
Introduction: The Prediction of Criminal Behavior

Static and Dynamic Variables

The prediction of both general and violent criminal recidivism of persons released from correctional institutions has received extensive study (for reviews see Andrews and Bonta, 1994; Blackburn, 1993). This literature indicates that a variety of measures are positively and reliably related to the probability of criminal recidivism.¹ Enough work has been completed to establish a consensus within the correctional research community about the classes of variables that are valid predictors of recidivism, and the degree to which they are related to the criterion behaviors of interest.

Among the best commonly available predictors are youthfulness and number of previous arrests. Other predictors, including age at

¹ There have been a large number of Canadian follow-up studies of released inmates: Andrews and Friesen (1987), Carlson (1973), Gendreau, Grant, and Leipziger (1979a), Gendreau, Madden, and Leipziger (1979b, 1980), Hart, Kropp, and Hare (1988), Malcolm, Andrews, and Quinsey (1993); Mandelzys (1979), Nuffield (1982), Porporino, Zamble, and Higginbottom (1990), Waller (1974), Wormith and Goldstone (1984), and Zarb (1978). Additional Canadian data come from follow-up studies of released mentally disordered offenders or mixed samples of mental patients and inmates (e.g., Harris, Rice, and Quinsey, 1993; Quinsey and Maguire, 1986; Quinsey, Rice, and Harris, 1995b; Rice, Quinsey, and Houghton, 1990b). American studies include Adams (1983), Barton and Turnbull (1979), Beck and Shipley (1987), Brown, D'Agostino, and Craddick (1978), Gottfredson, Wilkins, and Hoffman (1978), Gottfredson, Mitchell-Herzfeld, and Flanagan (1982), Heilbrun, Heilbrun, and Heilbrun (1978), Holland, Holt, and Brewer (1978), and Rhodes (1986).

first arrest, criminal versatility (variety of offending), alcohol abuse, and low educational attainment, are usually found to be positively but less strongly related to recidivism rates. Although there are conflicting findings on the use of institutional behavior in predicting postrelease recidivism, escape and escape attempts have always been found to be related to higher recidivism rates. Measures of antisociality, such as psychopathy (Hare, 1991), yield higher correlations with recidivism than single predictors commonly available in institutional files, although they are more expensive to collect.

It is of interest that the types of predictors found useful in predicting recidivism among convicted offenders are very similar to those that have been found to predict the initiation of criminal behavior in longitudinal studies of relatively unselected samples of children and adolescents. For example, Farrington (1995) describes those from the Cambridge Study in Delinquent Development as previous antisocial behavior, impulsivity, low intelligence and attainment, family criminality, poverty, and poor parental child-rearing behavior.

Given the predictive usefulness of single variables, one would expect that combining a variety of predictors would be a way of increasing reliability and therefore predictive accuracy. This has been done with good results by several investigators in various jurisdictions. Typically, a mixture of measures are given weightings determined by the degree to which they each singly differentiate between recidivists and nonrecidivists, and the weightings are simply summed, following the pioneering work of Burgess (1925). Essentially, this is an actuarial method, using the best available discriminators, without consideration of how or why they predict future criminal activity, although the nature of the predictors may have theoretical implications (Quinsey, 1995).

A variety of such instruments are available. Those developed in Canada include the general recidivism and violent recidivism scales of Nuffield (1982), the Level of Supervision Inventory (Andrews et al., 1986a; Bonta and Motiuk, 1985), and the Violence Risk Appraisal Guide (Harris et al., 1993). Comparable scales have been developed in the United States, including most notably the Salient Factor Score used in the federal prison system (Hoffman, 1983; Hoffman and Beck, 1985), and scales used in several states, for example, Iowa (Fischer, 1981), Wisconsin (Baird, 1981), and Illinois (Fowler and Jones, 1982).

Although each of these scales predicts recidivism far better than

chance, there is still room for improvement (Rice and Harris, 1995). As a rough generalization, we may say that the level of correct prediction is usually about halfway between chance and perfection, a level that is better than clinical prediction and good enough to justify the current use of actuarial scales in many jurisdictions for either classification or release decisions.

However, with few exceptions, the success of predicting violent recidivism has been much lower than that for general recidivism because the probability of violent recidivism is low in most circumstances (e.g., Gabor, 1986; Monahan, 1981; Nuffield, 1982; Quinsey, 1980, 1984; Quinsey and Maguire, 1986; Steadman and Cocozza, 1974; Thornberry and Jacoby, 1979) unless long follow-ups are completed with serious offenders (e.g., Harris et al., 1993). Given the relative infrequency of serious offences against the person, most studies, even those with large samples, essentially examine predictors of robbery, breaking and entering, and other property crimes, not interpersonal violence. This welcome rarity of postrelease violence means that efforts to predict it over relatively short follow-up periods inevitably result in unacceptably high false positive rates (Villeneuve and Quinsey, 1995), although the accuracy of predicting violent and general recidivism is about the same, at least for some actuarial instruments (Rice and Harris, 1995). At present, the extent to which variables that uniquely predict violent crimes against the person add to the predictive accuracy of those that predict general recidivism or nonviolent crime is unclear (Holland et al., 1978; Mandelzys, 1979).

The literature deals almost exclusively with static or “tombstone” predictors, that is, measures of personal history such as age, offence history, or previous substance abuse. In general, these predictors are defined by past events, and they are subject to change only slowly and incrementally (e.g., by an increase in the number of previous offences) if at all. In contrast, even at the beginning of a prison term, correctional program managers require information about factors that are modifiable to a greater degree and over relatively shorter times in order to plan interventions effectively. At the end of the term, what is needed is specific information about the risk for future offences presented by each particular offender, and the ways in which that risk can best be monitored or lowered by supervision. However, at best the empirical follow-up literature can only inform authorities

about which classes of offenders should receive the most intensive supervision or interventions, rather than what the nature of the supervision or intervention should be for each individual, and current techniques are far from being able to specify what events after release trigger recidivism.

This gap between the needs of program managers and the static focus of the empirical literature is most readily apparent in the prediction of violent reoffending among mentally disordered offenders. Mentally disordered offenders are typically dealt with by mental health professionals working in psychiatric hospital systems that explicitly espouse a treatment-rehabilitation model. Nevertheless, of 28 follow-up studies of released mentally disordered offenders identified in a review of this literature (Quinsey, 1988), 25 employed only static predictors, and only three (of which two were essentially pilot investigations) attempted to predict recidivism from measures of therapeutic change.

Thus, previous prediction methods are limited because their reliance on static measures ensures that they fail to provide the sort of specific information that is necessary for effective correctional practice. For the vast majority of offenders, the question is not whether they will be released, but when. If the conditions of imprisonment or the time of release are determined on the basis of static historical factors at the beginning of a sentence, then imprisonment will provide little incentive for inmates to change their current behavior patterns.

Thus, the bulk of the follow-up literature can provide very little information to guide correctional workers in choosing appropriate programs for offenders or in making decisions based upon offender change. The paucity of well-designed intervention evaluation studies carried out on prison populations only exacerbates this problem. All of the above leads to the conclusion that we must redirect attention from the general determinants of recidivism (except to identify high-risk groups for concentrated attention) to questions of how to reduce or prevent it in the community.

We are not the first to arrive at this conclusion. In the preface to Waller's (1974) book on prison releasees, Edwards (p. vii) states: "What is called for is a major realignment of the time and energies of those engaged in the fields of correction and related organizations toward the alleviation of those problems associated with employment,

family and community relationships, and alcoholism which are at the root of most failures following release.” Although this statement contains assumptions about the specific causes of recidivism, it correctly emphasizes the role of postrelease factors.

What is needed is a better understanding of the role of current factors in the causation of new offences. Criminal recidivism can result from unresolved problems within a released offender that could have been addressed during a period of imprisonment, or it could be a consequence of new environmental or offender problems occurring after release. How much either or both of these occur in any given case, or across all cases, is both empirically and conceptually unclear (cf. Mandelzys, 1979).

What is needed is a research focus on the specific contemporaneous determinants of recidivism. This is not to say that we should discard the information we already have on static predictors of release failure. Historical factors, especially those measured early in life, will retain an important place among the determinants of criminal misconduct, both for understanding its origins in an individual and as predictors.

However, at present we have little knowledge of other determinants. We do not know much about what actually happens just before and during the occurrence of recidivism. Several sorts of events are of interest here, all of them dynamic as opposed to the static factors emphasized in the literature, in the sense that they are at least potentially changeable over the time periods of interest. There are first relatively stable but still alterable behavior patterns of offenders, such as ways of coping, antisocial attitudes and values, and criminal socialization. These may have been strongly influenced by historical events and therefore are correlated with and predictable from static variables. However, future changes may be independent of the original causes and are therefore neither correlated with nor predictable from static measures. If these behavioral and cognitive states are the real mediators of reoffending, then direct measurement of them will be more powerful than the indirectly related static measures, especially after some intervention aimed at inducing change has occurred.

In addition to generalized personal characteristics of the offender, we assume that behavior is also strongly influenced by specific dynamic local antecedents, both responses within the offender and identifiable events in the external environment. These include passing emotional

experiences, thoughts, perceptions, and many, many other events that include most of the range of ongoing psychological processes entering actively into the choice of behaviors. Such events are not only dynamic, but often labile or transitory. Although they may be more difficult to capture, describe, and quantify than static indicators, contemporary explanations of behavior processes lead one to expect that they are critically involved and important when recidivism occurs.

There have been some attempts to specify how the manner in which offenders interact with their current environment is related to future offending (Zamble and Porporino, 1988), and it has been shown that one can predict recidivism using measures of current behavior as well as from static variables (Porporino et al., 1990). There is also evidence that events occurring after release affect recidivism. For example, Motiuk and Porporino (1989) found that adding postrelease ratings of parole officers to the SIR scale (based on Nuffield's [1982] general prediction scale) increased predictive accuracy. However, the information provided by such previous work is only fragmentary, even though it is encouraging.

Thus, we need to know a great deal more about what sorts of mechanisms are involved in recidivism, and we also need to ascertain how they express themselves in the sequence of events leading to new criminal offences. In short, what is called for is an investigation into the *process* of recidivism. Rather than a continued or even an enhanced search for static predictors associated with recidivism, it might be more productive to work to construct a plausible model that incorporates factors that have proven empirically to be predictive.

To this end, then, inclusion of a variety of dynamic antecedent measures is essential. The value of the resultant model will depend on how well it provides an analysis of recidivism in the context of contemporary understanding of psychological and behavioral processes, as well as how effective it proves in predicting recidivism and in directing preventive measures.

Supervision after Release

One area that should both inform and be informed by this enterprise is the effectiveness of supervision under early release. Unfortunately, the literature on the effectiveness of parole and mandatory super-

vision is quite small, and it is replete with methodological problems (Nietzel and Himelein, 1987). In summarizing the best-executed research on the issue of supervision versus no supervision, Gottfredson et al. (1982) conclude that “First, none of the studies indicates a lasting effect of parole supervision beyond the period of supervision itself. Second, the research seems to indicate an effect of parole supervision on recidivism during the course of the supervision, particularly in the initial period of release. Third, the effect indicated by the research does not appear to be very large.”

The limited effectiveness of supervision follows from our arguments above, for it is difficult to know what sorts of parole programs to develop in the absence of good information on the antecedents of release failure. With better knowledge about the antecedent conditions of recidivism, parole authorities, or even offenders themselves, could take actions to avoid the commission of new criminal acts.

What do we know about the antecedents of parole failure? With respect to general recidivism, Waller (1974) found that lack of employment, undesirable associates, fighting, not seeing one’s children, and frequent drinking predicted reoffending. Hart et al. (1988) similarly observed that instability in both employment and relationships during the follow-up period predicted reoffending. Shover’s (1996) ethnographic study of persistent thieves reveals a similar picture. The typical lifestyle of these men can be best described as “life as a party” in which good times are sought with few concerns for external obligations or commitments. In the language of evolutionary psychology, this enjoyment of the moment accompanied by alcohol and drug abuse, variety in sexual partners, risk taking, and intermale competition and aggression can be described as high mating effort (as opposed to parental investment).

Determinants of sexual reoffending among 136 child molesters and 64 rapists have been examined in more detail by Pithers et al. (1988). Nearly 90% of the sex offenders reported experiencing strong emotional states before the commission of a new sex offence: 94% of the rapists reported feeling anger, usually occasioned by interpersonal conflict; 46% of the child molesters reported experiencing anxiety, and 38% reported depression; these emotional states appeared to be related to social disaffiliation. The chain leading to relapse seemed to begin with negative affect leading to paraphilic sexual fantasies, then

cognitive distortions, and, finally, passive planning just before the offence.

Frisbie (1969), based on 550 interviews of 311 child molesters under supervision, concluded that, besides alcohol abuse, factors predicting recidivism were “the desire for and selection of physically immature children as sexual objects, unorthodox ethical values, and grave difficulties in establishing meaningful relationships with adult females on a mature basis” (p. 223). The similarities between Frisbie’s observations and those of Pithers et al. (fantasies, disaffiliation, and cognitive distortion) are striking. Planning and behavioral rehearsal as antecedents to serious sexual offences have also been noted by MacCulloch et al. (1983). It is of interest in the present context that Frisbie was surprised at how much her interviewees would disclose to a project interviewer; because of their home visits, the research team were often aware of impending relapse before the parole authorities.

In summary, it may be said that previous studies of the antecedents of parole failure have not produced findings detailed or unambiguous enough for actual application to the development of supervisory policies. Most of the work considered above has not dealt with serious offenders against persons (that is, those of most concern) and has implicitly treated offenders as a homogeneous population. Some studies of better-defined groups of released offenders, such as rapists and child molesters, do include consideration of the ongoing process, but they have not included comparison groups of other kinds of offenders and seldom offenders of the same type who did not re-offend.

Clearly, a great deal more work is required to develop the knowledge required to inform parole supervision policy. We envision an extended and comprehensive inquiry, the centerpoint of which would probably be a large-scale long-term follow-up of offenders using both prerelease and postrelease data to predict recidivism of various kinds. The final step would be an evaluation study to determine whether recidivism can be reduced to a meaningful degree by interventions designed to alter the dynamic elements, both general and specific, that are found to predict it.

However, such studies would be very expensive, and it would be premature to undertake such ambitious enterprises before carefully laying out the conceptual and empirical underpinnings. To provide

information for this conceptual effort, the principal antecedents must be identified first. For a first approximation at variable selection, we can use a number of criteria, including the demands of a theoretical model, continuity with previous work on prison populations (Zamble and Porporino, 1988), ease of measurement, known relationships with parole outcome, and evidence that changes in the variable produced by interventions are related to lower recidivism (e.g., Ross, Fabiano, and Ewles, 1988). These were the bases for initial selection in the study to be reported here. Once the precursors have been identified, and their role clarified, reliable and practical measures for field use must be developed before the major validation studies.

Thus, the research described in this monograph was the first step in developing a model of recidivism as an ongoing psychological process. As such, we expected that new criminal offences result from an interaction between internal dispositions and external events, so a variety of dynamic factors were included, among them measures of stress, social support, coping skills, substance abuse, supervisory and intervention variables, and affective states.

In addition, an attempt was made to deal with the problem of base rates, to put previous results into perspective. What are we to make, for example, of the finding (Pithers et al., 1988) that most sex offenders report negative affect before they committed their offence? What is the base rate of negative affect among released offenders of any type, and is it related to the probability or type of reoffending? Perhaps more to the point, we are not even sure of the base rate of negative affect among demographically similar members of the general population. The observation that negative affect precedes sexual reoffending, therefore, may be correct but uninformative. For these reasons, two types of comparisons were included in the research design. The first is between reoffenders and those who successfully adapt to the community after release; the second is among offenders who commit different types of crimes.

Coping and Relapse Theory

Two previous lines of investigation guided development of this project and the way it attempted to describe the interaction between the offender and his environment. The first direction comes from a large-

scale Canadian study intended to specify how offenders interact with their environment, and especially how they cope with their problems (Zamble and Porporino, 1988). Although it was primarily designed to study the behavior of male inmates in prison, the primary study also included data on problems experienced by inmates before imprisonment, and the resulting coping attempts.

We can define coping responses as a person's attempts to deal with a perceived problem situation. In the case of offenders, there was no evidence that the problems encountered outside of prison were distinctive in kind or in severity from the ordinary challenges that most people encounter. However, their ways of dealing with these situations were at best ineffective and often exacerbated the original problems.

In addition, there was evidence of an association between this disastrously poor level of coping and retrospective or prospective measures of criminal behavior. For example, there was a significant negative correlation between previous criminal history and coping efficacy. Similarly, future recidivism could be predicted using several measures of the coping process, and the accuracy of prediction was in the same range as that for commonly used actuarial scales (Porporino et al., 1990).

Results of this sort originally led to the formulation of a "coping-criminality" hypothesis (Zamble and Porporino, 1988) linking the repetition of criminal behavior to inadequate coping responses. It was hypothesized that offenders are unable to successfully recognize and resolve their problems, especially chronic situations such as strain in interpersonal relationships. One of the consequences is a considerable amount of stress, during which the person either strikes out blindly or chooses a maladaptive, often criminal, response as a misguided coping effort. A problem for this analysis is the choice of criminal behavior rather than some other form of maladaptation, but it is also known that a variety of generalized behaviors are common among chronic offenders, for example, a large amount of time spent socializing in a diffuse network of casual (mostly criminal) acquaintances, and one may argue that these combine with distinctive criminal cognitions and other factors to channel the results of poor coping into renewed criminal activity.

The case for the role of coping in criminal recidivism has been