an important social concern and as a source of anxiety for mental health professionals. The ability to predict whether or not an individual will act dangerously safeguards two major social principles. Society has given itself the right to protect its members from those who would inflict physical harm if left to their own devices. This right to protection allows for the segregation and incapacitation of dangerous individuals. On the other hand, the prediction of non-dangerousness takes on an importance of its own in a society where freedom of the individual is supported as one of our most fundamental tenets. Accuracy, then, is a crucial goal in the area of dangerousness prediction. To err in favour of protecting society is to violate freedom of the individual and, conversely. Klein (1976) reflects on the matter:

...we must continually concern ourselves with the social costs attached to measures which make the claim of accentuating social defence or civil liberties alone. From time to time events may occur which may lead us to focus our concern on one of these goals at the expense of the other. This is understandable; it does not mean, however, that we should lose sight of the need to optimize both goals, while achieving a sense of balance...[2]

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1. Monahan, 1975; Megargee, 1976.
  2. Klein, 1976, p. 110.

What of the task of "optimizing both goals, while achieving a sense of balance"? While the ramifications of accuracy in prediction extend to our social and legal structures, it is the mental health professional, burdened with the task of predicting dangerousness, who is ultimately responsible for striving toward accuracy. To complicate the task further, dangerousness has been described as a relatively infrequent-occurring phenomenon within the general population, as well as within the individual (i.e., often, a "once in a lifetime" event). The undertaking is much like finding a "needle in a haystack". Confronted with the dilemma of deciding when to predict dangerousness and when to predict the lack of it, the psychiatric clinician may be compared to the little white mouse in a learning experiment. Two courses of action are presented and that course which offers more reward or less punishment will eventually become the favoured of the two. If a clinician predicts that an individual is likely to act dangerously in the future and because of this prediction the individual is incapacitated through institutionalization, an error in prediction will most likely exist without detection. Once measures are taken to prevent the predicted dangerousness, the absence of such behaviour serves to validate the prediction and, likewise, justify the preventive measures. The clinician may be haunted by conscience since the correctness of his or her prediction will probably never be indisputably ascertained, but basically no visible negative consequences will be suffered as a result of over-prediction. On the other hand, the failure to detect an individual who will act dangerously is an error which is easily observed after the fact and can

be swiftly brought to the attention of the "offending" clinician. For every prediction of "not dangerous" which results in an individual's release into the community, the clinician sits under a "sword of Damocles" in anticipation of error, for the prediction remains accurate only as long as the individual refrains from acting dangerously. Thus, although the clinician continually strives for the accurate prediction of dangerous behaviour, it would seem only logical that he or she would over-predict if any errors are to occur.

Up to this point, we have discussed the social necessity of accurately predicting dangerousness, the inherent problems in obtaining accuracy and the possible tendency in clinicians to over-predict in the case of error. In recent years, a considerable number of studies purported to have described empirically the degree of accuracy with which dangerous predictions have been made. Our aim in the present review is to examine these studies in some detail in order to establish: a) the extent to which the results of these studies are based on soundly designed and carefully executed research; b) some direction for the design of a new methodologically-sound study in this area. In this review, we have limited ourselves to consider only those studies in which some clinical predictions were made (either during the course of the study or at some time previous), and in which some actual behavioural outcome data are known.

A - Examinations of Post-Release Behaviour in Relation to Pre-Release Characteristics

The first type of study in the area of dangerous prediction employs as

its subject material mentally disordered offenders who have been released from maximum security settings. An American Supreme Court decision in 1966 gave rise to a series of studies of this nature. The Court ruled that civil commitment proceedings by jury were necessary in order to detain involuntarily prisoner-patients in psychiatric institutions after the expiration of their sentences. As a result, some 967 patients (often referred to as the "Baxstrom" patients after the plaintiff in the case) were released to either civil hospitals, outpatient settings or to the community. These releases presented an opportunity for researchers to examine the post-release behaviour of a large number of mentally disordered offenders who were considered dangerous at one time.

Some of these studies do not deal with the issue of dangerousness, per se but rather with the degree of community adjustment exhibited by the Baxstrom patients (eg., Steadman and Keveles, 1972) or the characteristics of those patients who eventually returned to maximum security hospitals (eg., Steadman, 1973). An example of a study which searched for evidence of any post-release "violent assaultive behaviour against persons"[3] is that of Coccozza and Steadman (1974) who followed-up 98 Baxstrom patients several years after their release into the community. Rehospitalization was examined in addition to evidence of rearrest since, in some cases, it may happen that a

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3. Examples include the offences of homicide, rape, manslaughter, assault, robbery.

violent act committed by an ex-patient would lead to rehospitalization, rather than rearrest and conviction. Coccozza and Steadman developed a "Legal Dangerousness Scale (LDS)" based on the pre-release characteristics of the 98 patients. This scale was composed of four items: i) presence of juvenile record; ii) number of previous convictions; iii) presence of violent crime convictions; iv) severity of original offence. Points were given for the presence of each item such that a higher score signified a more serious criminal history. Since previous analyses revealed a relationship between LDS scores, age of the patient and community adjustment, the authors decided to relate these two variables to the presence or absence of post-release dangerousness. As such, the patients were divided into two groups; 1) LDS scores greater than or equal to five and under 50 years of age with the expectation that these patients would act dangerously and 2) LDS scores less than five and/or 50 years of age or more, with the expectation that these patients would not act dangerously. Coccozza and Steadman found that 14 of 98 patients or 15 percent expressed dangerous behaviour during the years of follow-up observation. Of these 14 patients expressing dangerous behaviour, 11 had been placed in the "expected to act dangerously" category and the remaining 3 in the "not expected to act dangerously" category, based on the LDS score and age criteria. This first indication of a fairly accurate statistical prediction of dangerousness is weakened, however, since of the 84 patients who were not rearrested or rehospitalized for committing acts of violence, 25 had been assigned to the "expected to act dangerously" category. As the authors point out, if no attempts

had been made to predict dangerousness based on the pre-release characteristics used in this study, only 14 errors would have resulted from assuming non-dangerousness for all 98 patients. As it is, the division of patients into prediction categories resulted in a total of 28 errors (i.e., 3 "misses" and 25 predictions of dangerous behaviour where none occurred).

There are some inherent methodological weaknesses of the Coccozza and Steadman study. As the authors point out, the Baxstrom patients are a highly specific subject population such that generalization of results is made difficult. The Baxstrom patients are comparatively older than a large proportion of currently institutionalized mentally disordered offenders and have spent, on the average, 14 years in a maximum security setting. In addition, it is difficult to be completely satisfied with the predictive success of the study since, while 80 percent of those expressing dangerous behaviour possessed the critical pre-release characteristics, 70 percent of those having the critical pre-release characteristics did not express dangerous behaviour. Likewise, if all cats have four legs, we cannot necessarily reverse the proposition and suggest that all four-legged animals are cats. Aside from the dubious accuracy of Coccozza and Steadman's prediction strategy, does the finding that only 14 patients of a total of 98, who were judged to be dangerous at one time, offer us a realistic description of the degree to which the original clinical predictions were successful? If we accept this finding as a

true description, then the original predictions which resulted in the commission of these patients to maximum security settings were, indeed, invalid in the majority of cases. The main methodological restriction of the study in this regard, however, is the fact that we have no way of knowing whether the post-release dangerousness ratio of 14 to 98 is a reflection of incorrect original predictions (i.e., 84 of 98 patients would not have acted dangerously without maximum security supervision), treatment success (i.e., the dangerousness potential was therapeutically reduced in 84 of 98 patients), or the effect of time (i.e., the dangerousness potential in 84 of 98 patients decreased over several years after the original prediction). In short, there is no opportunity in a study of this nature to examine control groups. We have at our disposal only those patients who were judged to be dangerous and committed and later released.

A series of studies executed by Quinsey, among others, involves a similar type of subject pool and research design to that of the Baxstrom patient studies. In one such study, Quinsey, Warneford, Pruesse and Link (1975) investigated the post-release behaviour of 91 maximum security patients released from Oak Ridge[4] by order of the Central Ontario Regional Board of Review (which has the authority to release patients without or against the advice of hospital staff) from 1967 to 1971. Although the main purpose of the study was to examine

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4. The maximum security division of the Mental Health Centre in Penetanguishene, Ontario.

the ability of patients to adjust to the outside community without criminal incident or returning to Oak Ridge, the investigators examined R.C.M.P. conviction records and readmissions to Oak Ridge in order to ascertain whether or not any of the 91 subjects in the study later committed a violent act (i.e., threatening, assault, robbery with violence, rape, etc.). Of the 91 patients released, 15, or 16 percent, subsequently committed violent acts. Pre-release characteristics obtained from the patients' clinical files (eg., age, education, psychiatric disorders, time in institutions, etc.) were compared with behavioural outcome data. History of violence before admission to Oak Ridge was the only factor which surfaced as a statistical index of post-release violence.

Unfortunately, as in the case of Coccozza and Steadman (1974), the study fails to offer a description of the dynamics involved in dangerousness prediction. The authors comment that "most men housed at Oak Ridge have been or are considered to be more dangerous than those housed in regional psychiatric hospitals" (p. 264). The validity of this assessment has not and, indeed, cannot be tested within the confines of the study's methodology and subject population. We are told that only 16 percent of the sample acted dangerously and, yet, are left wondering about the reasons for this low rate of dangerousness; over-prediction of dangerousness before admission to Oak Ridge?, efficiency of treatment at Oak Ridge?, accurate prediction of dangerousness for those released from Oak Ridge? Fortunately, Quinsey et al have shown that length of follow-up is an important

factor affecting behavioural outcome. As the length of the follow-up period was increased from one to four years, "failure rate" increased from 23 percent to 38 percent. Including length of follow-up period, therefore, as a variable for study would seem appropriate in any future research concerned with dangerousness prediction.

A study by Quinsey, Pruesse and Fernley (1975a) is basically similar to the previous study described in terms of the limited conclusions that can be drawn about dangerousness. There appear to be some methodological improvements, however, with regard to using patient interview data to measure post-release behaviour, rather than relying simply upon outcome data inferred from reconviction and rehospitalization records. In addition, the investigators administered an Environmental Deprivation Scale (EDS) to each subject in order to ascertain the amount of environmental support for non-criminal activity. It may, then, be worthwhile to incorporate post-release (or post-prediction) data into an improved research design, as well as environmental factors which may encourage or discourage dangerous behaviour.

In a further study by Quinsey, Pruesse and Fernley (1975b), "violence thought to be relatively likely by staff" was included as a pre-release predictive measure, though this measure was determined by external coders who read the last staff conference report on each subject before discharge and inferred the staff's perceptions of violence. As in the previous Quinsey studies, the main purpose was an

examination of post-release community adjustment so that this "likely to be violent by the staff" variable is related only to success and failure outcome and not dangerous behaviour, as such. Even so, the gathering of pre-release clinical opinion with respect to dangerousness (albeit "second hand" and without data on the reasons for the opinion) represents a step forward methodologically since contrast group comparisons present themselves as a possibility. That is, since all subjects in the study were released, behavioural outcome data for those judged likely to be dangerous could be compared to the behavioural outcome data for those judged not likely to be dangerous. Some index of clinical pre-release prediction accuracy could then be obtained. Unfortunately, this analysis was not undertaken.

While the studies discussed up to this point have looked at pre-release characteristics and behavioural outcome of adult maximum security patients, Wenk, Robison and Smith (1972) carried out a similar study with juvenile offenders released on parole. For each of 4,146 juvenile offenders released during a one-year period, data of several kinds were gathered: case history of alcohol use, suicide attempts; past and present psychiatric diagnoses; MMPI and intelligence test results; counsellor ratings of academic or vocational potential; history of violence. During a 15 month follow-up period, 104 of the 4,146 subjects committed "violent violations of parole". Analyses of pre-parole collected predictive data and incidence of subsequent dangerousness, however, failed to reveal any significant relationships.

Interestingly enough, the level of dangerousness in this study was found to be a little over two percent. The studies presented earlier reported a 16 or 17 percent incidence of dangerous behaviour during follow-up. This discrepancy in rates may be due, of course, to the differences in length of follow-up (follow-up continued over several years in the studies of Coccozza and Steadman, 1974; and Quinsey, Warneford, Pruesse and Link, 1975). There is the possibility, though, that the two percent dangerousness figure may be accounted for by the somewhat restricted environment of the study's subjects during follow-up. Although the authors do not make this clear, if the juveniles were all on parole at the time of follow-up, a resulting effect on behaviour may be present. In their criticisms of the study, Cohen, Groth and Siegel (1978) cite the work of Shapiro, Cohen and Bugden (1975) who found that while many of the parolees in their study did not commit offences, an increase in criminal acts was observed once parole ended. As such, one major methodological weakness in the study may be the restricted circumstances of the subjects at follow-up; prediction cannot be successfully tested where there is the possibility that the criterion behaviour is being affected by other factors which have not been taken into consideration during the final analysis.

The studies explored so far have attempted to relate various demographic and criminal background characteristics to the presence or absence of future dangerous behaviour. These attempts have been met with failure or, at best, qualified success. With regard to our originally stated aims of searching for a methodology which would

offer a true picture of the accuracy or otherwise of dangerous predictions, these studies leave much to be desired. The behavioural outcomes in each of these studies are difficult to interpret given that explanations may be derived from various sources; inaccuracy of the original clinical prediction (i.e., pre-admission), efficacy of treatment (or parole supervision), accuracy of the prediction attached to decisions to release individuals into the community. It is difficult to see how this situation could be remedied given that the subjects under investigation have already been judged as dangerous before any research study had been designed and implemented (Coccozza and Steadman, 1974; the Quinsey, et al studies, 1975). Furthermore, the Wenk, Robison and Smith (1972) study makes it difficult to draw sound conclusions with regard to prediction since the potential of dangerousness as an outcome may be reduced by parole conditions of the subjects.

Aside from these obvious methodological weaknesses, certain aspects of the previous studies would appear warranted as inclusions in the design of any new investigation into the area of dangerousness prediction. The results of the Quinsey, Warneford, Pruesse and Link (1975) study suggest that the length of the follow-up period is an important factor which should be taken into consideration. In addition, the use of interview data to measure behavioural outcome rather than simply records of arrest and rehospitalization, as well as the consideration of environmental facilitation or inhibition of dangerous behaviour (Quinsey, Pruesse and Fernley, 1975a) may prove to



be worthwhile additions to a study of dangerousness.

B - Examinations of Behavioural Outcome in Relation to Clinical Recommendation

A second type of study in the area of dangerousness prediction examines the behaviour of subjects subsequent to some form of clinical recommendation with respect to disposition, treatment, or release. Since the subjects of these studies are, in the main, mentally disordered offenders, the clinical recommendations are assumed to be based, to a large degree, on the assessed dangerousness of the individuals. Behavioural outcomes which indicate the presence or absence of dangerous behaviour permit a test of the clinical accuracy of dangerousness prediction, or so it is argued by the authors of such studies.

Schlesinger (1978) examined the clinical recommendations for sentencing disposition made by a social worker, a psychologist and a psychiatrist for 122 juvenile delinquents assessed at a psychiatric clinic during a six month period. A prediction of whether or not a juvenile was thought to be dangerous was inferred from the type of final recommendation (i.e., a recommendation of a closed facility or a maximum security setting was taken to mean a prediction of dangerousness). Of course, any explicit references to dangerousness found in the clinicians' notes were taken into consideration as well. During a one-year follow-up period, information from probation department contacts and family court files of reopened cases was used to establish whether or not the juvenile subjects had been involved in

"behaviour which resulted in harm to self or others" (p. 40). The results of this investigation, that seven of the 122 juvenile offenders or 5.7 percent committed violent offences during the one-year follow-up period subsequent to clinical recommendation for sentencing, showed that recommendations were not significantly related to behavioural outcome.

There is one major flaw in the design of this study on which the conclusion of inaccurate clinical prediction rests. Schlesinger points to this flaw himself by referring to the possible relationship between clinical recommendations and behavioural outcome. That is, a disposition based on the likelihood of future dangerousness (eg., maximum security setting) may act to inhibit that behaviour or subsequently reduce its potential because of effective treatment, for example. Descriptions of the prediction-outcome relationship lose validity whenever the outcome may be interpreted as a direct result of the prediction. The design would have been greatly improved and the results, therefore, made acceptable with the presence of a contrast group for which recommendations were made and yet not followed by the Court. In light of the study's results (i.e., a high degree of clinical inaccuracy) Schlesinger concludes:

We have not established that such a thing as "dangerousness" exists separately from the acts by which we have identified it or is an entity unto itself at all. That is, might it be more appropriate to view the occurrence of these abhorrent acts as situationally determined, transitory and therefore less amenable to identification in terms of a psychological construct? (p. 48)

It is ironic that the results of Schlesinger's study may be interpreted to mean that clinicians do define dangerousness as "situationally determined, transitory" since recommendations for sentencing may have been made with the intention of inhibiting dangerous behaviour through situational restraints. Without a contrast group, as described previously, incorporated into the design, it is possible to conclude from Schlesinger's study that clinical prediction of dangerousness is very accurate, even to the extent that only 5.7 percent of the disposition recommendations resulted in the lack of a reduction in dangerous behaviour.

Aside from this major methodological flaw, it may be argued that inferences of dangerousness assessment made from the final type of disposition recommendation, plus the unsystematic inclusion of any clinical allusions to dangerousness likelihood, per se, constitute an incomplete (and perhaps, erroneous) representation of dangerousness predictions in each of the 122 cases. If clinical prediction of dangerous behaviour is being investigated, then the presence or absence of such a prediction should be defined as explicitly as possible, preferably, in terms of a direct assertion made by the clinician. Finally, although several clinicians were involved in offering a disposition recommendation, the degree of inter-clinician agreement or reliability was not investigated in this study. A description of the prediction-outcome relationship in the area of dangerousness would be greatly enhanced if we could establish the degree to which these predictions enjoyed clinical consensus.

Cohen, Groth and Siegel (1978) reported a study carried out at the Massachusetts Treatment Centre for Sexual Offenders. In this study, 160 sexual offenders undergoing treatment were released from 1958 to 1974 and their post-release behaviour investigated. During this period, 131 of the subjects were discharged through clinical staff recommendations (i.e., "complete treatment" group) and the remaining 29 subjects were released through judicial order against the advice of the clinical staff (i.e., "incomplete treatment" group). Any subsequent commissions of "a violent offence" were recorded for all subjects. The authors report that while 31 percent of the "incomplete treatment" group committed post-release violent offences, only 14 percent of the "complete treatment" group acted in a similar manner. The authors conclude that, "dangerousness may be reduced by treatment" (p. 36).

It is, indeed, fortunate that the authors provided a contrast group for the purposes of comparison (i.e., not only those subjects released who were so recommended, but a group which was released without recommendation), but the clinical prediction of dangerousness remains unclear. It is not certain from the description of the study whether or not clinical recommendation for release was based solely on the expectation of post-release absence of dangerous behaviour. Decisions to release or retain a patient may depend on the evaluation of appropriate social functioning, emotional stability, etc., which are not directly related to expectations for dangerousness. Furthermore, while two groups are compared with respect to behavioural outcome, we

do not have a complete picture of the relationship between all clinical decisions and the individuals affected by these decisions. What of the patients who were not recommended for release, and consequently not released? Since they remained at the treatment centre it would be difficult indeed to compare their behaviour to the post-release behaviour of patients living in the unrestricted environment of the community and, because of this, we have no estimation of the accuracy of the decisions in these cases.

An important methodological weakness of the study would seem to be the highly variable nature of the follow-up period (i.e., seven months to 14 years) without analytical and interpretive consideration given to this factor. It may have been that members of the "incomplete treatment" group, released without clinical approval, were living out in the community for a longer period of time than those of the "complete treatment" group and, therefore, were provided with a greater opportunity for exhibiting the criterion behaviour. If this were the case, the "incomplete treatment" group would be expected to express a higher rate of dangerousness without necessarily being more dangerous than its "complete treatment" counterpart. The conclusion that dangerousness may be reduced through treatment, therefore, may not hold. Furthermore, the 17 percent difference in dangerousness incidence between the two groups used to draw this conclusion ignores the fact that 69 percent of the patients released against clinical advice remained in the community without incident. Once again, we are left wondering whether this 69 percent figure represents the

proportion of patients who never needed treatment in the first place (i.e., would not have been dangerous, regardless) or that proportion which benefited from treatment, despite the clinical staff's opinion to the contrary. Finally, as in the study by Schlesinger (1978), a measure of inter-clinician reliability in decisions to release from treatment has not been obtained.

A third study of this nature by Hodges (1971) employed as subjects 1,340 adult delinquents referred to the Patuxent Institution for diagnosis. The purpose of the diagnosis was to ascertain whether or not the individual could be termed a "defective delinquent" under Maryland law, an individual who:

clearly demonstrates an actual danger to society so as to require such confinement and treatment, when appropriate, as may make it reasonably safe for society to terminate the confinement and treatment. (p.71)

Of the 1,340 delinquents, 444 were diagnosed as not "defective" by the institution clinical staff and returned to prison. From the "defective delinquent" category, three separate groups emerged: a) returned to a correctional institution by the Court (i.e., the "untreated" group); b) released by the Court from treatment before completion without clinical staff approval (i.e., the "partially treated" group); c) remained in treatment and released on parole with clinical staff approval (i.e., the "fully treated" group). During a follow-up period, in which every subject was assured a three-year

minimum time of being at liberty, FBI, State and local police records were examined for evidence of "personal offences", ranging from aggravated assault to murder. The incidence of personal offences for each of the three groups was 30 percent ("untreated"), 19 percent ("partially treated") and 10 percent ("fully treated").

While the principle aim of this study was to investigate treatment efficacy, some inferences may be made with respect to the effective investigation of dangerousness prediction. First of all, this study failed to gather behavioural outcome data on 60 percent of the original study sample (i.e., 444 subjects diagnosed as not defective delinquents and 360 subjects diagnosed as defective delinquents were not released at the time of the study) for whom some form of diagnosis was made.

While the difficulties of this procedure are evident for those subjects still in treatment (see Cohen, Groth, and Siegel 1978, discussed above), a follow-up of those individuals who were not diagnosed as defective delinquents would appear to have been feasible. Second, there were two sets of clinical decisions (i.e., a decision to classify as defectively delinquent or not and a decision to release or retain) that may have been analyzed in terms of differences or similarities in rationale and inter-clinician agreement.

The final study in this section is that of Kozol, Boucher and Garofalo (1972). Similar to the previously described studies in this section,

Kozol et al examined the clinical assessment of 592 convicted offenders (mostly sex offenders) with regard to dangerousness potential and the subsequent decisions for treatment and eventual release. The post-release behaviour of subjects was then examined during a follow-up period for evidence of "serious assaultive crimes". The incidence of dangerousness was the lowest in the group predicted not to be dangerous by the team of clinicians (under 9 percent). Sixteen percent of those subjects released from treatment through clinical recommendation subsequently committed assaultive offences. Those released after partial treatment without clinical approval and those diagnosed as dangerous but never treated, showed dangerousness levels of almost 28 percent and 39 percent respectively. Thus, as the authors conclude, efficacy of treatment has been established since rates of dangerous behaviour were lower where the Court followed most closely clinical recommendations for treatment.

Once again, as in the previous studies, treatment was very often carried out because of a prediction of dangerousness. Fortunately, the design of the Kozol et al study incorporated a methodological sophistication by executing follow-up of those subjects not predicted as dangerous and, therefore, not consequently involved in the treatment programme. Indeed, the study has investigated outcome behaviour under four separate conditions, a marked advance in comparison to the Schlesinger (1978) study, for example, where essentially only one group of subjects was examined. There is the possibility, however,

that dangerousness potential was confounded with treatment potential. That is, the Court may have declined recommendations for treatment or removed the patient from treatment prematurely, based on its assessment of the individual's potential for successful treatment (i.e., a treatment recommendation might have been refused where treatment was seen as not worthwhile). If those offenders assessed by the Court to be bad treatment risks were also the most dangerous, the Court in its acceptance and refusal of recommendations might have selected out the most dangerous of offenders. This might explain the higher dangerousness rates in the group of subjects refused the treatment recommendation.

Another additional advantage of this study is that it has initiated the articulation of the clinical decision-making process. The authors detail and discuss the clinical areas of inquiry which were employed as a basis for the final clinical recommendation. These areas of inquiry included "use of force and violence", "subject's view of himself", "subject's view of others", "way of relating to others", "view of his prospects for the future", etc. The authors note:

In practice, we pose a series of questions to ourselves. These reflect some but not all of our frames of reference and lines of inquiry. They do not constitute a check list, and they are not complete or final. They are suggestions and reminders to us - not a questionnaire put to the patient (p. 384).

Having proceeded this far, one wonders why the investigators did not make explicit these components of the decision-making process in order

to test their relationship to the outcome data. It would prove most informative to have examined these components with the intention of discovering which aspects, if any, were most strongly related to the accurate prediction of dangerous behaviour. As Kozol et al indicates:

There is nothing unique about the content of these diagnostic areas of inquiry. They are familiar to all students of human nature. (p. 385)

There is all the more reason to investigate them, then, as well as the inter-clinician consensus on each of these areas.

In summary, the studies which examine outcome behaviour in relation to clinical recommendations regarding dangerousness point to a number of aspects for research design that would add methodological soundness. In examination of these studies, it is evident that recommendations of treatment or disposition directly tied to behavioural outcome conditions should be avoided. In order to describe accurately the prediction-outcome relationship, this association should be free from the possibility of a causal influence. Secondly, contrast conditions should exist in order to draw valid conclusions. The follow-up behaviour of those individuals classified as dangerous and, yet, not committed for treatment should be studied in addition to the behaviour of those not classified as dangerous, and those classified as dangerous with subsequent treatment. Thirdly, if predictions of dangerousness are being studied, these predictions should be expressed

by the clinicians as clearly as possible, without room for ambiguity from inferential data. Finally, as discussed earlier, an attempt should be made to establish the degree of inter-clinician agreement or reliability with respect to the prediction of dangerousness.

C - Towards a Methodologically Sound Study of Dangerousness Prediction

The studies detailed in this review (see Appendix A for summary chart) have all dealt with the relationship of future behaviour and some previous classification of dangerousness potential, largely with respect to the mentally disordered offender, but often with other subject populations (i.e., juvenile delinquents, adult prisoners). Throughout the review, we have attempted to identify the methodological weaknesses of each study which would detract from the accurate representation of the dangerous prediction - behavioural outcome relationship. It should be clarified, at this point, that many of the identified methodological faults are usually the result of conditions beyond the control of the investigators. There are judicial and clinical procedures in this area of research which often will not or cannot be expected to bend at the whim of the researcher who must take things as they are. Keeping this in mind, we must then begin to work towards the construction of as methodologically sound a study as can be accomplished.

1. Subject Population - Previous investigations, such as the Quinsey et al (1975) studies and those involving the Baxstrom patients, have employed highly selective subject populations (i.e., already institutionalized at the time of study, often for several years

prior). In dealing with the mentally disordered offender, it would be preferable to study a population on which dangerousness assessments have not already been made, and in which subjects judged to be dangerous have an equal likelihood of being followed-up in the community at some later time.

2. Clinical Setting - In order to provide for the presence of contrast groups, a clinical setting in which assessments of dangerousness are specifically asked for and then directly acted upon should be avoided. The direct influence of prediction on outcome poses obvious interpretive difficulties as noted in the Schlesinger (1978) study. Avoiding this situation is, indeed, difficult since any information from a clinical assessment will be used, in part, by the Court for the formulation of its own decisions. If a sample were large enough, however, this might allow for the presence of subjects whose disposition may have been less the result of predicted dangerousness and more the result of other factors. This may happen in a large enough sample, since the Court does avail itself of many other sources of information towards making a decision, even though clinical assessment may represent a major contribution.

In addition, though this may not be a crucial component of a good study, it might be worthwhile to examine the predictions, independently arrived at, of a group of clinicians representing various disciplines (i.e., psychiatry, psychology, social work). This would not only permit the examination of the prediction accuracy among mental health professionals, it would enable us to investigate

inter-clinician reliability (i.e., relating the degree of agreement among clinicians with respect to predictions of dangerousness to subsequent behavioural outcome).

3. Predictive Measures - Clinicians' predictions with respect to future dangerous behaviour should be articulated as clearly as possible and without prediction inferences made from other types of clinical decisions, such as treatment/disposition/release recommendations. Taking the study by Kozol et al (1972) one step further, we may begin to itemize explicitly the component parts of the prediction formulating process and then relate these individual parts of the process to behavioural outcome data. This would aid in the description of how clinical predictions of dangerousness are constructed, in addition to permitting a test of predictive validity for each of the components. Furthermore, in light of the suggestion made by Cohen, Groth and Siegel (1978), any situational condition perceived as either inhibitors or facilitators of dangerous behaviour might be included as informative components in the formulation of predictions.

Clinically speaking, evaluations made by social workers, psychologists and psychiatrists may exert a powerful influence on the future of individuals by virtue of the mental health professional's status in society. As such, the mental health professional is often urged to be careful and sparing in his or her judgements of dangerousness. This attitude is reflected in the following:

No one can predict dangerous behaviour in an individual with no history of dangerous acting out. (Kozol et al, 1972, p. 384)

...it is unlikely that dangerousness can be predicted in a person who has not acted in a dangerous or violent way. (Rubin, 1972, p. 405)

Past conduct alone is not a sufficient predictor of future behaviour... However, to predict an act that has never occurred in an individual's history is an unwarranted test of clinical prediction. (Cohen, Groth and Siegel, 1978, p. 33)

The need for conservatism implied in the above quotes may be warranted and, indeed, commendable in light of the present state of research in the area of dangerousness prediction. For the purposes of studying predictions of dangerousness, however, clinical goals should be separated from research goals whenever possible in order that the clinician, as a subject under investigation, may be given free reign to his or her own intuitions and judgements. In other words, a research methodology should allow the clinician to predict dangerousness where there is no history of violence, for example, in order that the rationale behind this prediction may be fully explored. Likewise, even though the clinician is often expected by the Court to make a decisive prediction in one direction or the other with respect to future dangerousness, within the scope of a research study, he or she should be allowed the freedom to indicate absolute doubt with regard to a particular individual's potential for dangerousness.

4. Behavioural Outcome Measures - All of the studies reviewed have used as their outcome measures some type of formal recording of dangerous behaviour (i.e., arrests, convictions, rehospitalizations).

indeed, these measures are important and, yet, may not be totally accurate nor representative of the amount of post-prediction dangerous behaviour (i.e., there may be occurrences of dangerous behaviour which do not come to the attention of formal agencies). The possibility of over-looking incidents of dangerousness may be removed, in part, through the use of follow-up interviews with subjects (see Quinsey, Pruesse, Fernley, 1975a; Steadman and Keveles, 1972). The presence of any formally undetected incidence of dangerousness may surface through such a procedure, as well as the establishment of the subject's environmental circumstances at follow-up. This latter consideration may prove helpful in terms of interpreting behavioural outcome data as a function, in part, of environmental contingencies which may promote or inhibit dangerous behaviour.

Finally, and this has been noted previously, Quinsey, Warneford, Pruesse and Link (1975) have offered a convincing argument for considering length of follow-up period as a variable affecting behavioural outcome. A constant follow-up period for all subjects would be ideal, but since this is almost impossible to attain, analytical consideration of the length of follow-up as a factor is easy enough to ensure.

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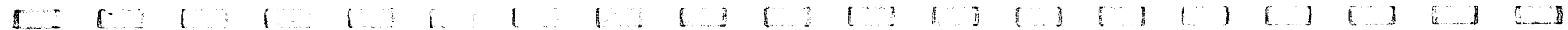
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APPENDIX A

Summary Chart

<u>Investigation</u>	<u>Subject Population</u>	<u>N</u>	<u>Prediction Measures for Dangerous Behaviour</u>	<u>Outcome Measures for Dangerous Behaviour</u>	<u>Results</u>
COCOZZA and STEADMAN "Some Refinements in the Measurement and Prediction of Dangerous Behaviour", 1974.	"Baxstrom" patients	98	<u>Legal Dangerousness Scale:</u> a) presence of juvenile record b) number of previous convictions c) Presence of violent crime convictions d) severity of original Baxstrom offence  <u>Age</u>	violent assaultive behaviour against persons leading to arrest or rehospitalization	14 of 98 patients or 15% committed a violent crime. Using prediction measures results in 3 misses and 25 false positives.
QUINSEY, WARNEFORD PRUESSE and LINK "Released Oak Ridge Patients: A Follow-Up Study of Review Board Discharges", 1975.	Oak Ridge Maximum Security Hospital Patients released by the Central Ontario Regional Board of Review	91	Prerelease characteristics obtained from clinical files.	Commission of violent crimes as noted in RCMP conviction records and through rehospitalization at Oak Ridge	15 of 91 patients or 16% committed a violent crime. A history of violence before the original admission to Oak Ridge was the only prerelease characteristic which correlated with post-release violence
QUINSEY, PRUESSE and FERNLEY "A Follow-up of Patients Found 'Unfit to Stand Trial' or 'Not Guilty Because of Insanity", 1975a.	Released Oak Ridge Patients formally detained under a Warrant of the Lieutenant Governor (WLG's)	56	Prerelease characteristics obtained from clinical files.	1. Commission of violent crimes as noted in RCMP conviction records and through rehospitalization at Oak Ridge. 2. Display of aggressive behaviour as noted by staff at psychiatric and correctional institutions	1 of 56 patients or less than 2% committed a violent crime. There were no reported displays of aggressive behaviour in the institution.

<u>Investigation</u>	<u>Subject Population</u>	<u>N</u>	<u>Prediction Measures for Dangerous Behaviour</u>	<u>Outcome Measures for Dangerous Behaviour</u>	<u>Results</u>
QUINSEY, PRUESSE and FERNLEY "Oak Ridge Patients: Prerelease and Post-release Adjustment", 1975b.	Three groups of released Oak Ridge patients: a) WLG's b) non WLG's c) released by order of the Central Ontario Regional Board of Review	60 (20 in each group)	1. Prerelease characteristics obtained from clinical files, including "violence thought to be likely by staff" as rated by external coders reading the last conference report on each patient before release.	Commission of violent crimes as noted in RCMP conviction records and through rehospitalization at Oak Ridge.	6 of 60 patients or 10% committed a violent crime. Prediction measures applied to success - failure ratio and not dangerous ratio.
WENK, ROBISON and SMITH "Can Violence be Predicted?", 1972. Second study reported	Juvenile Offenders on Parole	4146	1. Case history of alcohol use, suicide attempts, etc. 2. past/present psychiatric diagnoses. 3. MMPI, intelligence tests 4. counselor rating of academic/vocational potential. 5. violence history	Violent violations of parole.	104 of 4,146 or over 2% committed a violent violation of parole. No relationship between prediction measures and outcome.
SCHESLINGER "The Prediction of Dangerousness in Juveniles: A Replication", 1978.	Juvenile Delinquents evaluated by a psychiatric clinic	122	Recommendations for court disposition made by a team of clinicians (i.e., social worker, psychologist, psychiatrist).	Evidence of behaviour which results in harm to self or others as noted through Probation Department contacts and Family Court files of reopened cases.	7 of 122 juveniles or 5.7% committed violent offences. Clinical recommendation for disposition (from which an opinion of dangerousness was inferred) were not related to behavioural outcome



<u>Investigation</u>	<u>Subject Population</u>	<u>N</u>	<u>Prediction Measures for Dangerous Behaviour</u>	<u>Outcome Measures for Dangerous Behaviour</u>	<u>Results</u>
COHEN, GROTH and SIEGEL "The Clinical Prediction of Dangerousness", 1978.	Released sexual offenders who had undergone psychiatric treatment	160	Clinical staff recommendation for release from treatment = not dangerous. Clinical staff recommendation for continuation of treatment = is dangerous.	Commission of a violent offence.	18 of 131 or 14% recommended for release committed a violent offence. 9 of 20 patients released against clinical recommendation or 31% committed a violent offence.
HODGES "Crime Prevention by the Indeterminate Sentence Law", 1971.	Adult delinquents evaluated at the Patuxent Institute	1340	Diagnosis by clinical staff as a "defective delinquent" = is dangerous. Of those evaluated as "defective delinquents", one group was released by the Court without treatment, one group was released by the Court after partial treatment and a third group was released on parole after treatment was fully completed.	Personal offences as noted in the FBI, State and local police records of convictions.	The proportion of those committing violent acts was as follows: 30% in the untreated group; 19% in the partially treated group; 10% in the fully treated group.

<u>Investigation</u>	<u>Subject Population</u>	<u>N</u>	<u>Prediction Measures for Dangerous Behaviour</u>	<u>Outcome Measures for Dangerous Behaviour</u>	<u>Results</u>
KOZOL, BOUCHER and GAROFALO "The Diagnosis and Treatment of Dangerousness", 1972.	Sex offenders assessed for treatment potential	592	Psychological testing, case history, answers to several areas of clinical inquiry = clinical opinion	Commission of serious assaultive crimes.	The proportion of those committing assaultive crimes was as follows: 8.8% for those classified as not dangerous and released; 16% for those treated and released on clinical recommendation; 27.8% for those released after partial treatment against clinical recommendation; 38.7% for those clinically classified as dangerous but released without treatment.

**END**