INTRODUCTION

Typically, problems in offender management surface when offenders are referred to an agency for community supervision or are considered for release from an institution in which they were initially placed because of violent behavior. It is difficult to strike the proper balance between offenders’ civil liberties and community safety—that is, to decide how intensive supervision should be and what should be targeted or who should be released and when. Until the recent past, such decisions had to be made with little help from the literature on the prediction of violence. In the past, this literature asserted that although certain historical variables statistically predict future violence, a large proportion of offenders, perhaps the majority in many instances, assessed as dangerous (by whatever method) in fact turned out to have been inaccurately judged to be so (false positives). At the same time, many offenders judged to be safe eventually engaged in serious subsequent violence (false negatives). The situation until approximately the early 1990s
made it difficult and often impossible to base decisions on the extant empirical literature.

Those responsible for the management of offenders with histories of serious aggressive behavior and sex offenses often greet the task with a mixture of worry and despair—and no wonder. There is but modest scientifically persuasive evidence that treatment and supervision have much demonstrable effect on recidivism, and thus it is often unclear to practitioners what should be done with or for the offender. We have studied and written extensively on interventions for mentally disordered offenders, other violent offenders, and psychiatric clients (Harris, Hilton, & Rice, 1993; Harris & Rice, 1992, 1994, 2006; Harris, Rice, Quinsey, & Durdle, 1995; Hilton & Harris, 2009a; Hilton, Harris, & Rice, 2007; McKee, Harris, & Cormier, 2013; McKee, Harris, Rice, & Silk, 2007; Quinsey, 1981; Rice & Harris, 1993b, 1997a, 1997b, 1997c, 1998, 2003a, 2003b, 2011, 2013a; Rice, Harris, & Quinsey, 1994, 1996, 2001; Rice, Harris, Quinsey, & Cyr, 1990; Rice et al., 2004; Seto et al., 2001, 2008), so in this book we cover treatment primarily as it relates to risk assessment.

The community serves as the final common path for patients discharged from psychiatric facilities, people with developmental disabilities discharged from institutions, and inmates released from correctional institutions. Within the psychiatric hospital system, the “revolving-door” syndrome of frequent short (and mostly ineffective) hospital admissions is well known. Within the system for offenders with developmental disabilities, policies of normalization and deinstitutionalization have resulted in large numbers of such individuals living in the community with varying amounts of support. Similarly, because of probation and parole orders, large numbers of convicted offenders live in the community under supervision.

It is striking that the issues involved in managing or reducing the risk of violence posed by “clients” of these three traditionally separate human service sectors are almost identical. These similarities are telling given the great attention paid to making the initial disposition to a particular human service system and the difficulties in dealing with people who do not fit neatly within any of the three, such as dually diagnosed people or mentally disordered offenders. This concern with initial placement, as reflected in such legal dispositions as “not criminally responsible on account of mental disorder,” is based not so much on the behavior that initially led to institutionalization or the kind of programs that are actually delivered within a sector but rather on the perceived appropriateness of the confine-and-medicate, confine-and-train, confine-and-punish paradigms traditionally characterizing these three human service sectors.

This is not, of course, to assert that the same proportions of offenders in each of these sectors pose a risk for violence or that the type of violent behavior of concern is necessarily of the same kind or severity. Although one
associates propensities for violence primarily with the criminal justice system, the proportion posing such a risk within any service sector depends on various substantively uninteresting bureaucratic and legal arrangements within particular jurisdictions. This is summed up for mental health and corrections by Penrose’s Law, which states that the number of people in the mental health and correctional systems is a constant proportion of the population (Penrose, 1939). Although in fact at most only about half of individuals within any of the three service sectors pose a risk of exhibiting serious postrelease violent behaviors, there are a sufficient number in each that the absolute number of dangerous persons living in the community is large.

We argue here that community risk management can be improved by combining what is already known from three areas of inquiry: the appraisal of violence risk, the study of decision making and clinical judgment, and the literature on treatment outcome and program evaluation. We argue further that although these literatures certainly can (and have) induced predictive, therapeutic, and supervisory nihilism among practitioners, more recent developments represent true progress, particularly when an integrative approach is taken. Finally, we hope to show that the technological or engineering work that is necessary to improve practice provides information that can also inform scientific theory.

This book reports on a sustained program of research that began almost 45 years ago. Most of the authors’ research reported herein focused on (and was substantially supported by) the maximum security division (known as Oak Ridge during our tenures) of the Mental Health Centre Penetanguishene. Oak Ridge was surely the most thoroughly studied high-security psychiatric facility in the world. Although most of this research has been reported in book chapters and journal articles, from which we occasionally borrow here, such reports are too scattered to permit integration, and their cumulative effect is therefore minimized. Because of the duration and size of this concentrated research effort, we believe a unique opportunity exists to draw firm conclusions about assessing the risk of violent behavior—conclusions that, although originating primarily from a single institution and forensic system for dealing with mentally disordered offenders, apply to policy and clinical issues arising in the management of violent offenders in many contexts.

Our primary concern in this book is with the criminal violence of both mentally disordered offenders and released correctional inmates, not with politically inspired terrorism, civil war, or war between states. In addition, although it is clear that various kinds of violence can arise out of the social

---

1Renamed The Waypoint Centre for Mental Health Care in 2011.
disintegration and large-scale drug trafficking found in some large urban areas, this is not a book about such social issues. This book concerns people whose histories of criminal violence raise serious societal concerns about their commission of further violent acts. As illustrated by the case examples in this introduction, these concerns are very real. Because the overwhelming majority of these people are men, they are the focus of this book. We also do not concentrate on institutional violence, violence in the everyday lives of adolescents, or violence by men against their spouses here because we have dealt with those topics elsewhere (Harris & Rice, 1986; Harris, Rice, & Preston, 1989; Harris & Varney, 1986; Hilton & Harris, 2005, 2009a, 2009b; Hilton, Harris, & Rice, 1998, 2000, 2001, 2003a, 2003b, 2007, 2010, 2013; Hilton, Harris, Rice, Houghton, & Eke, 2008; Hilton et al., 2004; Rice, Harris, Varney, & Quinsey, 1989).

There has been substantial change in the field of risk assessment in the 16 years since the first edition of this book was published. Most important, the empirical literature on the prediction of recidivism is much larger and richer. Much of this new literature consists of follow-up studies of various offender and psychiatric populations in which already-developed predictive instruments are compared or new actuarial tools are devised. A small but growing literature investigates the dynamic management of risk among supervised offenders. Accompanying these empirical studies is a large body of commentary: review papers that debunk or celebrate the empirical findings; criticize or praise the ambition for, or technology of, accurate violence risk assessment; relate the empirical and legal literatures; present statistical arguments or hypothetical data to gainsay empirical findings; and so forth, all giving rise to a sense of déjà vu all over again by revealing fundamental socio-political values and beliefs about the causes of human behavior and revisiting the clinical versus actuarial debate. The commentaries reveal anything but a full consensus about the technology of risk assessment or even its advisability and appropriateness. However, the case of Ned Lomun shows that real-life forensic practice can still fall dangerously short of what should be achieved, all the research and commentary notwithstanding.

In this third edition, we update our review of the empirical literature, focusing on the actuarial instruments we developed and described in the first two editions of this book. We also review some of the commentaries on risk appraisal, revising somewhat our list of 20 common arguments against actuarial risk appraisal. We further clarify how to score certain items of the

---

In this context, actuarial means the measured potential of people to exhibit a particular outcome within a known duration and is based on specific, quantified indicators that have been established as predictors in follow-up research. In numerical combination, such predictors render estimates of the likelihood of the outcome of interest (in this book, usually violent crime in the community).
Violence Risk Appraisal Guide (VRAG) and Sex Offender Risk Appraisal Guide (SORAG) based on an extensive number of inquiries from professionals who use these instruments in the field. Lastly, we provide a description of the development (and details about the scoring) of the revision to the VRAG and SORAG, the Violence Risk Appraisal Guide—Revised (VRAG–R), an easier-to-score, but equally accurate, replacement for both the VRAG and SORAG.

The book is organized in five major parts and a series of appendixes. The first part deals with the historical and methodological context of risk appraisal and is designed to give the reader the background necessary to understand the necessity for and the mechanics of developing actuarial risk appraisal instruments. The second part reviews follow-up and etiological research on mentally disordered offenders and sex offenders, providing the substantive knowledge required for understanding the third section dealing with the development of actuarial violence risk assessment instruments; their level of accuracy, validations, and replications; and some common misconceptions about their use and interpretation. The fourth part discusses the general idea that violence risk assessment should fundamentally change, the impediments to that change, and a brief discussion of knowledge translation. The fifth part describes methods of altering the risk of violence and ends with a brief discussion of what we consider to be the principal broad conclusions that can be drawn from this work and their implications for future research. The appendices are practically oriented, providing a detailed description of how the VRAG, SORAG, and VRAG–R are scored and interpreted and how narrative case histories are used to derive violence risk appraisals. We hope the book provides the up-to-date substantive and technical knowledge necessary to conduct and interpret individual risk appraisals and understand the literature on violence risk assessment.

CASE EXAMPLES

These two stories are not presented as empirical findings but to help explain why we do this work—a desire to understand such people and to prevent the harm they cause. Unimportant details have been fictionalized, but otherwise the stories are true. The first story was also in our two previous editions, predates the development of our actuarial tools, and provided impetus for the VRAG. The second case, for whom an actuarial instrument had been scored and a risk appraisal report placed on the clinical record, illustrates how, even in 2014 and with dozens of replications, the task of implementing accurate risk assessment procedures and effective clinical services, although exhibiting important and real progress, is unfinished.
CASE EXAMPLE 1
Robert Phillip

Robert Phillip was born in Ottawa to a mother who already had 10 children. Almost all members of the family had been institutionalized for low intelligence or criminal activity. Within a year of his birth, Phillip was placed in foster care. He experienced a series of different foster homes, the longest lasting but a year, until he was 9 years old, when he was placed in an orphanage. Unmanageable in the orphanage, he went back into foster care, but he was a continual runaway and was frequently in trouble with the police for an escalating series of juvenile crimes, including sexual assaults against younger children.

When he was 11, Phillip was sent to an institution for the mentally retarded, as it was called then, near Ottawa (although he was actually quite bright). There he was one of the most difficult inmates the institution had ever had. He was violent. He ran away. He brutally sexually assaulted other residents, especially those who were younger and more vulnerable. At the age of 16, he was sent to Oak Ridge. There he was involved in coercive sexual activity with other patients. At the age of 20, however, he was transferred to the neighboring minimum-security facility.

Almost immediately, he escaped. He stole a knife, a gun, and ammunition from a nearby cottage. He made his way to Toronto (150 km away), and there raped a teenage boy at gunpoint, then sexually assaulted a young girl. The girl's mother arrived on the scene while Phillip was attacking her daughter. She grabbed the gun, aimed at Phillip and pulled the trigger. Because Phillip had loaded the gun with the wrong ammunition, it did not fire. The police apprehended Phillip, but he was charged with no criminal offenses. He was returned to Oak Ridge, where his institutional file bore a red caution flag for many years, “This man should not be considered for release from Oak Ridge without due and careful consideration of the events of September 13, 1963.”

After many more years in Oak Ridge, during which Phillip participated in behavioral treatment for sexual deviance and an intensive therapeutic community program, he was transferred in 1980 to a medium-security psychiatric institution several hundred kilometers away. There he was reported to be difficult to manage and a poor treatment candidate. He sexually assaulted a young mentally handicapped patient but was not criminally charged. Instead, he was returned to Oak Ridge, where he minimally involved himself in treatment and was frequently noted to be engaged in sexual misconduct.

In 1983, the medical director for the hospital of which Oak Ridge was a part decided to transfer patients who were personality disordered and not psychotic to regular psychiatric institutions. When apprised of the risk posed by Phillip (our actuarial tool did not yet exist, of course), the medical director replied that although a violent offense was likely, Phillip would then go where he belonged—to the correctional system. An expurgated version of his file accompanied him and, in 1983, Phillip was transferred to another minimum-security psychiatric hospital hundreds of kilometers away (and almost a thousand kilometers from the place he had gone in 1980).

Phillip quickly escaped and forcibly sexually assaulted a young boy and a teenage girl at knifepoint. He was criminally charged with assault but not sexual assault because it was thought that testifying would be too traumatic for the victims. He was sentenced to 22 months. During this sentence, Phillip participated in a treatment program for sex offenders but was also transferred to a maximum-security institution because of problem behavior. He was released on parole. Two weeks after release, he was living in a halfway house in Ottawa from which he escaped. Using force, threats of death, and a guard dog he had stolen from the halfway house, he raped a 10-year-old boy. The boy, son of a foreign diplomat who did not want him to testify, left the country. The prosecution agreed to a plea bargain and a sentence of 5 years.
CASE EXAMPLE 1
Robert Phillip  (Continued)

During this incarceration, Phillip participated in yet another specialized treatment program for sex offenders.

In 1988, Phillip was released to Toronto. He volunteered as a Little League coach and visited schools lecturing children about avoiding crime. During a mixup at two parole offices (each of two officers thought he was supervised by the other), he abducted an 11-year-old boy at knifepoint from a shopping mall parking lot. Phillip kept the boy in his apartment for 2 days and repeatedly sexually assaulted the child. He stabbed the boy to death and left the body in a vacant lot. Convicted of murder, Phillip was himself stabbed to death during the ensuing incarceration. No charges have ever been laid in connection with his death.

CASE EXAMPLE 2
Ned Lomun

Ned Lomun was born in a small city in the Canadian maritime provinces, the middle of five children; his mother was a teacher and his father a foreman in a factory. He had troubled relationships with his siblings—a younger sister left the family as a teenager due to difficulties with him. His parents described his childhood and adolescence as marked by vandalism, truancy, aggression, early sexual activity, and substance abuse. He did poorly in school, leaving in the 10th grade. He failed several times, starting in second grade, partly because of aggressive and noncompliant conduct, for which he was suspended more than once. At age 18, he trained in welding for 3 years but was never gainfully employed afterward.

He began using alcohol and drugs in his early teens. At 18, his substance use became severe—he drank daily to the point of intoxication and was “stoned all the time.” Substance abuse increased his impulsiveness: At 16, while drunk, he jumped off of a moving motorcycle, resulting in skull fracture and unconsciousness. At 20, he had a drunken argument with another male and was hit on the head with a hammer, resulting in unconsciousness and amnesia. He also incurred several reckless driving charges. Lomun’s only period of sobriety in the community was 3 months long when he was 22 and attending Alcoholics Anonymous as a bail condition. As a young adult, Lomun had two brief relationships with women. The first was with an 18-year-old until she was arrested for larceny. The other was with a copatient he met during a psychiatric admission. He moved in with her and her child when he was discharged, but the relationship ended after 2 months because of his substance abuse and assaults on his partner.

Lomun’s first psychiatric admission was at age 20 after heavy drug use; he stated he heard voices and cut his wrists “waiting for a sign from God.” Records indicate that all subsequent admissions were precipitated by charges for sex offenses. He had as many diagnoses as admissions including depressive reaction, schizoid personality, inadequate personality, schizophrenia, chronic organic brain syndrome (three electroencephalograms were all “within normal range”), psychosis not otherwise specified, and courtship disorder. His first charge for a sex offense occurred at 22. Lomun left a bar intoxicated and, after spotting a 15-year-old girl, dragged her to a secluded area, forced her to perform oral sex, and attempted penetration. Charged with attempted rape, he laughingly told police, “I’ll go to jail but I won’t let things get me down.” Lomun (continues)
was sentenced to 2 years plus probation. He participated in sex offender therapy and other programs and was released on parole after a year, only to return a month later having been arrested for driving while drunk. He was again paroled 7 months later. While on this conditional release, he was charged with sexual assault. He followed a woman he saw on a bus, forcing his way into her apartment. He threatened her with bodily harm and attempted to rape her. She managed to escape, and he was quickly apprehended. He later referred to her as a “piece of ass” and told police he intended to kill her. He was convicted, sentenced to 4 years, and was released on a form of parole for high-risk offenders. He quickly reoffended by attacking a female college student (his parole officer had enrolled him at the college). He grabbed the victim, placed his hand over her mouth, and fondled her breasts under her clothes. He was convicted and received a 5-year sentence. During this incarceration, he participated in more sex offender and other programming. He also attempted a sexually motivated hostage-taking of a female instructor at the institution, and on a separate occasion, he grabbed and fondled the warden's secretary. These two incidents resulted in institutional charges. On a third occasion, he sexually assaulted a female clerk. For this incident he was convicted of assaulting a peace officer and a year was added to his sentence. Three years later, Lomun yet again assaulted a female staff member and received an institutional sentence of 8 months. Also during this incarceration, Lomun was reported to have threatened and assaulted fellow inmates and had many instances of drunkenness and drug taking.

As Lomun’s accrued sentence neared its end, his predatory sexual aggression, poor impulse control, obviously unsuccessful treatment, and high score on a validated actuarial instrument for the risk of violent recidivism led prison psychiatrists to certify him under civil commitment laws and transfer him to an all-male maximum-security psychiatric facility in his home province. There, despite being prescribed antiandrogen drugs, a new phalometric assessment agreed with two previous tests indicating a “high magnitude of response to scenarios depicting rape,” and he frequently reported sadistic sexual fantasies. A review of his clinical file by a trained coder yielded a score of 35 on the Psychopathy Checklist. He also participated in another series of sex offender therapy sessions. He now received diagnoses of paraphilia-sexual sadism type, antisocial personality, and psychopathy. Although also sometimes diagnosed with schizophrenia, Lomun described the voices he heard as occurring when he was bored and as conversations in his mind with three young women he had formerly known. He subscribed to a “mail-order bride” magazine and corresponded with a foreign woman to whom he became engaged and sent money regularly. He planned to sponsor her immigration, but this was never permitted.

Lomun continued the same pattern of aggressive and threatening behavior to staff and copatients at the psychiatric institution, but less than 2 years after admission, he was transferred to an affiliated minimum-security forensic unit. Problems arose quickly because of Lomun’s sexual preoccupation with vulnerable young female patients. He also frequently abused street drugs and alcohol, and within a few months, he seriously assaulted a male patient, saying the victim called him “queer,” but no criminal charges resulted. Staff members openly expressed fear of Lomun, but it was 2 years before he was returned to the maximum-security psychiatric facility. Back only a few months, he lured a fellow patient into a room, locked the door, and administered a severe beating. He said this was “jailhouse justice” for a “diddler.” Lomun was convicted of assault and served a brief sentence in the secure psychiatric facility. Except for one more transfer to the minimum-security forensic...
UNIT LASTING ONLY A MONTH, HE REMAINED IN THE MAXIMUM-SECURITY PSYCHIATRIC FACILITY FOR THE NEXT DECADE.

THEN THERE WERE RENEWED EFFORTS TO DIVEST THE FACILITY OF SUCH SEX OFFENDER PATIENTS WHOSE RISK OF VIOLENCE WAS HIGH AND UNCHANGING; PLANS WERE MADE TO GRADUALLY MOVE LOMUN TO THE COMMUNITY. NEW ASSESSMENTS WERE CONDUCTED, SOME “STRUCTURED PROFESSIONAL JUDGMENTS” YIELDING CLINICAL OPINIONS THAT HE WAS OF ACCEPTABLE RISK, AND HE WAS MOVED TO AN AFFILIATED NONFORENSIC, OPEN PSYCHIATRIC WARD. RECORDS AVAILABLE ON THE NEW WARD DID NOT CLEARLY INDICATE HIS HISTORY AND ACTUARIAL SCORE, BUT CLINICIANS THERE WERE TROUBLED NONETHELESS. FORENSIC PROFESSIONALS, AWARE OF LOMUN’S ACTUARIAL RISK SCORE AND THE ACTUARIAL–CLINICAL DISTINCTION, EXPRESSED CONCERNS TO HOSPITAL DIRECTORS, WHO RESPONDED THAT LOMUN’S LAWYER WAS AGGRESSIVELY PUSHING FOR DISCHARGE, AND FIGHTING THIS WOULD BE TOO EXPENSIVE. THE RECENT CLINICAL OPINIONS WERE ALSO CITED SAYING LOMUN DID NOT BELONG IN A MENTAL HOSPITAL, ESPECIALLY FOR SO LONG.

A FEW MONTHS LATER, LOMUN (NOW AGE 52) ATTACKED A FELLOW OPEN-WARD PATIENT WITH WHOM HE WAS IN A DISPUTE OVER MONEY. HE WAITED UNTIL THE VICTIM WAS OUT OF SIGHT OF THE STAFF AND SEVERELY BEAT HIM. THE VICTIM WAS TRANSPORTED TO THE EMERGENCY DEPARTMENT OF A GENERAL HOSPITAL WITH BROKEN BONES REQUIRING SURGERY AND SUFFERED A NEAR-FATAL EMBOLISM. IT WAS MORE THAN 24 HOURS BEFORE THE POLICE WERE INFORMED, AND BY THEN, ALL PHYSICAL EVIDENCE HAD BEEN CLEANED UP. LOMUN WAS TRANSFERRED TO THE MINIMUM-SECURITY FORENSIC UNIT, QUICKLY REGAINING FULL PRIVILEGES, INCLUDING ACCESS TO THE HOSPITAL GROUNDS, THE LOCAL COMMUNITY, AND VISITS TO HIS PARENTS’ HOME. UPON CONVICTION FOR THIS FINAL ASSAULT, HE RECEIVED A SENTENCE OF 1 DAY. THE VICTIM LIVED IN TERROR OF ENCOUNTERING LOMUN, WHO AGAIN DESCRIBED HIS ACTIONS AS JAILHOUSE JUSTICE.


LOMUN CONTINUED TO HAVE UNSUPERVISED ACCESS TO THE HOSPITAL GROUNDS WITH VISITS TO THE LOCAL COMMUNITY. HE WAS DIAGNOSED WITH HEART DISEASE AND RECEIVED TREATMENT. ON A HOSPITAL-ORGANIZED BUT UNGUARDED TRIP TO A LOCAL SHOPPING MALL, HE COLLAPSED AND DIED IN A SECLUDED AREA. HIS BODY WAS FOUND A FEW HOURS LATER.

VIOLENCE RISK APPRAISAL (INDEX OFFENSE: SEXUALLY MOTIVATED ASSAULT)

THE FOLLOWING ACTUARIAL RISK ASSESSMENT PERTAINS TO LOMUN’S FINAL DISCHARGE FROM THE MAXIMUM-SECURITY PSYCHIATRIC FACILITY BUT IS BASED ON THE INFORMATION AVAILABLE UPON HIS INITIAL ADMISSION TO THAT FACILITY FROM PRISON. HIS INDEX OFFENSE WAS TAKEN TO BE HIS MOST RECENT PREVIOUS VIOLENT OFFENSE, HIS CONVICTION FOR A SEXUALLY MOTIVATED ASSAULT ON A FEMALE CORRECTIONAL STAFF MEMBER WHEN LOMUN WAS 32.
Childhood History

Factors indicating low risk are that Mr. Lomun lived with his biological parents until age 16. Factors indicating high risk are his severe behavior problems in elementary school, including frequent aggression resulting in suspensions.

Adult Adjustment

Factors indicating high risk are that Mr. Lomun had a history of alcohol problems, nonviolent offenses (several reckless driving charges), had failed on previous conditional release, had several prior convictions for violent sex offenses, and had not been involved in a cohabiting heterosexual relationship for at least 6 months.

Offense Characteristics

Factors indicating low risk are that Mr. Lomun was 32 at the time of the index offense. An indicator of high risk is that the victims of his sex offenses were all over age 14.

Assessment Results

Factors indicating high risk are as follows: Mr. Lomun met the criteria for personality disorder, his score on the Psychopathy Checklist—Revised was 35, and he exhibited preferences for rape in phallometric assessment. Applicability of the criteria for schizophrenia is unclear.

Appraisal

On the basis of his score on an actuarial instrument, the Sex Offender Risk Appraisal Guide, relying on these 14 factors, Mr. Lomun’s risk of violent recidivism is in the highest of nine categories. Among all sex offenders in the development and validation studies, fewer than 1% obtained higher scores, and 82% in that category reoffended violently within 5 years at risk. Note that Mr. Lomun met the criteria for violent recidivism with a subsequent conviction for assaulting a fellow maximum-security psychiatric patient, although technically not at risk to do so.

Comment

This second true story illustrates themes of this book. Briefly, there is good and bad news—real progress but stasis too. First, the actuarial
information did help prison psychiatrists and the forensic psychiatric facility accurately assess just how dangerous Lomun was, and he was detained for many years, undoubtedly preventing community violence. However, considerations having nothing to do with his violence risk repeatedly led to exposing patients, staff, and the community to the real risk he posed. We suggest that this was partly due to excessive optimism about the effects of aging and generic psychiatric care (and the value of clinical adjustment to actuarial scores based on such considerations). We return to this case and the themes it illustrates at the end of the current edition, the conclusion of Chapter 9.