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ASSESSING THE LIKELIHOOD OF FUTURE VIOLENCE IN INDIVIDUALS WITH MENTAL ILLNESS: CURRENT KNOWLEDGE AND FUTURE ISSUES

*Edward P. Mulvey, Ph.D.**

INTRODUCTION

The relationship between mental illness and violence is at the nexus of numerous legal policies, ranging from involuntary civil commitment to probation supervision, and most recently, mandated community treatment.¹ Yet it is often unclear whether mental illness significantly increases an individual's risk of violence in the community and how the factor of mental illness can be integrated into thoughtful legal policy that both protects the community and respects individual freedoms. During the last few decades, researchers have made considerable progress in investigating how mental disorder might be associated with an increased risk for violence.

In general, studies have shown a modest association between the presence of a mental disorder and an individual's involvement in violence.² In epidemiological surveys of community residents,

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¹ See generally John Monahan et al., *Mandated Treatment in the Community for People with Mental Disorders*, 22 HEALTH AFF. 28, 29-31 (2003).

² Randy K. Otto, *Prediction of Dangerous Behavior: A Review and Analysis of "Second-Generation" Research*, 5 FORENSIC REP. 103, 129 (1992); Edward P. Mulvey, *Assessing the Evidence of a Link Between Mental Illness and Violence*, 45 HOSP. & COMMUNITY PSYCHIATRY 663, 663-64 (1994).

individuals who reported symptoms of a type and intensity that qualified them for a psychiatric diagnosis were also more likely to report involvement in violence during the recall period.³ Researchers have also found in studies of discharged mental patients that endorsement of disorder-related symptoms or behaviors, particularly those associated with drug and alcohol use, indicates an increased likelihood of involvement in violence.⁴ This relationship between reported indicators of mental illness and violence, however, does not mean that most people with mental illness are violent or that most violent acts are committed by people with mental disorders. The presence of a mental disorder does not predict involvement in violence with a high degree of certainty; in fact, it accounts for only about 4% of the variability seen in reported violence. And only a small proportion of the violence seen in a community, about 5%,⁵ involves individuals with mental illness. While there is a likely association between mental disorder and involvement in violence, determining how and when to focus on this connection remains a daunting task.

I. THE RESEARCH ON ASSESSING THE LIKELIHOOD OF FUTURE VIOLENCE IN INDIVIDUALS WITH MENTAL ILLNESS

Research into the relation between mental illness and future violence has generally addressed one of three questions. First, how do clinicians determine when someone with a mental disorder poses a risk of violence? Knowledge of the process by which clinicians make this determination provides necessary background information for improving future practice. Second, how accurate

³ Bruce G. Link & Ann Stueve, *Psychotic Symptoms and the Violent/Illegal Behavior of Mental Patients Compared to Community Controls*, in *VIOLENCE AND MENTAL DISORDER: DEVELOPMENTS IN RISK ASSESSMENT* 137, 140-41 (John Monahan & Henry J. Steadman eds., 1994).

⁴ Marvin Swartz et al., *Violence and Severe Mental Illness: The Effects of Substance Abuse and Nonadherence to Medication*, 155 *AM. J. PSYCHIATRY* 226, 230 (1998).

⁵ See Elizabeth Walsh et al., *Violence and Schizophrenia: Examining the Evidence*, 180 *BRIT. J. PSYCHIATRY* 490 (2001) (discussing several studies researching the "link between schizophrenia and violence" in the community).

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are clinicians when they predict that an individual might become violent in the near future? The amount of discretion allowed to mental health professionals and the weight given to their clinical determinations depend heavily on the demonstrated accuracy of these clinical judgments. Third, what factors are related to violence in the community by individuals with mental disorders? Clinicians and courts can only improve their accuracy in assessing and intervening with individuals with mental illness by looking at the right factors for making determinations regarding the likelihood of future violence. Each of these questions helps to lay the groundwork for more informed and effective practice and policy in this area.

A. How Clinicians Make Determinations of the Likelihood of Future Violence

Surprisingly little work has been done to describe the clinical process for assessing individuals for a likelihood of future violence. There are a few observational studies of clinicians making decisions in real-world settings, some studies of clinicians making judgments about hypothesized cases, and some studies that integrate findings from both lines of earlier investigations.⁶ In general, when making determinations regarding the likelihood of future violence by patients, clinicians appear to rely mainly on a few straightforward factors, such as a patient's history of violence and a patient's current level of disorder or hostility, rather than any elaborate clinical formulation.⁷

Several researchers have proposed that clinicians follow a conditional prediction model when assessing likely future violence.⁸ In this model, the clinician uses cognitive "scripts"⁹ of

⁶ See Eric Elbogen, *The Process of Violence Risk Assessment: A Review of Descriptive Research*, 7 *AGGRESSION & VIOLENT BEHAV.* 591, 592 (2002).

⁷ VERNON L. QUINSEY ET AL., *VIOLENT OFFENDERS: APPRAISING AND MANAGING RISK* 141-43 (Bruce D. Sales et al. eds., 5th ed. 2003).

⁸ See, e.g., Edward P. Mulvey & Charles W. Lidz, *Conditional Prediction: A Model for Research on Dangerousness to Others in a New Era*, 18 *INT'L J.L. & PSYCHIATRY* 117, 135-38 (1995); Kirk Heilbrun, *Prediction Versus Management Models Relevant to Risk Assessment: The Importance of Legal*

how the violence might unfold and assesses the case according to the envisioned pattern of events. For instance, an individual might be seen as likely to be violent because he might go home, get drunk, and beat his girlfriend. However, if this individual moves somewhere else and attends Alcoholic Anonymous meetings, and his girlfriend subsequently moves out of town, his likelihood of violence might drop appreciably. Clinical determinations are rarely straightforward approximations of the likelihood of an event occurring; instead, they are judgments based on the perceived likelihood of a series of supporting or inhibiting events and conditions that might produce violence in a particular individual. This formulation suggests that improvement in the assessment of future violence might rest on encouraging clinicians to be explicit about the violence they predict and to tailor treatment plans to target those factors most likely to precipitate violence in a particular case. Research, therefore, should be directed toward documenting the conditions that clinicians consider when assessing the likelihood of future violence and toward evaluating whether these conditions are actually related to the occurrence of violence in the community.

B. The Accuracy of Clinical Predictions of Future Violence

For years, clinicians were considered to be rather poor at predicting future violence in individuals with mental disorders. In general, clinicians were thought to be right a third of the time about whether an individual with mental illness would be involved in future violence.¹⁰ The standard conclusion was that relying on clinical expertise was not appreciably better than flipping a coin.¹¹

Decision-Making Context, 21 LAW & HUM. BEHAV. 347, 357-58 (1997).

⁹ Cf. ROGER C. SCHANK & ROBERT P. ABELSON SCRIPTS, PLANS, GOALS AND UNDERSTANDING: AN INQUIRY INTO HUMAN KNOWLEDGE STRUCTURES (Roger C. Schank ed., 1977).

¹⁰ See JOHN MONAHAN, THE CLINICAL PREDICTION OF VIOLENT BEHAVIOR (1981); Otto, *supra* note 2, at 105-06.

¹¹ Bruce J. Ennis & Thomas R. Litwack, *Psychiatry and the Presumption of Expertise: Flipping Coins in the Courtroom*, 62 CAL. L. REV. 693, 701 (1974) (noting that the chances of two psychiatrists agreeing on diagnosis is about 50-

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However, the methodology used in the research supporting this general conclusion was rather weak.¹² For example, the groups of patients about whom judgments were made often were not representative of the types of patients usually seen by clinicians. In addition, the researchers' conclusions regarding the accuracy of clinical predictions of future violence often were based on official outcomes (e.g., a patient's release from a facility or a patient's involuntary commitment) rather than a direct measurement of the clinician's evaluative process. Finally, the outcome measures of violence in the community often were based on the official arrest or rehospitalization of patients—a biased underrepresentation of involvement in violence.

A rigorous field investigation conducted by Lidz, Mulvey, and Gardner challenged and changed this general conclusion.¹³ In their study, Lidz et al. asked clinicians to rate their concern about the likelihood of future violence in a group of patients appearing in a psychiatric emergency room.¹⁴ A group of patients who were assessed as being at a high risk for future violence and a matched group of patients (patients of the same age, race, gender, and hospitalization status) were then interviewed in the community every two months for a six-month period. Researchers asked participants about their involvement in violence, changes in their living situation, and their involvement in treatment. Collateral informants, that is, persons named by the research participants as individuals who know what is going on in their lives, were interviewed on the same schedule. Official records were also reviewed to capture incidents in which violence produced an arrest or hospitalization.

The study produced several striking findings. First, patients were involved in more violence in the community than previously thought. Using mainly self reports, investigators found that 53% of

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¹² Edward P. Mulvey & Charles W. Lidz, *Back to Basics: A Critical Analysis of Dangerousness Research in a New Legal Environment*, 9 *LAW & HUM. BEHAV.* 209, 212-14 (1985).

¹³ Charles W. Lidz et al., *The Accuracy of Predictions of Violence to Others*, 269 *JAMA* 1007, 1008 (1993).

¹⁴ *Id.*

the group predicted to be violent and 36% of the comparison group reported having laid hands on another person or threatened another individual with a weapon during the six-month follow-up period.¹⁵ Second, clinicians' judgments about the likelihood of future violence were more accurate than previously believed. Even after controlling for age, gender, race, history of violence, and disposition of the cases, clinical judgments about the likelihood of future violence by patients generally corresponded with the patients' later involvement in violent incidents.¹⁶ Interestingly, however, this accuracy only resulted when clinicians assessed the likelihood of future violence in males, not females.¹⁷ Clinicians of both sexes consistently underestimated the likelihood that females in the sample would become involved in violent incidents, at least partially because they had different conceptualizations of what male and female violence might look like in the studied individuals.¹⁸ Finally, these investigators found that clinicians focused primarily on treatment-related variables (e.g., whether the psychiatric condition of the person deteriorated and whether the person stayed in treatment) when making determinations about the factors that might precipitate or inhibit violent incidents.¹⁹ Clinicians also appeared to overestimate the role of medication and illegal drug use when assessing future violence.²⁰

These findings, coupled with reviews of the existing research,²¹ indicate that clinicians indeed demonstrate some appreciable accuracy in assessing the likelihood of future violence in

¹⁵ *Id.* at 1008-09.

¹⁶ *Id.* at 1009.

¹⁷ *Id.* at 1010.

¹⁸ Jennifer Skeem et al., *Gender and Risk Assessment Accuracy: Underestimating Women's Violence Potential*, LAW & HUM. BEHAV. (forthcoming 2005) (on file with author).

¹⁹ Edward P. Mulvey & Charles W. Lidz, *The Clinical Prediction of Violence as a Conditional Judgment*, 33 SOC. PSYCHIATRY & PSYCHIATRIC EPIDEMIOLOGY S107, S113 (1998).

²⁰ *Id.* at S112.

²¹ See, e.g., Douglas Mossman, *Assessing Predictions of Violence: Being Accurate about Accuracy*, 62 J. CONSULTING & CLINICAL PSYCHOL. 783, 788-90 (1994).

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individuals with mental illness. However, this does not mean that clinicians are infallible or even that their conclusions are highly accurate in most situations. Rather, it only means that clinical judgments add a moderate amount of valid information to other factors known about the case.

C. Factors Related to Violence in the Community in Individuals with Mental Disorders

The value of clinical predictions of future violence may be limited by the failure of some clinicians to systematically assess the most relevant characteristics of their cases. If clinicians concentrate on the “wrong” features of a person or combine information in a biased manner, it should come as no surprise that their predictions might be less than optimal. In order to improve their performance, clinicians must consider sound empirical information about the factors related to community violence and use the most efficient methods for combining this information. A considerable amount of recent research has been aimed at providing this information.²²

The MacArthur Risk Assessment Study is the largest recent undertaking of this kind.²³ This large-scale, multidisciplinary study followed more than 1,000 individuals discharged from psychiatric hospitals in three different locales (Kansas City, Missouri; Pittsburgh, Pennsylvania; and Worcester, Massachusetts) for a year.²⁴ Research participants were assessed extensively during their hospital stays and interviewed every ten weeks in the community after their discharge. As in the Lidz et al. study, collateral reports and official records were also collected to provide information about changes in the research participants’ lives as well as their involvement in violence.

The research participants enrolled in this study were limited to individuals between the ages of eighteen and forty who did not

²² See Otto, *supra* note 2, at 129.

²³ See generally JOHN MONAHAN ET AL., *RETHINKING RISK ASSESSMENT: THE MACARTHUR STUDY OF MENTAL DISORDER AND VIOLENCE* (2001).

²⁴ *Id.* at 16-17, 147-48.

have a diagnosis of retardation. Thus, the participants were representative of a reasonable cross-section of people found in acute care mental hospitals throughout the United States. Fifty-nine percent of the sample was male, 69% was white, and 42% was composed of individuals with a diagnosis of depression.²⁵ Also, more than 40% of the sampled individuals had been diagnosed with both substance use disorders and another major mental disorder.²⁶

In addition to tracking individuals discharged from mental hospitals, the researchers also conducted one-time interviews with a sample of people in the Pittsburgh site who lived in the same neighborhoods as the discharged patients. The researchers then interviewed collateral informants named by these individuals and pulled the arrest records of these community residents. Researchers gathered this information with two purposes in mind. First, the information would allow for a comparison between the discharged patients and their neighbors regarding both groups' levels of involvement in violence. Second, it would allow for an examination of whether the factors that predicted violence in individuals with mental illness also predicted violence in those without mental illness.

One of the notable findings from this study is the comparability of the types of violence reported by individuals with mental illness and their neighbors. The violent incidents reported by both groups were roughly equivalent in seriousness. Moreover, the co-participants in the violent incidents involving individuals with mental illness closely mirrored those in violent incidents involving community residents. About 80% to 90% of the incidents in both groups involved family members, friends, or acquaintances; but neither group had a high rate of engaging in violence with strangers.²⁷ In the sample of individuals with mental illness, however, women were more likely than men to be involved in

²⁵ *Id.* at 62, 160.

²⁶ *Id.* at 160.

²⁷ Henry J. Steadman et al., *Violence by People Discharged from Acute Psychiatric Inpatient Facilities and by Others in the Same Neighborhoods*, 55 ARCHIVES OF GEN. PSYCHIATRY 393, 400 (1998).

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incidents involving family and friends,²⁸ possibly reflecting a lifestyle more rooted in the domestic environment.

Some of the study's most dramatic findings related to the relationship between drug and alcohol use and violence. When the sample of individuals with mental illness was divided into three groups—1) those with a major mental disorder such as schizophrenia or severe depression and a co-occurring substance use diagnosis, 2) those with a less severe disorder and a co-occurring substance use disorder, and 3) those with a mental health disorder, but not a substance use disorder—individuals with a substance use disorder reported significantly more violence. The group of individuals with *just* a mental health disorder reported a level of involvement in violence that was identical to the level reported by their neighbors.²⁹ Substance use by both individuals with mental illness and community residents seemed to be a strong factor behind involvement in violent incidents. Additional investigation into the mechanisms of substance use in individuals with mental illness might refine treatment approaches aimed at reducing violence.

The study also indicated that most of the violence in the group of people with mental disorders occurred shortly after the individuals' discharge from the hospital.³⁰ The number of individuals in the sample that became involved in violent incidents dropped off markedly after about twenty weeks in the community. This held true even after correcting for the effects imposed by confining certain individuals during each period. Individuals were most at risk of being involved in a violent incident shortly after their return to the community, indicating a need for speedy and comprehensive community-based services for individuals likely to become violent after their hospitalization. Involvement in treatment also proved relevant, as individuals who attended treatment sessions in the period after discharge demonstrated a level of involvement in violence during the follow-up period that

²⁸ Pamela C. Robbins et al., *Mental Disorder, Violence, and Gender*, 27 *LAW & HUM. BEHAV.* 561, 565 (2003).

²⁹ See Steadman et al., *supra* note 27, at 400.

³⁰ See MONAHAN et al., *supra* note 23, at 27.

was only about a quarter that of individuals who attended no treatment sessions during the initial period.³¹

Recently, the researchers connected with the MacArthur Risk Assessment Study developed sophisticated methods for applying their findings to the task of clinical assessment. Using what is known as a classification tree approach,³² these researchers devised a method for asking a series of interdependent questions to determine an individual's risk level for involvement in a violent incident during the twenty weeks following discharge.³³ This methodology performs well in classifying a large proportion of the sample (74%) into groups that have a prevalence rate of violence either one-half or twice the expected base rate seen in the total sample.

II. EMERGING ISSUES

Recent research has laid the groundwork for substantial improvements in both the practice and policy of assessing the likelihood of future violence in individuals with a mental disorder. Work on predictive accuracy has led to calls for examination of the conditions surrounding the type of violence envisioned by clinicians and for more systematic efforts by clinicians to manage the reported risks rather than simply predicting them. This approach promotes assessments that are explicit about how

³¹ Jennifer Skeem et al., *Psychopathy, Treatment Involvement, and Subsequent Violence among Civil Psychiatric Patients*, 26 LAW & HUM. BEHAV. 577, 581 (2002). This held true even after controlling for the factors that influence whether an individual will seek treatment at all (e.g., age, diagnosis, gender, prior violence).

³² See LEO BREIMAN ET AL., CLASSIFICATION AND REGRESSION TREES (John Kimmell et al. eds., 1984) (explaining tree methodology in data analysis); William Gardner et al., *A Comparison of Actuarial Methods for Identifying Repetitively Violent Patients with Mental Illnesses*, 20 LAW & HUM. BEHAV. 35, 36-37 (1996).

³³ See Henry J. Steadman et al., *A Classification Tree Approach to the Development of Actuarial Violence Risk Assessment Tools*, 24 LAW & HUM. BEHAV. 83, 84 (2000); Steven Banks et al., *A Multiple Models Approach to Violence Risk Assessment among People with Mental Disorder*, 31 CRIM. JUST. & BEHAV. 324, 326-27 (2004).

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interventions might be fashioned to minimize the occurrence of violence. The expanded basic knowledge base provided by the MacArthur Risk Assessment Study, meanwhile, points to several aspects of an individual's background or functioning that are necessary components of any informed judgment. These findings also highlight the need to provide integrated services in a timely manner.

Like all good research, however, these efforts also raise new and challenging issues. One that looms on the horizon is the use of the construct of "psychopathy" as a predictor of future violence. A growing number of studies, including the MacArthur Risk Assessment Study, have found the designation of this personality disorder to be a very potent predictor of violence in both criminal and civil psychiatric samples.³⁴ Practitioners and policymakers will have to grapple with what it means for an individual to be labeled a psychopath. Another major challenge is that of integrating actuarial predictions into the administration of justice with regard to individuals with mental illness. Several "products" that combine data effectively to produce risk estimates for future violence have emerged recently, and this trend is likely to grow. How clinicians and the courts integrate these findings and new practices into their operations could have important implications for the operation of law at the "borderland of justice."³⁵

A. What Is Psychopathy and Why Does It Matter?

There is a solid and growing body of research indicating that ratings of an individual's "psychopathy" are superior to many other measures in predicting which individuals will become violent during the follow-up period after assessment.³⁶ A psychopath—a term coined in 1941 by a prominent clinician, Hervey Cleckly—is someone who operates in a guileless fashion without regard for

³⁴ Robert D. Hare et al., *Psychopathy and the Predictive Validity of the PCL-R: An International Perspective*, 18 BEHAV. SCI. & L. 623, 628 (2000).

³⁵ FRANCIS ALLEN, *THE BORDERLAND OF CRIMINAL JUSTICE* viii (1964) (referencing the use of the criminal justice system for administering social services).

³⁶ See Hare et al., *supra* note 34, at 623, 631.

others and who lives a generally antisocial lifestyle with no remorse. The gold standard for determining an individual's level of psychopathy is the Psychopathy Checklist – Revised (PCL-R).³⁷ The PCL-R gives an individual a score by combining a set of ratings completed by a trained professional after conducting both a semi-structured interview and a file review. Psychopathy, as rated by the PCL-R, is usually considered to consist of two components. One component is an *emotional detachment factor* typified by a superficial, grandiose, and deceitful attitude, and the other component is a *social deviance factor* indicated by impulsiveness, poor behavioral controls, irresponsibility, and antisocial behaviors (such as being arrested). Individuals who score above a threshold are considered psychopaths. These individuals are thought to have a personality disorder that makes them view the world differently and engage in dangerous behaviors without feeling the normal sense of risk connected with these activities. Practitioners have maintained for some time that psychopaths do not respond to standard psychological treatment approaches or punishment.³⁸

Making sense of the findings that psychopathy predicts violence is a trickier task than it might seem at first. Based on common conceptions of the “bad seed,” one might easily consider the designation of psychopaths as simply a modern-day method for identifying character-flawed individuals whom everyone knows are out there. Upon closer examination, however, the premises supporting this interpretation do not hold up very well.

First, the evidence that PCL-R scores predict violence cannot be cleanly interpreted as indicating that an individual with what one would commonly think of as a psychopathic personality (e.g., someone with a remorseless, grandiose style) is more prone to violence. The problem here is that, while the total score on the

³⁷ ROBERT D. HARE, THE HARE PSYCHOPATHY CHECKLIST-REVISED: MANUAL (1991) (on file with author).

³⁸ Carl B. Gacono et al., *Treating Conduct Disorder, Antisocial, and Psychopathic Personalities*, in TREATING ADULT AND JUVENILE OFFENDERS WITH SPECIAL NEEDS 99, 111 (Jose B. Ashford et al. eds., 2001); Otto Kernberg, *The Psychotherapeutic Management of Psychopathic, Narcissistic, and Paranoid Transferences*, in PSYCHOPATHY: ANTISOCIAL, CRIMINAL, AND VIOLENT BEHAVIOR 372, 390-91 (Theodore Millon et al., eds., 2003).

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PCL-R is related to the likelihood of future violence, this relationship appears to be driven (especially in civil psychiatric patients) by the score of an individual on the *social deviance*, rather than the *emotional detachment*, factor.³⁹ This means that irresponsibility, impulsiveness, and prior antisocial activity really account for most of the connection between having a high PCL-R score and engaging in violence. Importantly, high PCL-R scores do not necessarily mean that the person fits the classic picture of a Ted Bundy-like psychopath or sociopath. Moreover, the stereotypic notion of a link between being a somewhat cold and heartless person and committing violence does not seem to be strongly supported by the data.

Second, the idea that psychopathy is a “burnt-in” character flaw impervious to treatment is still an open question. Several scholars who have reviewed prior studies claiming that the treatment of psychopaths had no, or possibly a negative, effect on subsequent violence have been skeptical about this conclusion.⁴⁰ In addition, other research using the MacArthur Risk Assessment Study data has shown that psychopaths, although more likely to be violent in general, are just as likely as non-psychopaths to show reduced violence from higher levels of treatment involvement.⁴¹ A cautious reading of the existing studies leads to the conclusion that more systematic research on the treatment of psychopathic individuals must be conducted before firm conclusions can be reached.

The link between psychopathy (or at least high PCL-R scores) and involvement in violence is overwhelming in recent research.⁴²

³⁹ Jennifer Skeem & Edward P. Mulvey, *Psychopathy and Community Violence among Civil Psychiatric Patients: Results from the MacArthur Violence Risk Assessment Study*, 69 J. CONSULTING & CLINICAL PSYCHOL. 358, 369 (2001).

⁴⁰ See, e.g., Ronald Blackburn, *Treatment of Incapacitation? Implications of Research on Personality Disorders for the Management of Dangerous Offenders*, 5 LEGAL & CRIMINOLOGICAL PSYCHOL. 1, 15-17 (2000); Randall T. Salekin, *Psychopathy and Therapeutic Pessimism: Clinical Lore or Clinical Reality?*, 22 CLINICAL PSYCHOL. REV. 79, 95-102 (2002).

⁴¹ Skeem et al., *supra* note 31, at 598-99.

⁴² M.E. Rice et al., *A Follow-Up of Rapists Assessed in a Maximum Security Psychiatric Facility*, 5 J. INT’L VIOLENCE 435, 436-37 (1990); Randall

The challenge for clinicians and judges is to avoid the facile interpretation of what this means. The picture is more complicated than simply bad people doing bad things, and the next phase of risk research must elucidate the mechanisms behind these associations to avoid the potential harm of simplistic interpretations.

B. What Can Be Made of Findings from Actuarial Tools?

During the past decade or so, actuarial tools have become readily available for assessing the risk of future violence in specific populations. The best guess is that still more tools will become available in the future. The data for constructing such tools are being collected regularly and systematically, and the technological advances for combining information in sophisticated ways are becoming commonplace in the world of social science research. People now will develop actuarial tools to predict violence because they can and people will use them because it will be hard to justify *not* using them.

There are at least three well-validated methods for assessing the likelihood of future violence in individuals with mental illness: the Historical Clinical Risk - 20 (HCR-20),⁴³ the Violence Risk Appraisal Guide (VRAG),⁴⁴ and the Classification of Violence Risk (COVR).⁴⁵ There are also specialized instruments for assessing the risk of continued domestic violence, continued sexual offending, and violent offending in juveniles.⁴⁶ Each of these instruments combines selected bits of information about an individual to provide an estimate of the likelihood of a certain outcome behavior (e.g., an arrest for a violent offense) within a

T. Salekin et al., *A Review and Meta-Analysis of the Psychopathy Checklist and Psychopathy Checklist-Revised: Predictive Validity of Dangerousness*, 3 CLINICAL PSYCHOL.: SCI. & PRAC. 203, 215 (1996).

⁴³ See CHRISTOPHER D. WEBSTER ET AL., HCR-20: ASSESSING RISK FOR VIOLENCE (version 2, 1997).

⁴⁴ See QUINSEY ET AL., *supra* note 7, at 141-48.

⁴⁵ See John Monahan et al., *Prospective Test of an Actuarial Model of Violence Risk Assessment for People with Mental Disorder*, PSYCHIATRIC SERVICES (in press).

⁴⁶ See QUINSEY ET AL., *supra* note 7, at 155-59.

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given time period after assessment. The two most common methods for combining information about an individual are the “regression” and the classification tree approaches.

In the regression approach, each value (or score) that an individual has for a relevant measure is first multiplied by a preset weight for that measure.⁴⁷ The resulting “weighted” scores (the products of the multiplication process) are summed into a total score for the individual. This total score is then examined to see if it falls above a cut-off score, where people above the cut-off score are statistically more likely to engage in violence than those below the cut-off score. The weight given to each value is determined from prior research studies and is the weight that maximizes the ability of that value in combination with other weighted values to produce a total score that differentiates those who are later violent from those who are not.

In the classification tree approach, an individual is classified as a member of a particular group with an expected high or low likelihood of future violence based on successive answers to questions or scores on selected measures.⁴⁸ For example, an individual’s psychopathy score might first be considered. If the psychopathy score exceeds a certain level, an individual might then be asked whether she experienced physical abuse before the age of fifteen. If the psychopathy score is below the preset level, the individual might instead be asked about any prior arrests. At each step of the process, an individual is asked a question, or a score on a measure is considered, based on the score or answer at a previous step. This process continues until an individual’s membership in a group known to have either a high or low risk for future violence can be established.

The regression and classification tree approaches use different methods to achieve the same end result of assigning a risk estimate or designation to an individual. In the regression

⁴⁷ See MONAHAN, *supra* note 23, at 93-95. More influential measures are weighted more heavily.

⁴⁸ See generally William Gardner et al., *A Comparison of Actuarial Methods for Identifying Repetitively Violent Patients with Mental Illnesses*, 20 LAW & HUM. BEHAV. 35, 36 (1996) (illustrating the classification tree approach).

approach, the same set of predictors is assumed to apply to all of the individuals being classified (e.g., individuals being discharged from a hospital), and the full set of measures is applied and scored to get a total score indicating risk of future violence. In the classification tree approach, certain measures are only relevant for some subgroups of individuals (e.g., people who score high on psychopathy are asked different questions than those who score low on psychopathy). The assumption is that there are multiple combinations of scores that might put a person into a high risk category.

Despite these slightly different methods, all actuarial approaches still strive to assign some level of likelihood for future violence to an individual based on the consistent use of an algorithm for combining “objective” information about that individual. Given the consistency of the methods used for combining information and the verifiable nature of much of the information combined, actuarial methods are often considered more reliable and valid than unaided clinical judgments for determining things such as the likelihood of future violence.⁴⁹ It is important to remember, however, that actuarial methods have their own limitations, and these affect how such instruments might be applied effectively in the decision-making process of the courts.

First, it is important to keep in mind that actuarial instruments show a decrement in performance when they are applied outside of the context in which they were developed or to individuals unlike those upon which the measures were initially based. When data are presented about how well an actuarial instrument performs in terms of identifying those who will later become violent, these estimates are almost always the best figures one might ever achieve with the actuarial instrument in question. This is because any actuarial instrument (whether it uses a regression or classification tree approach) is developed using an “optimization” procedure. The algorithm behind the actuarial instrument is

⁴⁹ William M. Grove & Paul E. Meal, *Comparative Efficacy of Informal (Subjective, Impressionistic) and Formal (Mechanical, Algorithmic) Prediction Procedures: The Clinical-Statistical Controversy*, 2 PSYCHOL., PUBLIC POL'Y & L. 293, 315-16; John Swets et al., *Psychological Science Can Improve Diagnostic Decisions*, 1 PSYCHOL. SCI. PUB. INT. 1, 10-11.

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calculated to combine variables to get the most accurate predictions on the data set examined. The weights given to different measures, the cut points chosen, or even the variables considered are all determined by their power for differentiating violent from nonviolent individuals *in the research sample*. When a different sample is examined, these assigned values might, but in almost all cases will not, be the best ones to use for differentiating the violent and nonviolent in the new group. This result is a statistical regularity in that there is always “shrinkage” in performance when an algorithm is applied to a new sample. The greater the discrepancy between the sample on which the actuarial instrument is applied and the sample on which it was validated, the less one can rely on the estimates derived.

Any estimate from an actuarial instrument, therefore, must first be examined for its relevance to the individual being examined. One can have more confidence in the estimate produced by the instrument if that individual being examined is in the same situation as the subjects in the sample used to develop the instrument were (e.g., being discharged from a mental hospital) and looks like the subjects who constituted the sample on which the instrument was developed (e.g., the subject is a white Canadian). If there are wide discrepancies between the sample and the subject, then one must question the validity of the actuarial estimate.

Finally, it is useful to remember that actuarial instruments are not panaceas for hard judgments. They can work effectively as adjuncts to, rather than replacements for, clinical judgment. It is often tempting to believe that the hard numbers or clear categories produced by an actuarial instrument must be more precise than the often rambling conjectures of a mental health professional. Always choosing one over the other, however, is probably bad practice, regardless of the direction of the ultimate decision.

What actuarial instruments provide, when applied appropriately, is a validated estimate of how people who look like the individual in question will usually act. This does not, however, mean that the person assessed will act like the average person. Clinical insights about factors possibly not considered in the actuarial instrument are all valuable things for a decisionmaker to

know.⁵⁰ Actuarial instruments prove most valuable when they are used as a starting point for, or one component of, a reasoned clinical formulation. The best aspects of both actuarial and clinical judgment can be obtained if these two approaches are integrated thoughtfully rather than pitched against each other.

CONCLUSION

This article has provided a short review of the current status of research on predicting future violence in individuals with mental illness. Investigators have made considerable progress in recent decades in fleshing out the association between violence and mental disorder, but there is obviously much more work to be done. We now know that violence is more commonplace among individuals with mental illness than previously thought, that clinicians have some identifiable accuracy in assessing the likelihood of future violence, that substance use rather than mental disorder alone seems to drive the association between mental illness and violence, and that individuals with mental illness are at an increased risk for involvement in violence shortly after hospital discharge. These pieces of information can move us toward more reasoned practice and policy regarding interventions with violent individuals with mental illness.

At the same time, recent research raises two issues that will test the thoughtfulness of practitioners and policymakers in the near future. The concept of psychopathy has come to the fore as a factor related to violence, and it is clearly an idea that can be misinterpreted and misapplied in the legal system. Practitioners and policymakers will have to be especially diligent in their efforts to clarify what this construct actually means when used in the research world before they hurry to conclusions about its application in the delivery of justice. Similarly, actuarial instruments will continue to appear in legal proceedings, often with less scrutiny than they might deserve. Each of these developments

⁵⁰ Examples of factors that might not be considered are why one person is not like those usually assessed with the instrument or how an individual might respond to the life situations confronting her.

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will test the thoughtfulness of clinicians, judges, and policymakers as they address the complicated situations confronting them daily. Hopefully, a healthy dialogue with the research community can enrich this process.