

The 'SIR Scale': Some Reflections on Its Applications

Correctional Service of Canada and National Parole Board staff have been hit with lots of changes lately in the way they are required to do the business of case assessment and release decision making. Indeed, the past ten years have been a period in which change in case management has been the only constant. Change is almost always difficult to deal with, and many changes over a brief time span can be particularly difficult to handle.

In a way, it is unfortunate that the introduction of a risk prediction instrument into the daily business of the Correctional Service of Canada and the National Parole Board has arrived at the same time as so many other changes in case management and release decision making. The surrounding flux and anxiety have contributed to a certain mistrust of the so-called "SIR Scale" -Statistical Information about Recidivism. But a lot of the mistrust is founded on myths, misunderstandings, and fear, and it is important to distinguish the real from the false in using and abusing risk prediction instruments.

How the SIR Scale Was Developed

The SIR Scale was developed over a decade ago as part of a Secretariat research project requested by the National Parole Board. This project, called the "Parole Decision Making Project", was designed to examine a large number of cases of federal offenders on whom parole release decisions had been made by the National Parole Board. The idea was to determine, in a retrospective way, what factors had apparently led to the decisions made by the Board for a large sample of cases. Looking at the past, it was reasoned, would help the Board in deciding how to formulate guidelines for parole decisions in the future.

Not surprisingly, it was found that risk-related factors were chiefly associated with decisions to grant or deny parole. However, this relationship between risk and parole decisions was not always consistent. For example, when risk scores were plotted against parole decisions, it was found that some of the best conditional release risks were not being paroled at a rate as high as one might expect from looking only at their statistical probability of recidivating. This suggests that it would be useful for Correctional Service of Canada case managers and National Parole Board members to have available the best possible statistical information about risk in making their decisions. The SIR Scale would, in effect, provide a kind of statistical "reality check" for decision makers to use in assessing risk.

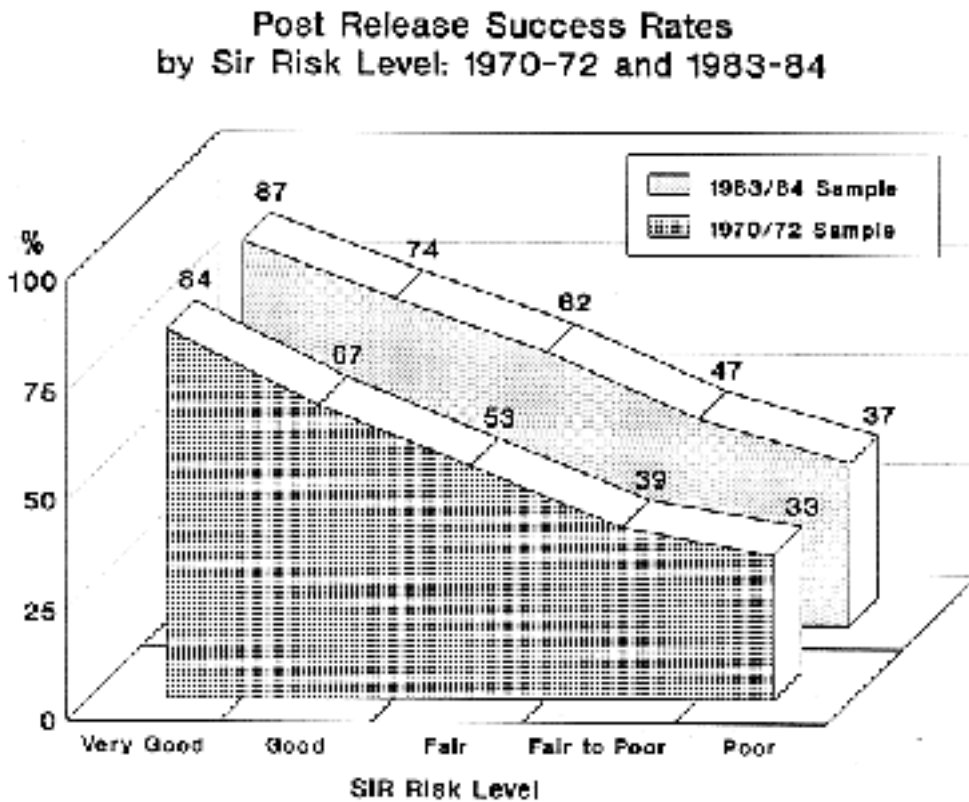
The statistical technique used to develop the SIR Scale works this way.(1) First, the sample of cases is split randomly into two groups. Taking the first group (known as the "construction sample"), the overall recidivism rate for the group is calculated. (Here, "recidivism" was defined as rearrest for an indictable offence within three years of release.) Information about the offenders is then considered, to see if various factors are significantly related to differences in recidivism rates. The weight attached to each such factor is derived from the amount of the difference seen in the recidivism rates of the offenders who do or do not possess the characteristic. Depending on whether a characteristic which the offender possesses increases or decreases the chances of his recidivating, the factor will be given a positive or a negative value.

All significant factors are then combined to make a "model" of the recidivism patterns. This model is then tested on the second half of the sample (the "validation sample"), to see if it holds up -that is, if it "predicts" accurately the recidivism of that group as well.

The SIR Scale was revalidated last year by The Research Group, a private consulting firm in Toronto.(2) Using a large sample of offenders who went through the federal system more recently, the SIR Scale was found to be still valid in distinguishing between, or helping to "predict", who in that group recidivated and who did not.

The figure shows the percentage of offenders who were successful in the community (i.e., did not recidivate) by each level of risk for the original sample of offenders released in 1970-72 (2,475 offenders), and the newer sample released in 1983-84 (534 offenders). Although the recidivism rate is slightly higher for the more recent sample, the figure shows a very clear pattern: offenders who were assessed as "very good" risks according to the SIR scale had the highest success rate in the community, while the "poor" risks had the lowest post-release success rate. Other studies of the SIR scale have also provided evidence of the validity of the scale for recidivism prediction.(3)

Figure 1



Why Use a Statistical Aid to Assess Risk?

Statistical methods for predicting criminal recidivism have been around for more than half a century. Still, questions are raised about why our system should bother with them. But there are good arguments

in their favour. Although they cannot tell us with certainty which offenders will recidivate and which ones will not -no statistical or clinical method can -they serve useful purposes.

First, we know from research that statistical methods are, over a large number of cases, more accurate than the judgments of a cross-section of decision makers in predicting recidivism.

Second, studies of the separate assessments of individuals regarding the risk presented by certain offenders show that there is large variation in the estimates made by these individuals as to the risk presented by the same offender. This finding raises significant issues about fairness - is it right that the method we use to assess an offender's risk should be so dependent on the individual decision maker involved in the case?

Finally, when we make our process for assessing risk more explicit - through statistical aids and other decision-making policies - we make the system more transparent and we are more open and accountable to everyone about how we operate. The principle of fairness suggests that offenders should be able to know the basis for the decisions made about them. If the factual basis for those decisions is flawed -if our information about a certain factor in the offender's past is inaccurate - he is then in a better position to respond knowledgeably. While this can be time consuming and irritating for staff, it is undoubtedly a better system than the traditional "black box" of parole decision making.

Criticisms of the SIR Scale

Let us look at the key arguments which one hears against the use of the SIR Scale, and see what there is in each of them.

"It's not based on Canadian offenders."

As discussed earlier, this is simply a misconception. The statistical technique was adapted from a British mathematician, but the factors which go into the scale, and the way in which they are used, are based entirely on a study of a large number of federal offenders released from Canadian penitentiaries. The tool was revalidated recently on another large sample of Canadian federal offenders.

"It is antiprofessional - It treats staff like computers."

It is quite understandable why some case managers and Board members feel that the use of the SIR Scale reduces them to computer adjuncts - they must use a numerical formula and an arithmetic summation to fill out and review a form.

But let us not forget that there are numerous professions which rely heavily on established diagnostic techniques to help them make decisions. Medicine is an obvious example. Doctors and other medical paraprofessionals use a wide variety of assessment tools, many of them computer-assisted, to guide their prognosis. Psychiatry, too, relies on standard tests to screen people for various purposes. Engineering, biochemistry - all of these are respected professions which use simple as well as complex aids to guide their judgment.

Risk prediction instruments should be seen as professional tools, as part of the established body of

knowledge that corrections professionals draw upon in making their recommendations and decisions. In fact, it would be unprofessional not to make use of the tools which capture and systematize our accumulated knowledge and experience in the field.

"It eliminates discretion."

The SIR Scale does not replace the need for human judgment in deciding how to handle a case. Nor can it "decide" the case for us - it just helps us to decide.

The SIR Scale score is just one important piece of information which case management officers and Parole Board members must consider in arriving at their decisions. The obligation to conduct a thorough review of all relevant information on the case remains. The score can help to guide discretion by providing important information, just as any important factor would, but it does not make the decision for us and it does not eliminate the duty to use discretion wisely, based on **all** relevant information.

"It doesn't apply to individuals."

It is easy to understand how people could get this impression, because the score tells you that the individual in question is in a category in which, say, four of every five offenders will not recidivate. But the scale does in fact apply to the individual. Each offender possesses certain characteristics which place him in a risk category. These are characteristics which he displays, and the risk score applies to him, as an individual, just as those characteristics do.

To make this clear, it may help to consider a medical analogy. When a doctor has a patient who is male, over 40, smokes two packs of cigarettes a day, is 60 pounds overweight, and has a high cholesterol level, she says, "Mr. Smith, **you** are at risk for a heart attack." She isn't talking about other people like him; she is talking about him.

Probably some of the confusion comes from the fact that no prediction instrument can tell us for sure that a given offender will or will not recidivate, any more than the doctor can be sure that Mr. Smith will in fact have a heart attack. However, the odds tell us something about the individual.

"The scale doesn't tell me which offenders will be violent."

That's true, it doesn't. However, there is no known statistical or clinical method that can. It does, however, tell you who is likely to recidivate in various ways, and your professional judgment and discretion must come into play in deciding whether the risk of violence is undue.

"The scale is past-oriented, and we are concerned about the gooder - The scale is static, and risk is dynamic."

It is true that the scale is based primarily on factors in the offender's past; these are known to be the best predictors of the future.

Using the scale does not, however, prevent you from considering future circumstances in deciding what to do with the case. Like the National Parole Board's decision-making policies, the use of the scale allows you to consider first what those factors in the offender's criminal history indicate about his risk; then you can turn to other relevant considerations, such as how that risk, and his needs, might be

managed through a release plan.

In that sense, the SIR Scale is not completely "unforgiving of the past". It merely summarizes what we would conclude about the offender's risk **if** we knew **only** about factors in his past. For example, if we see that the offender tended to commit crimes only when he was drinking, then we would be interested in developing a release plan which addressed his alcohol problem and managed his drinking, and therefore his risk.

This is the difference between "static" and "conditional" probabilities. Making decisions just on statistical methods which rely only on past or present factors is one approach, but we have not adopted it. Rather, we look also at the conditions which we could manipulate in the offender's future in order to change his "base" risk. We could get him decent housing, a stable job, psychiatric counselling in the community - things he did not have when he committed crimes. Changing the conditions he has been accustomed to can change his risk.

To take an analogy from auto insurance, many insurance companies set their rates based on factors which fix the driver's age, driving record, and so on. But if a new driver takes an approved driving course from a qualified training centre, this can affect his rates by affecting his risk. The fixed factors are still a good indicator of his risk, but the proper intervention at the right stage can also affect that "base" risk.

"The scale does not work for women, Natives and provincial offenders - maybe it shouldn't be used for other subgroups."

It is quite right that the scale does not work for Native and women offenders; we know this because it has been tested against samples of these populations.

However, there has not been any further testing of the scale against other subgroups, and so there is no reason to believe that it is not applicable to them. Because the scale was built on a sample of federal offenders, not provincial offenders, it should be taken as suggestive only of their future behaviour.

"The scale is not valid because certain obvious factors (such as alcohol abuse) are not used in it."

Risk prediction tools are only as good as the information on which they are based. When certain common-sense factors do not appear in it, that usually means either that the factor is not as consistent a predictor as we think, or that the information which appears on large numbers of files contains inaccuracies. For example, an offender who has an alcohol abuse problem according to file records, may not in fact have one, and vice versa. This underscores the need to carefully verify the information which does go into the scale for a specific individual.

"The scale makes us vulnerable to legal action by offenders."

There has never been a successful legal challenge to the use of statistical aids in release decision making. This is largely for two reasons. First, statistical aids are just tools to assist in reviewing the case, and they do not make the decision itself; case management officers and Board members must still make the decision themselves. Second, statistical prediction simply boils down to using the knowledge and experience of professionals in a systematic way. Correctional workers have always made assessments about offenders' risk. The SIR Scale merely ensures that we make the best possible use of information

about the offender's past in assessing this risk.

Allowing an offender to "see" more clearly how his risk is being assessed, and how relevant release plans are developed from this assessment, is a better approach than keeping the process enigmatic and opaque. This is in fact part of fundamental fairness in decision making.

The SIR Scale is thus not a panacea, but neither is it deserving of much of the suspicion and unease that has surrounded its introduction. Hopefully, the initial rush to complete the scale for large numbers of offenders will dissipate in favour of a somewhat less hectic pace and an appreciation of the value of the tool in helping us to analyze the risk which offenders present.

For the Future

Lots of problems remain. We need real program choices in order to give practical meaning to the increasingly sophisticated assessment tools at our disposal. We need to have quality programs in the institution and in the community in order to respond effectively to and manage the risk and the needs presented by offenders. We need to attract the best possible professionals to understand and make decisions about the factors which lead people into crime and help them break the cycle of recidivism. We need strong review mechanisms and disclosure policies which will ensure the tools of our trade are being properly used.

The SIR Scale is just one step along the way to sound professional decision making and effective correctional intervention. Used wisely, it can be an invaluable aid to corrections professionals.

(1)Nuffield, J. (1982). *Parole Decision Making in Canada: Research Towards Decision Guidelines*. Ottawa: Solicitor General of Canada.

(2)Hann, R. G. & Harman, W G. (1988). *Release Risk Prediction: A Test of the Nuffield Scoring System. A Report of the Parole Decision Making and Release Risk Assessment Project*. Ottawa: Ministry of the Solicitor General of Canada.

(3)Correctional Service Canada (1989). *The Statistical Information on Recidivism Scale: A Research Overview*. Research Brief, Research Branch, Communications and Corporate Development.