

EVALUATION, DIAGNOSIS, AND PREDICTION IN PAROLE DECISION MAKING

JOHN S. CARROLL*
RICHARD L. WIENER
DAN COATES
JOLENE GALEGHER
JAMES J. ALIBRIO

Discretionary legal decisions have become a recent focus of theory development and policy-oriented applied research. We investigated parole release decision making in Pennsylvania from both orientations. Analyses of post-hearing questionnaires and case files from 1,035 actual parole decisions revealed that the Parole Board considers institutional behavior and predictions of future risk and rehabilitation in the decision to release on parole. Predictions seem also to be based on diagnostic judgments identifying causes of crime such as personal dispositions, drugs, alcohol, money, and environment. A one-year follow-up of 838 released parolees showed that predictions were virtually unrelated to known post-release outcomes. An actuarial prediction device was developed that is more predictive than subjective judgments. The use of decision guidelines to structure discretion is discussed, as well as the utilization of our research in guideline development by Pennsylvania.

Discretionary decisions in the legal system have become a focal point for psychological research directed both toward policy development and evaluation and toward theory and development testing (e.g., Abt and Stuart, 1979; Konečni and Ebbesen, 1982). This is occurring at a time of major upheaval in the criminal justice system. Policy initiatives being implemented or debated attempt to reduce discretion (e.g., determinate sentencing, National Institute of Law Enforcement and Criminal Justice, 1978) or guide discretion (e.g., sentencing guidelines, Gottfredson *et al.*, 1978). Research on discretion offers substantial promise for addressing theoretical issues in a

* This research was supported by Grant MH 32855 from the National Institute of Mental Health. We gratefully acknowledge the support and cooperation of the Pennsylvania Board of Probation and Parole. We thank John Payne and Shari Diamond for their comments on earlier drafts. Requests for reprints should be addressed to Dr. John S. Carroll, Psychology, Loyola University, 6525 North Sheridan Road, Chicago, IL 60626.

natural context and for aiding policy makers to create sound approaches to social problems.

The first goal of this article is to provide a more comprehensive description of one discretionary decision—parole release—than has been previously available. Research has established that parole release decisions are based both on evaluations of past behavior and predictions of future behavior (Carroll, 1978; Gottfredson *et al.*, 1973; Stanley, 1976). This article describes qualities or aspects of parole applicants that are evaluated and predicted and the information used to make these judgments. Because parole decisions involve predictions, the second goal of the article is to examine the accuracy of these predictions and to provide an actuarial model that could be used in decision guidelines to enhance accuracy.

I. BACKGROUND OF THE RESEARCH: PENNSYLVANIA AND DECISION GUIDELINES

In Pennsylvania, offenders sentenced to maximum sentences of two years or longer are considered for parole under the authority of the Pennsylvania Board of Probation and Parole. Judges provide prison terms with both minimum and maximum sentences; the minimum can be no more than one-half the maximum. Offenders are eligible for parole at the minimum, and must be released at the maximum if not paroled earlier.

The parole review process in Pennsylvania consists of four formal stages with different personnel involved at each stage. First, the correctional staff (who work for the Department of Corrections, a separate State agency) associated with the inmate at the institution make a collective recommendation about release. Second, a Parole Case Analyst who works at the institution but is employed by the Parole Board reviews and summarizes the case and makes a recommendation. The Case Analyst has access to the institutional recommendation and other case information. Third, a Parole Interviewer who is either a Board Member or a specialized Hearing Examiner conducts an interview with the parole applicant at the institution and makes a recommendation. The Parole Interviewer has access to the institutional recommendation and the Case Analyst's summary and recommendations. Finally, a quorum of Board Members must officially decide the case unanimously. Typically, the Board does not meet on each case, but case folders are passed across three of the five Members' desks for signatures. Only cases that engender disagreement

or have some special significance are decided in full Board meetings.

Although only the Parole Board has the legal authority to grant or deny parole release, the system is set up to make the Parole Interviewer central to the decision process. It is the Interviewer who visits each institution to interview parole applicants. In approximately 60 percent of interviews, the Interviewer is a Board Member. The Parole Board no longer directly interviews parole applicants, because it has responsibility for a huge number and variety of decisions. In recent years the Board has been required by law to conduct a large number of parole revocation hearings with a quorum present (*Commonwealth ex rel. Rambeau v. Rundel*, 1973). These demands upon its time have led the Board to rely on individual Board Members and Hearing Examiners to carry out its decision making policy with continual review (the Board does overturn some recommendations). In a pilot study of 250 parole applicants, we found final Board decisions agreed with Interviewer recommendations in 98 percent of cases.

The research we will describe was initiated by the Pennsylvania Board of Probation and Parole as a means for gathering systematic data about its own decision making with the goal of constructing guidelines for the release decision (Gottfredson *et al.*, 1978). The guidelines approach has been an important response of parole boards and other legal decision makers (e.g., judges; Kress, 1980) to criticisms that their decisions are arbitrary, inconsistent, and inaccurate. After research has described the factors influencing decisions, guidelines are written that structure decision making in order to follow policy in a more consistent and equitable manner and sometimes change the factors on which the policy is based. The use of guidelines may therefore enhance justice, accountability, and accuracy. Existing parole guidelines have systematically incorporated assessments of risk and prognosis by constructing an objective prediction device relating case information to actual post-release outcomes of paroled cases. The Board and the collaborating researchers designed a strategy for collecting data relevant both to the development of guidelines and to the pursuit of the researchers' theoretical interest in causal reasoning (the latter reported in Carroll, 1978, and Carroll *et al.*, 1982).

II. DESCRIBING THE PAROLE DECISION

The Parole Interviewer is the key decision maker in Pennsylvania, and is thus the focus of our attention. Our first objective was to assess what case information the Interviewer uses in deciding parole release. The information available to the Interviewer consists of more than case "facts"; it also contains summary judgments and recommendations by the institution and Case Analyst. Thus, our analysis had to include these recommendations in the assessment of decision making by the Interviewer. Prior recommendations have been shown to be important in bail and sentencing decisions (Konečni and Ebbesen, 1979), and Interviewers are influenced by Case Analysts' comments about risk (Carroll, 1980). The present analysis therefore examined the case factors and previous recommendations available to the decision maker at each stage in order to provide a description of how information influences judgment at sequential stages in the parole decision process.

We obtained data from two sources on 1,035 actual parole cases interviewed between October, 1977, and May, 1978. The offender in each case was interviewed by a Parole Interviewer shortly before the minimum sentence would have expired. If granted parole, the offender would have served the minimum; if denied parole, the offender would be serving time decreed by the Board. In these cases, the Interviewer was always one of the five Board Members.

Post-Hearing Questionnaire

The first source of data consisted of a two-page questionnaire filled out immediately after each interview by the Interviewer. The questionnaire incorporated over 70 items and drew upon factors identified as important in previous research on parole decisions (Gottfredson *et al.*, 1973; Heinz *et al.*, 1976; Hoffman, 1973; National Council on Crime and Delinquency, 1966; Stanley, 1976), discussions among the researchers and the Board, our experience with designing a post-hearing questionnaire for parole revocation hearings (Carroll and Ruback, 1981), and the pilot study. Some of these items requested objective case facts (e.g., conviction offense, number of prior adult convictions, age). Most items solicited ratings of subjective judgments thought to be important in the decision. Some of these judgments were more closely tied to specific case facts (e.g., crime seriousness), whereas others required inferences combining many features of the case (e.g., risk of future crime).

A somewhat more detailed form was used in the first 272 cases than on the remainder. This form included open-ended responses to several questions, including "Opinion on underlying cause for offense committed" and "Opinion on reason for criminal record/history." These attribution items have played a central role in our theoretical work (Carroll, 1978; Carroll, *et al.*, 1982). Unfortunately, the Board shortened the questionnaire midway through the study by dropping several open-ended items, and thus reduced the data base for analyses of some theoretically relevant relationships.

Case Files

The second source of data was the case files that the Parole Interviewer had available prior to the interviews. During June and July, 1978, the files on these same cases were examined and coded on over 100 variables representing what the Interviewer could read prior to and during the interview. Because of the inability to locate some case files and the expiration of time for the coding, data on only 819 of the original 1,035 cases were collected for this portion of the study. There were two coders who overlapped on five percent of the cases as a reliability check.

The case files contain several different categories of variables. Some variables represent objective facts about the offender's crime, prior record, and social history. Reliability was high for nearly all of these variables. Agreement was typically over 90 percent on categorical variables, and correlations were over .9 on all 16 continuous variables. Other variables required the coders to assess what people said about the offender in the case file. For example, the "work assignment" was evaluated by looking for a statement by the work supervisor regarding the prisoner's job performance while incarcerated. This typically consists of a few sentences that appear in an institutional report. Reliability was somewhat lower on these interpretive variables, with correlations averaging .84. Only one of five variables describing institutional behavior had reliability below $r = .8$.

More extensive evaluations by correctional staff at the institution appear in the case files including assessments of past and future behavior and a recommendation. We coded not only the release recommendation but also frequently appearing categories of statements about risk of recidivism, adjustment in the institution, mental health, and so forth. This information is available in the case files to be read by the Case Analyst and,

later, by the Interviewer. The coding reliability of comments by the correctional staff averaged 75 percent on three-category variables. Three of 18 variables had reliabilities under 67 percent. A second set of these variables was coded from comments in the one- or two-page Case Summaries prepared by the Case Analysts. The coding reliability of Case Analyst comments averaged 90 percent agreement on three-category variables. Only one of 18 variables was below 80 percent. Finally, the release recommendation by the Interviewer and the official Parole Board action were coded from the case files. Reliability was nearly perfect for recommendations and Board actions.

Structure of the Data

This very large data set contains many variables that are closely related. For example, conduct in prison was directly coded four separate times. The Interviewer rated "discipline" on the post-hearing questionnaire; the coder rated "discipline" from reports in the case file; the coder also rated comments about "adjustment" (a term used to describe overall prison behavior) made by the correctional staff; finally, the coder rated comments about "adjustment" made by the Case Analyst. If we were trying to predict release on the basis of inmate behavior, we would combine these four variables into one estimate of "true" conduct. Instead, we seek to portray a decision process in which the different estimates are made and available for later reading at sequential stages when: (a) the institution makes its evaluation of conduct, (b) the Case Analyst makes an evaluation having available the institution's evaluation, (c) the Interviewer makes an evaluation having the previous two available, and (d) the Parole Board makes a final decision about the inmate. It is instructive to realize that Interviewers take only 5-10 minutes to read a typical case file and by necessity rely on Case Analyst summaries of the extensive case file. Each estimate, therefore, is potentially dependent on those that precede it.

The data for each case can be considered to form a five-part temporal sequence: (1) facts such as crime and age coded from the archival case files; (2) judgments made by the institution coded from statements in the case files regarding, for example, institutional adjustment and the institution's recommendation for release; (3) judgments by the Case Analyst similarly coded from the case files; (4) judgments by the Interviewer coded from the post-decision questionnaire; and (5) the final decision

made by the Parole Board coded from the case files. Facts or judgments earlier in the above temporal sequence can influence subsequent judgments but not vice-versa.

Additionally, our theoretical orientation from attribution theory and information processing psychology suggested the desirability of a sequential model within each decision maker. For example, Carroll (1978) found that attributions made by Parole Interviewers about why the offender committed the crime mediated judgments of risk of recidivism, which in turn influenced willingness to grant parole. We therefore ordered judgmental variables within each decision maker by assuming that more factually oriented and specific judgments (e.g., crime seriousness, discipline in institution) logically precede more subjective and complex judgments (e.g., risk of future crime).¹ When we had no logical grounds to establish a sequence, judgments were considered to be at the same point in time (e.g., discipline and counseling programs). We emphasize that these orderings are provisional and based on general concepts and our experience with parole rather than on a fully specified causal model. In some instances, sequential distinctions were made by noting which judgment related more strongly to a subsequent judgment. For example, parole release was more strongly predicted by prognosis for supervision than by risk of future crime, and this led us to consider prognosis the more general subsequent judgment.

We consider that these Interviewer judgments incorporate both case information and whatever information is gathered during the parole interview. During the interview, the inmate is questioned about prison behavior, attitudes and feelings, plans for parole, and so forth. There is evidence that parole interviews may provide information affecting Interviewer recommendations in Pennsylvania. Ruback (1981) found that ratings by Interviewers of inmates' honesty during the interview significantly predicted changes in parole recommendations from pre- to post-interview. We therefore consider "credibility in the interview," the only variable directly tapping the face-to-face interaction of Parole Interviewer and inmate, to be prior in sequence to other judgments made by the Interviewer (e.g., discipline, risk).

¹ Hagan (1977) also used logical grounds to order variables in his path-analytic model of sentencing. His model, however, was directed at exploring the role of specific variables (age, race, urban/rural) rather than developing a comprehensive model of judicial sentencing.

Plan of Data Analysis

For any variable² to be predicted, beginning with the parole decision, the analysis first selected only those predictors that were significantly related to the outcome variable.³ All significant variables were then introduced together by step-wise multiple discriminant analyses that selected the best group of variables in which each was significant at $p = .01$ or better (categorical variables were analyzed using dummy variables forced to enter the equation together). Several different analyses were always run to introduce variables with substantial missing data. Among these selected variables, additional analyses were performed to further select those that were most successful at predicting judgments; a variable was only added if it increased the number of correct predictions as well as achieved statistical significance. This final restricted set of predictors was examined for significant bilinear interactions that increased the predictability of the judgment. Interactions were often significant but never added appreciable predictive power and are therefore not discussed. Finally, these predictors were examined for their relationship to the individual decision maker represented as dummy variables. In similar fashion, we then analyzed each predictor variable as a product of all variables prior to it in temporal sequence.

² The judgmental variables had been coded on scales with differing numbers of alternatives. Three-point scales (e.g., good-mixed-bad) had been used for the archivally-coded judgments from the institution and Case Analyst. Most of the Parole Interviewer judgments had been made on five-point scales (e.g., risk of subsequent offense: very low, low, moderate, high, very high), but some had been on three-, four-, and nine-point scales. Essentially, more alternatives were given for judgments where Board Members indicated they could discriminate more finely. However, in the early stages of the analysis all these judgmental variables were recorded into dichotomous good-bad form. There were several reasons for doing this: (a) most judgmental variables were bimodal, with "mixed" or "moderate" categories rarely used; (b) the multiple discriminant analysis procedure produced a prediction table that we found very useful, and this procedure could most easily be utilized on dichotomous dependent variables; and (c) dichotomous predictors were much easier to present to the Board in describing and using models of the parole decision. In fact, most current guideline models of parole decisions use mostly dichotomous predictors for convenience and because they appear more robust (Gottfredson *et al.*, 1978). Our own analyses show little difference between dichotomous and full-scale predictor variables.

The dichotomizations were done individually by variable using several rules: (a) "goods" would define one category and "bads" the other; (b) the mixed or moderate categories would be placed with the "goods" unless the "bads" category was very small; and (c) missing data were considered to fall in one category (typically, "goods") when sufficient logical grounds existed. For example, no mention of drug problem was recoded from missing to "good."

³ This strategy for selection has been used in the development of parole and sentencing guidelines (Gottfredson *et al.*, 1978; Kress, 1980). It has recently been criticized because variables that affect outcomes only through interactions may be discarded (Rich *et al.*, in press).

Parole Decisions

The final Board decision was coded from files on 818 cases, among which 76.9 percent were granted parole, 13.9 percent were denied parole, and 9.2 percent were continued. The continue category in Pennsylvania is used when additional specific information or performance such as where the parole applicant will live and work, a psychiatric report, or the availability of a treatment program is required before the Parole Interviewer is willing to reach a decision. Because there are so many different reasons why a case is continued, and this decision is only provisional, we dropped all cases that received continue decisions. This left a total of 743 cases, 84.7 percent of which were granted parole.

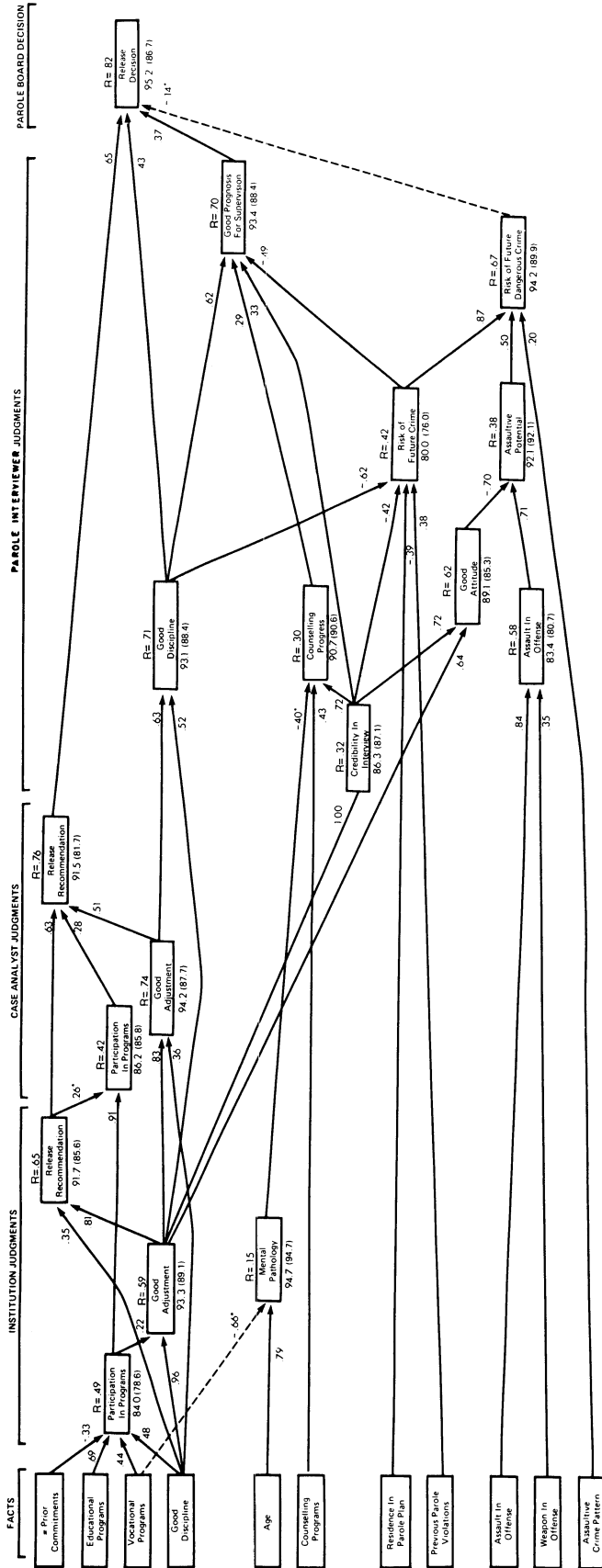
There was only a single instance in these cases of the Board quorum altering a recommendation by an Interviewer. Thus, we sought to predict decisions (equivalent to Interviewer recommendations) from the remaining variables. Among 123 variables, several dozen were significantly related to the parole release decision. In step-wise discriminant analyses, five of these entered at $p = .01$ or better. These variables in the order they entered and in the direction predicting the granting of parole were:

- 1) Case Analyst's recommendation to grant parole;
- 2) Interviewer's rating of good discipline in the institution;
- 3) Interviewer's rating of good prognosis for supervision;
- 4) Interviewer's rating of low risk of future dangerous crime; and
- 5) Interviewer's rating of good attitude in prison.

Once the first three variables are entered, additional variables are statistically significant but make little or no change in the multiple correlation, Wilkes Lambda, or the proportion of recommendations correctly predicted. For example, entering the five variables in order, the multiple correlation goes from .71 to .80 to .83 and remains at .83.⁴ Although some interaction terms and the identity of the Board Member (Interviewer) are statistically significant, they also fail to increase the multiple correlation or other indices of predictability. Ordinarily, we would consider this to be the final model of the parole recommendations. However, we made an exception in this case because the dangerousness variable seems of particular theoretical and applied interest (cf. Monahan, 1981). Our analyses therefore include four predictors of parole release,

⁴ The analyses of parole decisions reported in Figure 1 come from a sample of 585 cases, with a multiple correlation of .82. The analyses under discussion are based on 558 cases due to missing data on attitude and therefore have slightly different results.

Figure 1: Sequential Model of the Parole Decision Process



and the fact that dangerousness would not in general have been included is indicated in Figure 1 by the broken line between it and the parole decision.

If we partition the interviews into those conducted by each individual Board Member, we can use the same four variables (Case Analyst recommendation and Board Members' own ratings of discipline, prognosis, and risk of a dangerous crime) to model each Member's recommendations for those cases he or she interviewed. Compared to the overall model across all Board Members in which the multiple correlation was .82, the individual models have correlations from .79 to .92. Thus, the four-predictor model fits all Board Members quite well. For each member, the Case Analyst's recommendation is the single strongest predictor among the four in the model, and risk of dangerous crime is generally weakest. Note that the Case Analyst's recommendation is itself a summary of case information available to both decision makers. The importance of discipline and prognosis appear to vary, with some members weighting discipline substantially higher than prognosis, and some weighting prognosis higher. The discriminant function coefficients for Case Analyst's recommendation range from .61 to .80, for discipline from .09 to .44, for prognosis from .18 to .57, and for risk from -.10 to -.19. These can be compared to the respective coefficients from the overall model in Figure 1 of .65, .43, .37, and -.14.

We have tested the interactions of Board Member with predictor variables in the overall model. Significant interactions may indicate that Board Members have different judgment policies; that is, they weight the predictors differently. We have uniformly found that several of these interactions are statistically significant but make no practical improvement in the predictability of the decisions. Further, although these interactions could indicate different judgment policies, they may also reflect differential use of the judgmental rating scales, such that "prognosis for supervision" is not uniformly evaluated or rated across decision makers and thus varies somewhat in its relative relationship to the decision. For these reasons, our model and our theorizing rely on main effects and leave individual differences for a time when data more appropriate to their investigation are available (e.g., the same cases given to all decision makers).

Other Judgments

The four best predictors of parole release decisions are themselves judgmental variables. They were each analyzed to identify what judgmental and factual variables predict their values. Predictors that were judgments rather than facts were similarly analyzed until all judgmental variables were traced back to factual predictors. The complete set of observed relationships is portrayed in Figure 1. This is *not* a causal model or path analysis based on empirically well-specified causal links or a single set of cases. Each box represents a separate analysis producing a set of predictors calculated on the subset of cases containing no missing data for these independent and dependent variables.

Figure 1 is organized from left to right in theoretical sequential order. For each predicted variable, the variables that help predict it are shown by arrows directed at the predicted variable. Discriminant function coefficients are given on each arrow showing the direction and relative contribution of each predictor. Each predictor adds significantly to the prediction equation at the $p = .001$ level or better except in four instances where the level was $p < .01$. These instances are indicated in Figure 1 by an asterisk next to the coefficient. The multiple correlation for each prediction model is given above each boxed dependent variable, and below each box is the percentage of cases correctly predicted by the model; the percentage correct by chance (the base rate of the modal category) is in parentheses. The correct predictions can only be evaluated by comparison to the base rates: some variables are predicted quite well above chance (e.g., parole decisions) but others are only at a chance level (e.g., assaultive potential). The fact that the base rate is so high (above 85 percent of parole applicants receive favorable ratings on the variables in Figure 1) makes it difficult to predict better than chance (cf. Monahan, 1981).

Despite the apparent complexity of Figure 1, the reasonableness of the relationships and the consistency across levels of decision maker produce an understandable overview of the parole decision. The single most important variable apparently predicting the release decision is discipline in the institution. The Interviewer's rating of discipline not only predicts the decision directly, but also relates to prognosis and risk predictions that in turn predict the decision. Thus, inmates who have trouble conforming to conduct rules in prison are not only punished by being denied parole, but may

also be considered worse risks and less amenable to rehabilitation outside prison. However, as we will discuss later, direction of causality is difficult to determine here. Further, the Case Analyst's recommendation is itself based primarily on discipline or adjustment (the term used by the institution and Case Analyst), in part directly, and in part through the institutional recommendation.

Beginning at the left in Figure 1, we can see that institutional recommendations appear to be based primarily on discipline. Program participation, which represents educational and vocational programs and is better for inmates with good discipline and fewer prior commitments, has only a secondary relationship by way of adjustment ratings. Similarly, the Case Analyst's recommendations are predicted by the institution's recommendations and by discipline, but program participation is a slightly stronger predictor at this stage.

Turning to the Parole Interviewer's judgments, we find that credibility during the interview predicts several subsequent judgments but is itself not well predicted. This is consistent with the idea that the interview is actually being used to produce new information about the offender that is not measured by other features of the case information. Unlike California, where *de facto* parole decisions seem to be made before the hearing and hearings are used to justify the *a priori* evaluation (Garber and Maslach, 1978), parole hearings in Pennsylvania seem to be used as an opportunity to gather information for the release decision (Ruback, 1981).

Interviewer judgments of risk of future crime are predicted by institutional discipline, the interview, whether there is a residence in the parole plan, and past performance on parole. The risk of future dangerous crime can be traced back to overall risk, assaultiveness in the criminal record, and disciplinary problems. Prognosis for supervision is predicted by discipline, risk of future crime, the interview, and counseling progress. Older inmates seem in general to be rated more mentally disturbed, and this negatively influences judgments about counseling progress and hence prognosis for supervision.

Determinants of Parole Release

The parole decision in Pennsylvania apparently involves two clusters of considerations: institutional behavior and future behavior on parole. Institutional discipline emerges as

the single strongest factor associated with the parole decision. Poor conduct seems to influence the Parole Interviewer directly to deny parole and indirectly through poor recommendations from the institution and from the Case Analyst. The Parole Board's direct sanctioning of prison misconducts is necessitated by the procedures of Pennsylvania prisons. Pennsylvania has no "good time" procedures as do other states in which the correctional authorities exercise control by directly rewarding good behavior (or punishing bad behavior). The role of "keeping the lid on" the prisons thus devolves onto the Pennsylvania Board, with recommendations from the institution: inmates know that they can generally expect parole at the minimum unless their conduct in prison is poor.

The seriousness of the crime that brought the inmate to prison, whether measured by Interviewer judgment, minimum sentence, or ranking of crime type, is conspicuous by its absence. Gottfredson and Wilkins (1978) found that in states with minimum sentences, the "in/out" decision of the parole board is different from that in states with no minimum sentences, where parole boards "set time" like a judge. In Pennsylvania, where over 80 percent of inmates are released at their first parole interview, the Board considers the judge's minimum sentence to be punishment for the crime (Carroll, 1978). The Board denies parole for misconducts, dangerousness, or rehabilitative purposes, but not for punishment.

Thus, the decision makers in Pennsylvania who control the serving of sentences have allocated themselves complementary roles. Judges punish; parole boards sanction institutional conduct and try to influence the future of the offender in the community. As Figure 1 indicates, institutional recommendations rely heavily on discipline, with some attention to traditional prison activities of educational and vocational training. The judgments of Case Analysts seem to parallel the institutional judgments, with slightly more attention given to program participation. Case Analysts work for the Board but at the institutions, and apparently identify with the latter. In contrast, Parole Interviewers are more future-oriented or community-oriented than either the institution or the Case Analyst. This is demonstrated by the importance of counseling involvement, mental pathology, risk of future crime, and prognosis for rehabilitation in Interviewer judgments. They seek rehabilitation and community safety:

the conduct of inmates released on parole reflects more directly on the Parole Board than on the prisons.

Causality

The decision model we developed implies that decision makers consider certain cues or inferences in making judgments. For example, the Parole Interviewers appear to rely on Case Analysts' recommendations. Agreement with the Case Analyst ranges from 90 to 97 percent for the five Board Members. However, these data cannot be interpreted in causal terms. The Case Analyst's recommendation is a summary variable that correlates with many features of the case such as discipline, program participation, personal impressions, prior record, and so forth. The Interviewer may attend to these other variables, yet the analysis will pick out Case Analyst's recommendations as the single variable correlating most strongly with the Interviewer's own judgments. We conducted an additional analysis to discover whether the Case Analyst's recommendation explained additional variance in release decisions once the variance attributable to the case facts was removed. After controlling for prognosis for supervision, discipline, risk of future dangerous crime, all eleven factual variables in Figure 1, and all four institutional variables including institutional recommendations, the Case Analyst's recommendation is still a highly significant additional predictor of release decisions ($F[1,462] = 64.2, p < .001$).

However, it is still possible that Interviewers do not directly respond to the Case Analyst's recommendations. Both Case Analyst and Interviewer may be responding to unmeasured variables in the case file or personal demeanor of the inmate. Both may be responding to variables that are poorly measured; the Case Analyst's recommendation is measured more reliably than other variables. This is analogous to a third-variable problem in correlational research but is even more complex, since multiple third variables influence both decision makers and possibly induce a strong correlation between them. Thus, the model must be taken as a prediction model rather than a causal model. It demonstrates that Interviewers and Case Analysts often *agree*, but not that the Case Analyst's judgment per se is what the Interviewer relies upon.

The best way to determine true causality is with controlled case material in which case information and the Case Analyst's recommendation are experimentally varied within ranges and

combinations that would naturally occur. By naturally occurring ranges and combination we mean that the Case Analyst's rating must not be totally inconsistent with the rest of the case material. Carroll (1980) conducted such research by manipulating the presence of statements by the Case Analyst labeling a case as a good or poor risk on parole, while holding other case information constant. These statements did affect both the risk judgments and parole recommendations of Parole Interviewers providing controlled evidence that the Case Analyst directly influences the Interviewer, thus supporting the results of the present research.

An even more serious ambiguity in causal inference exists among prison conduct, prognostic judgments, and parole release. The implication of Figure 1 is that prognosis and risk are assessed by considering prison conduct, and release recommendations are based on prognosis and conduct. However, it is entirely possible that prognosis and risk judgments are partially produced by a justification process that reverses some of these causal relationships. Specifically, the Interviewer may decide on the basis of poor prison behavior to deny parole, and subsequently score the inmate with poor prognosis to be consistent (but not because bad conduct indicates poor prognosis).

If we drop those cases denied parole from the analysis, we can examine the relationship between conduct and predictions for cases where this reverse reasoning would presumably not occur. Discipline bears a significant but weak direct relationship to prognosis ($F [1,522] = 7.00, p < .01$) and a marginally significant relationship in the same four-predictor model shown in Figure 1 (discriminant coefficient = .18, $F [1,519] = 3.18, p < .10$). Discipline has no relationship to risk either directly or in the multivariate model of Figure 1. However, dropping those cases denied parole has dropped many of the bad cases on all these two-category variables, producing highly skewed distributions. If we return to the original five-category codes and analyze the relationships with multiple regression, we find somewhat stronger results. Discipline correlates with prognosis $r = .25 (p < .01)$ and remains significant in the multiple regression reanalysis of the model ($\beta = .07, F [1,520] = 3.93, p < .05$). Discipline correlates with risk $r = -.20 (p < .01)$ and is also significant in the multivariate model ($\beta = -.09, F [1,540] = 5.50, p < .05$). Given these very weak relationships, we cannot tell from the present data whether the correlation between prison conduct and

predictions of future behavior are spuriously induced by the decision to deny parole on the basis of conduct, or depict the Interviewers' reliance on conduct as an indication of prognosis and risk.

Prediction

Parole Interviewers are clearly concerned with predicting parolees' future criminal behavior and responsiveness to rehabilitation and control under parole supervision. Examining Figure 1, we can see that prognosis for supervision, risk of future crime, and risk of future dangerous crime are predicted by discipline in the institution, counseling progress, mental pathology, age, credibility in the interview, where the offender will live on parole, previous parole violations, and the presence of a history of assaultive or weapons offenses.

We believe that predictions of parolees' future behavior are based on a process of diagnosis. The case information is examined, and causal processes are inferred that account for the pattern of known events and offender characteristics. These diagnosed causes are then used to construct scenarios of expected future events (Einhorn and Hogarth, 1981).

Carroll *et al.* (1982) examined responses by the Parole Interviewers on the first 272 post-hearing questionnaires to open-ended items requesting their opinion on the underlying cause for the offense committed. These causal attributions were grouped by similarity into five broad categories: (a) person (lack of control, easily influenced, immature, mental problems, acting "smart," poor attitude, aggressive), (b) money (monetary gain, get money, family needs, no job), (c) drugs, (d) alcohol, or (e) environment (victim precipitated, influence of associates, domestic problems, environment). This classification of cases accounted for 8.5 percent of the variance in release recommendations, and was more strongly related to prognosis for supervision (15.8 percent of the variance) and risk of future crime (10.9 percent). Crimes attributed to the person, drugs, or alcohol have more unfavorable prognoses and recommendations than crimes attributed to money or environment. Other analyses revealed that causal category influences recommendations through its impact on prognosis and risk, and that these relationships remain virtually unchanged after controlling for crime type, seriousness, prior record, age, education, job stability, marital status, prison discipline, and Case Analyst's recommendations.

These results suggest that prediction is a result of a diagnostic process involving causal reasoning. Like clinical psychologists who diagnose clients by sorting them into “fuzzy categories” (Cantor *et al.*, 1980), parole decision makers identify criminals as “types” who have a pattern of criminal and social behavior, causes for this behavior, and treatments for the causes. In essence, drug problems are referred to drug treatment, alcohol problems to alcohol treatment, personal problems to psychological counseling, money problems to job training, and environment problems to social support, coping strategies, and new environments.

The Interviewer’s use of these categories seems quite reasonable in the light of scientific evidence. Drug and alcohol problems consistently emerge as predictors of poor parole performance. The classification of “problem types” relates directly to the availability of rehabilitative programs. Clearly, parole supervision entails a serious attempt at rehabilitation and provision of services directed at parolee needs. This is an admirable endeavor, despite the disappointing lack of evidence that rehabilitative programs can successfully reduce recidivism (Sechrest, White, and Brown, 1979).

Interestingly, in the past three years the Board has begun to discuss policy regarding certain diagnostic judgments. In preliminary guidelines implemented in 1979 (Alibrio and Thompson, 1980) they distinguished between two types of drug involvement: (a) criminal addicts whose substance abuse is an aspect of their criminal lifestyle but not a cause of crime, and (b) addict criminals who commit crime to support their drug dependency. The criminal addict category was considered a reason to deny parole because of poor prognosis, whereas addict criminals were felt to be controllable under a proper parole plan. However, the final guidelines eliminated this distinction because lengthy criminal records characteristic of criminal addicts were already reflected in the guidelines, and addict criminals were receiving parole slightly more frequently than non-drug offenders—a situation considered unjust. In the final guidelines, substance abuse is considered a potential negative factor for countervailing a guideline recommendation to grant parole.

Parole Interviewer predictions can be evaluated more objectively in terms of their accuracy. Research indicates that experts have a very difficult task in predicting recidivism (Gottfredson *et al.*, 1978; Hakeem, 1961) or dangerousness (Monahan, 1981). Scientific attempts to predict recidivism

using background information on criminal history, age, and so forth have been shown to be more valid than expert judgment, but even these actuarial predictors are only moderately accurate (Gottfredson *et al.*, 1978). Studies of parole recidivism have generally found several factors to separate successful from unsuccessful parolees, including prior record, crime type, age, drug and alcohol use, employment, and marital status. Some of these factors overlap with the items in Figure 1 that Interviewers seem to use in their predictions: (a) previous parole violations are related to prior record, and (b) where the parolee will live is related to marital status. Section III of this paper considers the accuracy of predictive judgments by examining one-year follow-up data on released parolees. Using these data we developed an actuarial prediction device that could be used to improve predictions in parole release decisions.

III. EVALUATING AND IMPROVING PAROLE PREDICTIONS

The obvious importance of prognostic judgments to parole release decisions led the Pennsylvania Board to seek an objective prediction device for use in a guidelines procedure. Other parole boards have designed and implemented such decision aids (Gottfredson *et al.*, 1978). Accordingly, the Board initiated a one-year follow-up of all cases from the study released on parole in Pennsylvania. These data were intended to aid in the construction of an actuarial prediction device relating objective case facts to known post-release outcomes. In addition, the follow-up made it possible for us to examine whether the subjective judgments of risk and prognosis had predictive accuracy (cf. Hammond *et al.*, 1976; Lichtenstein and Fischhoff, 1977), and whether the factors that influenced subjective judgments of risk were valid predictors of parole performance.

Method

Of the 1,035 cases from the study, 946 were followed until early 1980. The remainder were excluded primarily because the individuals were paroled out of Pennsylvania. Among these 946 cases, 46 individuals were paroled to serve a detainer sentence for another crime and thus were not released, 42 were denied parole, and 20 were excluded for various reasons, leaving a total of 838 paroled in Pennsylvania and available for study. Notice that only 42 individuals (four percent) did not receive parole by this time; the majority of individuals denied

parole at their initial parole hearing were granted parole at subsequent hearings.

For the 838 individuals paroled in Pennsylvania, research staff trained by the Research Division of the Parole Board (not the student coders we had previously trained) coded information from case files one year after release on parole. These data included age, race, sex, education, commitment offenses, sentence, prior arrests and incarcerations, misconducts during prison, time served, parole conditions, employment before and during parole, marital status during parole, alcohol and drug problems, and parole performance.⁵ Parole performance consisted of 17 categories reporting difficulty on parole, technical violations, new criminal violations, absconding, recommitment to prison for technical or criminal violations, completion of parole, and death. Technical violations are violations of the conditions of parole that are not criminal acts (e.g., failure to report).

Results

Of the 838 parolees, 10.5 percent were convicted of a new crime while on parole, and 13.1 percent were convicted of a technical violation. A total of 4.7 percent of all parolees appear in both the crime and technical categories. An additional 5.0 percent were absconders who had not been apprehended and thus not convicted of anything (yet). And 25.5 percent were considered "failures" by the Board because they were recommitted to prison (parole was revoked), were absconders, had died while committing a criminal act (.6 percent), or were being detained pending adjudication of a criminal charge (3.7 percent) or a technical violation (.4 percent).

The Accuracy of Subjective Predictions

We examined the relationships between four outcome variables and seven subjective judgments across all parolees. The four outcome variables were: failure as defined previously by the Board, new criminal convictions, conviction of technical violations, and absconding. The seven judgments were:

⁵ In general, the original codes and later codes for these variables correlate in the .7 range. Even our coding of age and the same variable coded by the Board correlate "only" .87. In contrast, our reliability checks show that our two original coders correlate well over .9 on prior record, discipline, and so forth. In short, this is not random error but a difference in definitions between coders trained by academic researchers and those trained by Parole Board practitioners. It is our belief that researchers must work more closely with practitioners in the spirit of Lewinian "action research" before our analyses will become truly useful to one another.

(a) prognosis for supervision, (b) risk of future crime, (c) risk of future dangerous crime, (d) assaultive potential, (e) initial parole decision to release or deny, (f) initial institutional recommendation, and (g) initial Case Analyst's recommendation. None of these judgments significantly predicted any of the outcomes. Most of the correlations were in the appropriate direction, but were of trivial magnitude; the largest correlation was $r = .06$.

The Parole Interviewers were more successful, however, at predicting the seriousness of crime among the 88 parolees convicted of new crimes. Seriousness of new conviction correlated $r = .27$ ($p < .05$) with assaultive potential.

In trying to understand this generally disappointing performance, it is important to consider possible reasons why the Interviewers may not predict well. First, predicting recidivism may be virtually impossible, on the basis of available information, although modest predictability has been attained using actuarial predictions based primarily on prior record (e.g., multiple $R = .3$ in Gottfredson *et al.*, 1978, ch. 3). Second, the Interviewers may be inconsistent, randomly responding to idiosyncratic features of each individual case. Alternatively, they may be using the right variables, but combining them with incorrect weights. Finally, they may be using the wrong variables to predict recidivism and missing the right ones. In order to investigate these possibilities, and to promote improved predictions, we analyzed the outcome variables to produce an actuarial prediction of parole performance.

Predicting Crime, Technical Violations, and Absconding

The research staff of the Parole Board first conducted discriminant analyses relating only the variables coded by their own staff in the follow-up data to success/failure on parole. These analyses reveal three variables that significantly predicted failure: conviction offense type (property crime rather than assaultive and drug crime), a long record of convictions, and more noncriminal misconducts during the last year in prison (infractions such as playing a radio too loud or talking back to a guard). This model had a multiple correlation of $R = .22$ (Wilks Lambda = .96; $F[3,692] = 8.65$ $p < .001$) but had no more correct predictions of outcome than chance (i.e., predict everyone succeeds).

We then sought to relate parole performance to the subjective and factual variables collected at the time of the

initial parole interview, as well as the variables coded during the followup. We examined the three specific outcomes of conviction of a new crime, conviction of a technical violation, and absconding. These variables overlap somewhat with each other and with the Board's variable of success/failure. There were 16 cases of individuals convicted of technical violations and 12 individuals with criminal violations who were continued on parole and are thus considered "successes" on the overall measure. Because the overall predictability was very low, we used the more liberal procedure, compared to our earlier analyses of parole decisions, of including any variable significant at $p < .05$.

Only three variables predicted conviction of crime on parole in the multiple discriminant analyses: alcohol problems as rated by the Parole Interviewer ($p < .01$), age ($p < .01$), and conviction offense type ($p < .05$). Those parolees with alcohol problems, younger parolees, and those originally convicted of property crimes (rather than assaultive or drug crimes) were more likely to commit new crimes on parole. Subsequent analyses showed that the ratings of alcohol problems by the Interviewer are predicted only by other ratings and codings of alcohol problems and thus seem to be reasonably factual. However, the overall level of prediction was quite modest, with a multiple correlation of $R = .18$ and no increment in predictability over the base-rate prediction that no one commits any crime.

We also examined the cases of offenders who had been convicted of new crimes to attempt to predict the seriousness of these crimes, using a ranking of crime types provided by the Board. There was only a single variable that entered our analysis to predict crime seriousness: heroin use ($r = .45$, $p < .001$). Those offenders with past heroin use were convicted of more serious crimes on parole.

The predictability of technical violations was also low. Again, three variables predict significantly. Those parolees with alcohol problems ($p < .001$), property offenses ($p < .001$) and more noncriminal misconducts in prison ($p < .01$) were more likely to receive technical violations. The multiple correlation was $R = .23$, and there was again no increment in predictability over assuming no one commits technical violations.

Absconding was significantly predicted by a prior record of convictions ($p < .001$), the presence of previous parole violations ($p < .001$), and miscellaneous negative statements by the institution about the inmate's personality ($p < .05$). The

multiple correlation was $R = .26$, and predictability was once again near chance levels. Institutional ratings of a miscellaneous negative personality seem basically to involve lack of intelligence, since they are predicted quite well by I.Q. scores ($r = -.44$).

Parole Interviewers' Predictions

The inability of Parole Interviewers to predict recidivism in comparison to actuarial predictions is consistent with numerous studies demonstrating the superiority of actuarial devices (Gottfredson *et al.*, 1978; Sawyer, 1966). In this instance, the Interviewers may go wrong because they use prison conduct as a major indicator of future criminal behavior. However common-sensical this may seem, prison conduct does not relate to known criminal conduct on parole. It is true that rule-breakers in prison are hard to handle on parole, breaking rules and becoming technical parole violators. But this does not mean that they are committing crime, only that they do not conform to the rules and constraints of parole supervision. The experts may therefore be led astray by the assumption that those who act up in prison will commit crime again. This is an example of "illusory correlation" (Chapman and Chapman, 1969). However, before concluding that Interviewers are exhibiting illusory correlation, we must reiterate the argument expressed earlier that the strong relationship between prison conduct and prognostic judgments may itself be an illusory correlation, because the direction of causality has not been empirically established.

In other ways, expert predictions are accurate. They do utilize age, residence in parole plan, and previous parole violations in making prognoses, and these variables have been found to be valid predictors of parole outcome (Gottfredson *et al.*, 1978). The experts also are capable of predicting to some degree the seriousness of crime among those who do commit further offenses. Referring to Figure 1, we see that risk of dangerous crime and assaultive potential are judged on the basis of a history of assaultive and weapons offenses. Interviewers' assumption that prior assaultive behavior predicts future behavior seems consistent with the best available scientific evidence on dangerousness (Monahan, 1981). However, their reliance on these valid predictors is not strong or consistent enough to achieve satisfactory predictive accuracy. This seems to be an ideal place to alter decision

behavior through training or guidelines intended to acquaint decision makers with valid predictors.

Prediction and Guidelines

The best-known prediction device is the Salient Factor Score developed for the United States Parole Commission in the mid-1970's. It consists of nine dichotomous or trichotomous items: prior convictions and incarcerations, age at first commitment, offense type (auto theft or not), parole revocations, drug use, education, past employment, and release plan to live with family. These items overlap both with the predictors of parole outcome in Pennsylvania and with the factors affecting Parole Interviewers' predictions of risk. The correlation of this nine-item scale with a two-year follow-up measure of parole success similar to that in Pennsylvania was about $r = .3$ in the original and validation samples (Gottfredson *et al.*, 1978: ch. 3). Although this is better than the results in Pennsylvania, it is still a modest level of prediction.

Thus, the use of prediction devices as decision aids must be considered a promising approach but hardly a panacea, at least unless better predictions can be constructed. At best, they serve to moderate the apparently less accurate subjective judgments made by decision makers and may offer an increment in accuracy over assuming that everyone succeeds. (For a recent review of the political, legal, and scientific issues involved in prediction, see Underwood, 1979.) In the next section we consider some reasons why "scientific" prediction is no better.

Limits on Predictive Accuracy

One reason why prediction may be poor is that some of the very worst risks may not have been followed up, restricting the sample of parolees. Inmates who were refused parole or were paroled to detainers (sentences or warrants) and thus never released on parole in Pennsylvania are not present in the follow-up data. Comparing the follow-up cases with the entire sample of cases, it is clear that some of the worst subjective risks tended to be excluded by not receiving parole in Pennsylvania. Thirty-four percent of those judged poor or very poor on prognosis for supervision were excluded from Study 2, compared to ten percent of those judged fair or better ($X^2 [1] = 55.9, p < .001$). Similarly, 27 percent of those judged high risks of subsequent offenses were excluded, compared to 13 percent of those judged moderate or better ($X^2 [1] = 25.8, p < .001$). The

exclusion of the worst cases would attenuate the relationship of predictions and outcome. However, it remains true that 66 percent of those rated poor on prognosis for supervision and 73 percent of those rated as high risk *were* followed up.

There is some evidence that the worst *objective* risks tended to be excluded from the follow-up, but this evidence is weak and mixed. Individuals excluded were significantly worse on institutional discipline (49 percent of bad cases excluded vs. 14 percent of good cases, $X^2 [1] = 87.2, p < .001$) and previous parole performance (40 percent of bad vs. 15 percent of good; $X^2 [1] = 4.8, p < .05$). However, individuals excluded were significantly *better* on alcohol use (14 percent of bad vs. 21 percent of good; $X^2 [1] = 5.5, p < .05$) and not significantly different on crime type, prior convictions, or age. In fact, it is crime type, prior record, and age that tend to be the strongest predictors of parole performance in most studies (Gottfredson *et al.*, 1978).

A second problem is that the measure of recidivism is not perfectly valid. Some parolees may commit crimes and not be apprehended; others may even be mistakenly convicted. Some criminal violators may not be convicted but instead returned to prison as technical parole violators. The predictability of violations, particularly technical violations, may say more about the parole officer than about the parolee. The parole officer may watch some parolees more closely and more readily bring charges against them. This has been documented in other studies (McCleary, 1978; Neithercutt, 1972) in which "dangerous" offenders are held to a higher standard of conduct. Additionally, criminal recidivism depends not only on some "propensity" to crime, but also on environmental factors and chance events. The longer the parolee is out of prison, the more these unpredictable factors would influence conduct. Events become progressively more difficult to predict as the time between the prediction and the outcome increases (Monahan, 1981), yet predictions of immediate parole failure are difficult because these are relatively rare events (Einhorn and Hogarth, 1978; Monahan, 1981).

A final reason why prediction may be poor is if the parole system *works*. If worse risks are accurately identified, more intensively supervised, and treated in effective programs, then this extra effort could be reducing the recidivism of higher-risk parolees to a level comparable to the lower-risk parolees. This confounding of treatment and selection effects makes it difficult to evaluate accuracy or learn from feedback (Einhorn and

Hogarth, 1978). Although current research does not provide much support for this interpretation (Sechrest *et al.*, 1979), we suggest it as a logical possibility.

IV. SUMMARY AND PROGRESS REPORT ON PENNSYLVANIA GUIDELINES

Decision Goals

Parole decisions in Pennsylvania have been shown to involve two major considerations: (a) behavior in the institution and (b) predictions of future behavior relevant to rehabilitation and community protection. Behavior in the institution is important because Pennsylvania has no "good time" procedures to control prison conduct. Recommendations for release by the institutional staff and Case Analyst are based primarily on discipline and secondarily on participation in educational and work programs. Parole Interviewers (and the Board) combine these recommendations with judgments of their own regarding discipline, prognosis, and dangerousness. They are thus more future—or community—oriented than the institutional staff or Case Analyst.

Diagnosis

In making predictive judgments, Interviewers diagnose the "problem" that caused the individual's criminal offense. Five broad categories of crime causes were identified: personal dispositions, drugs, alcohol, money, and environment. Offenders whose crimes are attributed to the first three consistently receive less favorable prognoses and are less likely to be released on parole. These categories also suggest the rehabilitative strategies or treatment plans that would be used, respectively: counseling, drug treatment, alcohol treatment, job training, and supportive services/coping skills.

Predictive Accuracy

The accuracy of Parole Interviewers' predictions of performance on parole was evaluated with a one-year follow-up. Predictions showed virtually no relationship with performance, except that Interviewers were moderately successful at predicting the seriousness of crimes among those who committed new offenses on parole.

A comparison of the factors influencing subjective predictions with the factors predicting actual performance revealed that Interviewers may rely too heavily on prison

discipline as a predictor of parole performance. Prison discipline does not predict actual future crime, although it is related to technical parole violations (i.e., uncooperative prisoners make uncooperative parolees). Interviewers do rely on some demonstrably valid predictors such as previous parole violations, residence in parole plan, age, assaultive behavior, and substance abuse. This would seem to be an ideal situation to increase the use of the more valid predictors through education or guidelines aimed at controlling discretion.

However, even the scientific prediction devices are of only modest accuracy. Because of measurement problems, low base rates, long time spans, and confounded treatment effects, recidivism is inherently very difficult to predict. Nevertheless, actuarial predictions are more accurate, equitable, and consistent than intuitive judgments. For this reason, the Pennsylvania Board and other criminal justice agencies are implementing guidelines systems to employ a consistent policy using the most valid predictors available.

Guideline Development in Pennsylvania

The research we have described has had considerable impact upon guideline development in Pennsylvania. The Board has moved to create and formalize policy embodied in guidelines. The process begun by our research has continued in research conducted internally through the Board's Research and Statistics Division. A preliminary set of guidelines was implemented in early 1979 (for a report see Alibrio and Thompson, 1980), and a revised set put into effect in January, 1981.

The Board now considers the parole release decision to embody three major considerations which are, in order of importance: (a) institutional conduct, (b) parole prognosis, and (c) adequacy of parole plan. The Board proceeded to establish explicit indicators for each consideration. Thus, institutional conduct was translated into categories on the basis of specific numbers of misconducts and rule infractions in the twelve months prior to release. Prognosis was translated into categories based on prior convictions, offense type, and age. Additional unfavorable factors were enumerated, including prior parole revocations, habitual offender status (three or more similar prior offenses), and an offense involving injury or weapons. The final parole decision rests on an explicit combination of prognosis and accumulated unfavorable factors. However, the Parole Interviewer can go outside the

guidelines for a variety of reasons (many of which are expressed in the guideline materials) such as response to institutional programs, the strength of the parole plan, psychotic or dangerous behavior exhibited in the parole interview, and a record of substance abuse.

The Board policy expresses the fundamental objective of parole guidelines as the assurance of fairness and equity. The guidelines also serve to make parole decision making accountable to the public, the legislature, and inmates. Inmates can predict the parole decision with high accuracy and understand how they are accountable to the Board. The modest increase in predictive validity represented in the guidelines is actually a less important objective. The Board establishes the objectives of the interview as the gathering and verification of information in order to enhance the effectiveness of judgment.

Implications

In any field research the generalizability of the conclusion is limited by the particularities of the research setting. For instance, in Pennsylvania the relationship of the courts, the corrections system and the Parole Board establishes the role of Parole Interviewer and its principal concerns. However, the major implications of our research probably apply to discretionary decision making in a number of settings. First, we have shown that the decision maker's goals or major considerations, and their attendant use of information, is defined in part by organizational arrangements among criminal justice agencies and within an agency. Second, our results illustrate the major role of prediction in discretionary decision making and indicate that prediction may be based on diagnosis or causal reasoning. Finally, our results are consistent with many investigations that have shown actuarial prediction to be superior to clinical prediction. We believe that increasing our understanding of the organizational and psychological factors that influence decision making will facilitate the construction of actuarial prediction devices and their adoption by decision makers, and will facilitate the process of creating consistent and publicly visible policy procedures to improve discretionary decision making.

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