

## Recidivism Is Predictable and Can Be Influenced: Using Risk Assessments to Reduce Recidivism

*Criminal justice and corrections is a major area of sociological, historical, and psychological research. In part, this interest in justice and corrections reflects public concern with the control of crime. The research interests also reflect the extraordinary power that society offers criminal justice practitioners. In particular, the concern is that the resources and power be employed in ethical, legal, humane, efficient, and effective ways.*

*The purpose of this article is to explore how research on risk, need, and other characteristics of offenders may contribute to the humane and efficient management of the sentence and to reductions in criminal recidivism. Many of these contributions are embodied in four principles of case classification known as the principles of risk, need, responsivity, and professional discretion. These principles will be described in detail.*

*A secondary purpose of the article is to suggest that the contributions of research to effective corrections reflect a long history of theory and research in the area of the psychology (or human science) of crime and corrections. We will see also that Canadian researchers in particular have been committed to the humane application of research in corrections. Interestingly, most Canadian researchers have resisted the strong pressures that, in the United States, threaten to turn criminology into a field preoccupied with the art of punishment and the science of oppression.*

### Research on Risk Factors

The largest body of well-established research findings in the whole of criminology is that body of work devoted to the prediction of criminal behaviour. Included are the pioneering studies in which researchers attempted to identify those biological, personal, and circumstantial factors that could distinguish between samples of people with criminal histories from samples of people without criminal histories. Also included are the many studies in which well-defined samples of people are carefully assessed on various personal and social characteristics and then followed into the future to see who would become less or more involved in criminal activity.

James Bonta, Stephen Wormith and I have recently summarized the findings of several of the large-scale and classic attempts to distinguish between groups of delinquents and non-delinquents. The major findings are remarkably consistent from study to study regarding characteristics of young people that suggest an increased risk of delinquency:

- antisocial/delinquent associates
- antisocial/antiauthority/procriminal attitudes, values and beliefs
- family conflict, low levels of affection or cohesiveness, violence
- poor supervision, monitoring, and disciplinary practices by parents
- psychological disadvantage evident among parents and siblings in the family of origin: criminal records, substance abuse, mental health problems, reliance on (as opposed to sometime use of) welfare, poor work habits and unstable work history (as opposed to a low level of occupation)

- impulsivity, weak self-management and problem solving skills, restlessly energetic
- a taste for risky activities, early adventurous exploration of adult pursuits (sex, drugs)
- early and diverse misbehaviour (lying, stealing, aggression) in a variety of settings (home, playground, school)
- below average verbal intelligence
- poor performance in school and, in particular, misconduct in school
- generalized difficulties or trouble in relationships with others (parents, siblings, teachers, peers)
- a preference for leisure and recreational activities that are unsupervised and conducted in unregulated settings
- being male

The classic research is also near unanimous in suggesting that there are several routes through which young people become at risk for delinquency. Thus, producing a list of risk factors does not suggest that any particular risk factor is always present, or that some factors not included in the list may be very important for some people under some circumstances.

In addition, a list of risk factors does not suggest that all offenders are alike, any more than it suggests that all low risk cases are alike. Thus, for example, some offenders are very bright, even though the average level of verbal skill may be lower among offenders than it is among nonoffenders. Similarly, for example, the research literature shows clearly that many restlessly energetic young people do not become delinquent or criminal, just as some loving and highly skilled parents suffer from seeing a young family member become involved in serious antisocial behaviour.

Finally, not all of the characteristics of people and their circumstances that have been identified as risk factors for delinquency and crime are "bad" characteristics. For example, there is nothing inherently wrong with being male, being antiauthority in attitude, or possessing a taste for risk. They are simply risk factors for delinquency.

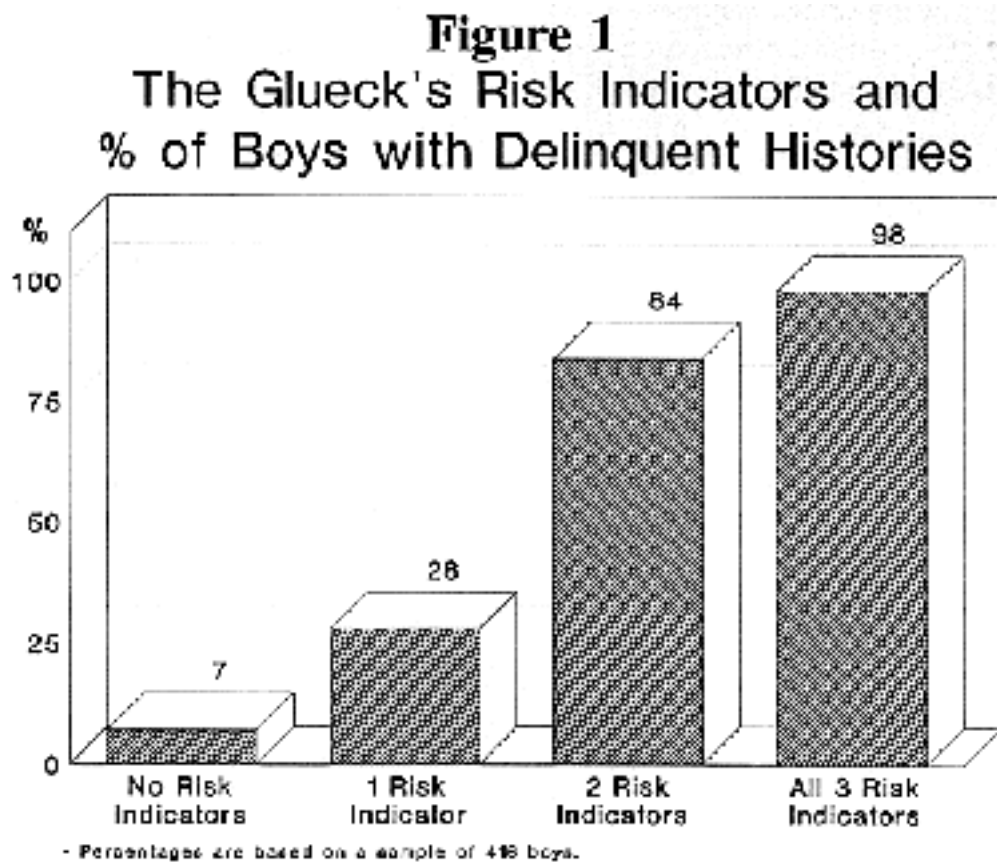
No researchers have documented this better than Sheldon and Eleanor Glueck who, in their classic book of the 1950s, *Unraveling Delinquency*, reported that some young people who were at **least** risk for delinquency - the hyper-conventional young boys - were **most** at risk of suffering from long and frequent periods of personal misery in the form of feelings of guilt, worry, and anxiety. The latter fate, according to the Gluecks (and Freud), may well be worse personally and socially than is an increased chance of violating conventional rules and procedures such as those represented in legal codes.

The overall findings of studies of delinquents and nondelinquents (are very strong and very clear: the ability to distinguish between delinquents and nondelinquents increases dramatically when a number and variety of major risk factors are surveyed.

Once again, one of the early and compelling examples of this overall trend was provided by work in the 1940s and 1950s by Sheldon and Eleanor Glueck of Harvard University. Those researchers compared nondelinquents and frequent and serious delinquents from underprivileged areas in Boston on a risk scale that combined three pieces of information; high risk family conditions (as assessed by social history interviews and observations), high risk personality (as assessed in clinical interviews), and high risk

personality (as assessed with psychological tests). The percentage of boys with delinquent histories by the number of risk indicators that were present is shown in the figure - delinquent history was more likely as the number of risk indicators increased (see Figure 1).

Figure 1



The overall pattern of results from these classic studies has also been found in studies of the recidivism of officially processed young offenders and convicted adult criminals.

A particularly important series of studies was conducted in the 1970s under the sponsorship of the Research Branch of the Ontario Ministry of Correctional Services. Under the leadership of Drs. Andy Birkenmayer, Leah Lambert and Tom Surridge and in cooperation with various university-based researchers, detailed profiles were compiled of young offenders, adult probationers, and adult inmates of provincial institutions. Dr. Jim Bonta, a psychologist, and his colleagues at the Ottawa-Carleton Detention Centre have continued this tradition through their classification research in group homes and regional detention centres.

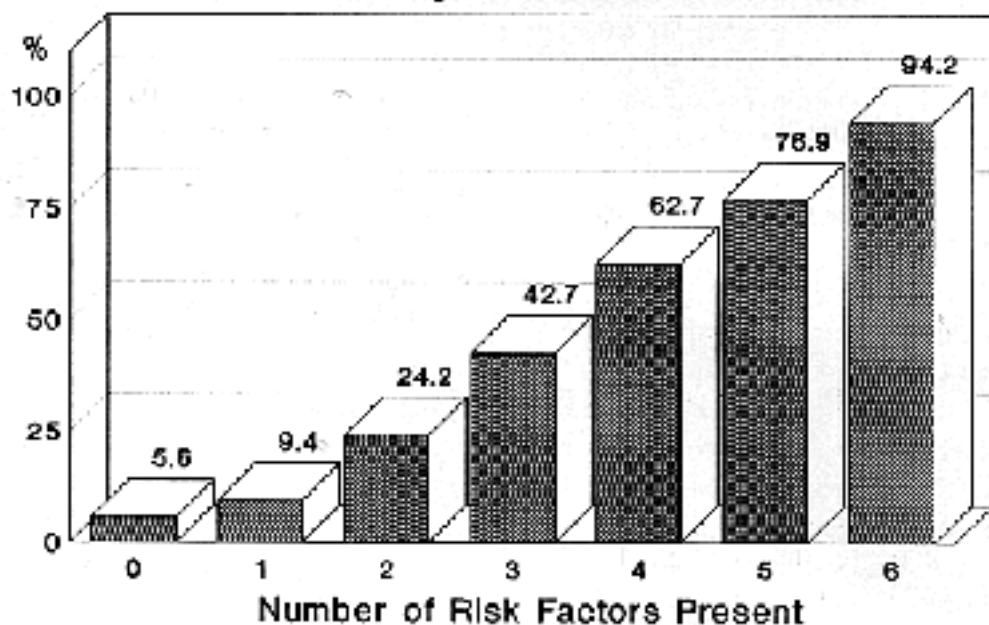
Sally Rogers' study of a representative sample of Ontario probationers clearly shows how combining information on several risk factors may dramatically improve the prediction of recidivistic crime. Ms. Rogers simply counted how many of the following six factors were judged to be present in a sample of offenders: being male, being young, having a criminal record, mixing with criminals, family relying on welfare, and aimless use of leisure time. As the figure demonstrates, the probability of a reconviction

over a two-year follow-up period increased in a regular manner with each additional risk factor present (see Figure 2).

Figure 2

Figure 2

### Reconvictions by Number of Risk Factors Present among Ontario Probationers



That a few well-chosen risk factors could predict criminal recidivism with an impressive level of accuracy has been evident in the research literature at least since the 1940s and 1950s. Routinely now, accuracy rates are in the area of 60% to 80%. Not until the 1970s and 1980s, however, were practical applications of this ability introduced into correctional practice systematically. Examples include the Wisconsin scale, the Salient Factors scale in U.S. parole, Ontario's Level of Supervision Inventory (LSI), the Statistical Information on Recidivism Scale (SIR) in the Correctional Service of Canada and the National Parole Board, and the Risk/Needs project being piloted in community supervision in the Correctional Service of Canada.

Research with practical risk assessment instruments has established now, beyond question, that systematic risk assessment allows the identification of lower and higher risk groups, and that the higher risk categories may be selected so that they include a majority of the cases who will recidivate. Moreover, offenders in higher risk groups will be responsible for a majority of the recidivistic offences.

As impressive as the ability to identify lower and higher risk cases may be, the predictions are not perfectly accurate: Some higher risk cases will not have a reconviction (indeed, even a majority of the higher risk cases may not be reconvicted), and some lower risk cases will be reconvicted.

At least part of this imperfection may be traced to limitations in our knowledge of what constitutes a risk

factor. Notably, the risk scales in routine use today make little use of promising biological and situation-specific information. Similarly, the scales now in routine use tend to rely on information available from interviews and reviews of official records, and make little use of information that may be gleaned from systematic psychological testing.

Sometimes the accuracy of risk scales is underestimated because the follow-up period is too short for the higher risk cases to show their criminal potential. In addition, a reliance on official records as a measure of recidivism leads to an underestimation of predictive accuracy because many criminal acts of higher risk cases may never show up on official records.

All of these technical explanations of the imperfection of risk assessments, however, are trivial compared to a key consideration in the management and treatment of offenders. The assessments of risk that we have been discussing up to this point ignore the fact that, once in the correctional system, offenders are subject to events and experiences that may produce shifts in their chances of recidivism. That is, lower risk cases may remain low risk throughout their period of supervision, or they may move into higher risk categories. On the other hand, higher risk cases may remain high risk or they may move in the direction of lower risk.

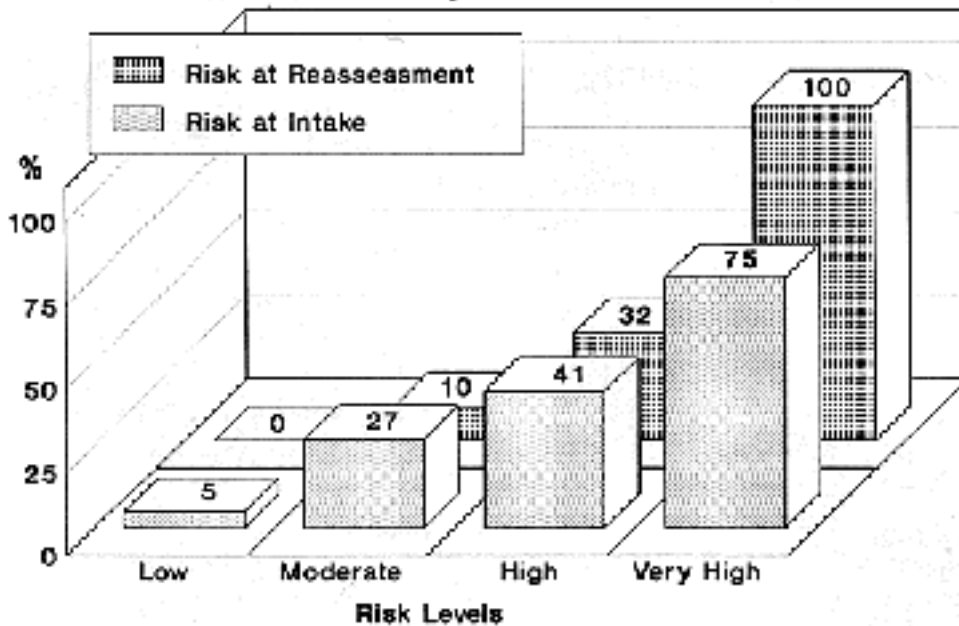
The task of improving the accuracy of prediction now turns in two key directions. First, what characteristics of offenders and their circumstances are subject to change during the sentence? Second, of those changes, which ones really do indicate an increased or a reduced chance of recidivism?

In order to answer these questions, researchers and practitioners must look beyond risk factors that cannot be changed. Risk factors such as criminal history, a history of substance abuse, and poor adjustment while serving an earlier sentence are simply not going to reveal change upon reassessment. Thus, in order to detect shifts in the chances of recidivism, risk factors which are dynamic must be assessed. These dynamic risk factors are often called "criminogenic need" factors. Examples of risk assessments which are predictive of recidivism abound in the research literature. However, concrete illustrations of the predictive accuracy of reassessments with dynamic risk scales are relatively rare. One example with Ontario's Level of Supervision Inventory (LSI) illustrates the value of reassessments of dynamic risk factors.

A group of probationers in the Ontario city of Belleville were assessed with the LSI upon probation intake, and the predictive accuracy of the intake LSI was very similar to that found in other probation offices in Ontario. More interestingly, the Belleville probation officers were in the habit of conducting quarterly reassessments of risk with the LSI. The predictive accuracy of these reassessments greatly exceeded the accuracy of the risk scores obtained at probation intake. Without suggesting that such dramatic predictive accuracy could be achieved in all studies, reassessments for the Belleville sample showed that the lowest risk probationers had no reconvictions (0%), while all of the highest risk cases were reconvicted (100%) (see Figure 3).

**Figure 3**

## Recidivism Rates by Risk Levels at Intake and Upon Reassessment



The overall finding suggests; for purposes of the accurate prediction of recidivism, that the important information is not risk at intake but risk later in the sentence. My research lab at Carleton University has found similar results when reassessments were conducted on measures of antisocial attitudes, substance abuse, and trouble in the family. In other words, research findings are beginning to strongly support the view that an important task of corrections is to manage the sentence in such a way that low risk cases remain low risk, and higher risk cases move in the lower risk direction.

Here we move toward a real challenge for corrections: managing the criminal penalty in legal, humane, and efficient ways, while keeping low risk cases in the low risk categories, and creating and delivering programs that will move higher risk offenders into lower risk categories. This area of research involves the management and treatment of offenders according to their risk levels (the risk principle), choosing appropriate targets of rehabilitative programming (the need principle), and employing styles and modes of treatment that are appropriate for offenders (the responsivity principle).

### **Risk Principle**

The risk principle is so obvious that it hardly needs to be stated, and so subtle that it needs to be developed very carefully. The risk principle suggests that higher levels of service should be allocated to the higher risk cases. On the obvious side, "If it ain't broke, don't try to fix it." Of course we try to reserve higher levels of correctional control and treatment services for higher risk cases!

On the more subtle side, however, the belief persists that treatment services, if effective at all, only work for lower risk cases. Social workers call this the "casework paradox" services are great, as long as the client is not in difficult circumstances. Psychologists and other human service professionals make

reference to "YAVISS" treatment is great, as long as the client is Young, Attractive, Verbal, Intelligent, and Socially Successful.

Even experienced researchers often mistake the relatively successful post-treatment functioning of low risk cases for evidence that the low risk cases profited from treatment. Similarly, they mistake the relatively poor post-treatment functioning of higher risk cases for evidence that treatment does not work for higher risk cases. The errors here involve confusing the predictive accuracy of pretreatment risk assessments with the issue of who profits from treatment.

The following illustrative data were gathered by Jerry Kiessling in the Ottawa Probation and Parole offices in a project on the value of increasing supervision and service by involving volunteer probation officers. An intake risk assessment was conducted on all probationers in the project, and probationers were then randomly assigned to routine or amplified supervision. The recidivism rates of the probationers assigned to regular supervision reflected their level of risk at intake:

- Higher Risk Cases in Regular Supervision Program: 58%
- Lower Risk Cases in Regular Supervision Program: 10%

Similarly, the recidivism rates of probationers in amplified supervision reflected risk at intake:

- Higher Risk Cases in Amplified Supervision Program: 31 %
- Lower Risk Cases in Amplified Supervision Program: 17%

Making the errors referred to above, we might conclude that the lower risk cases profited from both the regular and the amplified probation programs - because, the low risk cases had the lowest recidivism rates in both programs.

In order to appreciate the risk principle, and to avoid the errors just reviewed, the recidivism rates of probationers in the regular and amplified programs must be compared directly, and these comparisons are made separately for lower and higher risk probationers. Considering only the lower risk cases, the program effect was as follows:

- Regular Program: 10% recidivism rate
- Amplified Program: 17% recidivism rate

With this mode of presentation, it becomes very clear that amplified supervision was not effective with lower risk cases. Indeed, there is evidence that the recidivism rate of low risk probationers was greater under amplified supervision than under regular supervision.

Considering only the higher risk probationers, the program effect was as follows:

- Regular Program: 58% recidivism rate
- Amplified Program: 31 % recidivism rate

Now it is clear that higher risk cases were profiting from amplified supervision. The recidivism rates of higher risk cases in amplified supervision was nearly half that of the higher risk cases on regular supervision. This is the pattern of results that our reviews of the research have been uncovering in corrections, child welfare, mental health, and family service.

Another aspect of the risk principle has to do with making efficient use of the least restrictive interpretations of the sentence. The research literature, in particular the now massive evidence compiled by Dr. James Bonta and his colleagues, suggests that lower risk cases may be assigned safely to the least restrictive correctional settings. In Ottawa and various other Ontario cities, Dr. Bonta has shown that low risk cases succeed so well in group home settings that only under very special circumstances is it necessary that their sentences be managed in institutions.

My colleagues, Drs. Jim Bonta and Robert Hoge, and I have been suggesting in recent papers that the risk principle should be considered a professional guide to research and practice in corrections. The risk principle is not simply a management tool by which the discretion of correctional workers may be monitored. It is a principle that suggests how human service professionals may allocate correctional treatment resources in ethical, humane, and effective ways. This positive perspective on risk assessment does not suggest, however, that the research evidence is complete on the many issues involved. Far from it!

For example, to suggest that higher risk cases respond better to treatment than do lower risk cases is not to suggest that effective treatment programs have been demonstrated for the highest risk cases. Thus, the excitement created by Dr. Robert Hare's work on antisocial/psycho-pathic personality (see the article by Ralph Serin in this issue) will lead to careful research on the types of programs that may work with groups who have been labeled chronically antisocial.

What the current research shows is that the implications of the risk principle should be explored systematically so that its limits may be fully appreciated. One set of limits has to do with the quality of the treatment services that are delivered to higher risk cases: higher risk cases will not respond well to treatment programs that are inconsistent with the principles of need and responsivity.

## Need Principle

The need principle asserts that, if correctional treatment services are to reduce criminal recidivism, the criminogenic needs of offenders must be targeted:

- "If recidivism reflects antisocial thinking, don't target self-esteem, target antisocial thinking."
- "If recidivism reflects difficulties in keeping a job, don't target getting a job, target keeping a job."

Research on criminogenic need is small in volume compared to the wealth of evidence on risk factors. At the same time, however, existing theory and research are very promising. As reviewed in more detail elsewhere, the following list suggests some promising targets of rehabilitative service:

- changing antisocial attitudes
- changing antisocial feelings
- reducing antisocial peer associations
- promoting familial affection/ communication
- promoting familial monitoring and supervision
- promoting identification and association with anticriminal role models
- increasing self-control, self-management and problem solving skills
- replacing the skills of lying, stealing and aggression with more prosocial alternatives
- reducing chemical dependencies
- shifting the rewards and costs for criminal and noncriminal activities in familial, academic, vocational, recreational and other behavioural settings, so that noncriminal alternatives are favoured
- providing the chronically psychiatrically troubled with low pressure, sheltered living arrangements
- changing other attributes of clients and their circumstances that, through individualized assessments of risk and need, have been linked reasonably with criminal conduct
- insuring that the client is able to recognize risky situations, and has a concrete and well-rehearsed plan for dealing with those situations

Theory and research also suggest a list of less promising targets:

- increasing self-esteem (without simultaneous reductions in antisocial thinking, feeling and peer associations)
- focusing on vague emotional and personal complaints that have not been linked with criminal conduct
- increasing the cohesiveness of antisocial peer groups
- improving neighborhood-wide living conditions, without touching the criminogenic needs of higher risk individuals
- showing respect for antisocial thinking on the grounds that the values of one culture are as valid as the values of another culture
- increasing conventional ambition in the areas of school and work without concrete assistance in realizing these ambitions
- attempting to turn the client into a "better person," when the standards for being a "better person" do not link with recidivism.

## **Responsivity Principle**

The risk principle assists in deciding who might profit most from intensive rehabilitative programming. The need principle suggests the appropriate targets of change for effective rehabilitation. Responsivity has to do with the selection of the appropriate modes and styles of service. Two components are important here:

- What styles or modes of service work for offenders in particular, as opposed to what works with undergraduates, with business people on a psycho-recreation retreat, or with people suffering from neurotic or psychotic disorders?
- **Within** offender groups, are there special responsivity considerations?

Generally, the best modes of service are **behavioural**, in particular, cognitive-behavioural and social learning: modeling and reinforcement of anticriminal behaviour, graduated practice of new skills, role playing, providing resources, and concrete verbal suggestions (giving reasons, prompting).

Jerry Kiessling and I identified five dimensions of effective correctional supervision and counselling in the 1970s that are still worthy of serious review:

- (a) Authority: "firm but fair", distinguishing between rules and requests, monitoring progress, rewarding compliance with treatment, **not** interpersonal domination or abuse.
- (b) Anticriminal modeling and reinforcement: demonstrating and reinforcing vivid alternatives to procriminal styles of thinking, feeling and acting.
- (c) Concrete problem solving: skill building and removal of obstacles in order to increase the rewards and satisfactions associated with anti-criminal behaviour in settings such as home, school and work.
- (d) Advocacy and brokerage: referring the offender to other helping agencies, as long as the receiving agency offers appropriate correctional service.
- (e) Relationship factors: relating in open, enthusiastic, caring ways.

At the same time, theory and research suggest that some styles and modes of treatment have very poor track records in corrections. For example, the research literature contains several examples of group programs designed according to the principles of clinical sociology that were outright failures: these programs involved creating intense group interactions without the leader of the group being able to discourage the expression of antisocial sentiments.

Similarly, there is as yet no convincing evidence that programs designed according to the principles of either deterrence or labeling theory have been very successful. Yelling at people is inconsistent with the relationship factor described above, and fear of punishment is not a major predictor of criminal conduct. Similarly, "radical nonintervention" -doing nothing in the face of antisocial potential - is simply inconsistent with the risk principle. I am also unaware of any evidence that innovative alternative punishments such as community service orders or restitution are in any important sense rehabilitative.

Non-directive, client-centered counselling and unstructured psychodynamic therapy have also yet to prove themselves in corrections. Generally, the therapist plays the role of listener in these types of therapies and provides the offender with very little in the way of concrete direction. Some offenders, however, - those who are more interpersonally mature and comfortable with self-reflection - may respond favourably to these less structured therapies.

Gender, age, psychopathic personality, social anxiety, the existence of mental and personality disorders, verbal intelligence, language, ethnicity, and motivation are other possible responsivity factors awaiting systematic study in the context of correctional treatment. Research is needed to determine whether or not offenders who possess these characteristics respond in different ways to treatment.

A group of colleagues and I have recently completed a review of the correctional treatment literature. I think that review well represents the current state of research on risk, need and responsivity as they apply to the objective of reduced criminal recidivism. That review revealed that front-end criminal sanctioning, that is the punitive sentence, without the delivery of rehabilitative service, at best and on average, was associated with slight increases in the chances of recidivism. The delivery of treatment services that were inconsistent with the principles of risk, need, and responsivity, on average, were also associated with slight increases in the chances of recidivism. What worked was the delivery of treatment services that were consistent with risk, need, and responsivity.

In summary, the available evidence suggests that the real action for purposes of reducing criminal recidivism resides in creating correctional settings in which correctional professionals may design, deliver, and evaluate the effectiveness of rehabilitative programs.

### **Professional Discretion**

The professional reviews risk, need, and responsivity for a particular case under particular circumstances, and makes the decision that best reflects ethical, humanitarian, legal, and effectiveness considerations. Principles of treatment, no matter how solid the research base, must be applied by an informed and sensitive professional.

### **Conclusions**

The principles of risk, need, and responsivity are both obvious and subtle. I hope, for example, that this review has served to illustrate how strong and how limited is the research base for effective correctional programming.

I wanted to keep the tone of this article positive right up to its conclusion. It would be indefensible, however, to leave readers with the impression that the research and ideas reviewed here are widely accepted in criminology. The lack of acceptance I refer to is not simply the normal business of researchers attempting to improve knowledge through exploration of possible errors in earlier research. That type of criticism and skepticism is the very basis for gains in knowledge through research.

What I have in mind is the explicitly "antiprediction" and "anti-rehabilitation" themes that are so deeply woven into much of mainstream criminology. These themes are not presented in this text but, for completeness, samples of antiprediction and antirehabilitation themes drawn from criminological journals and textbooks are provided in a box that accompanies this paper.

Correctional researchers and practitioners have a base of research about which they may feel proud. At

the same time, they must be prepared to face ideologues who appear committed to destroying that knowledge base.

This paper drew heavily upon the following papers. They are available as a package from the Research Branch, Correctional Service of Canada, 340 Laurier Avenue West, Ottawa, Canada K1A 0P9.

---

*Andrews, D. A. (1980). Some experimental investigations of the principles of differential association through deliberate manipulations of the structure of service systems. American Sociological Review, 45, 448-462.*

*Andrews, D. A. (1982). The supervision of offenders: Identifying and gaining control over the factors that make a difference. Program Branch User Report. Ottawa: Solicitor General of Canada.*

*Andrews, D. A. (1983). The assessment of outcome in correctional samples. In M.L. Lambert, E.R. Christensen, & S.S. DeJulio (Eds.) The measurement of psychotherapy outcome in research and evaluation. New York: Wiley.*

*Andrews, D. A. (1988). Research, education and training in criminology and human science: Implications for sentencing and correctional policy. Testimony before the Standing Committee on Justice and the Solicitor General, Canada.*

*Andrews, D. A., Bonta, J., & Hoge, R. D. (in press). Classification for effective rehabilitation: Rediscovering psychology. Criminal Justice and Behaviour.*

*Andrews, D.A., Bonta, J. & Wormith J. S. (1988). Criminal Behaviour: Notes for 49.342. Ottawa: Carleton University Bookstore.*

*Andrews, D. A., & Kiessling, J. J. (1980). Program structure and effective correctional practices: A summary of the CaVIC research. In R. R. Ross & P. Gendreau (Eds.) Effective correctional treatment Toronto: Butterworths.*

*Andrews, D. A., & Wormith, J.S. (in press). Personality and crime: Knowledge destruction and construction in criminology. Justice Quarterly.*

*Andrews, D.A., Zinger, I., Hoge, R.D., Bonta, J., Gendreau, P., & Cullen, F.T. Does correctional treatment work? A clinically relevant and psychologically informed metaanalysis. Presented at NAACJ seminar: Research on Direct Service - A Human Science Approach. Ottawa: March 1989.*

*Cullen, F. T. & Gendreau, P. (1989). The effectiveness of correctional rehabilitation. In L. Goodstein & D. L. MacKenzie (Eds.) The American prison: Issues in research policy. New York: Plenum.*

*Gendreau, P., & Ross, R. R. (1987). Revivification of rehabilitation: Evidence from the 1980s. Justice*

*Quarterly*, 4, 349-408.

*Hoge, R. D., & Andrews, D. A. (1986). A model for conceptualizing interventions in social service. Canadian Psychology, 27, 332-341.*