

RESEARCH IN

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FOREWORD

The National Institute of Corrections is pleased to join with the Robert J. Kutak Foundation to offer the first monograph in a new *series, Research in Corrections*, designed to provide high-quality summaries of research for correctional practitioners. Each monograph seeks to convey research findings on a selected topic in a clear and policy-relevant fashion and includes the reactions of correctional practitioners regarding the issue which arise in applying the findings in real-life agency operations.

In this first monograph, Dr. Todd R. Clear presents a critical assessment of the uses of statistical prediction in corrections. Billy Wasson and James Rowland highlight the significance of those findings to agency operations and the importance of an implementation strategy. It is undeniable that the use of prediction is central to virtually every aspect of correctional decisionmaking, whether informally applied or based on carefully designed prediction instruments.

The National Institute of Corrections has contributed in a major way to the expanded use of prediction techniques. In the past ten years, the Institute has devoted more resources to policy development and technical assistance on this issue than to any other single area. We have encouraged the use of prediction methods to determine security classification in prison or jail and the intensity of supervision while an offender is on probation or parole. We have also contributed Institute resources to research on the use of predictive data in decisions regarding the length and type of punishment-in pre-trial release, at sentencing, and in parole release decisionmaking processes.

Publication of this monograph contributes significantly to a growing critical discussion of the uses corrections should and should not make of prediction methods. We must be clear about how predictive information is used under different sanctioning strategies and demand the highest quality of prediction methods, because of the consequences for offenders, costs, and the entire criminal justice system.

We wish to recognize the contributions of the late Robert J. Kutak to the field of corrections. He was a key author of the legislation that created the National Institute of Corrections and a man genuinely interested in the future of corrections as well as the continued welfare of the Institute. We also appreciate the support and special interest in this project of Dr. Stephen Horn, a member of both the Institute's Advisory Board and the Kutak Foundation's Advisory Board. Finally, the monograph series is indebted to the vision and commitment of Joan Petersilia, who serves as the series organizer and editor.

Raymond C. Brown

EDITOR'S NOTE

Over the past decade, many excellent research projects have been conducted. However, the results often fail to reach the practitioner community. This is a particularly problematic issue for corrections, which it is more fiscally strained than other components of the criminal justice system. Even when a report reaches practitioners, its recommendations often "bounce off" the policy process because the researcher has failed to present the results in a policy-relevant style.

After several discussions of this problem, officials from the NIC and the Kutak Foundation agreed to support a monograph series dedicated to "translating" research findings for correctional practitioners.

Research in Corrections will be published three to four times a year, over the next two years. Each issue will be devoted to a single topic and will include a review of relevant research, as well as two to three "practitioner responses." In these responses, leading corrections officials will assess the importance of the research findings for policy and practice. They may discuss the feasibility of the research recommendations, the validity of the findings, implementation difficulties, and so on. In general, practitioners are being asked to review the research findings and to consider whether or not they convey something that corrections should take seriously. The result, we hope, will be to bring the latest research findings to correctional managers, and also to create a stronger dialogue between researchers and practitioners.

Dr. Todd Clear, the author of the first issue of the series, is an Associate Professor at the School of Criminal Justice, Rutgers University. He is well known for his work in the area of correctional decisionmaking systems, classification, and community corrections. He is the author of numerous books and articles, including *American Corrections (1985)*, *Controlling the Offender in the Community (1982)*, and *The Presentence Investigation Report (1988)*.

The remaining issues of *Research in Corrections* planned for 1988 will address the relationship between diet and criminal behavior (Drs. Diana Fishbein and Susan Pease), pretrial release (Stevens Clarke), and correctional costs (Dr. Doug McDonald).

Articles are now being commissioned for 1989, and we would be pleased to hear from individuals who would like to contribute research papers or serve as practitioner respondents. All correspondence should be addressed to the National Institute of Corrections, 320 First St., N.W., Washington, D.C., 20534.

Any experimental venture such as this requires the efforts of many. In this project, this includes Raymond C. Brown, Director of the National Institute of Corrections; George Keiser and Phyllis Modley, of the NIC Community Corrections Division; Harold Rock and Dean Pohlenz, of the Kutak Foundation; and Stephen Horn, a member of the NIC's Advisory Board and the Kutak Foundation Board of Directors. We are grateful to them for their continued support.

Joan Petersilia

STATISTICAL PREDICTION IN CORRECTIONS

Todd R. Clear

ACKNOWLEDGMENTS

In September 1986, a small group of people met for three days in New Brunswick, New Jersey, to discuss the uses and limitations of prediction in corrections. The costs of the meeting were underwritten by the National Institute of Corrections, the Rutgers University School of Criminal Justice Program Resources Center, and the participants themselves. This monograph is an outgrowth of that meeting, reflecting the "briefing papers" developed by four participants to set the basis for the discussion as well as the very active interchange that took place. That meeting was an invaluable asset in the writing of this paper. It provided the structure for the work and clarified many of the points that needed to be made under the topic of prediction in corrections. I would like to express my indebtedness to and appreciation of the people who attended that meeting: Chris Baird, Don Gottfredson, Stephen Gottfredson, and Joan Petersilia, who wrote briefing papers; and Linda Adams, Larry Bennett, Tim Brennan, Dave Dillingham, Bob DeComo, Carol Engel, Kay Harris, Sally Hillsman, Malcolm MacDonald, Mary Mande, Dale Parent, Tom Perras, and Billy Wasson, who wrote reaction papers. I would also especially like to thank Stephen Gottfredson and Andrew von Hirsch, whose reviews of earlier versions of this paper were extremely helpful.

INTRODUCTION

Prediction is probably the most commonly used basis on which corrections officials make decisions about offenders. Prediction can be overt, as when a parole board denies parole because the offender is deemed a danger to the community, or it may be subtle, as when a corrections officer decides to watch an inmate closely because he thinks "something fishy" is going on. Prediction can be a formalized process, based on the use of standardized assessment instruments, or it can be informal and unstructured, based on the decisionmaker's "gut feelings" about the case. Whatever form a correctional decision takes, most of those concerning offenders are made with some prediction in mind—even if it is merely of how a person is expected to react to a particular intervention.

Because prediction is ubiquitous in corrections, increasing attention has been paid to improving the accuracy and effectiveness of the prediction methods used. This has resulted in the widespread adoption of "prediction instruments" that are purported to provide the decisionmaker with information about the offender's probable future conduct. These instruments have two main advantages for corrections: First, they improve the reliability of decisions made about offenders—in a sense, they make corrections officials more predictable. Second, they provide a basis on which corrections personnel can publicly justify both individual decisions and decisionmaking policies. In both cases, the advantage is grounded in the powerful appeal of "scientific" decisionmaking.

In fact, in recent years, there has been a virtual explosion of information relating to the problem of prediction. Beginning in the early 1970s, several experiments were conducted to provide a quantitatively based structure for various correctional decisions, including parole (Gottfredson, Wilkins, and Hoffman, 1978), sentencing (Wilkins et al., 1978; Kress, 1980), and bail release (Goldkamp and Gottfredson, 1985). These major studies served as prototypes for the similar attempts that followed, and each relied heavily on statistical prediction methods in the formulation of the decisionmaking structure (the methods were called "guidelines," because they were considered advisory rather than binding). These structured approaches to decisionmaking have been subjected to considerable study (e.g., Rich et al., 1982; Blumstein et al., 1983).

In the late 1970s, a number of researchers began to apply the techniques of prediction to the problem of offender classification (Baird et al., 1974; Clear and Gallagher, 1985; Brennan, 1987), borrowing heavily from earlier work by Glaser (1962) and Gottfredson (1967). Statistical prediction instruments, often called "risk classification devices," have proven so popular that they have become the standard basis for classification decisions concerning supervision in the community (Clear and Callaghan, 1985), even though their use has not been subject to much systematic evaluation.

Public concern about crime, which seemed to grow steadily through the 1970s and peak in the early 1980s, spearheaded considerable research on the problem of repeat offenders, who account for a large portion of serious crime (Greenwood, 1982). Research methods ranged from self-reporting (Chaiken and Chaiken, 1982) to individual career modeling based on analyses of official statistics (Blumstein and Cohen, 1979); all the studies shared the goal of developing a better understanding of "criminal careers" (see Blumstein et al., 1986). The idea of criminal careers is important for correctional prediction, because the ability to know which offenders will have long or productive criminal careers could permit corrections officials to make decisions that would help prevent crimes. Because career criminal research is so new, there is much speculation as to its value but few concrete evaluations of programs. The career criminal idea has also raised considerable debate concerning the ethics of basing judicial and correctional decisionmaking on measures of criminal career involvement, especially predictive measures (von Hirsch and Gottfredson, 1983).

These three concepts-structured decisionmaking, classification systems, and criminal careers-have had tremendous influence on correctional thinking and practice in the past decade. In many areas, the changes have been so rapid that little time has been given to considering the implications of new policies and programs based on prediction methods, and some decisions have been made about new programs or methods without adequate consideration of the alternatives and their consequences (Clear and Baird, 1987). The choice is not so much whether or not to use prediction approaches in corrections, but when and how to use them. And it is essential that their limitations be understood.

This monograph is about the application of modern prediction methods to correctional decisions. It is directed to the corrections policymaker, and its purpose is to help that policymaker be a more informed user of prediction approaches in various applications. It is not possible here to provide a detailed review of the decision structuring, criminal careers, or classification literature-in any case, excellent, quite recent reviews of these topics already exist. (Where appropriate, these are noted in the text and references.) Instead, this monograph discusses prediction (and its recent advancements in these three areas) in terms of practical significance for corrections. This is not a "how to" document; it is a critical assessment of the uses corrections may make (and, probably more important, may not make) of recent advancements in prediction-related work.

THE PHILOSOPHICAL BASIS FOR PREDICTION

Perhaps because prediction tools are so easy to use, corrections officials often fail to recognize that critically important philosophical statements are being made when a prediction method such as a risk screening device is used. Two primary philosophical orientations are necessarily adopted when prediction is used as the basis for a correctional decision. One is the concept of science and its inherent values, the other is the notion of utilitarian punishments, with its often controversial assumptions and values. Decisionmakers should not adopt prediction methods without acknowledging these two important philosophical statements.

Science

It is often difficult for people who work with human beings in situations that may be highly uncertain to embrace the values of science. Yet much of the resistance expressed by staff to "new" instruments for, say, classification decisions, stems from discomfort with the orientations of science. Staff are often quite used to discretion, and they approach decisions as though they were individual exercises. From the scientific point of view, decisions are sample incidents from a larger population of events. Individual events that are unique are of little interest, especially if our goal is to reduce uncertainty about how best to approach future situations (Wilkins, 1969). It is not the uniqueness of events that is useful, but their similarity to other events with which we are concerned. Thus individual decisionmakers may ask themselves how a particular

offender is different from others, whereas a scientific model of decisions asks how the offender (or decision situation) is similar to others that have been experienced in the past.

Instead of treating offenders as individuals, a scientific model treats them as members of groups for which there is an experience base. It then acts on the individuals, basing those actions on experience with other members of the group to which they belong. This is not really a particularly remarkable idea, because it is basic to much human behavior. Still, treating people as members of classes often seems to fly in the face of the corrections worker's personal values, even though it is very commonly done. Without the ability to group people, science can be of no help to us in structuring decisions, for if a situation is truly unique (i.e., it has never occurred before and will not occur again), on what can we base a decision, and what does it matter anyway? Thus, the values of science connote objectivity (not subjectivity) in decisions, the assumption of an underlying order to the physical and behavioral world, and the adoption of rules and categories for explaining observed phenomena.

Of course, anyone with any sense knows that the idea of mapping objectivity, order, and rules onto the whole range of human behavior in some hard and fast manner is very nearly nonsensical. Except for trivial activities, human behavior seems unpredictable, complicated, and inexplicable. It is not that the values of science are wrong; it is that the quality of our science of human behavior is so very limited. Rather than trying to "explain" human behavior in the same way that we use the laws of physical sciences to explain physical phenomena, we should think of the human sciences as ways to "reduce our uncertainty" about human behavior.

This concept of uncertainty reduction is critical to an understanding of what correctional prediction is all about. The very need for prediction stems from our uncertainty about what will happen in the future—we don't know how the offender is going to act. We will never be able to *eliminate* our uncertainty, because no matter how strongly we feel that a given offender is going to behave in a certain way, there is always some chance that we will be wrong. No one can predict human behavior with 100 percent certainty. The task is to reduce our uncertainty to the point where we will be wrong in our predictions as infrequently as possible. That is what science—with its assumptions of order and regularity of the behavior of classes of individuals—helps us to do.

Another aspect of the use of science to study behavior is that it commits the decisionmaker to basing decisions on what is known about human behavior. It makes no sense to adopt a prediction approach and then allow officials to treat offenders according to whim. The decision to take a scientific point of view is also an obligation to operate in ways consistent with current knowledge. Science operates as a limiting principle when it is used in decisionmaking.

Utilitarian Punishments

The second-and highly controversial-philosophical assumption is that it is appropriate to make decisions about offenders based on what they will do in the future, knowing that this is uncertain.

The controversy stems from two problems: First, the inevitability of error means that, regardless of the power of the prediction instrument, some offenders who are designated low-risk will commit crimes, and some who are deemed high-risk will, in fact, be nonrecidivists. In the latter case, a cost is borne by the offender, because tight controls (such as continuing imprisonment) are imposed, solely due to an erroneous prediction, even though they are not needed. Second, it is not altogether clear that it is fair to base an offender's correctional situation on a prediction of his or her potential conduct. These considerations will be dealt with separately below.

The Problem of Justice. The use of prediction methods in correctional decision-making is considered "utilitarian" because its aim is the design of a punishment level or type that is best able to reduce the incidence of future crime. Of the traditional utilitarian justifications of punishment, three-incapacitation, treatment, and specific deterrence-rely on some form of prediction. The alternative-the nonutilitarian justification-is based on the idea that punishments need not be justifiable in terms of reducing future crimes in order to be just.

In the 1970s and 1980s, an influential body of literature appeared advocating the abandonment of utilitarian justifications for punishment (von Hirsch, 1976; Singer, 1979). This literature makes two main arguments against the use of prediction in judicial decisionmaking: First, it is argued that basing an offender's punishment on some event that may or may not occur in the future is fundamentally unfair and violates the very foundations of U.S. jurisprudence. Under U.S. criminal law, people are punished for acts they have done and for which they have been convicted via due process, not for acts they may do in the future (Hart, 1958). Therefore, offenders should receive punishments that reflect only the relative seriousness of their crimes.

The second argument is that predictive or otherwise utilitarian schemes of corrections inevitably use unacceptable criteria in the distribution of sanctions (von Hirsch, 1976). The use of rehabilitation or incapacitation rationales in corrections requires consideration of personal characteristics such as substance abuse, employment prospects, and suitability for treatment-factors that are considered patently inappropriate to the sanctioning decision, which should be based solely on the seriousness of the crime and the offender's culpability. Because of their reliance on these irrelevant concerns, predictive systems do injustices to the offenders to whom they are applied.

What is at stake in this debate is the fundamental meaning we attach to the criminal law. Is it the role of criminal law to make a public statement of disapproval of an offender's misconduct and to place a public price on that disapproval through the punishment imposed, or is the purpose of the law to allow

the state to take whatever actions are necessary to provide some level of protection to the community?

In truth, corrections officials engage in a good deal of sloppy thinking about this dilemma. When a long prison term is handed out to an offender, it is not uncommon to hear the sentencing justified by a statement something like this: 'I am putting this offender away because he is dangerous, but if he never committed another crime, the punishment I am imposing would be justified because of the crime he committed.'

This kind of reasoning is illogical on two grounds. First, if the offender's crime is sufficiently serious to justify the heavy penalty, it is immaterial whether another crime is likely to be committed. The punishment must be imposed because failure to do so would denigrate the seriousness of the act. By the same token, the seriousness of a person's crime is quite a different issue from the person's risk of committing a future crime. This problem will be treated in more detail later, but its importance cannot be overemphasized: One of the most common findings in the literature on prediction is that the seriousness of the current offense and the probability of a subsequent offense are statistically unrelated (indeed, many studies find these factors to be negatively related). Therefore, justifying a penalty that is designed to incapacitate on the basis of the crime's seriousness, no matter how tempting, violates our scientific understanding of human behavior.

The lack of relationship between crime seriousness and risk of future crime has ominous significance for corrections policymakers. It is not possible, given current knowledge, to maximize both concerns, even though each is legitimate. In other words, the decision to employ a prediction method in correctional practice is tantamount to a decision to devalue concerns for just punishment in order to embrace the utilitarian notion of crime control. It is possible to optimize either just deserts or crime control, but not both simultaneously.

Of course, the degree of damage to the principles of just deserts that occurs because of the use of a prediction rationale for punishment depends on the amount of influence the prediction carries for the decisions being made (von Hirsch, 1983). It is possible to use prediction methods merely to influence security classification during incarceration or to determine supervision intensity while the offender is on probation or parole, which wreaks little havoc on the basic principles of nonutilitarian thinking. However, if the correctional policy calls for some predictive information to help the sentencing official determine either the type of punishment (i.e., probation or incarceration) or the length of the sentence, some damage is bound to occur to the value of just deserts, simply because of the poor mathematical relationship between prediction and crime seriousness. The question is the amount of latitude correctional officials should be given to employ utilitarian rationales in their work, and the degree to which deserts requirements may be relaxed to incorporate those concerns. Therefore, the philosophical challenge to those who wish to use prediction is this: Under what conditions and for what reasons is it permissible to violate the requirements of just deserts?

To answer this question requires, first, a return to the underlying intent of utilitarianism, which is to reduce the incidence of harmful events. Moreover, it is not enough to say that the reduction of crime justifies the violations of deserts that occur in the use of prediction, for it is not crime per se that is undesirable. We seek to reduce crime because we detest and wish to eliminate the harm to victims and society that occurs as a result of crime. Therefore, the ultimate test of any utilitarian scheme is whether it reduces harm, pain, and suffering. Without such reduction, there is no justification for the approach, and there has been no gain to offset the distortion of just deserts.

If the philosophical basis of prediction in corrections lies in the ultimate reduction of harm, then the question arises, What kinds of harm are to be reduced, and with what priority? Certainly, the harm crime victims experience should be reduced. Yet imprisonment is also a harmful experience, by any account (see Sykes, 1951; Irwin, 1970). Not only offenders, but their families as well often experience harm as a consequence of a punishment (Newman, 1983). Moreover, damage is done to the social fabric when punishments imposed are far out of order with either what is deserved for the crimes or what is needed to prevent recurrence.

This generalized concern about future harms has two consequences for the use of prediction: First, a prediction can never be used as a blank check to justify any treatment of a given offender—in other words, it is not permissible to seek to avoid the harms of new crimes at all costs. The costs to the offender of extreme punishments and the costs to society of overly aggressive social control also must be considered from a utilitarian viewpoint. Second, the decisionmaker must consider the consequences of prediction errors.

Prediction Errors. Because it is impossible to predict human behavior with certainty, errors are inevitable. Figure 1 displays the four possible results of prediction decisions:

- *True positives:* The corrections official correctly predicts that the offender will recidivate.
- *True negatives:* The corrections official correctly predicts that the offender will not recidivate.
- *False positives:* The corrections official incorrectly predicts that the offender will recidivate.
- *False negatives:* The corrections official incorrectly predicts that the offender will not recidivate.

In a later section, we present the mathematical and strategic relationship between false positives and false negatives. Here, for purposes of clarifying philosophies, it is important to consider the costs (or harms) that result from each of these prediction errors.

False negatives (FNs) result in costs to the victims of crime, including financial burdens and less easily quantifiable emotional harm and personal loss. There is also an intangible loss to the community that happens as a result of crimes-

		Actual outcome	
		Failure (new crime)	Success (no new crime)
Predicted outcome	Failure (new crime)	True positive	False positive
	Success (no new crime)	False negative	True negative

Fig. 1-The structure of predictions and their errors

neighborhoods become less wholesome, people begin to fear each other, and there is a decline in the quality of life. Because of the extreme political and social costs of FNs, many prediction approaches attempt to minimize their occurrence.

False positives (FPs) also produce direct costs to citizens. Offenders are forced to experience levels of control that are unwarranted and unfairly intrusive. Tax-payers must bear the burden of paying for expensive correctional control-and prisons are very expensive indeed-that is providing no control benefit. Worse, expenditures on control for FPs also create opportunity costs (Clear et al., 1982), for the money must be diverted from other possible public services, such as schools or roads, to provide the correctional service. Moreover, there is a cost to the social system when unnecessary controls are routinely applied to its members. One of the reasons for overcrowding in America's prisons is the prevalence of FPs.

A simple listing of the costs of the errors that occur when predictions are followed by actions amply demonstrates the difference between utilitarian thinking and the nonutilitarian alternative. Those who would use prediction as an aspect of correctional policy are forced to confront the difficult problem of errors and minimize the costs of both types. Nonutilitarians are unconcerned with the costs of prediction errors, because no predictions are made. While it is true that under a just deserts model, the harms that utilitarians seek to avoid still occur-that is, some offenders commit new offenses and others experience a loss of freedom that provides no reduction in crime-no plan is devised to reduce or control these harms, because the philosophical orientation of the concept recognizes no obligation to do so.

Therefore, the decision to use prediction methods carries with it serious philosophical obligations:

1. It must be accepted that critical aspects of nonutilitarian philosophies will sometimes be sacrificed in order to advance values of crime control.

2. The primary test of the justifiability of any prediction-based system of corrections policy is whether the policy actually tends to have crime-control effects.
3. The building blocks of any prediction-based policy must be consistent with current knowledge about offenders and crime control.
4. The problem of prediction errors must be expressly and visibly confronted.

In the sections that follow, strategies for abiding by these philosophical obligations are presented in some detail. However, the specific mechanisms for any jurisdiction will necessarily depend upon the special characteristics of that jurisdiction. Three values have been suggested as important for framing more specific strategies (O'Leary and Clear, 1984), and these are consistent with the philosophical underpinnings of prediction in corrections.

First, the value of humaneness requires that, to the degree possible, actions must be taken which enhance the quality and meaning of human life, including the lives of offenders, their families, victims and other citizens. Where it is possible to establish programs that are consistent with the value of humaneness, this must be done.

Second, the value of knowledge requires that any actions taken must be consistent with what is currently known about crime control. This means that a simple rhetorical reference to "protecting the public" is not enough to justify a program; there must also be some demonstration of the program's reasonableness, given current evidence. This value also means that correctional programs must be designed in a way that can contribute to our knowledge.

Third, the value of cost requires that, all else being equal, the least expensive correctional approach must be adopted. This value recognizes the existing limitations on public funding and seeks to eliminate unnecessary expenditures to free funds for other public services.

THE ACCURACY OF PREDICTION IN CORRECTIONS

Several recent publications discuss the accuracy of prediction in corrections (e.g., S. Gottfredson and D. Gottfredson, 1986; Gabor, 1986; Gottfredson, 1987a), and there is a rather extensive literature on the general problem of predicting human behavior (e.g., Meehl, 1954; Monahan, 1981). A general conclusion one might draw from a review of this literature is that the accuracy of predictions of unusual human behaviors such as committing serious crime is limited. On the other hand, our understanding of ways to use statistical methods in making predictions has improved greatly in recent years, and this has improved our general ability to predict crime.

Actually, what has happened is that people no longer talk about "predicting" an offender's behavior; instead, they refer to "classifications" of an offender's risk

level. To explain the significance of this, we must explain how modern prediction methods work and how they are used.

The Problem of Prediction Error

Most prediction methods attempt to identify individuals who are likely to be reoffenders; these methods have suffered from serious difficulties in the type and frequency of prediction errors. To illustrate this problem, let us assume a population of 1,000 offenders subjected to a prediction that the rate of felony rearrests for the population as a whole will be 20 percent. By making this assumption (which is reasonable, given some summary studies of overall offender failure rates in the United States (e.g., BJS, 1983), we have already determined two aspects of a prediction problem that must be established, the base rate and the prediction criterion. The base rate is the proportion of the population that will exhibit the behavior in question-in this case, the base rate is 20 percent. The criterion is the actual behavior being predicted-in this case, felony arrests. As can be seen, the base rate and the criterion are related aspects of a prediction problem. For example, if our criterion had been "rearrest for a violent crime," a less frequently occurring event, the base rates would be lower-perhaps as low as 5 percent.

The prediction problem becomes this: How do we know which offenders are going to be rearrested? For purposes of illustration, let us assume that the use of a prediction device of some sort allows for the identification of 200 potential failures out of the population of 1,000 (because of the base rate, we know there will be approximately 200 failures in this group). We also assume that one-half of our "identified potentials"-the predicted failures-will actually fail (a 50 percent true positive rate is considered good for most prediction devices; see Gottfredson, 1987b). Figure 2 shows the distribution of correct and incorrect predictions, based on the above parameters.

		Actual outcome		
		Failure	success	
Predicted outcome	Failure	100	100	200
	Success	100	700	800
		200	800	

Fig. 2-Illustration of distribution of correct and erroneous predictions
(1,000 offenders; base rate = 20%; 50% positive)

In this hypothetical case, there are 200 erroneous predictions, equally divided among FNs and FPs. Stated in another way, if a judge incarcerated the 200 “predicted failures” and released all the other offenders, 10 percent of the decisions would be FNs and 10 percent would be FPs, with an overall error rate of 20 percent, which does not seem too bad.

However, it is important to look at these errors separately, since it is wrong to assume that they are qualitatively equal. Of those released, 12.5 percent (the ratio of FNs to all releases) will reoffend—this ratio provides something of a recidivism rate for this group. The “recidivism rate” for the nonreleasees, had they also been released, would have been 50 percent.

One difference between the two types of error is that only the FNs are visible to the public as individual offenders. The 100 offenders sentenced to incarceration who could have been released (the FPs) are invisible errors, but because of the limits of prediction, it is not possible to know precisely which ones the errors have been made about. By contrast, all the FNs are known quite precisely. No matter how safe people feel because the FPs are incarcerated, the feeling is irrational, for there was no reason to be fearful in the first place—even though the public will never know it. They will, however, learn about the FNs, for each new arrest of a previous offender is all too visible.

The symbolic significance of this difference in visibility cannot be overstated. From a prediction standpoint, every decision makes the decisionmaker vulnerable to error, but only one type of decision creates a vulnerability to *visible* error: the decision to treat an offender as a probable nonfailure. That is one reason for the great pressure on the system to make conservative decisions. The other reason is public pressure; there is a general, dependable negative reaction to the FN, and this reaction has, if anything, become more apparent in recent years. By comparison, the public pressure to avoid FPs is minimal, probably partly due to their invisibility.

The effect of internal and external pressure to avoid visible errors has a dramatic effect on the overall error rate. This is illustrated by returning to the situation in Figure 2. Let us assume that the pressure to reduce FN errors is so intense that a goal is set to cut them in half. There are really only two ways to do this. The first, obviously, is to improve the predictions. Since the illustration is already based on a good true positive rate, this is not a reasonable approach. The other approach is to overclassify, or to select a number of failures that exceeds the known base rate. (The proportion of offenders predicted to fail is known as the *selection ratio*.) Since all of the 800 predicted successes “look alike” to us in our original prediction, our only choice is to select from that entire group. To cut the FN rate by half, we must reduce the number of predicted successes by half. Figure 3 shows the resulting distribution of correct and erroneous predictions, based on the new selection ratio.

The desire to reduce the rate of FNs in our example has changed the structure of errors dramatically. A 50 percent reduction in FNs has been accomplished at the expense of a 450 percent increase in FPs! Now, a full 50 percent of all the

		Actual outcome		
		Failure	success	
Predicted outcome	Failure	150	450	800
	success	50	350	400
		200	800	

Fig. S-Illustration of the impact of overprediction on prediction errors
(1,000 offenders; base rate = 20%; 50% accuracy; overprediction to cut FNs by 50 percent)

decisions are erroneous, and still the failure rate of releases is 12.5 percent, while fully 70 percent of the incarcerated offenders could safely have been released. Figures 2 and 3 demonstrate the cost of overclassification: With low base rates, reductions in repeat crimes can occur only at the expense of (sometimes drastic) increases in unnecessary incarcerations. When base rates are low, our current ability to predict, combined with the desire to avoid the harms that result from both types of prediction error, suggests that we should not engage in overprediction.

Yet overprediction is one of the most common phenomena in correctional decisionmaking, as studies consistently bear out. When the U.S. Supreme Court ordered the Commonwealth of Pennsylvania to release approximately 250 “insane criminals” because their life commitments had been achieved via unconstitutional procedures, the rearrest rate of these so-called “dangerous” offenders was approximately the same as that of a random sample of Pennsylvania parolees from the same time period (Steadman and Keveles, 1974). This is merely one particularly dramatic illustration of a general practice of overprediction that has been repeatedly documented (Monahan, 1987).

The Risk Assessment Alternative

Because the base rate of most types of offender failure is below 50 percent, the prediction that produces the fewest errors is always a “success,” absent any additional predictive information. Yet concern about the costs of FNs—and their excruciating visibility—makes this prediction approach frustratingly inadequate, even when most offenders in a prediction population will succeed. This has led to the widespread adoption of the “risk assessment” approach, because it creates subgroups with base rates that approach or even exceed 50 percent. Although the use of risk assessments cannot eliminate the existence of FPs, the identification of a high-base-rate group reduces the cost (in terms of error) of a prediction of ‘failure.’

Risk assessment techniques divide an offender population into ‘subclassifications’ in which the subclasses have different base rates of criterion behavior.

For example, a typical risk assessment approach is to create, say, three groups called “high-risk,” “moderate-risk,” and “low-risk.” A risk classification device is then applied to each offender to determine the class to which he or she will be assigned.

The risk assessment device is created by using one of several standard statistical methods (Brennan, 1987), all of which appear to be of roughly equivalent effectiveness in practice (Gottfredson and Gottfredson, 1979). In each one, a series of steps is followed in all competent design strategies (Clear and Baird, 1987). These steps are summarized below.

Steps in the Design of Risk Assessment Devices

Step 1: Development of a Study Sample. A representative sample of closed cases is drawn to form the basis for the instrument design. Variables commonly associated with various failure criteria (see D. Gottfredson and M. Gottfredson, 1986; Gabor, 1986) are then coded for those cases. The sample should be large enough to produce reliable estimates of the prediction model parameters. Most statisticians suggest at least 50 cases for each variable to be used to construct the instrument, with a similar number in the validation sample. Because no more than 10 variables are usually established for the prediction instrument, 1,000 cases is sufficient for most studies.

Step 2: Dividing the Sample. The sample is randomly divided into two subgroups, a “construction” subsample and a “validation” subsample. The prediction model will be developed on the construction subsample, and the reliability of its estimates will be tested on the validation subsample. This allows an estimate of the prediction outcomes that is not based on “chance correlation,” which sometimes occurs in the construction analysis. (Some recent authors, e.g., D. Gottfredson and M. Gottfredson (1986), have argued that the loss in power of the estimates resulting from a divided sample militate against this procedure, but it provides a good, independent new estimate of the base rates of the subgroups and can be valuable for understanding the instrument’s validity as well as the limitations of the cutoffs chosen for establishing the subgroups.)

Step 3: Constructing the Model. Some statistical method, usually multiple regression, is used to create a “statistical model” that is essentially the combination of factors and their weights which, taken together, do the best job of indicating whether an offender will fail. This “model” can also be thought of as a “scale” which is correlated with the criterion variable.

Step 4: Validating the Model. The model from step 3 is then applied to the cases in the validation sample. This provides another estimate of the number of cases falling in each of the risk classes and the base rates of those classes.

Step 5: Monitoring and Revalidation. Steps 1 through 4 are periodically repeated to determine whether the model needs to be updated to reflect changes in offender population profiles or other factors.

The process outlined above is a simplification of a relatively straightforward and well-established set of procedures. The fact that these steps involve language and concepts unfamiliar to most policymakers should not intimidate the corrections administrator. This listing is presented merely to show that a well-understood process is used to design risk instruments, and that this process should be followed, more or less, in the decision of a given agency to use statistical prediction for a particular problem.

If the instrument is valid, scores (added totals of the points for each factor in the instrument) will be linearly correlated with the criterion, such that the judicious selection of cutoff scores (the scores that define each of the classes) will produce very different subclass base-rate estimates. Table 1 illustrates this aspect of risk instrument design. In this example, the constructed model has been validated against a subsample of 333 cases. The scoring of the instrument produces a scale that ranges from 0 to 21 total points (i.e., a 22-point scale). In some respects, this table illustrates a typical validation of a risk screening instrument. The overall correlation between the scale score and failure is moderately high and statistically significant. There are even reversals—people with a score of 3 failed at twice the rate of those with a score of 11. The power of the scale lies not in a fine interpretation, but in the creation of subclasses that establish large differences in subrates. In this illustration, the application of the two cutoffs

Table 1

**RESULTS OF A HYPOTHETICAL VALIDATION
OF A RISK SCREENING DEVICE**

Scale Score	N	Number of Failures	Number in Cutoff	Cutoff Base Rate (%)
0	18	0	123 (37%)	7
1	16	0		
2	13	1		
3	14	2		
4	16	0		
5	17	2		
6	16	1		
7	13	2	105 (32%)	17
8	14	3		
9	14	3		
10	16	2		
11	15	1		
12	16	2		
13	14	3		
14	16	4	105 (32%)	38
15	13	5		
16	14	4		
17	18	5		
18	17	5		
19	16	7		
20	14	8		
21	13	6		
Total	333	66	333	

from the construction sample creates three groupings with quite different sub-base rates. The population base rate of 20 percent is decomposed into subrates of 7 percent, 17 percent, and 38 percent. Although none of the subsample rates in this example exceeds 50 percent, a large difference has been created between the groups, with each group's rate less than half that of the next higher group, and the high group's rate five times that of the low group.

Here, the relative differences are not important; it is the absolute numbers in each of the groups that is important. Figure 4 shows the significance of subgroup differences in patterns of errors to be dealt with through prediction policies. The figure shows the distribution of errors for each group. The left side of each diagram represents the proportion of errors that would be made if all offenders in that group were treated as potential failures. The right side shows the number of errors that would be made if all members of the group were treated as potential successes. As can be seen, the difference is the smallest for the 'high-risk' group.

It is now possible to develop policies that attempt to manage the number and relative frequency of errors. "Policy A" shows the distribution of errors under a relatively conservative control policy (one that uses control sparingly); "Policy B" shows the relationship for a fairly liberal control policy (one that makes greater use of 'controls'). The differences are remarkable. For the low-risk group, the two policy choices produce very little difference in the number of FNs, but this minor difference is purchased at the cost of a great increase in FPs. For the 'high-risk' group, however, the pattern is much different. The more liberal policy produces a considerably smaller increase in FPs in order to gain a larger decrease in FNs.

Figure 4 shows visually what can be said very easily in commonsense terms: It makes no sense for a risk control strategy to apply 'controls' to a group with a very low base rate. Those correctional methods that provide the most effective controls should be applied to only the highest-risk offenders. Moreover, in this illustration, even the highest-risk group does not approach a 50 percent failure rate. Therefore, with the high-risk group identified in this example, heavy reliance on incarcerative controls might not be warranted because such controls would impose extreme costs on the large number of FPs.

Even though prediction methods lack finely tuned accuracy, they provide a corrections decisionmaker with the ability to classify according to risk. The principle operates in nearly the same fashion as insurance actuarial tables—the presence of certain personal characteristics places the individual into a category that produces the undesirable consequence at a higher group rate. This enables the policymaker to manage group members in a way that takes differential error rates into account.

The key is to develop a risk screening device that really works, that really establishes different subgroup rates. With the proliferation of risk screening devices available today, this would not seem to be a difficult task. Unfortunately, much

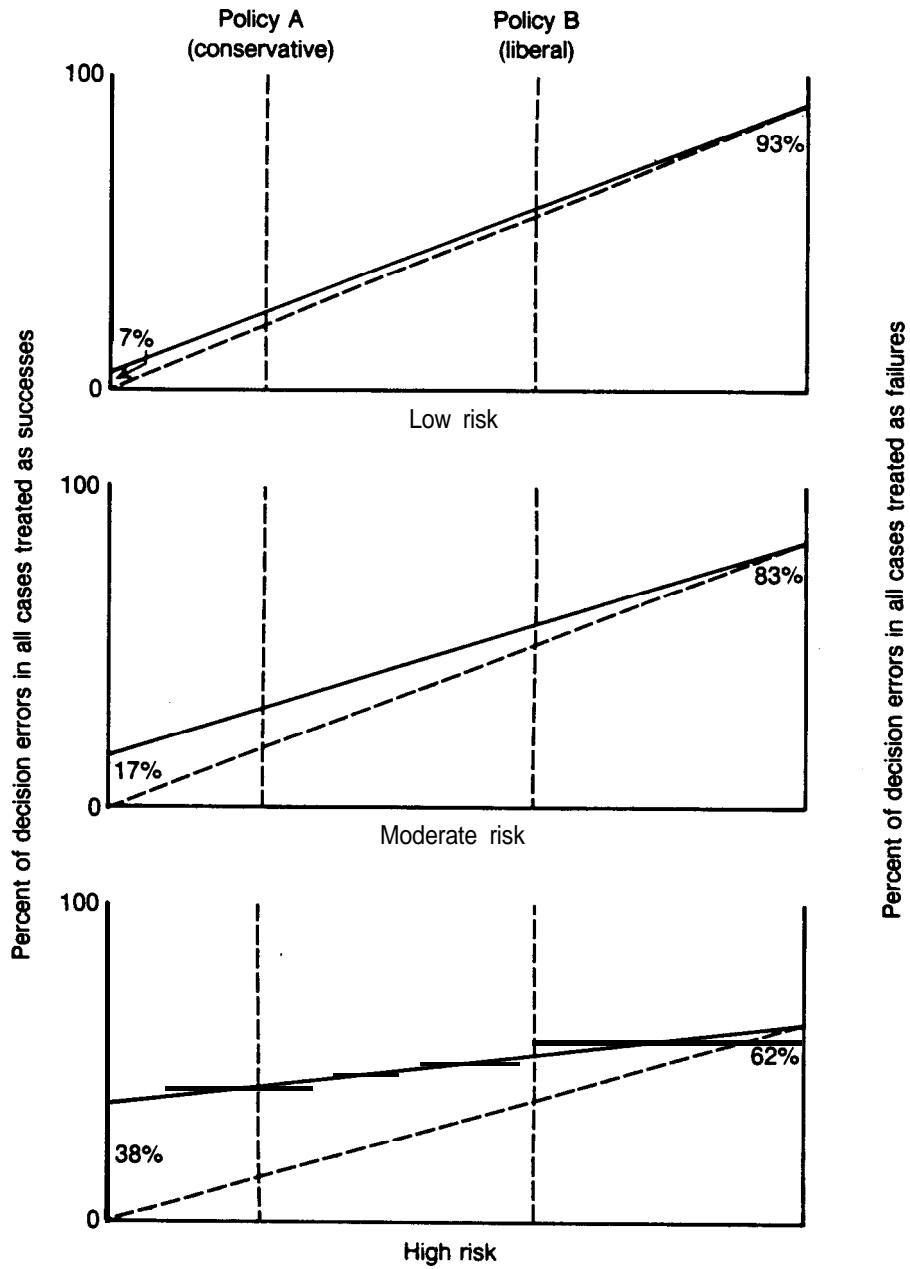


Fig. 4--Illustration of prediction errors and policies for risk classes

that is now known about the use of risk instruments suggests that it is not as simple as might be expected (Bornstedt, 1980).

Caveats on the Use of Risk Screening Devices

There are numerous pitfalls in the use of screening devices, and unless these pitfalls are avoided, the screening process may not be doing what the decision-maker hopes. Most of our knowledge of these problems comes from very recent research on risk screening instruments. To understand why these limitations occur, one must remember two points: First, risk assessments are merely tools, and like any technology, they must be used correctly or they will not be helpful. Second, the measurement of risk is often very crude and should not be considered an accurate calibration of the probability of new crime. The following list of caveats indicates some of the technical limitations of risk screening.

Caveat 1: The selection of the criterion is a very important policy decision.

There are several commonly used criteria for prediction in corrections. The selection of the criterion is very important, for three reasons. First, many common criteria are statistically only marginally related to each other. For example, the incidence of violent recidivism is not strongly related to the incidence of violation of the technical rules of supervision among probationers (Baird et al., 1986). This means that a risk screening instrument that is valid for discriminating rates of technical failure may not effectively discriminate according to the probability of arrest for violent crime (see NCCD, 1987). This problem is illustrated in Table 2, which shows rates of different types of behavior for three classes of offender risk of “reconviction for a new felony offense.” As can be seen from this table, differential treatment of these offender risk classes based on this instrument will not provide a good differentiation of technical revocation, certain arrests, or violations, although the discrimination on the criterion variable is quite good.

Table 2

ILLUSTRATIVE PERCENTAGE DISTRIBUTION OF BEHAVIORAL OUTCOMES, BY RECONVICTION RISK LEVELS

(Construction sample only, N = 244)

Outcome	Risk of Reconviction for New Felony		
	High	Moderate	Low
Criterion base rate	74	39	13
Rules violation	84	65	36
Technical revocation	23	23	4
Misdemeanor arrest	26	40	11
Felony arrest	52	34	11
Revocations due to arrest	20	5	0

SOURCE: Memorandum to the Probation Task Force of the Probation Development Project, Oregon, April 7, 1987.

Second, the selection of a criterion behavior will determine the base rate that is being decomposed by the prediction instrument. This is very important because the lower the base rate, the more difficult it is to get a strong differentiation of subrates or to produce a group that is even moderately high in true rate. The problem is that the types of behavior for which the prediction stakes are the highest—for example, violent crime—also have the lowest base rates. Therefore, it is most difficult to develop good risk screening devices for the most serious types of offender failure. (It is worth noting that some very recent and preliminary progress has been made in overcoming this problem through what are called “bootstrapping” techniques, which segment the prediction sample using one instrumentation, then develop new screening factors on each of the now more homogeneous study subsamples (see S. Gottfredson and D. Gottfredson, 1986). Promising results have been obtained with this technique in studies of samples of offenders in Iowa (see Fisher, 1981) and Oregon (see NCCD, 1987). Ordinarily, this technical approach requires greatly expanded sample sizes, and the results of some versions have been seriously questioned following reanalysis (see S. Gottfredson and D. Gottfredson, 1986). Some commonly used criteria, organized in rough order of frequency of occurrence in an offender population, are listed below:

High frequency:

- Any rules violation
- Any rules violation leading to a hearing

Moderate frequency:

- Any arrest
- Any conviction
- Any felony arrest
- Any felony conviction

Low frequency:

- Return to prison
- Any arrest for a violent crime
- Any conviction for a violent crime

The selection of any of the above criteria (or a combination of them) will define the base rate for the prediction model.

The third reason the criterion is important is that its selection has obvious policy significance. For instance, the decision to count all violations as failures will help to produce excellent discrimination but will not necessarily orient the correctional practice toward only the most violent offenders. Whether this is a reasonable approach is a matter of policy, not technical research.

Caveat 2: Different decision points require different risk screening approaches. The recent popularity of the concept of “risk management” has led some administrators to advance the idea of using a single risk instrument for offender classification at all decision points in the corrections system. As desirable as this approach may seem, our current technology does not support it.

Some decision points are more compatible than others. For instance, classification for risk to plan probation supervision is quite analogous to the same decision for parolees, and identical instruments and policies are commonly used. While the instrument may be valid for both groups of offenders, the population differences between them produce discrepancies that must be noted. For instance, one study- found that probationers and parolees with the same scores on the instruments performed differently under supervision, with parolees consistently performing better (Van Dine, 1977).

Other decision points are much more dissimilar, and the -problems of using the same instruments to classify for risk are magnified at these points. One reason for this stems from a point already made: The criteria of interest often change as decision points change. For example, the institutional security classification decision is initially based on risk of victimization, violence, or disciplinary problems, and later, risk of escape (a very low-base-rate event). These interests are different from each other, and they are all quite different from “recidivism under community supervision.” To use an instrument validated, say, for “new felony arrests under supervision” to classify for institutional security would be a mistake, for the results would be of dubious validity. Similarly, the parole readiness decision is related to but different from the parole supervision priority decision.

It may be that the same risk instrument can provide useful information at various decision points. For example, a judge may be interested in knowing the level of supervision that will be provided to an offender, should the offender be sentenced to probation; thus the judge might be interested in his or her risk class. Yet the decision to sentence an offender to probation is influenced by a variety of factors other than risk, including the crime itself, statutory requirements, and so forth. The risk class of the offender is only one factor, especially given the high misclassification rate. In most cases, the transfer of risk screening devices across decision points is inadvisable.

Caveat 3: Screening for risk will not necessarily correspond to the seriousness of the offender’s current offense. This point has been made before, but it bears reemphasis because it is one of the most common misuses of prediction devices. Many people will say, “I rate this person as a high risk because his crime was so vicious that he poses a risk to the community.” It is faulty logic (and poor science) to equate crime seriousness with risk of future offending behavior. Table 3 illustrates this point on a sample of probationers from Oregon.. As can be seen, the offender’s risk class does not provide very good discrimination according to either the statutory classifications of seriousness or the parole board’s special crime-scaling system. There is some differentiation based on property and drug offense types, but this falls outside of the overall level of crime seriousness.

When an offender commits a serious crime, especially a crime that is particularly reprehensible, people are naturally appalled by the act and repelled by the offender. This reaction is not necessarily a good gauge of the offender’s true risk, however. Some writers have speculated that the decisionmaker’s concern is

Table 3
PERCENTAGE DISTRIBUTION OF OFFENSE TYPES,
BY RISK CLASSIFICATION LEVEL IN OREGON
(N = 244)

Offense	Risk Level		
	High	Moderate	Low
Felony C Class ^a	67	60	60
Felony Class 4 or above ^b	17	27	26
Property crime	75	31	10
Drug offense	23	15	6

SOURCE: Memorandum to the Probation Task Force of the Probation Development Project, April 7, 1987.

^aFrom Oregon Penal Code Statutory Classes.

^bFrom Oregon Parole Board's crime seriousness ranking.

“stakes,” a mathematical combination of concern for risk and for crime seriousness (D. Gottfredson and M. Gottfredson, 1986). This is plausible reasoning, but it does not change the fact that a good risk instrument probably will not provide much classification power in terms of crime seriousness. When the decisionmaker allows crime seriousness to influence risk class assignments, the overall power of risk assessment is reduced.

Caveat 4: The transferability of risk screening devices across jurisdictions is problematic. The seeming ease with which risk screening can be transported across the country has promoted its widespread use. A jurisdiction will borrow a device developed somewhere else and put it to use with few or no changes and without separate validation. This is a mistake, for two reasons: First, and most significant, the instrument may not be valid for the new population. Table 4 shows the results of several validation studies of the popular Wisconsin Bureau of Community Corrections Risk Screening Instrument (Baird et al., 1974). This instrument has been well studied and powerfully validated for Wisconsin probationers and parolees. Because it was subjected to widespread adoption as a part of the National Institute of Corrections' Model Probation and Parole Project (NIC, 1981), which encouraged participating sites to revalidate the instrument, it has been tested on a variety of populations. It is readily apparent that the instrument transferred well to some jurisdictions, but not to others. Similar findings resulted when a team of federal researchers attempted to validate several instruments on multiple populations (Eaglin and Lombard, 1982).

The reasons why an instrument may transfer well in some cases and not in others are not well understood. Of course, differences in offender populations, laws, and agency policies may distort the transfer, but that in itself does not provide a full explanation. Compare, for example, the class base rates in Table 4 for Wisconsin and Hennepin County, Minnesota. The offender populations and cultural traditions in these two jurisdictions are very similar, yet the classification outcomes are very different (Clear, 1986). For whatever reason, the transferability of instruments across sites, no matter how good the instrument is

Table 4
PERCENTAGE DISTRIBUTIONS OF RISK CLASSIFICATION BASE RATE
OF THE WISCONSIN RISK ASSESSMENT INSTRUMENT
IN SIX OFFENDER SAMPLES

Risk Level	Offender Sample				
	Wisconsin	Hennepin County	Georgia	Ohio	Oregon
High	17	19	36	31	51
Moderate	10	7	13	24	32
LOW	7	12	7	8	22

SOURCES: Wisconsin and Hennepin County data from Todd R. Clear, 'A Validation of the Wisconsin Risk Assessment Instrument,' paper presented to the American Society of Criminology, Atlanta, November 1987; Georgia data from J. Banks, 'Validation of the Risk and Needs Assessment Instruments,' report to the Georgia Department of Offender Rehabilitation, n.d.; Ohio data from Scott P. Lauder, 'Examination of the Use of the Wisconsin Risk Instrument on Ohio Probationers and Parolees,' Ohio Adult Probation and Parole Authority, nd.; Oregon data from unpublished research project, Multnomah County Probation Development Project; New York City data from Kevin Wright et al., 'The Universal Applicability of Risk Assessment Instruments,' *Criminology*, 22:1, 1984, p. 113.

for the original site, cannot be guaranteed. Agencies that have adopted an instrument without validation on their own population run the unfortunate risk that the instrument is not working and they do not know it.

The second reason for not simply "borrowing" an instrument is that the development process can have very positive side effects for an agency (Clear and Gallagher, 1985). Going to the trouble to design, supervise, modify, and report research on risk screening makes an agency a much more informed consumer of the technology and advances the state of the practice for the field. There is no better way to become acquainted with the limitations of and potential uses for a risk device than to be responsible for creating and validating it. Separate development is ideal; separate validation is essential.

Caveat 5: It is important to know subgroup base rates. It has become common to hear offenders referred to as high-risk or low-risk, especially since the use of objective instruments has increased in recent years. These labels are ominous-no one wants to take a chance with a high-risk offender, while low-risk cases are seen as trivial. The easy use of such labels-along with the difficulty of overcoming their interpretation-raises a concern about their accuracy.

It is not really appropriate to use those terms without an understanding of both the base rate and the criterion. The criterion answers the question, Risk of what? The base rate says, How high is high? Without this information, it is not possible to know what the offender risk labels mean. This is illustrated in Table 4, which shows the class base rates for the same instrument applied to different populations. The rates vary from site to site, suggesting that what high-risk means in terms of dealing with error is different in each correctional site.

Indeed, the high-risk client in Wisconsin fails less frequently than the moderate-risk client in Ohio. In virtually every site, the so-called high-risk offender is not that much more of a risk than the moderate-risk offender, and in no site does the high-risk client exceed one chance in three of failing. Many people would have serious problems with the use of the label high-risk if they knew it referred to an offender with less than one chance in five of failing, as is true in Wisconsin, Hennepin County, and Georgia. If these offenders are being harshly treated because of the label, an injustice is being done.

Ultimately, the base rate is a product of the criterion selected and the population to which it is applied. Table 5 illustrates how base rates can differ depending on the criterion chosen. The higher the population base rate, the higher will be the subclass base rates, assuming a valid risk assessment. For example, all the rates in Table 5 are higher than those in Table 4 because the Oregon base rate of failure is higher to begin with than that in the other sites, and each of the criteria identified in Table 5 occurs more frequently than the criterion used by the Wisconsin instrument in Table 4.

The selection of a criterion that occurs frequently has both advantages and disadvantages. The main advantage is that this will cause the high-risk group rate to exceed 50 percent, and this changes the error management problem in terms of tradeoffs between FNs and FPs. Increasing the controls placed on the high-risk group does not come at the expense of large increases in FPs. The disadvantage lies in the concomitantly high rate of the so-called low-risk group. In Table 5, the low-risk group rates get as high as one out of six offenders. (It is worth noting the power of the base-rate criterion—the Oregon low-risk offenders perform about the same in terms of risk as the Georgia high-risk offenders.) For the Oregon low-risk group, at least some control resources will be necessary due to the base rate, whereas the lower rates of low-risk cases in other jurisdictions may justify a much smaller commitment of resources.

Table 5
BASE RATE? OF RISK ASSESSMENT INSTRUMENTS
FOR DIFFERENT RISK CRITERIA IN OREGON

Risk Level	Base Rate (46)		
	Criterion A ^a (N = 244)	Criterion B ^a (N = 244)	Criterion C (N = 205)
High	74	81	61
Moderate	39	53	16
Low	13	21	0

SOURCES: Various unpublished memoranda to the Probation Task Force of the Probation Development Project; Todd R. Clear and Carol Shapiro, 'identifying High Risk Offenders for Supervision in the Community: The Oregon Model,' *Federal Violation*, 1:142-149, 1986.

^aConstruction sample only.

The point of this discussion is that a truly effective risk management program must go beyond the labels of low-risk or high-risk to include an understanding of what those labels mean in terms of both type and frequency of risk behavior. Otherwise, the labels will only prove confusing.

Caveat 6: The actual distribution of cases in the classes is very important.

The base rates themselves can sometimes be misleading, if the frequency of cases is not known also. For example, in the classification device used for Criterion C in Table 5, only one out of ten offenders was classified as low-risk (for which the rate of Criterion C was zero). Since one of the reasons for risk classification is to allow reassignment of risk control resources from the low-risk cases to the high-risk cases, the fact that so few cases are rated low would mean that this prediction system is of limited usefulness, because it frees such a small proportion of resources. However, the prediction problem in this case was to identify a large group of high-risk offenders, and the small number in the low category was unimportant (Clear and Shapiro, 1986). From a resource-management standpoint, the administrator usually wants a large group of low-risk offenders in order to free as many resources as possible for concentration among the high-risk offenders.

Caveat 7: No matter how good the instrument is, it is important to allow for human judgments in the ultimate classification decision.

Most studies of factors relating to risk find that the correctional worker's judgment about a case is correlated with the case's outcome. If for no other reason than this, it is important to allow the human decisionmaker to have an influence on the ultimate decision. There are two other important reasons for this, as well: First, statistically based instruments are designed to take into account how a variety of common characteristics are ordinarily related to future conduct by the offender. By their nature, traditional risk instruments do not take into account unusual events, nor can they easily be designed to consider special circumstances. For example, it makes little sense to classify as high-risk an armed robber who was shot and made quadriplegic during his last holdup, just because he scores as high-risk on the instrument. Research has also shown that the place in which a person lives (or to which he is paroled) can have a direct bearing on his probability of success (Gottfredson and Taylor, 1986). Factors such as these have been called "contingencies" (Gottfredson, 1967), and statistical instruments seldom take them into account. It is better, and more effective, to allow the human decisionmaker to decide how to weigh these contingencies in making the ultimate classification decision, even if this means "overriding" the results of the statistical tool. It must also be remembered that an instrument-generated classification assignment will produce numerous "misses." When the base rate for a high-risk group is 40 percent, that means that 6 out of 10 offenders placed in that group will not fail. Corrections staff can often override the instrument in ways that improve overall accuracy (Cohen et al., 1978).

The second reason is much more pragmatic: Experience shows that when corrections workers are not allowed to exercise their own judgment, they may manipulate the scoring on the instruments to force the offender into the class

they believe is most accurate. The best way to avoid this problem is to leave the final decision in the hands of the worker, subject to review.

In fact, the number of human overrides of the instrument can be taken as something of a gauge of a classification system's real implementation. If there are very infrequent overrides, the staff may be relying too heavily on the instrument and may not be thinking enough about each case. If there are too many overrides, it may mean the staff are not finding the system useful. An override rate of 5 to 15 percent of all classification decisions is common, but it is difficult to say whether this is too high or too low.

THE IMPACT OF CORRECTIONAL PREDICTION ON CRIME CONTROL

The idea that prediction can be used to reduce the amount of crime seems, on the surface, fairly straightforward: If we know which offenders are more likely to commit new offenses, we can place them under sufficiently strict controls that crimes will be prevented. But like most other aspects of prediction, achieving crime control is not as easy as it seems on the surface.

In any attempt to reduce crime through control of individual offenders, certain assumptions are made about offenders, their circumstances, and the methods used to control them. First, it is assumed that it is possible to identify those offenders who are about to commit crimes. Second, it is assumed that interventions are available that have the effect of ensuring that those offenders do not engage in crimes. Third, it is assumed that preventing those offenders from engaging in crimes means that criminal events are avoided. Much of the speculation of the crime control potential of prediction-based corrections involves exploring and clarifying these assumptions.

The first assumption—that it is possible to identify offenders who will commit crimes—was explored in the preceding section. A very brief summary of that section would be: It is not possible to identify recidivists without making prediction errors in the process. But it is possible to reduce prediction errors through the use of risk screening methods combined with risk management.

The discussion of the other two assumptions is best presented through a summary of the literature concerning the two major methods for controlling crime through intervention into individual offenders' lives: treatment and incapacitation. Numerous books and articles have been published on these topics. There are several excellent discussions of the concept of treatment, from reviews of the literature (Sechrest et al., 1979; Ross and Gendreau, 1981; Lipton et al., 1975) to critical appraisals of the state of the art, in terms of treatment methods and their evaluation (Gendreau and Ross, 1979; Warren, 1973; Gottfredson, 1979). The discussions of incapacitation have been more recent and less extensive, but they include literature reviews (Blumstein et al., 1986), empirical modeling studies

(Greenwood, 1982; Blumstein and Cohen, 1979), and critical conceptual discussions (von Hirsch and Gottfredson, 1983).

These studies do not reach a consensus concerning the potential benefits for crime control of incapacitation and treatment. Indeed, there is much controversy about these topics among scholars in the field, a fact that makes the literature difficult to summarize. Any review of these topics is bound to involve controversial aspects of interpretation and emphasis. Nevertheless, there are some points concerning crime control on which there is substantial agreement among the experts, and these points form the basis for a beginning assessment of the potential crime control benefits of prediction in corrections. These points, and some of the studies supporting them, are presented in separate assessments of the crime control potential of treatment and of incapacitation.

Crime Control Through Treatment

For most of its history, treatment in corrections has involved a search for a panacea that would solve all treatment problems for all offenders (Finckenauer, 1982). Even some of the most vociferous critics of correctional treatment have based their objections on an underlying idea that a single treatment should be effective for all or most offenders (see Palmer, 1976). Yet the concept of the "interaction effect"—that most types of treatment are effective for some types of offenders and not others, and that no treatment is effective for everybody—is one of the most widely documented concepts in the field of correctional rehabilitation (Warren, 1973; Ross and Gendreau, 1981; Gottfredson, 1979; Palmer, 1976 ; Grant and Grant, 1962). Therefore, the task for those who would provide treatments is not to decide which treatment to use, but how best to identify which offenders are most suited for which treatments.

Usually this is more a qualitative task than a quantitative one. The problem of matching treatments to offenders is clinical in that some expert assessment of the offender is used to determine the best programs of treatment. Risk assessment as a type of prediction activity is a quantitative task that merely assigns the offender to a class of statistically similar persons, achieving a base rate that is different from other classes. How can this prove useful to what is essentially a qualitative process? Some answers to this question are provided by a return to the base rates themselves and a review of recent experiences with intensified supervision experiments.

Table 6 demonstrates how the use of prediction in selection for treatment might enhance crime control. The table presents a hypothetical case based on the following assumptions: (1) a risk assessment instrument has resulted in a roughly equal distribution of offenders into three classes; (2) the base rate of each class is roughly twice that of the next lower class; and (3) the impact of treatments on offenders is somewhat greater for the low-risk than the high-risk offenders. (There is little empirical evidence to support this last assumption—indeed, as shown below, what evidence there is seems to run contrary to it—but it is used here as a concession to the common corrections-staff impression that their

Table 6
**ILLUSTRATION OF CRIME CONTROL EFFECTS OF DIFFERENTIAL
 TREATMENT EFFECTIVENESS FOR DIFFERENT RISK LEVELS**

Risk Level	Base Rate (percent)	Percent of Cases	Crime Reduction (percent)	Reduction in Crimes per 1000 Offenders
High	40	33	10	13
Moderate	20	34	15	10
Low	10	33	20	7

efforts are more successful with lower-risk offenders. If this is a misimpression on their part, it is probably due to their experience of so few failures among this group, which is only to be expected. This assumption is made here purely for the sake of argument.)

Even under these hypothetical assumptions, the effect of supervision on crime control on a sample of 1,000 offenders is small, but it is twice as large for the high-risk offenders as for the low-risk, even though it is more effective on the average for the latter group, simply because of the base rate. This hypothetical example illustrates the major payoff that can result from focusing treatment on the very highest-risk group. That is where the greatest criminal potential exists, and thus it is where there is great potential benefit from concentration of resources.

If there are plentiful treatment resources, of course, this type of classification provides little benefit, for it makes little sense to deny treatment to any offender simply because of risk. However, in most jurisdictions in the United States, there is a shortage of treatment resources, a shortage that is sometimes critical. In these locations, identifying the cases with the greatest potential payoff is of real significance.

This is illustrated by the results of recent quasi-experiments with intensified supervision for high-risk offenders in Wisconsin (Baird et al., 1974), Georgia (Erwin, 1985), and Texas (Eisenberg and Markley, 1987). The results of these studies are shown in Table 7.

In each of the studies, closer supervision showed greater impact on the high-risk cases than on the other two categories; and in Georgia, where intensive supervision was applied to the low-risk offenders as well, the impact on the low-risk case was negative. In the other two sites, the level of supervision was actually reduced for low-risk subjects, and they performed better with less treatment. Why intensified supervision might actually increase a person's chances of failure is difficult to say, but it may relate to the type of treatment provided. Intensive supervision means closer surveillance and greater strain on the offender. While this is appropriate for high-risk cases, greater contact may actually pressure the low-risk cases into trouble. Perhaps this is why so many studies have found

Table 7
IMPACT ON ARREST RATES OF INTENSIFIED SUPERVISION
QUASI-EXPERIMENTS BY RISK LEVEL IN THREE SITES

Risk Level	Wisconsin		Georgia		Texas	
	Exp.	Control	Exp.	Control	Exp.	Control
High	18	37	39	37	15	23
Moderate	13	18	34	35	11	17
Low	3	10	42	27	6	7

SOURCES: Wisconsin data from S. Christopher Baird et al., *The Wisconsin Workload Development Project, Final Report*, Madison: Bureau of Community Corrections, 1974; Georgia data from Billie S. Erwin, *Evaluation of Georgia's Intensive Probation Supervision Program*, Atlanta: Department of Corrections, 1986; Texas data from Michael Eisenberg and Greg Markley, 'Preliminary Evaluation of the CSC System,' Austin: Board of Pardons and Paroles, unpublished manuscript.

that reducing caseloads has limited overall impact (Banks et al., 1975)-it improves the performance of some clients, but makes others' performance worse.

In any event, the' results of these studies certainly suggest that prediction systems can be used successfully to advance crime control interests through community supervision decisions by identifying which offenders require closer control and which need reduced involvement. Moreover, in the Texas study (Eisenberg and Markley, 1987), the focused use of special treatment programs helped to reduce offender needs in important areas such as employment, education, use of leisure time, and finances. As the technical quality of predictions improves in complexity and variety, it is likely that the utility of prediction for identifying groups for treatment will also improve (Warren, 1973).

Crime Control Through Incapacitation

Incapacitation is controversial because it proposes the use of extremely harsh interventions, usually imprisonment, to prevent the offender from committing more crimes. Three types of incapacitation have been identified:

- *Collective incapacitation*: Widespread incarceration of large numbers of offenders to make it less possible for them to commit crimes.
- *Categorical incapacitation*: A hybrid of desert theory with crime control intentions, in which the self-reported crime rates of persons convicted of different types of offenses (e.g., robbery) are used as a basis for establishing the length of incarceration, within the scalar requirements of desert theory (von Hirsch, 1985).
- *Selective incapacitation*: the selection of individuals with high probabilities (or high probable rates) of future offending for longer prison terms (Greenwood, 1982).

Of these three, only selective incapacitation makes use of individualized predictions of future criminal conduct. However, the research on collective incapacitation is instructive of the problems that will be encountered in any attempt to improve crime control through special use of incarcerative terms.

Straightforward as is the notion of incapacitation, studies show its effects to be far less powerful than might be thought. For example, one study estimated that a mandatory 5-year prison term for all felons in Franklin County, Ohio, would have resulted in only a 5 to 8 percent decrease in crime (Van Dine et al., 1977). Revisions of these estimates based on methodological refinements raised the number slightly, to about a 12 percent reduction (Boland, 1978). A study using similar methods estimated that a 5-year mandatory term would result in a 35 percent reduction in crime in Denver, Colorado (Petersilia and Greenwood, 1978). Both studies agreed that the reduction in crime would have required at least a 300 percent increase in prison space—in other words, an expenditure of several billion dollars. Perhaps the main reason the proceeds of collective incapacitation strategies seem so small in comparison to the costs is the large number of false positive errors that must be paid for in the process. The fact that we already lock up a large proportion of the most active offenders means that each increase in collective incapacitation produces diminishing returns in crime control, because we are forced to sample increasingly less criminally active subgroups. This problem is of such a magnitude that one of the most sophisticated recent mathematical treatments estimated that virtually unimaginable wholesale increases in incarceration would have to be imposed to produce an even marginal increase in crime control (Blumstein et al., 1986).

Another reason for the difficulty of reducing crime through incarceration is the so-called “replacement effect.” Many of the most criminally active offenders commit their crimes in groups; when one offender is removed from the streets and sent to prison, his comrades do not cease their activity but instead recruit new companions (see Blumstein et al., 1978). The exact magnitude of this phenomenon is unknown, but it eliminates much of the crime control benefit of imprisonment.

A final difficulty with imprisonment is the possible criminogenic effect of prison—a subject about which experts have speculated for years (Miller, 1987). A recent study of a large sample of California offenders provides support for the existence of such an effect, at least in comparison with probation (Petersilia and Turner, 1986). In that study, a matched sample of probationers produced more arrests than a prison comparison group during the initial months after sentencing, but the prison group had a far higher level of activity, so that they caught up with and surpassed the probation sample in a few years. The researchers concluded that in the long run, probation may be a better crime control bargain, especially considering the high costs of prison, even for the relatively criminally active California offender population.

This broad summary suggests that some of the crime control assumptions underlying collective incapacitation are problematic—there has been limited success in incapacitating truly active offenders, the correctional programs may not prevent crime, and the simple act of incapacitation may not prevent crimes from occurring, anyway.

The failure of collective incapacitation strategies has led to increasing interest in selective incapacitation as an alternative. The philosophical objections to selective incapacitation were discussed in the opening section of this monograph, and it is subject to the same practical limitations as collective incapacitation, but those limitations are less intense because only the most criminally active are selected for incapacitation.

The most important statement on selective incapacitation methods was provided by Greenwood (1982) in his study of California robbers and burglars in prison. Using self-report methods, Greenwood found that a small minority of the robbers produced by far the majority of the robberies, by their own admission. He then speculated about the potential impact of selectively incarcerating only these persons and found that it would have simultaneously reduced both crimes and prison use (this result held only for the California sample, however, not for samples in Michigan and Texas). Not surprisingly, this study sparked a great deal of interest among policymakers faced with the stark reality of increasing public concern about crime and the serious problem of overcrowded prisons.

Follow-up analyses of the Greenwood data and the policy of selective incapacitation have found it to be a less powerful crime control strategy than was originally thought (von Hirsch and Gottfredson, 1983; Visher, 1986; Cohen, 1987), for several reasons—each of which poses a challenge to the advocates of this policy.

First, studies have shown that criminal careers take a variety of forms, but on the average the frequency of criminal activity declines after early adulthood. The best predictor of future criminality is almost invariably past criminality, and most offenders' careers proceed for some time before the behavior patterns are exhibited that classify the offenders as high-risk. By the time a high-risk offender is identified, much of his "career" of criminality has already occurred, and in fact his criminal intensity may be waning. While this pattern may be more or less true for individual cases, it is certainly true for the aggregate. Therefore, use of reports of past behavior to predict the payoff of selective incapacitation will invariably overestimate its incapacitative effect.

Second, in general, only the most active offenders end up in prison at all; the rest tend to escape detection. Using prisoners' reported behaviors as estimates for all offenders, whether incarcerated or not, again overestimates the effect. Thus, the test of the crime control potential of a given policy is best estimated by using prospective studies with follow-up rather than retrospective studies based on current estimates.

Third, while it seems well demonstrated that a small fraction of all offenders commit a highly disproportionate amount of crime (Greenwood, 1982), it does not necessarily follow that most crime is committed by this small number of offenders. The vast majority of offenses may be committed not by the highly active, but by the moderately and less active offenders who constitute the bulk of the criminal population (von Hirsch and Gottfredson, 1983). Therefore, incapacitation of the few who are extremely active would still have only a minimal impact on the rate of crime (Visher, 1986).

Finally, serious questions have been raised about the adequacy of official records for classifying the criminal propensities of offenders (Chaiken and Chaiken, 1982).

Nevertheless, despite these problems, the logic of selective incapacitation remains the basis of any policy approach that attempts to reduce crime through prediction: Identify the high-rate offenders and impose a greater degree of control on them. This has led to an interest in the strategy of risk management.

The Risk Management Model

The risk management model is based on the creation of a wide range of correctional programs of descending levels of control, and management of the flow of offenders through those programs primarily on the basis of risk assessments (O'Leary, 1985; O'Leary and Clear, 1984; duPont, 1985). Experimental projects using this approach are being implemented in Vermont, Delaware, Colorado, and Oregon. Risk management is based, first, on a recognition of the limitations of prediction and risk assessment, and second, on the realization that prediction is central to virtually every aspect of correctional practice. The risk management approach attempts to build a systematic use of information about risk into correctional programs whose organization reflects the limitations of current prediction methods. Risk management programs are established on four basic premises:

1. Risk assessment instruments should be designed and implemented in ways that make the prediction errors visible and therefore manageable.
2. An array of correctional programs is needed that have the capacity for varying levels of control, ranging from maximum-security incarceration to unsupervised probation.
3. The 'punitive aspects of sentences, and of correctional programs themselves, must be separated from their risk control aspects. The court establishes only the former, while corrections officials determine the latter.
4. The initial program assignment (e.g., intensive probation) should be made on the basis of the offender's level of risk, given the court's sentence.
5. Movement through the programs should be based on the offender's performance in the programs.

The results of the hypothetical classification presented in Figure 4 illustrate how this might work. The three groups presented there produce three substrates, for an overall population base rate of 20 percent. The risk level of the low group's

rate is so low (7 percent) that the application of any risk control resources to it produces a high rate of false positives-and the use of intensive controls might actually increase the base rate, as has been shown above. Therefore, this group might be slated for minimal supervision under probation, with an expectation of rapid movement to nonreporting probation (say, after 3 or 6 months), should the probationer's compliance with punitive conditions set by the court (for example, community service) justify it. There would be no risk conditions for offenders in this group. Managing these offenders in this way may seem to make obvious good sense, but the surprising fact is that many of those currently under intensive supervision throughout the country are actually, low-risk offenders (Clear, in press).

The high-risk category in Figure 4 represents a different type of risk management challenge. The base rate for these offenders is relatively high (38 percent), but incarcerating them would produce a rate of FPs of nearly two-thirds. However, their initial program assignment must provide very close controls, because the public must be protected from potential FNs. In this illustration, intensive supervision with nearly daily contact might be the optimum initial program assignment for high-risk offenders. This would allow an offender's performance, particularly as it relates to risk conditions (such as drug treatment or restrictions on companions), to determine movement to less strict control (after, say, one year of adequate performance). More restrictive programs (work release centers, for example) could then be imposed in the event of risk management problems, such as a new arrest or noncompliance with court-imposed conditions. The rates and directions of movement would enable corrections authorities, acting as risk managers, to quickly identify potential classification errors-false negatives and false positives-based on performance and to move the offenders to more suitable levels of control.

Efforts to design and implement risk management correctional systems have experienced serious impediments. Most of the problems seem to stem from the fact that risk management is a rational planning model that occurs in the context of nonrational forces (see Clear and O'Leary, 1982). For example, a jurisdiction's sentencing laws often reflect a multiplicity of considerations, ranging from tradition to unrestricted politics, many of which may be incompatible with a risk management approach. Thus, it may not be possible to assign low-risk offenders, such as those in Figure 4, to a minimal level of probation with or without risk conditions. Sentencing laws may impose so many standard conditions and financial restrictions that rational enforcement is nearly impossible. Fragmentation of correctional agencies may also make effective coordination of programs and program movement impossible.

Another difficulty with this approach is that most correctional systems have an imbalance of control programs in favor of the extremes of maximum-security prison and regular probation. Because of the dearth of medium-level alternatives and the frequent lack of program coherence and integrity in the area of offender control, implementation of risk management frequently requires a complete redesign and reprogramming of the corrections process. This is often not feasible either fiscally or politically. Experience has shown that most

correctional agencies have problems simply in the design and use of a risk instrument. To use the instrumentation as a basis for reprogramming the entire logic of the agency may be too much to expect.

The final question is, How much crime control benefit really results from a risk management approach? Within legal and bureaucratic limitations, the operations are designed to maximize the crime control impact of correctional resources, but a full-scale evaluation of this strategy has yet to be made.

THE IMPACT OF PREDICTION IN CORRECTIONS ON THE QUALITY OF JUSTICE

The ultimate test of any innovation in corrections is how it assists public administrators in carrying out their responsibility of running a just and effective public service. If prediction will not help corrections to be more just and effective, there is no good reason for its adoption.

As was pointed out at the beginning of this monograph, the ability of prediction systems to meet this test depends partly on the underlying philosophy that defines the meaning of justice. And for those who are committed to a nonutilitarian philosophy of punishment, there is probably no way individual predictions can pass the test of justice when they are used to alter significantly the nature or degree of punishment for some individuals whose crimes are comparable to those of others (von Hirsch, 1976). For those who accept correction's responsibility to manage risk and undertake policies that control crime, the use of prediction must be assessed in terms of humaneness, knowledge, and cost. Most of the foregoing discussion has been an exploration of those factors, in light of current scientific ability. The careful design of risk assessment approaches can provide a corrections process that uses prediction more effectively.

But is reliance on prediction "just" even when it is effective? Most utilitarians who have considered this question have been concerned with two problems: the use of prediction to justify enhancements of the ordinary degree of punishment, and the collateral consequences of prediction systems.

Prediction as Enhancement or Reduction of Penalty

Strictly speaking, the result of a risk assessment is not a penalty (Hart, 1958), because it is a response to a status, not an act. This distinction loses its persuasiveness when the results of the assessments take the form of programs that also are penalties for acts, such as imprisonment. Certainly the distinction is lost on an offender who is told, "We are keeping you in prison because you threaten society, not because of your crime." That offender certainly experiences the risk-control response as a penalty. Given the inevitability of error in predictions, routinely enhancing the punishments of some offenders because of their risk level seems a questionable policy, at best.

In view of this, some writers have urged that the appropriate role of predictions in corrections is to allow reductions in the level of penalty rather than to require enhancements (S. Gottfredson and D. Gottfredson, 1986). Their argument is that the punitive value established for a crime sets an upper limit on what may be done to an offender who commits that crime, but it does not require that the penalty be served. Prediction techniques have a much better record in identifying low-rate offender groups than high-rate groups. It can be argued, therefore, that it is entirely reasonable to use risk as a basis for ameliorating the level of penalty imposed on low-risk offenders, partly because it makes little sense to punish so much when there is so little benefit. Critics of this point of view have pointed out that it is very difficult, in operation, to tell the difference between a system that enhances punishment for the high-risk, and one that reduces it for the low-risk. The difference may be more semantic than real. Besides, there remains the issue of what is done with the prison space that is freed by reducing the penalties for low-risk offenders-inevitably, it is used to increase penalties for the high-risk (Sherman and Hawkins, 1981), thus exacerbating the problem of inequitable punishments.

A similar problem applies to the potential of a prediction system to expand the overall social control apparatus. Many observers believe that the corrections system in the United States is already far too large, and the adoption of prediction as a legitimate correctional enterprise encourages continued expansion of this top-heavy government control. Whatever the merits of this argument, it should be clear that the size of the corrections system has less to do with the technical aspects of the system's operation than it does with the political interpretation of public pressures to deal with the problem of crime (Sherman and Hawkins, 1981). In fact, the unprecedented growth of the corrections system in the past 15 years has been encouraged by rhetoric that rejects individual prediction approaches; however, studies show *that the shift away from, these approaches was primarily a result of factors other than sentencing reform (e.g., Casper et al., 1982).

If the correctional response was established on the basis of risk assessment alone, without concern for other factors, there would probably be less corrections rather than more. The vast majority of offenders are either low-risk or are of risk levels and types that are best managed through programs in the community, given adequate resources. The severity of penalties for most offenders in the United States is a product of many considerations, and the most severe penalties may be based on factors other than risk.

Collateral Consequences of Predictions

In some respects, the most serious challenge to prediction methods is that they are unfair in two respects: First, they are based on personal characteristics about which offenders can do little or nothing. Second, reliance on those factors discriminates systematically against minorities and the poor. Any system that provides consequences without allowing choices and does so based on ethnicity or social class must be unfair.

There is considerable evidence to support these accusations. Most assessment instruments include measures of “lifestyle stability,” such as employment, living situation, and education. These characteristics are commonly correlated with social class and ethnicity, and it has been shown that their inclusion (as well as that of other correlates of social class) in classification devices may result in systematic overselection of ethnic minorities and the poor for the less desirable categories (Petersilia and Turner, 1986). Practices that result in such discrimination are surely suspect.

In its recent decisions on the constitutionality of the death penalty, the Supreme Court addressed this issue by drawing a distinction between aggregate measures that appear to show a discriminative result and specific discrimination in a specific case. Risk instruments that seem to discriminate might be constitutional in terms of that logic, or they might be taken as the proof of specific discrimination. To those who are sensitive to injustice, neither outcome is very persuasive.

It is possible to limit the influence of undesirable factors on the results of prediction devices, but this requires a policy decision that guides the statistical design of these devices. It must be decided up front that certain variables that may be unfair will not be allowed. Factors such as “custody status at the time of sentencing” may be helpful in assessing risk, but they are such a direct measure of financial resources that policymakers may want to exclude them from the final classification device.

A straightforward statistical procedure can be used to eliminate the direct effects of undesirable variables such as ethnicity when designing instruments (Sparks, 1981). The research process is actually counterintuitive: All questionable variables should be included in the analyses, to test their true impact on the prediction model. The statistical impact of the undesirable variables (such as ethnicity) is thus mathematically eliminated from the process of constructing the weights assigned to the acceptable factors in the instrument (see also Goldkamp and Gottfredson, 1985). The resulting instrument will be free of the direct influence of undesirable factors. To test this, the researcher should then check the correlation between the score on the new instrument and the undesired factors, controlling for the criterion (outcome). If the correlation is nonsignificant, the instrument can be considered “cleansed” of the undesirable variables, at least in terms of any direct effect.

The decisionmaker who takes this approach should understand that if there is a direct relationship between the undesirable factors and the criterion variable, the power of the risk assessment instrument will be reduced. The magnitude of the loss of predictive power should be checked, but it will often be negligible compared with the increased confidence in the risk-screening function, since the influence of variables considered to be unfair has been eliminated. However, if a large number of variables are treated in this fashion, the instrument’s power to classify may be diminished.

The Ultimate Question

The ultimate consideration is whether, after the necessary precautions have been taken in the design and implementation of a prediction-based approach, the result is worth the effort. The cautions are many, and the payoffs in terms of crime reduction are probably small, even under the best of circumstances. Prediction, when handled correctly, can be complicated, and it will surely involve philosophical and programmatic considerations.

The correct question is not whether the results will justify the effort, but whether there is any other realistic alternative. Prediction is such a fundamental aspect of correctional decisionmaking and it carries such significant consequences for the offender and society that any practice less than the best possible is inexcusable. If it were possible to eliminate prediction **as** a consideration, there would still be the question of which policy option to implement. It is difficult to imagine a corrections process devoid of prediction. Therefore, the decisionmaker is left with two questions: First, to what degree and in what manner should correctional policy allow for predictions as a consideration in dealing with individual offenders? And second, what must be done to ensure that the correctional policy is carried out in the highest quality manner possible?

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THE USE OF PREDICTION METHODS IN A COUNTY CORRECTIONS SYSTEM

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INTRODUCTION

Statistical prediction in corrections has shown itself to be one of the most important tools in the field today. The purpose of this brief paper is to describe the status and evolution of the prediction methodology in the Marion County (Oregon) Corrections Department.

Several of the key points presented here apply not only to statistical prediction as a correctional tool, but also to ongoing research in this area. Research, other than being important to the one who conducts it, will not have any lasting impact on the field unless a strategy is devised to implement its findings. In Marion County, several key communication media were used to aid the implementation strategy for statistical prediction. Briefly stated, they were as follows:

- National Institute of Corrections (NIC) training (the researcher was used as a trainer).
- NIC publications.¹
- Professional organizations (the American Probation and Parole Association and the Oregon Corrections Association) that provided more exposure to the content and the researcher.
- Team development (an organizational development strategy created by Jay Hall).

BACKGROUND

The Marion County Department of Corrections was formed in January 1979, following the passage of the Oregon Community Corrections Act by the 1977 Session of the Oregon Legislature. The agency was placed in the executive branch of county government, and its director serves at the pleasure of a board of commissioners who are full-time, paid elected officials.

The empowering legislation made it optional for a county to participate; jurisdictions that chose to participate had to perform three basic actions:

¹ In particular, Vincent O'Leary and Todd R. Clear, *Community Corrections in the 1990's*, Washington, D.C.: National Institute of Corrections, 1984.

- Appoint a Citizen Advisory Committee to oversee the local program.
- Present a biennial plan that specifies what the county will do with the state resources provided.
- Maintain financial accountability to the plan as submitted or amended.

The Department of Corrections has been characterized as a “full service” community corrections agency because of the full range of sanctions it attempts to offer to the courts and the state Parole Board. On any given day, its client population is made up of 1,800 to 2,000 adult offenders, distributed as follows:

- 60 percent felony probation
- 20 percent felony parole
- 20 percent misdemeanor probation

The department also operates a 58-bed minimum-security residential facility and manages the 108-bed county jail. The department recently completed the planning of a new 255-bed county jail, which is currently under construction, with completion planned for the fall of 1988.

CORRECTIONS IN THE 1990's

The NIC funded a short-term technical assistance project to produce a case history of the Marion County Department of Corrections,² in which the author, Nora Harlow, states:

The conceptual framework MCCC [Marion County Community Corrections] had lacked from the beginning was serendipitously provided by a paper on limited risk control developed by Vincent O'Leary and Todd Clear³ for the National Institute of Corrections and distributed during the NIC “peer consultation” training the MCCC director attended in early 1983. This training also enhanced the director's commitment to team management and reemphasized the need for improved communications skills. The years 1985-86, therefore, brought a coalescing and sharpening of diverse efforts that had previously been linked only loosely to one another and to departmental mission. These [resulted] in the refinement and formalizing of classification, case management, and management information systems and further work to improve internal communications and broaden the base of management decision-making and responsibility.

... With a framework in place for conceptualizing the department's mission, MCCC was able to move more decisively in refining its organizational structure and developing the tools needed to implement the limited risk management model. Over the next year, the statement of mission, objectives and outcomes was again rewritten to focus on risk management and deemphasize activities and results with no obvious relationship to risk control. Policies, procedures, and work plans were revised to reflect the new mission statement, and performance measures were further refined. To provide a more complete continuum of sanctions, minimum-supervision cases were shifted into the community service unit, creating a separate organizational unit for low-risk offenders and management began looking at the

² Nora Harlow, *Marion County Corrections, A Case History 1979-86*, National Institute of Corrections, TA 86-030, October 1986.

³ O'Leary, Vincent and Todd R. Clear, *Community Corrections in the 1990's*. Washington, D.C., National Institute of Corrections (1984).

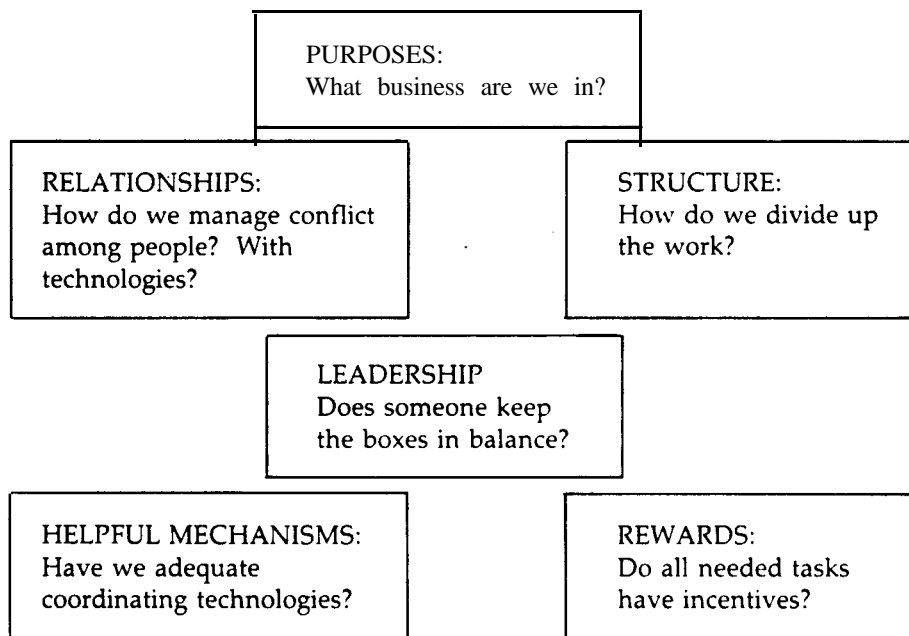
possibility of establishing an intensive supervision (IPS) unit along the lines of the Georgia and New Jersey models.

With NIC assistance, MCCC also undertook the studies needed to develop risk and needs assessment tools and to flesh out its design for a computerized management information system that would support the function of ongoing feedback for planning and evaluation purposes.

The O'Leary and Clear paper cited above is a widely distributed NIC monograph written in nonresearch language, and its statistical prediction methodology is integrated in a broad philosophical framework.

To implement O'Leary and Clear's risk management principles, an overall strategy was needed. The strategy chosen was a team management approach to problem solving and change. The first step was to utilize Jay Hall's "team development" concept in a seminar/retreat attended by the department supervisors. In this group-process setting, a task force of supervisors and department line staff digested the O'Leary and Clear article sentence by sentence and proposed actions to be taken to implement the limited risk control model.

The decision to "formalize" the process of risk prediction in the agency has led to many changes that are still in process. Perhaps the best way to describe the change effort is to use Weisbord's⁴ six-box organizational model:



Risk prediction in the practical field of corrections could be seen as a "helpful mechanism" in Weisbord's model. Many jurisdictions that have implemented

⁴ M. Weisbord, "Organizational Diagnosis: Six Places to Look for Trouble With or Without a Theory," *Group and Organization Studies*, 1:430, 1976.

the NIC model classification project have used the risk scale developed in Wisconsin. However, in Marion County and many of the other jurisdictions, this model has affected every other aspect of the agency. Its impact in Marion County can be summarized as follows, using the six-box model:

- *Purposes: What business are we in?* The choice of risk prediction brought about a conscious effort to rewrite the mission of the agency to embrace the principle of “limited risk control.” Perhaps the most important and lasting impacts to the agency have been in the area of purpose. The key to all sanctions and their use flows from a well developed and understood purpose statement.
- *Structure: How do we divide up the work?* The implications here were to shift the client classification decisions from the caseworkers to the intake and pre-sentence investigation stages of the agency. The continuum of sanctions has been reordered, based on risk control. More reasoned and consistent decisions on client sanctioning were made possible on an agencywide basis.
- *Rewards: Do all needed tasks have incentives?* The best and most effective rewards have been achieved by efforts to improve the supervision techniques of the management staff. Concentrating on desired behavior of employees and reinforcing that behavior in a timely fashion has been the strategy here. Again, the strategy was an offshoot of the task force review of the O’Leary and Clear paper.
- *Helpful Mechanisms: Have we adequate coordinating technologies?* The risk prediction scale itself became the major feature of this box. Again, NIC technical assistance was a major aid in this area. Brian Bemus, in his report to Marion County, states:

Corrections in the 1980’s is characterized around the central theme of “risk.” Sentencing, parole release decision-making and probation and parole supervision priority have all been subjected to modification, even drastic change, in an effort to focus limited resources on offenders who present the most or least risk.

As a result, in the last five years, probation and parole agencies have been exposed to both model case management and limited risk management. We are expected to be tough on the high risk offender and weed out the low risk offender while at the same time limiting our liability (risk of making an error).

Out of this focus on risk a number of model systems were developed in an effort to assess risk in a valid, reliable fashion. The Minnesota sentencing guidelines use a risk scale to help determine length and type of sentence and resulted in the elimination of the Parole Board. [Note: The U.S. Department of Justice is in the process of developing federal sentencing guidelines and plans to phase out the U.S. Parole Commission by the early 1990s.] The federal salient factors [model] has been adapted or modified by several parole authorities (Texas and Oregon) and has been validated by the U.S. Parole Commission as well as the Texas Board of Pardons and Paroles. Finally, the Wisconsin risk scale, developed and validated for probation and parole supervision in the late 1970’s, has been implemented in nearly 100 agencies throughout the U.S. and Canada.

More recently, the profession is attempting to improve or fine-tune the ability to predict risk. The Iowa risk scale for parole decision-making, with its focus on predicting assaultive behavior, is the most notable. In addition, many other agencies have developed their own scales for use at various points in the criminal justice process.

With both the proliferation of "valid" risk scales and "model" systems, probation and parole agencies are faced with a decision. Which scale is best for our agency? Can we just pick a scale that looks good or is supported by good PR? Marion County Community Corrections, within their process for developing a limited risk management system, chose not to "pick" a scale but use research methods to choose or modify a scale that fits their goals as well as resources.

- *Relationships: How do we manage conflict among people?* The key to managing this aspect has been the decision to pursue and follow-through team development in the agency by the supervisors and director. This process is once again in revision because of the merger of the jail with the Community Corrections Department. A new set of relationships are emerging.
- *Leadership: Does someone keep the boxes in balance?* Harlow states in her case history paper:

An outsider looking at MCCC today sees a bewildering variety of changes occurring simultaneously. Office automation and computerized management information systems are being implemented in stages, with some portions already in place and others planned or underway. A case management system is being fleshed out; risk and needs assessment instruments have been developed, casebanking was recently introduced, and an intensive probation supervision program is being established on an experimental basis. The presentence investigation process is under study, and short-format reports may be in use in the near future. Team management concepts are building the evolution from "top-down" decision-making to a more participative management style. The agency's statement of mission and objectives was recently rewritten to emphasize its commitment to risk management, and performance measures are being developed to focus organizational energies on results. The organizational structure remains fluid: changes in lines of authority and responsibility are periodically updated on a magnetic board.

These diverse developments are now coming together within a conceptual framework provided by the limited risk control model of O'Leary and Clear, but the origins of most can be traced back through the history of MCCC, some to events that occurred or ideas that were current before the department was created. Their persistence through the years can be explained in part by the continuity in leadership both within and outside the organization that has enabled basic values and assumptions to become "embedded" in the culture of MCCC and to some extent in the systems with which it works. There are exceptions. Some ideas, such as team management, are new to MCCC, while some external actors, such as the sheriff, could not be described as committed to values or assumptions that MCCC appears to hold.

Marion County has invested three years to date in its effort to research, design, and implement risk prediction techniques in the department's operation. For this jurisdiction, risk prediction has not been a "quick-fix" approach to improving

the decisionmaking of the agency. Committed and consistent leadership is the key to the institutionalization of such a fundamental part of the corrections decisionmaking fabric.

CONCLUSIONS

Statistical prediction in corrections is an important and evolving “helpful mechanism” in the field today. Research on this subject is particularly beneficial to the field when combined with:

- Effective communication strategies with practitioners (such as the O’Leary and Clear monograph).
- NIC training and technical assistance that includes the research in its design.
- Practitioner involvement with researchers and research content in training and other professional meetings.
- Federal agency technical assistance resources that support implementation and other learning experiences.
- Efforts that integrate the research into the philosophical framework of the jurisdiction.
- Consistent leadership that keeps the “boxes” (in the Weisbord model) in balance.

Yes, I agree with Clear in his statements that risk prediction will occur in the criminal justice system and a more formalized, research-validated process is greatly needed. The content of the research is important and needs to be teamed with a process to communicate and integrate it with the field.

I also strongly concur with the need to develop and validate these risk prediction tools in the specific jurisdiction. Marion County’s experience using Bemus as a consultant followed essentially the same process outlined by Clear. The most valuable learning from this experience has been the insight into prediction tool composition and our own agency functioning, which was previously not understood.

The NIC is currently awarding a contract to do a follow-up on the model classification project and determine its impacts on the field. I would recommend that the risk tool validation issue be pursued in that follow-up. Also, a more formal and ongoing effort to bring practitioners and researchers together should be undertaken. It appears that the NIC is the logical agency from which this leadership should come.

A REVIEW FROM THE PRACTITIONER'S PERSPECTIVE

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SUMMARY

Dr. Todd Clear's paper, *Statistical Prediction in Corrections*, is a stimulating exploration of the use of prediction in the correctional field. It offers many insights and interesting considerations. The key points, from a practitioner's viewpoint, can be summarized as follows:

1. The development and implementation of a custom-designed risk management system would enhance the programming and security assignment of offenders.
2. The risk management model appears to be an excellent approach for controlling and minimizing inmate populations. It offers a conceptual framework for addressing the issues of spiraling numbers and costs associated with incarceration.
3. It is imperative that correctional administrators be pragmatic in planning and implementing a risk management model. Prediction instruments provide no miracles or panaceas. However, the use of a carefully thought-out instrument which incorporates the practitioner's judgment greatly reduces the probability of error in the categorical assignment of offenders.
4. The use of a risk management system will greatly aid an administration in the allocation of resources. The focus of such a system should be on those offenders most responsive to higher levels of programming.
5. A risk management model would help agencies to define and publicize their philosophy. It would help staff and the public, through a public education strategy, to better understand corrections' mission and function.
6. One of the key issues emanating from Dr. Clear's paper is that of the role predictions should have in policy, programming, and resource allocation.
7. It is to an agency's advantage to develop its own prediction instrument. If an instrument is borrowed, the instrument needs to be modified for adaption to the agency's particular demographics. In order to promote the successful use of a prediction instrument, the users must have a role in the instrument's development. Equally important, the staff must be well trained in the use of the instrument.
8. The education of the public and related agencies about the prediction instrument is a key factor in the success of its implementation. A conscientious prediction-instrument education program can provide the benefits of support, but with the public's involvement, there is the potential of additional resources becoming available to corrections departments.

9. A research design for the prediction instrument should be built into the process. Ongoing monitoring, with the provision for making modifications to the instrument when there appears to be an opportunity to improve it, is also important.

INTRODUCTION

Dr. Clear presents a comprehensive and thought-provoking paper on prediction methodology that should be useful to administrators, correctional policymakers, practitioners, and interested citizens. The fact that he writes in a nontechnical style is also helpful.

In his introductory section, Dr. Clear helps the reader grasp the nature, function, and challenges related to the use of prediction in corrections. His examples of overt, subtle, formal, and informal predictions illustrate that correctional practitioners use some form of prediction, whether they are aware of it or not. He successfully makes the case that there is a need to recognize this fact and to strive continuously to improve prediction and related methodologies.

The brief history of studying the problems of prediction-instrument reliability supports the importance of working toward improving that reliability. The adoption of a carefully thought-out, relevant prediction philosophy and instrument is a major step in the right direction.

PHILOSOPHICAL RAMIFICATIONS

As Dr. Clear states, the philosophical implications inherent in any prediction methodology is a crucial consideration for correctional administrators and policymakers. The failure to carefully consider the ramifications of the adoption and use of a prediction instrument could truly create confusion. Whether its users know it or not, an adopted prediction instrument is a statement of philosophy.

By comparing scientific, utilitarian, and nonutilitarian categorical prediction philosophies, the policymaker can define his or her philosophical position. Each category provides for in-depth discussion on how offenders are or should be viewed. Each approach also influences how the correctional system interacts with the public.

It is contradictory and not unusual for offenders to be confined for lengthy periods of time both because of the seriousness of their offense *and* to protect the public from the commission of the same type of crime in the future. Dr. Clear aptly describes how this may be unfair, in view of the statistical probability that a large number of serious offenders may not repeat their crimes. He reports that "one of the most common findings in the literature is that the seri-

ousness of the current offense and probability of a subsequent offense are statistically unrelated."

Utilizing a prediction instrument to determine an offender's length of confinement *and* applying a prescribed sentence because of the seriousness of the crime thus presents a dilemma. Although the available instruments are not yet sophisticated enough to resolve this dilemma, they still have considerable value for programming levels of supervision and security classification in the corrections system.

THE LIMITATIONS OF PREDICTION INSTRUMENTS

Prediction instruments may enable one to forecast the percentage of high-, moderate-, and low-risk offenders who will recidivate. However, as Dr. Clear and others report, the instruments are incapable of identifying specific individuals as highly potential recidivists, since the instruments address group tendencies.

Dr. Clear points out that the errors of predicting success are "invisible," since the offenders are incarcerated, whereas the released offenders who are predicted to succeed but fail are very "visible." This creates a tendency to overpredict and sentence in response to the public outcry about visible failures.

The use of risk assessment devices is an improvement over the use of prediction instruments alone. Although imperfect, the risk assessment approach does reduce the error in predicting individual success or failure. The more refined the instrument, the better its prediction capability for a subgroup.

No miracles are possible or should be expected from the use of screening devices and prediction instruments. They have inherent limitations, as Dr. Clear points out. However, the correctional policymaker who recognizes and guards against the limitations will be in a good position to utilize the instruments.

A wide range of criteria have been used in the different classification systems as indicators of future criminal activity, including social, economic, education, and employment factors. Experience and research support Dr. Clear's caution about examining the criteria very carefully. For example, many of these criteria have been shown to be discriminatory against ethnic minorities. It is imperative that policymakers be cognizant of and guard against these types of discrimination.

Another criterion used in many classification systems is the type of offense. Humans are by nature generally very reactive to heinous crimes. Consequently, these types of crimes usually preclude probation or early parole consideration for the offender. Moreover, a legislative trend toward reinforcing such responses to serious crimes has removed some discretion from the courts and parole authorities.

Some additional questions arise when evaluating risk assessment instruments. The basing of the categories of high, medium, and low risk on a point system and the further refinement into subgroups poses a problem. How confident can a practitioner be about forecasting the future criminality of an offender whose "score" is near the top or bottom of a scale, adjacent to the next category? Prediction validity of even the high-risk group is only 30 percent.

It is thus important to go beyond a reliance on labeling. The correctional practitioner must fully understand what the categories connote, recognize limitations, and use additional resources along with the prediction instrument.

PREDICTION INSTRUMENT ISSUES

Human nature and individual behavior being what they are, there is a built-in problem with an instrument that addresses only similarities with like groups and excludes individuality.

Dr. Clear cites an invaluable resource, i.e., the practitioner's judgment. The use of informed judgment enhances decisionmaking, no matter how good the practitioner's instruments are. It is extremely important that those involved in policymaking and program development have an investment in the product. In this case of risk assessment, involvement will improve results and reduce indifference to instrument application. A practitioner's judgment relates to outcome through a self-fulfilling-prophecy process.

Dr. Clear advises that the design of a risk assessment instrument that incorporates the practitioner's judgment should include an override component. The rate of review override in practice can help the correctional manager determine the practicality of the instrument, the degree of the practitioners' use of the instrument, and how much practitioner judgment is involved.

Studies and experience suggest that most risk management instruments identify low-risk offenders fairly well. This group presents a low payoff on resources invested, as studies suggest that low-risk offenders are the least responsive to intervention and intensive supervision resources. The low-risk category has a significantly lower recidivism rate than the high-risk group, which is generally much more responsive to intervention and intensive supervision programs.⁴ Accordingly, all concerned should concentrate the majority of resources and specialized programs on those identified as being in the high-risk group.

Incapacitation has become a popular response to the crime problem. Dr. Clear suggests that this approach has failed to significantly affect the crime rate. He suggests that this failure may be attributed to the relatively small percentage of offenders that are actually apprehended, prosecuted, and sentenced. Nonetheless, in the opinion of many, incarceration is valuable, simply because those who are incarcerated are not victimizing the public.

Another factor influencing the continued level of criminality is what Dr. Clear calls the “replacement effect.” The majority of criminals commit offenses in groups, and consequently, although an offender who is responsible for many criminal acts may go to jail or prison, his group will recruit a replacement for him, and the rate of criminal activity will continue.

As jail and prison populations continue to grow because of the increasing trend toward incapacitation, the costs of construction and maintenance of facilities put a tremendous burden on the tax dollar. Fiscal pressure may reach a point where measures that are less costly than incarceration but still effective will have to be sought.

RISK MANAGEMENT MODEL RATIONALE

The rationale for using a risk management model is based upon three considerations: (1) By the time an offender has established a criminal behavior pattern, he or she may have “matured” out of criminal activity; (2) only a small percentage of the criminal population actually ends up incarcerated, and using their criminal activity as representative of those that are undetected may overestimate the criminal effect of undetected offenders; (3) the evaluation of a crime control policy is of more value if it is designed for future rather than past incidence of behavior, because the latter may be replete with problems.

Dr. Clear offers five premises to be considered when developing a risk management program. First, the risk assessment instruments should be designed and implemented in a way that makes prediction errors as visible as possible and thereby more manageable. Inclusion of this premise in the program requires careful monitoring. However, it lends credibility to the model and makes it more functional. The best approach is for each jurisdiction to develop its own instrument from the very beginning. This ensures relevance to the profile of the offender population and its unique characteristics and influences. It may be satisfactory to borrow a model from another jurisdiction, but the model must be adapted to meet the needs of the agency using it.

The second premise for the successful development of a risk management model is that a vast array of diversified programs must be available. It is helpful that the base rate for the low-risk category is low and that studies have shown a diminishing return for program investments for this category of offenders. These factors facilitate the redirection of resources toward programs for the high-risk group.

The separation of the punitive aspects of sentencing and correctional programs for the risk control aspects is the third premise to be considered in the development of a risk management model. In addition to the courts, legislature and parole authorities are becoming more involved in prescribing definite terms of incarceration. Laws have been enacted that relieve the courts of sentencing discretion. In turn, this “just desert” approach puts additional limitations on the

correctional administrator's programming flexibility. Nonetheless, there are many opportunities within these constraints for a correctional policymaker to meet the requirements of the "just desert" philosophy while incorporating a functional risk management model.

The fourth premise, that the initial program assignment should be made on the basis of the offender's level of risk, given the **court's** sentence, has much merit. Again, previous studies support this as a practical approach. In addition to humaneness, economics may soon dictate that this will be an important consideration in sentencing. Once the costs of incarceration reach a level that the public can no longer tolerate, there will be a demand for a more cost-effective approach. The use of a sound risk management model will definitely be of great value. Correctional policymakers should be proactive, immediately employing plans that will carry out justice, protect the public, and provide humane programs for offenders.

The fifth premise is that an offender's movement through the programs should be based on his or her performance and risk level. This premise can be helpful in its application with a classification system both for field supervision and within an institutional setting. It would facilitate the allocation of resources and the disbursement of probationers, parolees, and inmates. In addition, the system would benefit from an incorporated reclassification of the offenders at specific intervals as they progress through the programs.

The major challenges to the adoption of these premises and a risk management model will exist for correctional agencies that function with "just desert" laws and court sentences. These challenges could be addressed with a risk management model designed specifically for whatever flexibility might be within those laws and **sentences**. For example, it may be very difficult to redesign an institution, but with careful planning, the program could be modified to focus the majority of resources on the high-risk group.

THE ROBERT J. KUTAK FOUNDATION

After the death in 1983 of Robert J. Kutak, one of the founding partners of the law firm of Kutak Rock & Campbell in Omaha, Nebraska, the partners of the firm and other friends and colleagues established the Robert J. Kutak Foundation to honor his memory and to continue support of the activities in which he had been personally and professionally involved. Among those interests was the field of criminal justice, with special emphasis on corrections. As a staff member of the U.S. Senate, Mr. Kutak helped draft the legislation that established the National Institute of Corrections and served as the first chairman of the NIC Advisory Board. He also served on the President's Task Force on Prisoner Rehabilitation and on the American Delegation to the Fourth and Fifth United Nations Congresses on the Prevention of Crime and Treatment of Offenders.

THE NATIONAL INSTITUTE OF CORRECTIONS

The National Institute of Corrections is a national center of assistance to the field of corrections. The goal of the agency is to aid in the development of a more effective, humane, constitutional, safe, and just correctional system.

The National Institute of Corrections is both a direct-service and a funding agency serving the field of corrections. Its five legislatively mandated activities are (1) training; (2) technical assistance; (3) research and evaluation; (4) policy and standards formulation and implementation; and (5) clearinghouse. The basic objective of the Institute's program is to strengthen corrections at all levels of government, but primarily at the state and local levels.

As established by the enabling legislation, the Institute's policy is determined by an active 16-member nonpartisan Advisory Board appointed by the Attorney General of the United States. The Board is composed of six federal officials serving ex-officio, five correctional practitioners, and five individuals from the private sector who have demonstrated an active interest in corrections. Through public hearings, the Advisory Board regularly, solicits the opinions of correctional practitioners and others involved in the criminal justice process prior to targeting the Institute's fiscal year funds.

