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DIRECTIONS FOR VIOLENCE AND SEXUAL RISK ASSESSMENT IN CORRECTIONAL PSYCHOLOGY

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This review covers the current contributions to risk assessment. The fields of static and dynamic variables are covered for both violent and sexual offenders. The research on risk management strategies and how risk assessment is communicated to decision makers is also reviewed. Methodological considerations in risk-assessment research focus on incorporating time until failure, multiple failures, and severity of failure as outcomes. For each of the areas covered, future research directions are formulated.

Keywords: risk assessment; violence risk; psychopathy; static variables; dynamic variables; sex offenders

The core mission of correctional agencies is public safety. Accordingly, correctional agencies have a compelling need to be able to predict the potential risk for violence that an offender may pose, which typically involves the deliberative process of parole decisions and risk management.

RISK ASSESSMENT

VIOLENCE RISK ASSESSMENT IN CORRECTIONAL SETTINGS

Prior to the development of specific risk instruments, varied approaches were taken in the assessment of risk, including the use of unstructured clinical assessments. However, the importance of reliance on actuarial data over clinical judgment in the process of assessment and prediction has been well documented (e.g., Barbaree, Seto, Langton, & Peacock, 2001;

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Dawes, Faust, & Meehl, 1989; Grove et al., 2000; Hanson, Morton, & Harris, 2003), and the advent of specific risk-assessment instruments during the past decade makes an actuarial approach distinctly possible.

In an effort to better understand the theoretical concept of psychopathy, Hare (1980, 2003) developed the Psychopathy Checklist (PCL) as a research instrument and discovered that the PCL scores were predictive of re-offense and violent behavior. The PCL and the current Psychopathy Checklist–Revised (PCL-R; Hare, 2003) have proven to be a “good predictor of general recidivism and, particularly violent recidivism” (Gray et al., 2003, p. 443). Furthermore, its predictive validity has been found to generalize across various adult offender populations.

The Hare PCL-R assessment is conducted via a review of historical information documented in institutional records and a clinical interview by a mental health professional with expertise in psychological testing and training in administering the PCL-R. Hemphill and Hare have contended that using instruments specifically designed to measure the theoretical concept of psychopathy provide an advantage in which “the results are more likely to generalize to a wider range of samples and situations” (Hemphill & Hare, 2004, p. 209).

As an alternative to Hare’s approach of focusing on psychopathy, other instruments, such as the Level of Service Inventory–Revised (LSI-R; Andrews & Bonta, 1995), the Violence Risk Appraisal Guide (VRAG; Harris, Rice, & Quinsey, 1993), and Lifestyle Criminal Screening Form (LCSF; Walters, White, & Denney, 1991), have been applied to violent correctional samples with adequate validity results (Kroner & Mills, 2001).

RISK ASSESSMENT WITH SEX OFFENDERS

As risk-assessment instruments used to predict recidivism with the general correctional population have developed, there has been a parallel need to develop instruments for the prediction of sexual recidivism. Although general criminal offenders share traits in common with sexual offenders (e.g., antisociality), there are reasons to believe that the two groups are dissimilar in nature. Moreover, sex offenders themselves are a diverse group, and traditional risk-assessment instruments may not adequately predict sexual recidivism in some offenders (cf. Hanson & Bussiere, 1998). Therefore, although general risk-assessment instruments may be adequate for the prediction of violent or nonviolent recidivism among sex offenders, unique instruments are needed for the prediction of sexual recidivism (Hanson & Bussiere, 1998).

The most recent nationwide survey of sex-offender treatment providers (McGrath, Cumming, & Burchard, 2003) reported the most common assessment instruments used among practitioners were the Static-99 (Hanson & Thornton, 2000), the Rapid Risk Assessment for Sexual Offense Recidivism (RRASOR; Hanson, 1997), the Minnesota Sex Offender Screening Tool–Revised (MnSOST-R; Epperson, Kaul, & Hesselton, 1999), and the Sexual Violent Risk–20 (SVR-20; Boer, Hart, Kropp, & Webster, 1997).

Along with the advent of multiple risk-assessment instruments for sex offenders came questions about the utility of their combined use. Seto (2005) examined whether the VRAG (Harris et al., 1993; Rice & Harris, 1997), Sex Offender Risk Appraisal Guide (SORAG; Quinsey, Harris, Rice, & Cormier, 1998), RRASOR, and Static-99 used together or in various combinations would enhance prediction of recidivism. He found that synergistic use did not enhance prediction over single-scale use. As the use of multiple instruments is not uncommon in practice (cf. McGrath et al., 2003), Seto’s (2005) research was the first to suggest that

such an approach was unnecessary. This—along with the conclusion that there has not been sufficient study of risk-assessment instruments to declare that any one instrument has the best predictive validity (Hemphill & Hare, 2004)—leads to four central research questions for risk assessment.

FUTURE RESEARCH DIRECTIONS OF RISK ASSESSMENT FOR VIOLENT AND SEX OFFENDERS

1. What are the best criteria for choosing a risk-assessment instrument? Many risk-assessment instruments are not appropriate for use with all populations, such as incest, child pornography, or female sex offenders, as well as offenders with mental illness or significant intellectual challenges. In addition, these instruments may not be appropriate for all assessment purposes (e.g., sexually violent predator [SVP] evaluations; Wollert, 2006). Research examining this question will have an immediate impact on how risk assessments are conducted.
2. Can the accuracy of actuarial instruments be improved?
3. What is the best way to combine risk factors in a global assessment (e.g., unadjusted versus adjusted actuarial prediction; Hanson et al., 2003)? Austin (2004) noted the need for instrument developers to tailor risk assessments to the specific needs of the agency (e.g., classification, public risk, treatment modification, etc.). These factors may be crucial in selecting a prediction process dependent on the purpose of assessment, the volume of assessments to be completed, and the available funding.
4. How can we tell if treatment has reduced recidivism risk for an individual offender (Hanson et al., 2003)?

STATIC AND DYNAMIC VARIABLES AND RECIDIVISM

The risk-assessment research has seen strong movement toward including both dynamic and static risk factors. Dynamic factors refer to mutable variables such as current age, marital status, recent conduct, employment status, current substance abuse, peer relations, and housing status. Static factors cannot change and would include age at first arrest, mental health history, history of substance abuse, and history of gang affiliation. Actuarial refers to the mechanistic method of organizing the variables that gives a probability. The focus on dynamic variables has a potential contribution on two fronts: treatment outcome and community management. Optimally, the dynamic variables are integrated in a mechanistic fashion, resulting in a dynamic actuarial approach. Mechanistically measuring variables becomes especially relevant for offenders who undergo treatment and/or rehabilitative interventions or who experience significant changes in environmental factors. With respect to community management of offenders, establishing dynamic risk factors is important because it enables an assessment of changed risk over time, which allows for the monitoring of fluctuating risk that might impact offender management in the community. In addition, for an optimal assessment of change, an understanding of the offender must be based on targeted intervention areas that are tied to an actuarial probability.

The incorporation of dynamic factors in a systematic fashion originated through a structured-clinical judgment approach to risk assessment. The structured-clinical judgment approach has been undertaken in the areas of risk for general violence (HCR-20; Webster, Douglas, Eaves, & Hart, 1997), spousal violence (Kropp, Hart, Webster, & Eaves, 1999), and sexual violence (Boer et al., 1997). One particular advantage that the HCR-20 has over other risk-assessment instruments is its use of 10 dynamic variables that consist of five clinical variables (lack of insight, negative attitudes, active symptoms of major mental illness, impulsivity, and unresponsiveness to treatment) and five risk-management variables (plans

lack feasibility, exposure to destabilizers, lack of personal support, noncompliance with remediation attempts, and stress). Conceptually, changes in these dynamic variables reflect potential changes in risk. However, the sensitivity of these dynamic variables to detect change over time has not been demonstrated. Acknowledging that an offender's circumstances and personal experiences change over time emphasizes offender re-entry as a dynamic process as compared to a one-time risk assessment.

An extensive retrospective study by Zamble and Quinsey (1997) offered an introductory examination into the dynamic factors leading to recidivism. They investigated offenders' functioning during release and, more specifically, during the 30 days prior to their reoffending. Their data showed that offenders were able to identify problem areas that precipitated their relapse into crime, such as employment, physical or emotional health, financial problems, and family problems. Many significant differences between recidivist and nonrecidivist groups were found for both static and dynamic variables. More important, however, these differences remained between the groups for many more of the dynamic variables than static variables after criminal history and age were statistically controlled. For example, previous statistically significant differences between the groups on static variables—such as highest school grade completed, accommodation, and age when first in trouble—disappeared when age and criminal history were controlled. However, dynamic self-report variables such as criminal socialization, life worries, problem indices (substance abuse, physical/emotional health, family, and friends), alcohol consumption, and emotional states (depression, anger, and loneliness) all remained significantly different between groups.

The central limitation of the Zamble and Quinsey (1997) study was the retrospective nature of the data. Nonetheless, this is one of the few studies that attempts to identify dynamic variables leading to recidivism. Furthermore, the ability of dynamic variables to distinguish a recidivist from a nonrecidivist underscores the importance of measuring proximal, relevant antecedents to crime immediately prior to the re-entry process.

Other research has examined the prediction of risk through the lens of static and dynamic variables (Beech, Friendship, Erikson, & Hanson, 2002; Hanson & Harris, 2000; Hanson & Morton-Bourgon, 2005). Hanson and Harris (2000) divided dynamic variables into stable dynamic factors (those expected to remain unchanged for months) and acute dynamic variables (those that could change within hours or days). The purpose of their study was to determine the best predictors of sex recidivism within the categories of static, stable, and acute variables. Examples of stable variables included intimacy deficits, attitudes tolerant of sexual assault, and deviant sexual interests. Acute variables included victim access, increase in sexual preoccupations, and emotional crisis. The best three predictors within each of the tiers of static, stable, and acute groupings were selected and then entered into a hierarchical regression. The results showed that each variable grouping made a significantly unique contribution to prediction. However, the largest contribution was made by the dynamic variables. These studies all have in common a demonstration that dynamic variables are important proximal antecedents in the prediction of criminal behavior. Drawbacks are that the Zamble and Quinsey (1997) study relied on offender recall and the Hanson and Harris (2000) study relied on parole officer recall many months after the offender had completed the community portion of their sentence. Walters (2002) used the Psychological Inventory of Criminal Thinking Styles (PICTS) to develop Current (dynamic) and Historical criminal thinking scales. Across different samples, the Historical scale demonstrated

stronger test-retest coefficients than the Current scale. In addition, the Current scale was predictive of recidivism even after controlling for the Historical scores. A drawback to this study and other dynamic systems (i.e., Georgia Parolee Risk Assessment instrument) is the lack of multiple administrations to determine the truly dynamic predictive ability of the dynamic scales.

MULTI-WAVE, PROSPECTIVE STUDIES OF DYNAMIC RISK FACTORS

Brown (2002) conducted a prospective study that examined a number of static and dynamic measures during the re-entry process. The dynamic variables were assessed prerelease and again 1 month and 3 months postrelease. A number of dynamic variables demonstrated change, including employment problems, marital instability, financial problems, perceived stress, perceived problem level, negative affect, social support, criminal associates, coping ability, expected negative value of crime, and substance abuse. When static and dynamic variables were compared, the strongest dynamic variables outperformed the static variables in predicting conditional release failure. Within the set of dynamic variables, the strongest and most robust predictors were employment and marital support, perceived problem level, negative affect, substance abuse, social support, and expected positive consequences of crime. The greatest level of accuracy was achieved when both static and dynamic measures were included. Of note, those offenders who did not have their release revoked generally improved over time.

In a large, multi-wave study, Quinsey, Jones, Book, and Barr (in press) developed a 29-item dynamic prediction scale to predict any incident (general risk) and violent incidents (violent risk). This scale was completed by the clients' caregiver and had General Risk and Violent Risk subscales. With a substantial sample ($N = 568$), Quinsey et al. conducted a truly prospective study. Clients were assessed (forensic mental health) monthly for an average of 33 months. During the follow-up period, there were 256 incidents, which occurred both in the hospital and in the community. There was a linear relationship between the General Risk scores and incidents of any type and a linear relationship between Violent Risk and violent incidents. For the General Risk scores, the probability of a high-risk patient having an event in the next month increased by 3% for every unit in the General Risk score from the score of the previous month.

FUTURE RESEARCH DIRECTIONS FOR DYNAMIC RISK

1. Do dynamic variables consistently add to static measures? Harris and Rice (2003) suggested that the addition of dynamic variables would be deleterious in the prediction of long-term recidivism.
2. What is the optimal frequency of dynamic assessment (see Levenson, in press)?
3. What is the relationship between static and dynamic variables (i.e., additive, interactional)? Gottfredson and Moriarty (2006) argued that the static/dynamic distinction is not necessary, suggesting more appropriate categories of public safety and needs assessment.
4. Which dynamic variables have the greatest reliability? It is necessary that a dynamic item have sufficient reliability so that it will change only under the specific conditions contained in the content of that item. A recent study by Philipse, Koeter, van der Staak, and van den Brink (2005) on dynamic risk predictors highlighted some of the practical issues of reliability and measurement. Using clinicians as raters, they found difficulties in obtaining adequate reliability with dynamic items. Alternatively, Gendreau, Little, and Goggin's (1996) meta-analysis found both dynamic (.13) and static (.11) variables to be predictive of recidivism.

Thus, in an aggregate form, dynamic variables were predictive regardless of potential reliability issues.

5. Do psychosocial dynamic variables have the same efficiency for both mentally ill and non-mentally ill offenders?
6. Is it the change in dynamic variables or the content of the dynamic variables that improves recidivism prediction?

POSTRELEASE RISK MANAGEMENT FOR SEX OFFENDERS

Proposed risk-management strategies vary considerably from risk-assessment-based strategies to political legislation. Harris and Rice (2003) suggested that postrelease management of offenders should begin with determination of risk based on an actuarial measure using static risk factors, which would determine the necessity and intensity of initial community supervision. Adjustments in the level of this supervision could change over time in response to dynamic factors in the direction of more to less supervision and management as statutory and regulatory requirements permit. However, an offender's long-term risk profile would always be a base indicator of necessary supervision. Other suggestions include the teaming of various parties to enact a "sex offender reentry court," allowing gradual reductions in supervision levels in the community based on factors relevant to reduced risk (LaFond & Winick, 2003), or a "containment model" that links treatment providers, law enforcement, and polygraphers in risk-management decisions (English, Pullen, & Jones, 1996).

With the public perception that all sex offenders are at high risk to reoffend (Hanson et al., 2003), resulting political legislation sculpting public policy in recent decades has been largely reactive to heinous cases of sex offender recidivism and has included the imposition of regulatory controls such as registration, community notification, residence restrictions, and civil commitment laws for sexually violent predators (Janus, 2003). In many cases, decisions about the implementation of these regulatory controls are not informed by actuarial risk assessment and in the case of registration, notification, and residence restrictions, may be applied broadly to all offenders regardless of risk. There has been a paucity of research on risk-management strategies for sex offenders, whether based on risk research or political legislation. There is, however, some evidence that registration, community notification, or residence restrictions fail to protect the public or reduce recidivism (e.g., Cotter & Levenson, 2005; Levenson, in press). In fact, accumulating evidence suggests that the consequences of this legislation may exacerbate the risk of recidivism by, for example, increasing the difficulty of obtaining and keeping employment (identified as a risk factor for recidivism in Hanson and Morton-Bourgon, 2005) as the areas in which sex offenders are permitted to reside steadily shrink (Carey, 2005).

The challenge for the emerging researcher is to affect public policy about sexual offenders in a way that is empirically informed. Although we have some ideas about how public policy could incorporate a better approach to the risk management of sexual offenders, the following are the most pressing research questions:

1. What are the treatment components that lead to a reduction in sex offender recidivism?
2. What are the dynamic factors meaningful for public policy that would be responsive to fluctuating levels of risk in the community?
3. What standards regarding how to enact a risk-management model are necessary?
4. What support of the public and lawmakers is necessary in affecting changes?

THE COMMUNICATION AND PERCEPTION OF RISK

Despite the increased interest in and development of risk-assessment techniques and tools, there has been relatively little information on how that risk information is communicated or perceived by the user or decision maker. Risk information is typically communicated in two ways, which is usually dependent on the instrument used in the assessment of risk. The first way is through a probability statement, a percentage likelihood associated with a probability bin or, in cases when Cox regression techniques are employed, associated with an individual score. The second is through a classification of low, moderate, or high. In some instances, both descriptions of risk are provided. The ultimate goal of the risk-assessment enterprise is to provide as accurate an assessment of the likelihood of a given behavior (outcome) as possible, so that those with the responsibility for making a decision can do so with a clear understanding of the risks involved. On this point, others have observed that improvements in risk assessment will not improve risk-related decision making unless the communication of that information is effective (Heilbrun, Dvoskin, Hart, & McNeil, 1999).

Early forays into the study of risk communication within correctional or forensic settings has focused on clinician preferences (Heilbrun, O'Neill, Strohmman, Bowman, & Philipson, 2000; Heilbrun, Philipson, Berman, & Warren, 1999). For example, within the Heilbrun et al. (1999) study, the majority of clinicians did not use probabilistic statements, with the most often-cited reason being that the state of the research literature did not justify the use of specific numbers despite the fact that probabilities associated with a number of instruments have been successfully replicated. The most cited preference was to report how specific risk factors raise or lower risk even though there is no empirical research demonstrating that the dynamic change of risk factors within a risk-assessment procedure postrelease were related to a change in risk or likelihood to reoffend or act in a violent manner. Despite these stated preferences of experts, including an actuarial statement has been recommended in instances when the data are available on comparable individuals (Heilbrun et al., 1999).

Hilton and Simmons (2001) found perhaps the most disconcerting findings relevant to the application of violence risk estimates in their review of tribunal decisions and how those decisions were related to case-specific factors. Their data showed that, in making a decision to detain or transfer psychiatric patients (to lower security), the patient's physical attractiveness was more of a factor than an objective estimate of violence risk (VRAG). In fact, the VRAG was not related to the decision at all. The single most important contributor to the decision was the testimony of the senior clinician. Those factors that statistically accounted for the senior clinician's testimony were institutional management problems, psychotropic medication use and success, patient attractiveness, and pre-index criminal history. The results of this study suggest strongly that actuarial risk information, when incorporated in decision making in an unstructured manner, subjects the final outcome to the vagaries and inaccuracies of clinical judgment. In other words, 25 years of effort to improve risk assessment are lost when actuarial-risk information becomes just another "piece" of information in the decision-making process. This limiting factor is not unique to criminal justice issues. Slovic, Fischhoff, and Lichtenstein (1982) observed that regardless of the arena, "even when statistical data are plentiful, the 'hard' facts can only go so far....At some point, human judgment is needed to interpret the findings and determine their relevance" (p. 463).

It seems then that it is at the point of human judgment and application that the risk-assessment enterprise is vulnerable, as both experts and laypeople have been found to make the

same cognitive errors (MacGregor, Slovic, & Malmfors, 1999; Nisbett & Ross, 1980; Slovic et al., 1982). One of these errors is the ignoring of base rate information when perceiving risk.

In a recent study, Mills and Kroner (2006) asked clinicians to provide percentage estimates for the descriptive classifications of risk: general, violent, and sex offending. The task was undertaken to examine the perception of individuals who receive these descriptions in the absence of numerical probabilities to anchor their understanding. Half of the participants were provided with base rate information regarding the occurrence of general, violent, and sex offending. The results showed that there was no difference between the group that received base rate information and the group that did not receive base rate information in their estimates of risk. Thus, experienced clinicians ignored the base rate when making estimates of risk based on descriptive categories. In general, there was a tendency for greater error (actual rate less estimated rate) for those types of crimes with lower base rate (violent and sexual offending).

RESEARCH QUESTIONS

1. What factors determine how risk is perceived by a decision maker? Studying current practice has some benefit, but current practice may also reflect common human errors in judgment reported in the social psychology literature, such as optimistic overconfidence (Bazerman & Neale, 1992; Kahneman & Tversky, 1995), framing (Tversky & Kahneman, 1981), and anchoring (Northcraft & Neale, 1987). Such errors do not necessarily occur because of a lack of knowledge but because we are human and subject to common human decision or processing errors.
2. What factors contribute to ignoring the base rate (i.e., dread, fear)?
3. What method would allow decision makers to systematically incorporate risk assessments and retain confidence in the application of their decisions? In the absence of such a method, the early results suggest that the advances in assessment are not being transmitted consistently to the decision makers.

METHODOLOGICAL ISSUES

For nearly 30 years, the risk-assessment literature has persisted with similar risk factors (Champion, 1994; Hubbard, Travis, & Latessa, 2001) and similar methods of using the risk factors (Brennan, 1993) to yield similar results in many ways (Kroner & Mills, 2001). This has prompted a reexamination of how risk scores are calculated and utilized (Dow, Jones, & Mott, 2005; Silver & Chow-Martin, 2004).

The majority of risk-assessment studies have used either correlations or contingency tables to analyze the data, with the preference being a correlation statistic. In the debate of whether or not to use a correlation statistic, the naysayers point to a correlation's limitations in detecting a potential relationship and the yeasayers argue for its ease in interpretation. A correlation's limitations include its susceptibility to base rates and the limited range by using the typical outcome dichotomy of failure/no failure. The argument for a correlation statistic is the ease of interpreting the effect size, which facilitates meaning, and meta-analytic research. In risk-assessment research, the limitations of correlation statistics outweigh the benefits and should not be the primary statistical procedure used. The receiver operating characteristic (ROC) area statistic overcomes the correlation's limitations of susceptibility to base rates and limited range of dichotomous outcome (Mossman, 1994; Rice & Harris, 1995), and now can indicate an effect size (Rice & Harris, 2005). But as the field

advances with using time till failure, multiple failures, and severity of failure as outcomes (noted below), matching these advances with putative statistics is a necessity, drawing on procedures commonly used in econometrics.

With regard to the source of the data, many correctional professionals believe that self-report questionnaires are either not valid when used to predict offender recidivism or have inferior validity as compared to professionally rated measures. Specific concerns regarding self-report measures are their vulnerability to lying, manipulation, and self-presentation biases (Gendreau, Irvine, & Knight, 1973; Holden, Kroner, Fekken, & Popham, 1992; Posey & Hess, 1984; Schretlen & Arkowitz, 1990). Despite the assumption that self-report measures are susceptible to deception, evidence exists that self-report questionnaires can be accurate, valid (Kendall & Norton-Ford, 1982), and equivalent to traditional methods of predicting recidivism (Motiuk, Motiuk, & Bonta, 1992; Quinsey, Khanna, & Malcolm, 1998). The Zamble and Quinsey (1997) study clearly points out that offenders can self-identify relevant problem areas associated with their recidivism and that psychosocial variables have a central role as an antecedent to crime. In addition, the SAQ (Loza, 2005), a self-report questionnaire that was designed specifically to predict offender general and violent recidivism, was repeatedly found to be at least as effective in predicting offender postrelease outcome when compared to four other widely used and professional rated measures (Loza et al., 2004; Loza & Loza-Fanous, 2001).

OUTCOME CONSIDERATIONS

In conducting follow-up research, it is preferable to collect information beyond a dichotomous outcome measure of failure/no failure. Three useful types of information are number of subsequent failures, severity of offending, and time until failures. These types of outcome information can inform public policy (i.e., resources assigned to offender) and the implementation of risk-management strategies (i.e., amount of time until a reduction in resources). A statistical caution regarding the analysis of number of subsequent failures: These data are count data and not of a continuous nature. Thus, least squares regression techniques are not appropriate, as the count data violates the assumption of normally distributed errors. A more appropriate analysis would be statistic from the Poisson distribution family. Given that the count of 0 or 1 will be more frequent than the other counts (i.e., 2, 3, etc.), the most likely consideration will be negative binomial regression (Gardner, Mulvey, & Shaw, 1995).

With regard to severity of offending, and specifically with violent offending, Kenney and Press (2006) have acknowledged the need to measure violent severity. Treating a verbal assault on a correctional psychiatric unit and a murder in the community similarly lacks in specificity and uniformity in the assessment of violence (Quinsey & Upfold, 1985).

Incorporating time until failure (i.e., days of opportunity), along with the corresponding statistic of Cox regression, not only adds the dimension of time into the statistic but also provides the information necessary to move from a group-based (i.e., categories) judgment to a more individual, idiographic risk assessment. Although survival/hazard analysis incorporates time until failure, with Cox regression the number of potential risk probabilities generated can be large. For example, using 12-item and 54-item scales will result in 648 risk probabilities. The benefit of using this procedure is to have a highly individualistic score associated with a mechanistic approach to risk assessment. For this type of research to be used by clinicians, cooperative efforts are needed by both researchers and clinicians.

Researchers must be willing to make available data sets with time-dependent outcome data, whether in table form, such as the British Home Office does (Copas, Marshall, & Tarling, 1996) or electronic form. Similarly, Harris and Rice (2007) have demonstrated that the VRAG risk estimates, as an independent variable, can be adjusted with the passage of successful release time in the community. Clinicians must see the usage of individualistic time-dependent data as a best-practices method of conducting risk assessments.

If individualistic scores are not used, offenders are typically placed into categories, which are based on a range of scores, even though their risk factor patterns leading to those scores can be quite different. The category is ultimately based on scores generated by some data patterns that are highly correlated with risk, and other similar scores that are less correlated with risk are also included in the band. The net effect of mixing highly correlated paths with lower correlated paths will result in a lowering of the band's predictive classification accuracy.

Zamble and Quinsey (1997) observed a significant amount of variability in the factors they examined to understand the offense process leading to recidivism. In an effort to explain the variability they suggested that "there were several determinative paths operative at the same time, and that the general picture of the path to recidivism given here is a composite of several subpopulations that blurs many of the details" (Zamble & Quinsey, 1997, p. 67). In essence, Zamble and Quinsey allude to the importance of maintaining the pattern of information leading to recidivism. Methodologically, examining patterns of behavior involves a statistical simulation that is constructed by combining other offenders with known outcomes who have a similar risk factor pattern to the offender's risk factor pattern. As a result, rather than basing a risk estimate for a given offender on a summary score, a risk model is constructed for an offender based on his or her actual risk factor pattern that would otherwise have been condensed to form the summary score. Unfortunately, patterns can become quite mathematically complex. Similarly, future methodological directions might look at the machine-learning techniques and use the full pattern of responses as an input vector, picking up on high-dimensional nonlinear variance, as compared to a linear discriminator based on the composite scores (i.e., cutoffs). Such complexity quickly exceeds a person's ability to mentally juggle all of the threads of the pattern. It becomes the responsibility of researchers to present the probability statistic within a framework that incorporates dynamic content areas that have utility for practitioners. Thus, research elucidating the nature of risk data will have to be tied to an understanding of an offender's dynamic content areas, which should provide explicit potential intervention strategies, offering a truly dynamic actuarial approach.

SUMMARY

Contributing to a safer society must guide the assessment and communication of risk and the recommendations for appropriate risk-management strategies. It is against this criterion that the risk-assessment enterprise is judged. Researchers and clinicians alike should endeavor to be value-added contributors to this process. Risk assessments occur within a legal context, where societal expectations, personal responsibility, and judicial decisions intersect. Acknowledging this context will assist in resolving ethical issues related to the application of risk assessments. The development of accurate, actuarially based static and

dynamic measures that are theoretically based and explanatory, with effective communication to decision makers, is an exciting direction for the risk-assessment enterprise. Through these developments and applications, the expectation of a safer society can be realized.

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