

Vincent B. Van Hasselt · Michael L. Bourke
Editors

Handbook of Behavioral Criminology

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 Springer

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Vincent B. Van Hasselt
College of Psychology
Nova Southeastern University
Fort Lauderdale, FL, USA

Michael L. Bourke
Behavioral Analysis Unit
Investigative Operations Division
United States Marshals Service
Washington, DC, USA

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DEDICATED TO THE MEMORIES OF
David van Hasselt and David Saczyk

Preface

The concern of the public and professionals from a wide variety of fields regarding crime and criminal behavior has increased dramatically over the past few decades. Driven by the horrifically violent and tragic events that have become almost commonplace internationally, the need for heuristic assessment, investigation, prevention, and intervention strategies has become more urgent. Indeed, while this preface was being written, a suicide bomber in Manchester, England, killed 22 mostly young people attending a rock concert; terrorists went on a knife-wielding rampage in the heart of London, killing 8; a fired, disgruntled employee in Orlando, Florida, returned to his former workplace, shooting and killing 5 before turning his gun on himself; and gunmen attacked Iran's parliament building and a shrine in Tehran, killing 17. These acts occurred in the span of less than 3 weeks. More than ever before, law enforcement and intelligence agencies around the world must maintain constant vigilance to detect and deter terroristic and other violent events.

As psychologists who are also certified law enforcement professionals, we have a somewhat unique perspective on crime and violence. In our efforts to underscore the need for a broad-spectrum response to these pressing and critical problems, we point to the value of the emerging field of Behavioral Criminology. This multidisciplinary approach draws on research to apply behavioral theories and methods to reduce and prevent violent crime and criminal behavior of all types. Some of the disciplines relevant to this field are criminal justice (law enforcement and corrections); forensic, correctional, and clinical psychology and psychiatry; neuropsychology, neurobiology, and neuroscience; conflict and dispute resolution; computer/cyber technology; sociology; and epidemiology, to name a few. Areas of study and application include, but are not limited to, specific crimes, perpetrators, and victims (e.g., homicide, sex crimes, and child maltreatment; domestic, school, and workplace violence), topics of current national and international concern (e.g., terrorism/counterterrorism, online criminality), and strategies geared toward evaluation, identification, and interdiction with regard to criminal acts, such as crisis (hostage) negotiation, criminal investigative analysis, and threat and risk assessment.

The purpose of this volume is to provide practitioners and researchers with information, data, and current best practices for the most important and timely topics in Behavioral Criminology. To this end, we have, perforce, enlisted the contributions of professionals who are recognized scholars in their respective areas of academic study. Also, we believe this book differs

from many others in that we have made an effort to include contributors who are “operational,” i.e., on the “front lines” of investigations, assessments, and interventions with regard to serious forms of violence and aggression.

Many people have contributed their time and effort to bring this volume to fruition. First, we thank our gracious contributors for sharing their expertise with us. Second, we thank our technical assistants, Estefania Masias and Kristin Klimley, for their contributions. Also, we thank our friend and Editor at Springer, Sharon Panulla, and Editorial Assistant Sylvana Ruggirello, for agreeing about the timeliness of this project and for their support, patience, and guidance throughout.

We would also like to take this opportunity to thank the many mentors, colleagues, and friends who have served to inspire and support us over the years. In our dual roles of psychologists and law enforcement professionals, there have been many who have influenced us to take this rather unique career path. They include Detective Sergeant Joe Matthews (City of Miami Beach Police Department, ret.), Chief Dan Giustino (Pembroke Pines, Florida, Police Department), Dr. Frank De Piano and Dr. Karen Grosby (Nova Southeastern University), Unit Chiefs Gary Noesner and Steve Romano (Crisis Negotiation Unit, FBI, ret.), Dr. Andres Hernandez (Raleigh, North Carolina), Ombuds Laurel Mills (U.S. Marshals Service), Dr. Robert Durrenberger (Federal Bureau of Prisons), Dr. Emily Fallis (Fort Worth, Texas), and the late Drs. Vesta Gettys (Oklahoma City Police Department), Ernie Little (Oklahoma Department of Corrections), and John Spencer (Fort Lauderdale, Florida). Last, but hardly least of all, we would like to thank our wives Melanie and Angela for their unwavering support, tolerance/patience, and encouragement in this project, and everything we do.

Fort Lauderdale, FL, USA
Washington, DC, USA

Vincent B. Van Hasselt
Michael L. Bourke

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List of Contributors

Craig N. Ackley Federal Bureau of Investigation (Retired), Wake Forest, NC, USA

Daniel Antonius Erie County Forensic Mental Health Services, Buffalo, NY, USA

New York University School of Medicine, New York, NY, USA

University at Buffalo, State University of New York, Buffalo, NY, USA

Deborah Arant-Daigle United States Air Force, Southern Pines, NC, USA

United States Air Force, San Antonio, TX, USA

Monty T. Baker United States Air Force, Southern Pines, NC, USA

Anna C. Baldry Department of Psychology, Università degli Studi della Campania “Luigi Vanvitelli”, Caserta, Italy

Brandy Bang Bang Psychology & Associates, Plantation, FL, USA

Keller Simon Healthcare & Associates, Plantation, FL, USA

James O. Beasley (Retired FBI Behavioral Analysis Unit) Independent Criminal Behavior Consultant, Woodbridge, VA, USA

Ryan A. Black College of Psychology, Nova Southeastern University, Fort Lauderdale, FL, USA

Randy Borum School of Information, University of South Florida, Tampa, FL, USA

Michael L. Bourke Behavioral Analysis Unit, Investigative Operations Division, United States Marshals Service, Washington, DC, USA

Bethany Broj College of Psychology, Nova Southeastern University, Fort Lauderdale, FL, USA

Kristen M. Budd Sociology, Criminology, and Social Justice Studies, Miami University, Oxford, OH, USA

Kimberly Capp College of Psychology, Nova Southeastern University, Fort Lauderdale, FL, USA

Alexis Carpinteri College of Psychology, Nova Southeastern University, Fort Lauderdale, FL, USA

Federal Bureau of Investigation, Miami, FL, USA

Andrea N. Cimino School of Nursing, John Hopkins University, Baltimore, MD, USA

Carlye B. Conte College of Psychology, Nova Southeastern University, Fort Lauderdale, FL, USA

Sharon W. Cooper Department of Pediatrics, University of North Carolina-Chapel Hill, Fort Bragg, NC, USA

Dewey G. Cornell Curry School of Education, University of Virginia, Charlottesville, VA, USA

Natalie D. Dautovich Psychology Department, Virginia Commonwealth University, Richmond, VA, USA

David DePiano Shapiro, Blasi, Wasserman, and Hermann, Law Offices, Boca Raton, FL, USA

Frank DePiano College of Psychology, Nova Southeastern University, Fort Lauderdale, FL, USA

David P. Farrington Institute of Criminology, University of Cambridge, Cambridge, UK

Ronald P. Fisher Department of Psychology, Florida International University, Miami, FL, USA

Mary Fran Flood Department of Psychology, University of Nebraska-Lincoln, Lincoln, NE, USA

Joanna E. Foster School of Medicine, University of Pittsburgh, Pittsburgh, Pennsylvania, USA

James Garbarino Loyola University, Chicago, IL, USA

R. Edward Geiselman University of California Los Angeles, Los Angeles, CA, USA

Charles J. Golden College of Psychology, Nova Southeastern University, Fort Lauderdale, FL, USA

Karen N. Guskowski College of Psychology, Nova Southeastern University, Fort Lauderdale, FL, USA

David J. Hansen Department of Psychology, University of Nebraska-Lincoln, Lincoln, NE, USA

Holly Hargreaves-Cormany Marymount University, Arlington, VA, USA

Sarah N. Henderson College of Psychology, Nova Southeastern University, Fort Lauderdale, FL, USA

Tia A. Hoffer Federal Bureau of Investigation, Honolulu, HI, USA

Kirk A. Kennedy Behavioral Analysis Unit, Federal Bureau of Investigation (FBI), Quantico, VA, USA

Kristin E. Klimley College of Psychology, Nova Southeastern University, Fort Lauderdale, FL, USA

Vera A. Klinoff College of Psychology, Nova Southeastern University, Fort Lauderdale, FL, USA

David J. Kolko Western Psychiatric Institute and Clinic, University of Pittsburgh School of Medicine, WPIC, Pittsburgh, PA, USA

Kenneth V. Lanning (Retired FBI Behavioral Science Unit) CAC Consultants, Fredericksburg, VA, USA

Lisa K. Lashley College of Psychology, Nova Southeastern University, Fort Lauderdale, FL, USA

Corey M. Leidenfrost University at Buffalo, State University of New York, Buffalo, NY, USA

Erie County Forensic Mental Health Services, Buffalo, NY, USA

Robert A. Leonard Institute for Forensic Linguistics, Threat Assessment and Strategic Analysis, Hofstra University, Hempstead, NY, USA

Kenneth E. Leonard University at Buffalo, State University of New York, Buffalo, NY, USA

Research Institute on Addictions, Buffalo, NY, USA

Benjamin Lowry College of Psychology, Nova Southeastern University, Fort Lauderdale, FL, USA

Philip R. Magaletta Federal Bureau of Prisons, Washington, DC, USA

Marisa Malone Curry School of Education, University of Virginia, Charlottesville, VA, USA

Estefania V. Masias College of Psychology, Nova Southeastern University, Fort Lauderdale, FL, USA

Stacey A. McCaffrey Inflexxion, Inc., Waltham, MA, USA

Blake McConnell Investigative Credibility Assessment Service LLC, Woodbridge, VA, USA

J. Reid Meloy School of Medicine, University of California - San Diego, La Jolla, CA, USA

Laurence Miller Miller Psychological Associates, Boca Raton, FL, USA

Mandy Morrill Psychology Department, Valparaiso University, Valparaiso, IN, USA

Thomas Neer Supervisory Special Agent, Federal Bureau of Investigation (Retired), Alexandria, VA, USA

Danielle Nesi Loyola University, Chicago, IL, USA

Angela Noe College of Psychology, Nova Southeastern University, Fort Lauderdale, FL, USA

Scott Poland College of Psychology, Nova Southeastern University, Fort Lauderdale, FL, USA

Lindsey M. Rodriguez University of South Florida, St. Petersburg, FL, USA

Victoria A. Schlaudt College of Psychology, Nova Southeastern University, Fort Lauderdale, FL, USA

David L. Shapiro College of Psychology, Nova Southeastern University, Fort Lauderdale, FL, USA

Valerie M. Sheehan Mentor Forensic Services, Cork, Ireland

Joy Shelton Behavioral Analysis Unit III, Crimes against Children, Federal Bureau of Investigation, Quantico, VA, USA

Kristy Shoji University of Alabama, Tuscaloosa, AL, USA
South Texas Veterans Health Care System, San Antonio, TX, USA

Andre Simons Federal Bureau of Investigation, US Department of Justice, Washington, DC, USA

Jada J. Stewart Bay Pines VA Healthcare System, U.S. Department of Veteran's Affairs, St. Petersburg, FL, USA

Murray A. Straus University of New Hampshire, Durham, NH, USA

Ashley M. Stripling College of Psychology, Nova Southeastern University, Fort Lauderdale, FL, USA

Joe Sullivan Mentor Forensic Services, Cork, Ireland

Kate Theimer Department of Psychology, University of Nebraska-Lincoln, Lincoln, NE, USA

Caitie Tighe The University of Alabama, Tuscaloosa, AL, USA

Victor Tran College of Psychology, Nova Southeastern University, Fort Lauderdale, FL, USA

Ronald F. Tunkel Bureau of Alcohol, Tobacco, Firearms and Explosives, Washington, DC, USA

Vincent B. Van Hasselt College of Psychology, Nova Southeastern University, Fort Lauderdale, FL, USA

Lenore E.A. Walker College of Psychology, Nova Southeastern University, Fort Lauderdale, FL, USA

Rachel Zachar College of Psychology, Nova Southeastern University, Fort Lauderdale, FL, USA

Izabela Zych Facultad de Ciencias de la Educacion, Universidad de Córdoba, Córdoba, Spain

Part I

Overview and Perspectives

Overview and Introduction

Kristin E. Klimley, Michael L. Bourke,
Estefania V. Masias, and Vincent B. Van Hasselt

Introduction

Americans are no strangers to crime. As a country we are privy to stories of criminal acts on a daily, even hourly, basis through our constant connection to information via television, radio, print, and the Internet. In recent decades the ability to gain real-time information about local, state, and national crime has further revealed the alarming reality of crime in this country. Our daily lives are seemingly enmeshed with violence in today's media, and questions arise how this perpetual exposure impacts our society. In 1950, only 10% of American households owned a television, but today televisions are present in 99% of homes. Television programs display over 800 violent acts in a single hour (Beresin, 2009). According to a 2014 Gallup Poll, 70% of Americans believed crime had

gone up in the past year (Gallup, 2015), inconsistent with federal crime reports.

As technology steadily advances we now have the capacity to instantly discover what is going on in our neighborhoods as well as around the world through a variety of different technologies and mediums. Mass communication, multinational commerce, and increasing internationalized politics all contribute to the increase of crime on a global scale (Findlay, 1999). The impact of globalization, although beneficial for international economies, can be detrimental to crime and its subsequent victims. As worldwide markets drive international communication and trade there are greater opportunities for criminals and terrorists to advance their activities on a global stage (Marvelli, 2014). It is imperative that as our world continues to evolve and becoming increasingly international, the approach to crime, its study, prevention, and assessment evolves as well.

Theories, disciplines, and approaches are continuously emerging in an attempt to further expound on crime and criminal behavior. Behavioral Criminology as a multidisciplinary approach has the ability to study criminal behavior, victims, and offenders in today's society. For the purposes of this text our definition of behavioral criminology incorporates the following: behavioral theories and methods for the direct application of assessments, prevention, and intervention efforts for violent crime and criminal behavior. Various topics are

K.E. Klimley (✉) • E.V. Masias • V.B. Van Hasselt
College of Psychology, Nova Southeastern
University, Fort Lauderdale, FL 33314, USA
e-mail: kk990@mynsu.nova.edu;
em1322@mynsu.nova.edu; vanhasse@nova.edu

M.L. Bourke
Behavioral Analysis Unit, Investigative Operations
Division, United States Marshals Service,
Washington, DC 20530, USA
e-mail: Michael.Bourke@usdoj.gov

examined under behavioral criminology including but not limited to: specific crimes and their perpetrators (e.g., homicide, sex crimes, crimes against children, and workplace violence), topics of current national interest (e.g., terrorism and cyber-crime), and strategies geared toward the evaluation and identification of criminal acts (e.g., hostage negotiation, and threat and risk assessment). A behavioral criminology approach will be used throughout this text, ensuring a comprehensive approach to crime, criminal theories, assessment, and prevention.

Scope of the Problem

Crime in the USA

According to the Federal Bureau of Investigation's Uniform Crime Report, in 2014 a violent crime occurred every 26.3 s one murder every 36.9 min, one rape every 4.5 min, one robbery every 1.6 min, and one aggravated assault every 42.5 s. A national violent crime rate of 365.5 per 100,000 inhabitants was recorded in 2014 (FBI, 2014). A property crime occurred every 3.8 s one burglary every 18.2 s, one larceny-theft every 5.4 s, and one motor vehicle theft every 45.7 s. The national property crime rate was estimated at 2596.1 per 100,000 inhabitants for 2014 (FBI, 2014).

The following statistics further illustrate the frequency crime in today's society. Of all arrests made, 9.1% were juveniles under age 18 according to the FBI Uniform Crime Report (2014). Juveniles accounted for 10.1% of all violent crime arrests in 2014. In 2010, 1 in every 12 murders involved a juvenile offender (Sickmund & Puzzanchera, 2014). According to Catalano (2012) from 1994 to 2010, four in five victims of intimate partner violence were female, with women ages 18–34 experiencing the highest rates of victimization. Powers and Kaukinen (2012) found that between 1980 and the mid-2000s, increased employment of women was associated with increased risk of intimate partner violence among women.

International Crime

The Thirteenth United Nations Congress on Crime Prevention and Criminal Justice (2015) provides an overview of the state of crime worldwide and details global and regional trends on different types of crimes. According to the report, from 2003 to 2013 there was a slight decrease in certain violent criminal offenses (i.e., intentional homicide, robbery, rape). In 2012 the global homicide rate was 6.2 per 100,000 individuals. The global trend, however, is not representative of certain regional trends of violent crime. For example, intentional homicide is particularly low and decreasing in Europe, Asia, and Oceania (2–4 per 100,000), but substantially higher in the Americas (16 per 100,000). Of the victims of homicide in the Americas, more than 40% were under the age of 30 (United Nations, 2015). While the global rate of homicide seems to be decreasing, low-income countries have seen increases in homicide.

Gender-related killings of women and girls by intimate partners and family members had a similar prevalence across all regions, regardless of other forms of violence (UN, 2015). The report indicated that during 2012, 47% of all women killed were killed by an intimate partner or family member. This international trend of intimate partner violence elucidates the need for further research on the evaluation, identification, and prevention of such acts.

Trafficking of persons has received international attention in recent decades, and the Uniform Crime Report began to collect data as recently as 2013. The flow of trafficked person is often from poorer, low-income regions to more affluent ones. Human trafficking is a transnational crime that typically involves foreign victims for sexual exploitation, forced labor, or other forms on exploitation (Federal Bureau of Investigation, 2013). The American perception of human trafficking is that it is often a foreign epidemic; however, research suggests an average of 250,000 American children and adolescents are at risk for commercial sexual exploitation each year (Estes & Weiner, 2001). The globalization of transport and labor markets are often cited as

major contributing factors to the exploitation of vulnerable individuals (Candappa, 2003; Hughes, 1999).

Where Does Violent Crime Occur?

Acts of violence can occur anywhere at any time, including but not limited to the home, the streets, at the workplace, in school, and online. Despite the ever-increasing attention to crime in the media and the public's increasing awareness of violence, the majority of individuals still hold antiquated views of where crime occurs. The most common type of violent behavior, for example, does not occur on the streets or across borders, but rather in our homes (Englander, 2003). Women and girls are led to believe that city streets and dark alleys pose the greatest threat for violent victimization. However in 2007, 64% of female homicides were committed by a family member or intimate partner (Catalano, Smith, Snyder, & Rand, 2009). Research addressing fear of crime often has shown throughout the years that women are more afraid of all types of crime, but men statistically endure more victimization (Lane, Gover, & Dahod, 2009).

The Home

Contrary to public perception, the home seems to be one of the most common places for violence. According to the National Violence against Women Survey (NVWS), the lifetime prevalence of intimate partner violence victimization was nearly 25% for women and 7.6% for men (Tjaden & Thoennes, 1998). Block (2003) estimated that one in five women are either killed or severely injured as a result of first time violence by their partners. Consequently, Block (2003) also found that 45% of the murder of women by intimate partners seemed to be precipitated by the women's attempt to leave. The most deadly room in the house for violent victimization is often the bedroom, where it has been estimated that one out of five deaths occur (Gelles, 1972; Pokorny, 1965; Straus, Gelles, & Steinmetz, 1980; Wolfgang, 1958).

The Streets

It is all too common for the media to remind Americans about the danger lurking in the streets. Robbery and stranger assault often take place in the streets and are most overwhelmingly committed by strangers (Bellair, 2000). These types of street crimes produce considerable fear in the general population (Goodstein & Shotland, 1980). Franklin, Franklin, and Fearn (2008) found that individual perceptions of (street) crime were correlated with perception of neighborhood disorder (i.e., noise, traffic problems, and youth gangs). Subsequent factors contributing to violent crime in the streets include: low-lighted areas, lack of surveillance or security, litter, graffiti, and homes in disrepair (Brill, 1977; Brown, Perkins, & Brown, 2004; Harries, 1976; Skogan, 1990; Wilson & Kelling, 1982) which perpetuates peoples fear of street crime.

The Workplace

In the 1980s there seemed to be an apparent rise in mass murders at the workplace, although this impression may have been facilitated by increased media attention. Contrary to public perception, between 1993 and 1999 there were an estimated 1.7 million violent victimizations in the workplace, 95% of which were aggravated or simple assaults (Harrell, 2011). The bulk of research done on workplace violence focused on patient assaults of healthcare workers, late night convenience store workers, and the robbery and homicide of taxi drivers (National Center for the Analysis of Violent Crime, 2003). According to the Bureau of Justice Statistics, between 2005 and 2009 the occupations with the highest rates of nonfatal workplace violence included law enforcement officers, security guards, and bartenders (Harrell, 2011). The majority of workplace violence between those years (53%) was committed by strangers. However, intimate partner violence accounted for 26% of violence against males and almost a third against females in the workplace (Harrell, 2011).

In School

Prior to 1992, the term “school violence” was scarcely used to describe aggressive and violent behavior in schools. In fact, the thought of violence in schools was largely unimaginable. Furlong and Morrison (2000) cited a multifaceted problem with school violence including victims and perpetrators of violence, fear and insecurity, and the impact on the disciplinary system and overall school environment. The National Center for Education Statistics cited 11,000 fights in public schools with weapons, almost 200,000 fights without weapons, 115,000 thefts, and 4000 incidence of rape or sexual violence in the 1996–1997 school year alone (Heaviside, Rowand, Williams, & Farris, 1998). The National Youth Risk Behavior Survey (2015) found that an estimated 4.1% of high school students stated they carried a weapon (e.g., gun, knife, and club) to school in the past month (Kann et al., 2016).

Online

With new technological advancements always on the horizon, there is an increased risk for new forms of crime. Cyber-crime generally can be defined as “crimes perpetrated over the Internet, typically having to do with online fraud” (Decker, 2007). These cyber-crimes can target either information stored on computers, or facilitate another, more traditional crime (Decker, 2007). Experts in the field of cyber-crime caution that the worst is yet to be seen, with the rates of Internet-enabled crimes increasingly rapidly “impacting e-commerce, trade, a serious additional threat to national security through cyber terrorism” (Holder, 2000; Martinez, 2005; Mueller, 2002). Over the past decade, the Internet has facilitated an explosion of social media sites, which have become an integral part of our daily lives. Likewise, criminals have begun to exploit social media sites to phish for potential victims. According to FBI’s Internet Crime Complaint Center (IC3), 12% of complaints filed in 2014 involved some form of social media, with social media complaints having quadrupled over the past 5 years.

Factors Involved in Violent Crime

Violent crime can occur in a variety of different locations and mediums. Indeed, location is one of a multitude of factors that contributes to crime and criminal behavior. Offender age and gender, and the use of alcohol are a few examples of factors involved in crime.

Age

The relationship between crime and age appears robust, with delinquency peaking in late teen years and rapidly declining thereafter (Sweeten, Piquero, & Steinberg, 2013). The majority of crimes committed by juveniles are often thought to be nonviolent offenses. According to the Juvenile Offender and Victim Report (2010), larceny-theft constituted one in five arrests, making it the most common type of crime committed by juveniles. However, despite their age, juveniles committed one in ten violent crimes known to law enforcement in 2010 (Sickmund & Puzzanchera, 2014). The majority of violent crimes committed by juveniles (62%) occurred on school days. The FBI’s Violent Crime Index, which includes murder and nonnegligent manslaughter, forcible rape, robbery, and aggravated assault, accounted for over 75,000 arrests in 2010, 18% of which were female, juvenile offenders.

Gender

In recent decades a debate has occurred regarding the nature of female offending in the United States. Some researchers argue that increased rates of female offending result from women changes in offending patterns, becoming more violent and more masculine (Adler, 1975). Steffensmeier, Schwartz, Zhong, and Ackerman (2005) argued that our laws, practices, and policies have changed to include and criminalize women’s violence. In 2010, girls accounted for nearly 30% of juvenile arrests (Sickmund & Puzzanchera, 2014). FBI Uniform Crime Reports

show that in 2013, 7.7% of murders were committed by females. A Bureau of Justice Statistics Report on Women Offenders found, in 1999 “about 1 out of 7 violent offenders described by victims was a female” (Greenfeld & Snell, 1999).

Alcohol

The link between alcohol consumption and crime has been extensively examined for decades. Research often suggests alcohol is consumed by both victims and offenders prior to the crime being committed, although its facilitative role is often unclear (Shepherd, 1994). The link between alcohol and crime is multifaceted. The role of alcohol can impact the disinhibition of offenders, the situational factors of the drinking environment, and the likelihood of aggressive behavior (Giancola & Zeichner, 1995; Roman, 1981; Room & Collins, 1983). The role of alcohol on criminal behavior also can be seen in the “high proportion of violent crime (50 to 80%) including assault, rape and homicide that is committed by an intoxicated person” (Taylor & Leonard, 1983).

Identification and Evaluation of Crimes

The identification and subsequent evaluation of criminal acts and/or individuals is of significant importance to the mental health and criminal justice communities. Intelligence gathering in the USA is a vast community with more than a dozen agencies and approximately 100,000 employees (Sanders, 2008). The goal of intelligence gathering and analysis is to “evaluate, integrate, and interpret information in order to provide warning, reduce uncertainty, and identify opportunities” (Fingar, Fischhoff, & Chauvin, 2011). Alongside intelligence gathering capabilities, assessments and negotiations are used to either prevent or deescalate a dangerous situation. Mental health and law enforcement professionals are called upon to not only assess the risk for violent recidivism but also assess the risk for specific types of

violent offenses (Borum, Fein, Vossekuil, & Berglund, 1999).

Risk and Threat Assessments

Effective assessment and intervention of risk or threats of violence continues to be a significant concern for mental health and law enforcement professionals (Borum et al., 1999). Risk assessments evaluate the probability of an individual to engage in violent behavior based on a number of different factors associated with violence (Meloy, Hoffmann, Guldinann, & James, 2012). However, risk assessments may not be able to predict the entire gamut of criminal offenses. Threat assessments were developed to prevent violent behavior by responding to threats and/or individuals that pose an increased risk of harm to others (Borum et al., 1999). Threat assessments have expanded contemporary research to include a variety of domains for violence including: “workplace, campuses and universities, school shootings, public figure assassinations, mass murder, terrorism, and the development of protocols and organizations” (Meloy et al., 2012).

Crisis Negotiation

The importance of crisis negotiations has become salient over the last several decades, with both local and federal law enforcement using strategies to come to more peaceful resolutions. “The goal or mission of crisis and hostage negotiation is to utilize verbal strategies to buy time and intervene so that the emotions of the perpetrator can decrease and rationality increase” (Hatcher, Mohandie, Turner, & Gelles, 1998). Crisis negotiations often involve four components: (1) establishing communication with the subject and developing rapport, (2) buying time, (3) defusing and deescalating emotions, and (4) gathering information to employ the most optimal negotiation strategies (Lanceley, 1999; Romano & McMann, 1997).

Introduced by the New York City Police Department in 1973, crisis negotiation has proven

to be one of law enforcement's most efficacious tools. Crisis negotiation has been utilized in a variety of hostage, barricade, attempted suicide, and kidnapping cases saving the lives of law enforcement officers, hostages, and suicidal subjects (Regini, 2004). According to the FBI's Hostage Barricade Database System (HOBAS), maintained by the Crisis Negotiation Unit, between 2002 and 2003 approximately 82% of reported incidents were resolved without injury or death to either the subject or the victim (Flood, 2003).

Preview of the Book

The increased awareness of the scope of crime in our society both domestically and internationally calls for a handbook to explore the nature of crime and its prevention through a behavioral criminology lens. The purpose of this text is to (1) provide a comprehensive overview of perspectives and theories on violent crime, (2) provide a thorough examination of a wide variety of violent crimes committed by adolescents and adults, and (3) cover a range of special topics of criminal offenses, assessments, and factors that are of interest to behavioral criminology.

In Part I, "Dyadic Conceptualization, Measurement, and Analysis of Family Violence," "Role of Neurobiological Factors," "Psychological Theories of Criminal Behavior," and "Behavioral Science Research Methods" chapters provide an overview and framework of sociological, biological, behavioral, and epidemiological perspectives and theories on violent crime, as well as an overview of behavioral science research methods.

Part II examines violent crime committed by children and adolescents. "Animal Cruelty Offenders" chapter looks at children and adolescents as animal cruelty offenders. "Child and Adolescent Firesetting" chapter examines children and adolescent fire setting. "School Bullying and Cyberbullying: Prevalence, Characteristics, Outcomes, and Prevention" chapter provides a comprehensive review of school bullying and cyberbullying, its prevalence, characteristics,

outcomes, and prevention. "Child and Adolescent Homicide" chapter deals with child and adolescent homicide.

Part III looks at the most extreme form of violent crime and violent behavior: homicide. "A Cultural and Psychosocial Perspective on Mass Murder" chapter targets mass murder, a burgeoning topic that has been receiving international attention, and examines both cultural and psychosocial perspectives. "Maternal Filicide" chapter deals with maternal filicide, or the killing of one's child. "Homicide-Suicide" chapter examines specific populations who are at risk for involvement in a homicide-suicide. "Criminal Investigative Analysis: A Move toward a Scientific, Multidisciplinary Model" chapter details the specific methods of criminal investigative analysis.

Part IV provides comprehensive coverage of sexual deviance and assault. "Sex Work and Adult Prostitution: From Entry to Exit" chapter focuses on the commercial sexual exploitation of adults, the offenses, and those individuals at risk. "Child Sexual Abuse and Molestation: The Spiral of Sexual Abuse" chapter provides a more in-depth examination of child sexual molestation and abuse. "The Commercial Sexual Exploitation of Children" chapter covers the commercial sexual exploitation of children, as this international offense is brought to the public's attention, and with focus on prevalence, victim and offender characteristics, specific types of offenses. "Female Sexual Offenders" chapter deals with the unique population of female sex offenders. "Young People Displaying Problematic Sexual Behavior: The Research and Their Words" chapter explores children who engage in problematic sexual behaviors, including those engaging in crimes related to sexual deviance or assault. "Internet Sexual Offending" chapter addresses some of the issues with evolving sexual crimes committed via the Internet.

Part V examines distinct forms of family violence. "Sibling Abuse" chapter provides a comprehensive examination of sibling violence and abuse. "Child Physical Abuse and Neglect" chapter delineates the various aspects of child physical abuse and neglect, while "The Medical

Aspects of Victim Vulnerabilities in Child Sexual Exploitation” chapter explores the medical aspects of victim vulnerabilities related to child sexual exploitation. “Domestic Violence” and “Elder Abuse and Mistreatment” chapters cover the various forms of domestic violence and elder abuse, respectively.

Part VI offers a detailed coverage of various topics of behavioral intelligence. “Forensic Linguistics” and “Investigative Interviewing” chapters examine the processes of investigative interviewing and forensic linguistics. “Criminal Interview and Interrogation in Serious Crime Investigations” chapter explores the practice of interviewing and interrogation of suspects. “Management and Mitigation of Insider Threats” chapter covers management and mitigation of insider threats. Finally, “Investigative Uses of Hypnosis” chapter discusses the investigative use of hypnosis.

Part VII is dedicated to special topics concerning environments where violent offenses can occur. “Violence and the Military” chapter explores violence and the military by examining the interface between military and law enforcement, as well as crisis negotiations with veterans. “Workplace Violence” chapter explores the various prevalence, causes, and outcomes of workplace violence. “School Violence” chapter examines the school violence, which over the past few years has been at the forefront of discussions in the USA. “Violence in Correctional Settings” chapter explores violence in correctional settings.

Part VIII is likewise dedicated to special topics and provides an in-depth look at a variety of topics including strategies geared toward evaluation, identification of criminal acts, and other criminal offenses. Furthermore, crimes such as arson, abductions and kidnapping, and terrorism are also discussed. “Crisis (Hostage) Negotiations” chapter details the evolution of crisis, or hostage, negotiation for law enforcement. “Risk Assessment: Law, Theory, and Implementation” and “Foundations of Threat Assessment and Management” chapters provide a detailed coverage of risk and threat assessments, respectively, and the judicial and theoretical foundations of each. “Neuropsychology of

Violence” chapter examines the neuropsychological aspects of violence. “Alcohol, Drugs, and Crime” chapter looks at the relationship between the use of alcohol, drugs, and crime. Chapter “Criminal Profiling Investigative Strategies for Arson Investigations” examines the crime of serial arson and subsequent criminal profiling and investigative strategies. “Child Molesters Who Abduct: A Behavioral Analysis” chapter provides an in-depth look at abductions and kidnapping, the prevalence, and various causes. Finally, “Terrorism and Violent Extremism” chapter explores a topic of international interest: terrorism.

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Dyadic Conceptualization, Measurement, and Analysis of Family Violence

Lindsey M. Rodriguez and Murray A. Straus

Adequate understanding and interventions to prevent and treat family conflict and violence need to go beyond the prevailing focus on individual persons as causes or victims. Families and couples who engage in violence have a distinctive history and pattern of behavior which must also be identified. This chapter represents a critical step toward this integration by accounting for the couple-level dynamics that frequently precede partner abuse.

Partner abuse is inherently a dyadic process given its involvement of two individuals. Langhinrichsen-Rohling, Selwyn, and Rohling (2012) review of 46 studies and a study of couples in 32 nations (Straus, 2015b) found that approximately 50% of partner abuse involves perpetration by both partners. One interpretation is that it represents reacting in self-defense; however, a systematic review of 17 empirical studies found that self-defense was not the predominant explanation for either women or men (Straus, 2012). Therefore, it is also important to consider and empirically investigate the couple-level dynamics that precede, follow, and maintain partner abuse.

The potential of dyadic data may not be realized if the measurement and analysis procedures are not understood and implemented. For example, a study of pornography might ask both male and female partners about their own pornography use. A growing literature in social psychology demonstrates that perceptions are often a more powerful determinant of behavior than are objective measures. Thus, a more compelling design would also obtain data on each person's perception of their partner's pornography use. Then, pornography use can be differentially associated with outcomes based on: (a) its use by the male partner, female partner, or both, and (b) awareness or perception of each other's pornography.

The primary objective of this chapter is to provide information to facilitate wider use of dyadic data measurement and analysis including difficulties in acquiring dyadic data needed for dyadic analysis, the *actor-partner interdependence model* (APIM) for analyzing dyadic data, *concordance analysis* (CA) and the implications of dyadic analysis for theories of family violence, research methodology, and prevention, and treatment.

L.M. Rodriguez (✉)
University of South Florida,
St. Petersburg, FL 33701, USA
e-mail: LRodriguez12@mail.usf.edu

M.A. Straus
University of New Hampshire,
Durham, NH 03824, USA
e-mail: Murray.Straus@unh.edu

Dyadic Measurement

Dyadic data exists when the same variable is measured for both members of the dyad (e.g., husband and wife, and mother and child). It is required for dyadic data analysis. Although a

simple requirement, implementing it in practice can be difficult. Compared to studies measuring data at the individual level, studies measuring dyads are much less common. Few studies of couples tested both partners, and few studies of parents measured the same variable for both parent and child. Despite this, there are studies with dyadic data that can be obtained through organizations, such as the Interuniversity Consortium for Political and Social Research (<http://dx.doi.org>) and the German Family Panel, at little or no cost.

Even if hundreds of archived studies could be found, it would not meet the demand for new dyadic data on emerging issues. Researchers who wish to utilize dyadic data approaches must use recruitment and data collection methods that require participation from both partners, which is inherently more difficult. First, only a certain percent of individuals approached about a study will agree to participate. If this percent is 60% for an individual, the probability of both agreeing is 0.60×0.60 , or only 0.36. Second, identifying a time and place that meets the needs of both dyad members is similarly more difficult than for a single participant. There are also potential problems with validity of the data when collecting dyadic data online, as there is no way to ensure the data was actually completed by the spouses separately. Third, regardless of how the data are obtained, additional effort is required to maintain privacy and confidentiality, not only because there are two participants to protect, but also because privacy of the disclosures of each from the other is usually necessary. Finally, the data file structure has additional requirements to maintain the separate identity of each participant in the context of a single data file.

Dyadic data can be obtained in a variety of ways. Almost any measure can be used to obtain dyadic data by administering it to both partners. APIM uses separate reports provided by each member of the dyad. This approach focuses on each partner's perception of their own behavior. We identify this as a *Dual-Reporter* (DR) measurement. A less frequently used method is to ask one partner to describe themselves and also their perception of the behavior of *their partner*. We

identify this as a *Sole-Reporter* (SR) measurement. A few instruments such as the Conflict Tactics Scales (Straus & Douglas, 2004; Straus, Hamby, Boney-McCoy, & Sugarman, 1996) do this by asking each item twice: first for the participant to describe their own behavior and then for the participant to describe the behavior of the partner. Although a SR measurement provides data with the same names as when the data was obtained using DR measurement, they are conceptually (and likely also clinically) different. It can be argued that when the behavior being measured is an interaction in which both participated (e.g., a discussion), it is methodologically appropriate to obtain information about the behavior of the partner from the respondent because he or she was present during its occurrence. Of course, the participant may misrepresent what the partner did, just as the partner may misrepresent what they themselves did. We suggest it is best to conceptualize them as measuring different phenomena. Therefore, when a SR instrument such as the CTS is used to obtain the data on both partners, it is important to explicitly identify the data on the partner as a measure of the respondent's perception, not the partner's self-report. That will alert readers to difference between the dyadic data presented based on a SR measurement compared to the usual dyadic data based on a DR measurement.

When both partners provide data about their self and their perception of their partner, each is unique and powerful. Self-reported perception by each partner (and perceptions of self and of partner) may carry the same label (e.g., assault), but are conceptually different, and both are needed to adequately understand dyadic relationships. The value of enhancing dyadic research by considering more than each partner's report of their own behavior is underscored by results from an instrument which incorporates these other dimensions. The Relationships Evaluation Questionnaire *RELATE* (Busby, Holman, & Taniguchi, 2001; Holman, Busby, Doxey, Klein, & Loyer-Carlson, 1997) asks participants to rate themselves and their partner on many different individual and relational constructs. Then, the four scores are presented side-by-side in graphs to help couples

consider all ratings on a particular scales. The respondent's rating of *their partner* on personality and couple dimensions predicted 25% more variance in relationship satisfaction than did the respondent's rating of self.

There are only a few SR instruments. Some examples include the *Conflict Tactics Scales* (CTS) (Straus & Douglas, 2004; Straus et al., 1996), *RELATE* (Busby et al., 2001; Holman et al., 1997), and the *Conflict in Adolescent Dating Relationships Inventory* (CADRI) (Wolfe et al., 2001). Many more are needed. Fortunately, it is often possible to create a SR version of many measures by an appropriate introduction and presenting the items in pairs of questions. An article intended as both theoretical and a methodological information to facilitate this process is in preparation (Rodriguez & Straus, 2016). We hope this article will encourage relationship researchers, including those investigating aggression and violence, to give attention to both modes of conceptualizing and measuring the dyadic aspects of these phenomena.

Actor–Partner Interdependence Model

Imagine hypothetical married couple James and Beth. Like any couple, James and Beth sometimes have difficulty navigating discussions around sensitive topics. Sometimes one of them ends up yelling or insulting the other and stomping out of the room. They both want to stop these patterns, but find themselves doing it more often than not. Researchers and clinicians have common goals of understanding and reducing unhealthy behaviors. How can researchers and clinicians better understand what is happening between them? How can they understand how each of their psychological aggression contributes to each of their levels of depression?

Understanding the dynamics underlying James and Beth's relationship cannot be identified without considering the behaviors of *both* James and Beth. Perhaps Beth is easily contemptuous, James gets easily defensive. Perhaps they both never learned to take a time out when their

conflict discussions get too heated. There are elements that both James and Beth independently contribute to the relationship dynamic, as well as the synergistic element that arises a function of the specific combination of the two partners (e.g., that both are defensive may often result in quick escalation of conflict and poorer outcomes). Another way to conceptualize these components is to think of James and Beth as two separate cans of paint. James' can is blue, Beth's can is yellow. James and Beth independently contribute to the interaction dynamic with their own predisposing factors. We can also conceptualize the unique *combination* of James and Beth as a new can of green paint. Green paint is a new, emergent, distinctive color arising as a function of James' and Beth's relationship.

Statistically, these individual and relationship effects can be examined using the actor–partner interdependence model (APIM). An example APIM model from a study of married couples (Rodriguez, 2016) is shown in Fig. 1. In this model, the number of times each partner perpetrated psychological abuse (measured by the CTS2-short form) was the independent variable, and depression (measured by the Center for Epidemiologic Studies Depression Scale—Revised) was the dependent variable. As can be seen in Fig. 1, results revealed that each partner's perpetration is positively associated with their own depression (i.e., an *actor effect*, the horizontal paths in Fig. 1), but not with their partner's depression (i.e., a *partner effect*, the diagonal paths in Fig. 1). That the actor effects were significant and the partner effects were not indicates that the association between psychological abuse and depression is more intrapersonal than interpersonal.

Ultimately, the APIM allows researchers to estimate the simultaneous influence of both own and partner constructs on outcomes, as well as the additional, emergent influence of the specific relationship (e.g., the green paint can). Moving beyond Fig. 1, addition of the interaction term to the analysis might reveal that the association between own perpetration and depression is even stronger when partners report lower levels of perpetration (i.e., an *actor × partner interaction*).

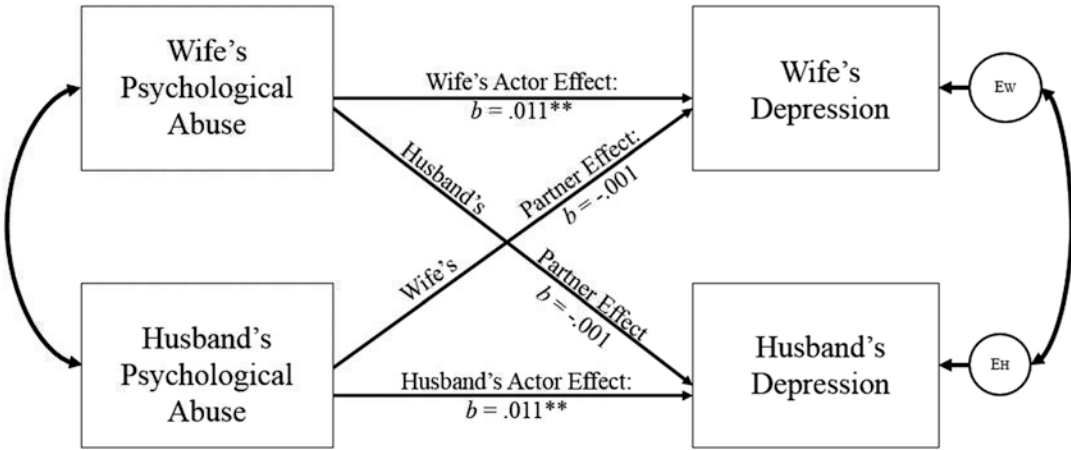
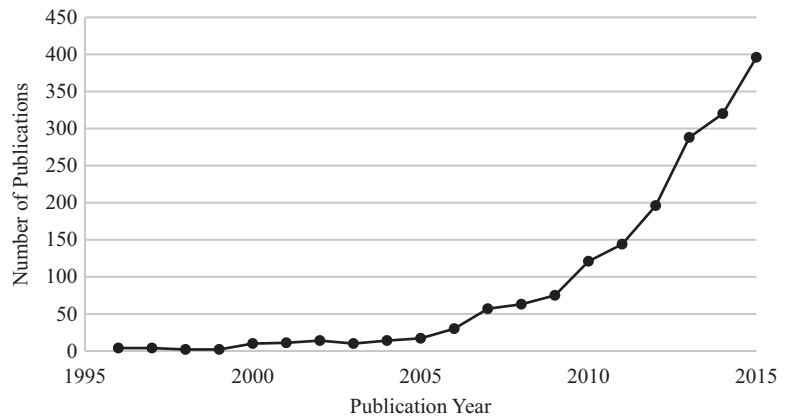


Fig. 1 The actor-partner interdependence model: relation of actor and partner psychological abuse to depression

Fig. 2 Growth in peer-reviewed APIM articles



The APIM led the way to what can be considered a dyadic revolution in family and couples research. The APIM began with Kenny (1996) as a special case of multilevel modeling. Since its inception, research utilizing the APIM has made great strides. As shown in Fig. 2, the rate at which peer-reviewed publications are using the APIM has exponentially grown. Figure 2 plots studies using the APIM between 1996 and September 2015. However, even the substantial growth in APIM does not fully demonstrate how much is yet to be accomplished. For example, almost none of those studies are on family conflict and violence (notable exceptions include Lambe, Mackinnon, & Stewart, 2015; Langer, Lawrence, & Barry, 2008; Maneta, Cohen, Schulz, & Waldinger, 2013; Proulx, Buehler, & Helms, 2009; Sbarra & Emery, 2008).

Whereas many analytic strategies (e.g., multi-level modeling) control for the nonindependence that results from nested data, APIM takes advantage of it by examining how each partner's predictors are uniquely associated with each partner's outcomes. In other words, an individual's outcome is simultaneously modeled as a function of their own predictor (i.e., the actor effect), and their partner's predictor (i.e., the partner effect). If desired, other determinants (e.g., gender, gender $\times$ actor and partner interactions, actor $\times$ partner interactions) may be included. APIM treats the dyad as the unit of analysis, and can utilize individual- (level 1) and dyad- (level 2) level predictors and outcomes. Additional details about the APIM, as well as a step-by-step tutorial, are provided elsewhere (e.g., Ackerman, Donnellan, & Kashy, 2011; Campbell & Kashy, 2002).

Returning to James and Beth, we mentioned that beyond the influence that each partner contributes to the dynamic, there are also emergent characteristics of the couple. Both APIM and Concordance Analysis can identify phenomena that arises as a function of *the combination* of James and Beth together. In CA, this is the first step. In APIM, it is implemented if researchers examine the actor $\times$ partner interaction. At a fundamental level, the actor $\times$ partner interaction represents the synergistic effect that emerges from the combination of two specific individuals in a relationship. It evaluates whether the partner effect is different based on actor characteristics, or vice versa. For example, it can test whether couples with discrepant levels of some variable (e.g., heavy alcohol use) would show particularly poor outcomes.

Concordance Analysis

Concordance Analysis (CA) is another mode of dyadic analysis. APIM and CA complementary. Each does things that the other does not. The crux of CA is use of *Dyadic Concordance Types* (DCTs) to identify and analyze an aspect of close relationships that is over and above the individual-level characteristics of the members of the dyad. DCTs classify relationships according to whether there is

concordance or discordance between members of dyads such as husbands and wives, siblings, parents, and children in a selected behavior or characteristic by cross-classifying the behavior of the partners. Suppose the characteristic selected is whether a physical assault occurred. Three of the four cells resulting from cross-classifying assault by the male and female partner identify the three DCTs: *Male-Only*, *Female-Only*, and *Both* assaulted. The fourth cell (*Neither*) is the reference category for statistical analyses. The next step in CA is use of standard methods of statistical analysis of categorical data, such as analysis of variance and logistic regression to test hypotheses about what is related to the couple being in one or other DCT. The theoretical basis of DCTs and examples of their use to describe and analyze cases in almost a hundred studies, and the unique information obtained when DCTs are analyzed is presented in Straus (2015b).

Figure 3 is an example of the descriptive use of DCTs. It shows the percent in each DCT for physical assault among couples in the World Mental Health Survey in 11 nations (Miller et al., 2011). The “Prevalence” box in the upper right gives the percent of couples who experienced an assault in the previous 12 months. The bars give the percent in each DCT among the subgroup of couples where a physical assault occurred. The *Both assaulted* DCT was almost half of all

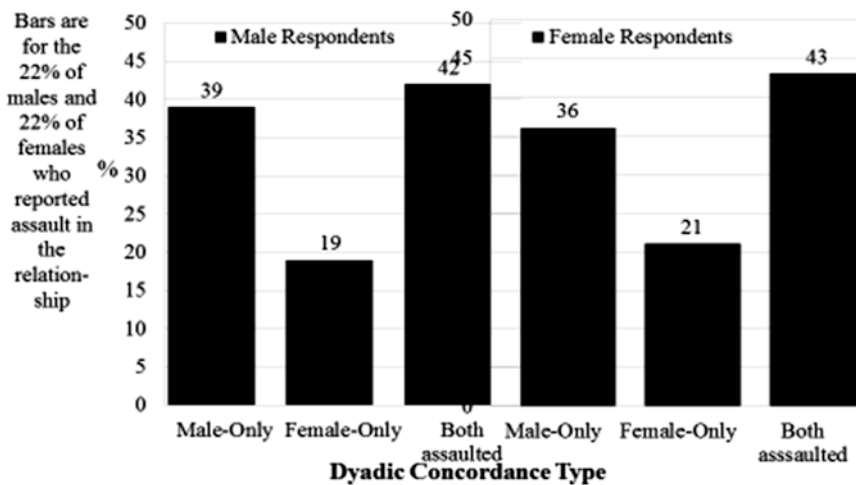


Fig. 3 Concordance in partner assault perpetration as reported by 3642 men and women in the World Mental Health Study

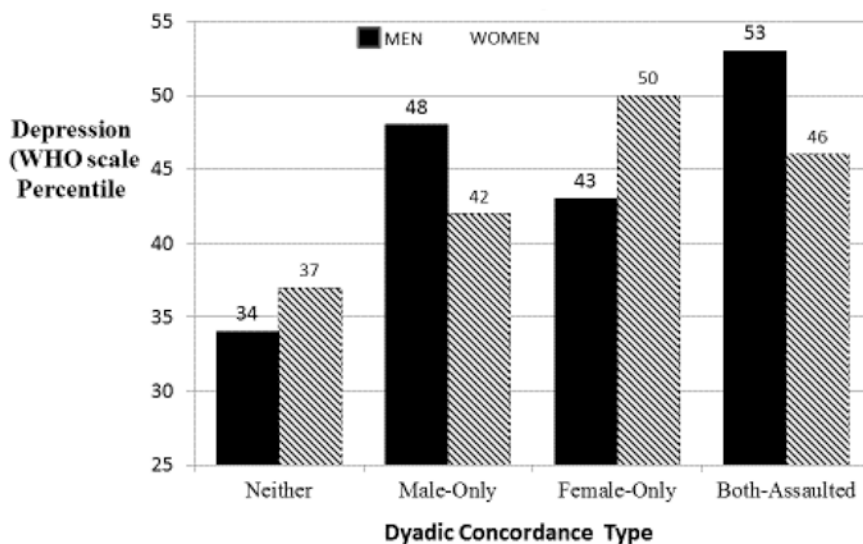


Fig. 4 Relation of couple concordance in assault to depression of male and female partners of University Students in 15 nations

couples in which violence had occurred. The results in Fig. 3 are consistent with reviews of a large number of studies in many nations, and among many types of samples (Langhinrichsen-Rohling et al., 2012; Straus, 2008), and for sexual coercion as well as physical assault (Costa et al., 2014).

DCTs identify couples in which only the male partner, female partner, or both meet a specified criterion or threshold. However, one partner may greatly exceed this threshold. For example, if the threshold to classify a partner as having perpetrated physical assault is one or more instances, the male partner may have assaulted ten times and the female only rarely. This can be readily examined using standard statistical methods to determine the mean of the cases in each of the three DCTs; for example, 4×2 ANOVA, with the 4-factor variable being the three DCTs and the reference category, crossed with gender of the participant.

An important attribute of DCTs is that they provide a way of addressing the concerns of both sides in the 40-year controversy about “gender symmetry” in perpetration of partner assault. Identification of cases of concern to those focused on female victims and male perpetrators is

assured because one of the three logically possible DCTs is *Male-Only* perpetrator. Identification of cases of interest of those concerned with the well-being of men is assured because a second DCT is *Female-Only* assaulted. Finally, identification of cases of concern to those whose interest is focused on bidirectional violence and interactive processes is assured because the third DCT is *Both* assaulted (rightmost column in Fig. 4).

Comparison of APIM and CA

APIM and CA are complementary frameworks for investigating dyadic data. Both incorporate the behavior of the partner, and both account for nonindependence of the data. When practical, both should be used because they elucidate different information in results. APIM models can establish how both partners—and their relationship—uniquely influence each other’s outcomes. APIM models can present more specific information—and a greater variety of information—by using additional variability in continuous predictors and outcomes for the actor and partner effects. For example, APIM models can present the relative strength of the causal paths,