Pedophilia and Sexual Offending Against Children

THEORY, ASSESSMENT, AND INTERVENTION



Michael C. Seto

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AMERICAN PSYCHOLOGICAL ASSOCIATION
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PREFACE

Pedophilia, defined as a persistent sexual interest in prepubescent children, is an emotional and controversial topic. For many people, the mention of pedophilia brings images to mind of sexual predators[1] who pursue and violate unknown children, although the reality is quite different. The public's perceptions of sexual offenses against children are influenced by media stories focusing on sensational cases that involve child abductions, killings, or individuals with long histories of sexually offending against many children (see Cheit, 2003; Jenkins, 1998).

Parents are understandably worried about the safety and well-being of their children, and many others are concerned that children they know might be exploited or harmed by adults. In this preface, I discuss the social, political, and legal contexts for studying pedophilia to provide readers a framework for understanding the social, political, and legal responses to pedophilia and the associated problem of sexual offending against children.

SCOPE OF THE PROBLEM

Child sexual abuse[2] is a widespread social problem. In the United States, there were approximately 89,500 cases of substantiated child sexual abuse in

[1]Terms such as *pedophile*, *child molester*, *sex offender*, and *sexual predator* are often used interchangeably in public and professional discussions. Having pedophilia is not a crime, whereas having sexual contact with a child when one is an adult is. In this book, I repeatedly distinguish between what we know about pedophiles and what we know about individuals who have committed sexual offenses against children. Although these two groups overlap, they are not synonymous. I use the terms *pedophile* or *pedophilia* to refer to individuals who have a sexual preference for prepubescent children, whether or not they have acted on this preference. I use the term *sex offender against children* to refer to individuals who have engaged in sexual contact with a child, whether or not they are pedophiles.

[2]My use of the term *sexual abuse* in this context is controversial. The term is not a good scientific term because it is not behavioral and it is emotionally and morally loaded, implying harm to the child and the intent to exploit or harm on the part of the adult. It may not adequately describe sexual contacts

2000 (Finkelhor & Jones, 2004). A nationally representative survey of children and adolescents between the ages of 2 and 17 found that approximately 1 in 12 reported being sexually abused in the study year (parents responded for younger children; Finkelhor, Ormrod, Turner, & Hamby, 2005). Finkelhor (1994) reviewed international surveys of adults and found a wide range of prevalence rates for child sexual abuse (likely reflecting differences in survey methodology and definition of sexual abuse, rather than true variations in prevalence). Data were available from 19 countries, including 10 national probability samples from Belgium, Canada, Denmark, Finland, Great Britain, the Netherlands, Norway, Spain, Sweden, and the United States. The average rate of childhood sexual abuse recalled by adult respondents was approximately 20% for women and 10% for men. Across these international surveys, females were more likely to have been sexually abused than males, females were more likely to have been abused by relatives than males, and the perpetrators were usually male.

Official crime data indicate that the majority of incidents of child sexual abuse are committed by someone known to the child, and the majority of offenses involve sexual touching (Snyder, 2000). Although incidents in which children are kidnapped or killed by pedophiles are thankfully rare, those incidents that do occur are widely publicized in media coverage (Cheit, 2003) and appear to have had a tremendous influence on the social, legal, and political responses to pedophilia and sexual offending against children.

SOCIAL CONTEXT

Public attitudes are extremely negative toward pedophiles and individuals who sexually offend against children. Sexual offenses against children are viewed as very serious crimes, ranking even higher than intentional homicide in one study of perceived moral wrongfulness (D. Lieberman, personal communication, February 19, 2003; Lieberman, Tooby, & Cosmides, 2003). Rosenmerkel (2001) also found that sexual offenses against children ranked higher in wrongfulness than felony homicide and other violent offenses in another survey of college students and received the second highest rating for overall seriousness, after homicide.

Calls for lifetime imprisonment, castration, and capital punishment have been made for convicted sex offenders against children (for a historical ac-

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between children and adults in which the child is not seriously harmed (Rind, Tromovitch, & Bauserman [1998] found that many children are resilient to the experience of sexual contact with an adult), the adult believes the sexual contact is part of a loving and caring relationship rather than an attempt to exploit the child, or the child initiates the sexual contact (which of course does not obviate the adult's legal and moral responsibility to refrain from responding). A more neutral substitute could be "childhood sexual contact with a much older youth or adult," but this is cumbersome. I use the term *sexual abuse* because it is widely used in scientific and nonscientific writings, and it is probably much more familiar to the readers of this book.

count of the shifting attitudes and laws about sexual offenses involving children, see Jenkins, 1998). Being identified as a pedophile could jeopardize one's relationships, employment, home, and even physical safety. Although incidents are rare, vigilantes have burned houses and assaulted suspected or known sex offenders against children (for a description of several incidents in the United States, see Freeman-Longo, 1996). A recent and highly publicized case involved the murder of two registered sex offenders in Maine by a young Canadian man who killed himself after his bus was stopped by police; a similar case involved two sex offenders against children in Washington killed by a man who found their addresses on an online sex offender registry (Canadian Broadcasting Corporation News, 2006). An English tabloid newspaper *News of the World* began publishing the names of convicted sex offenders as part of a "Name and Shame" campaign following the murder of Sarah Payne, an 8-year-old girl, in the summer of 2000. Following this campaign, a pediatrician was forced to flee her home after a group mistook her professional title for the word *pedophile* and spray-painted her front door (Boulware, 2000).

I include the story about the harassment of a pediatrician to illustrate how fear and outrage about child sexual abuse and the individuals who commit such crimes can lead to what Jenkins (1998) has described as a moral panic: times in history when child sexual abuse has been seen as endemic, devastating, and an overwhelming menace to society. Jenkins argued that social views of child sexual abuse and sex offenders against children have been quite different in the past when sexual offenses against children were considered to be unlikely to lead to serious consequences for the child if a proportionate response was made. There was a dramatic shift in such views in the 1980s and early 1990s, with extensive coverage of child sexual abuse rings and dramatic stories of satanic rituals involving child sexual abuse; 20 years later, many of these convictions have been overturned and there is little, if any, evidence that satanic ritual child abuse ever took place (Jones, 2004; Nathan & Snedeker, 2001). Currently, there is increasingly strong rhetoric about the dangers of the Internet, including claims of a large and profitable child pornography industry; many so-called Internet predators who use e-mail, chat rooms, and other technologies to communicate with potential child victims; and vast online networks of pedophiles, child pornography offenders, and sex offenders against children. There is little research, however, to support the rhetoric or to guide the major policy and legal changes that are taking place as a result.

I had my own encounter with public outrage about pedophiles and sexual offending against children while copyediting this book. My colleagues and I received government funding to begin a new research study comparing child pornography offenders with no history of sexual contacts with children with child pornography offenders who had a contact sexual offense history to identify factors that distinguish these two groups. Data were to be collected through

interview, questionnaire, and a viewing time task involving the presentation of digitally morphed images of clothed children and adults (see chap. 2, this volume). The university of one of my coinvestigators issued a press release about the new grant, and a subsequent newspaper story focused on the fact that the offenders who would be asked to volunteer for the study would be financially compensated for their time and expenses rather than on the purpose of the study and the knowledge that might be gained in understanding the onset of sexual offending against children and ultimately prevent further victims (Tetley, 2007). Victims' rights advocates expressed their opposition to the idea that sex offenders would be paid to participate in the research, perhaps unaware that no research ethics committee would approve a study that forced individuals to participate in research or that it is common practice to compensate research participants as part of study recruitment.

The newspaper story was posted on a Canadian newswire service and then picked up by other newspapers, radio, and television (e.g., Canadian Broadcasting Corporation News, 2007). Although the research funding was not affected by the controversy, such public reactions may have a chilling effect on researchers and the institutions that might be asked to collaborate on research studies intended to increase the understanding of pedophilia or sexual offending against children.

POLITICAL CONTEXT

Given the public's attitudes about sex offenders against children and their crimes, it is not surprising that political views can be similarly emotional and strong. A recent example was the political response to the publication of a meta-analysis by Rind et al. (1998) that concluded the average effect of childhood sexual contact with an adult was generally small (but still negative) among college students. Rind et al. did not argue or suggest in their article that adults should not be held legally or morally responsible for sexual offenses against children and, in fact, made a specific point of distinguishing between the results they obtained and the legal or moral implications of their findings. Nonetheless, there was a media outcry that then led to an extraordinary vote by the U.S. Congress to censure the American Psychological Association (the publisher of the journal in which the article appeared and the publisher of this volume) for allegedly publishing nonscientific research findings that did not conclude that child sexual abuse was tremendously and irreversibly harmful. This censure led the American Psychological Association to conduct an intense internal inquiry (see the March 2002 issue of the *American Psychologist* for a thorough overview from the journal editors, American Psychological Association officers, and additional commentators; Albee, Newcombe, & McCarty, 2002).

The political censure was alarming because of its implications for academic freedom, journal independence, and the relationship between public policy and science. The censure also was notable because serious harm is not required to justify the legal and moral prohibitions against adult–child sex.[3] An internally consistent philosophical rationale can be made in terms of children's rights, uncertainty about children's ability to provide consent given their stages of cognitive and emotional development, and asymmetry in the potential benefits versus potential risks of sexual contact for the adults and the children. One can ask the following questions in this analysis: How many children have advocated for the decriminalization of adult–child sex compared with the number of adults who have done so? What are the motivations of the adults who advocate for the decriminalization of adult–child sex? One of my assumptions throughout this book is that the legal and moral prohibitions against adult–child sex should and will continue.

LEGAL CONTEXT

Jenkins (1998) also reviewed the history of laws regarding sexual offenses against children in the United States. These laws have varied greatly in the 20th century, reflecting public and political views about sex with children. The current views are highly restrictive, singling out sex offenders from nonsexually violent offenders in the scope of legal controls that are possible. Though there is also a great deal of public and professional concern about gun-related crimes, gang-related crimes, and domestic violence, no other group of offenders is specifically subject to laws involving community notification when moving into a neighborhood, lifetime registration with police, rules about where they can live, and potential civil commitment to a secure treatment facility on completion of a criminal sentence.

In the United States, two child victims of sexual offenses are memorialized in federal legislation. The Jacob Wetterling Crimes Against Children and Sexually Violent Offender Registration Act (2001), which requires sex offenders to register with local law enforcement agencies, is named after a 11-year-old boy who was kidnapped while on his way home from a convenience store with his younger brother and a friend by a masked man who threatened the children with a firearm. No arrest has been made, and Jacob Wetterling has not been found. Megan's Law (1994), which requires community notification of sex offenders living in the area, is named after a 7-year-old New Jersey girl named Megan Kanka. On July 29, 1994, she was lured to a neighbor's residence and raped and murdered by a previously con-

[3]Some people might be heartened to learn that many children are resilient to the experience of sexual abuse.

victed sex offender. As a result of this crime, New Jersey and eventually the federal government of the United States passed laws requiring community notification about sex offenders when they move into a neighborhood. Jurisdictions in many states have also begun to legislate where sex offenders can live by requiring them to live a minimum distance from areas where children may congregate, including schools, parks, day care centers, and school bus stops (J. Levenson & Cotter, 2005). More detailed information about state and federal legislation pertaining to sex offenders has been provided by Doren (2002); Matson and Lieb (1996); Prentky, Janus, and Seto (2003); and LaFond (2005). A national sex offender public registry administered by the U.S. Department of Justice provides access to state sex offender registry Web sites (http://www.nsopr.gov).

Other legislative responses include the civil commitment of dangerous sex offenders after they have served their prison sentences (see Doren, 2002). A 2002 survey found that 2,478 sex offenders were in civil commitment facilities at that time: 1,632 offenders were committed, and the remainder were awaiting a hearing. Approximately half (49%) of the civilly committed sex offenders had a diagnosis of pedophilia (Fitch, 2003); pedophilic sex offenders are more likely to be recommended for civil commitment (J. Levenson, 2004b). Finally, some countries have begun to introduce extraterritorial jurisdiction over sexual contacts with children because of concerns about citizens traveling to other countries to engage in sex tourism and prostitution of minors. The scope of such sex tourism and prostitution is unknown, but it is widely perceived to be a major problem (see chap. 3, this volume).

GOALS FOR THIS BOOK

This book was written to address the following questions: Is pedophilia a human universal that has appeared across cultures and across times? How can pedophilia be detected? What is the relationship between pedophilia and sexual offending against children? How do pedophilic and nonpedophilic sex offenders against children differ? What explains pedophilia and sexual offending against children? How is the risk to sexually offend assessed? Finally, what is known about interventions to reduce the occurrence of sexual offenses against children?

My hope is that public policy and clinical practice can be informed by scientific knowledge regarding these topics to prevent the sexual victimization of children. There is a major gap between scientific understanding of these topics and the practices and policies that have been developed in response to the problem of child sexual abuse. Much of what laypeople and professionals believe about pedophiles and sexual offending against children—and the policies and laws that are implemented as a result—is not supported by empirical evidence. I believe this has been to the detriment of children,

offenders, their respective families, and the mental health and criminal justice systems that deal with sex offenders against children. Children have been placed at undue risk because of suboptimal decisions made about offender sentencing or release from custody, offenders have not been suitably matched to intervention according to the risk they pose for recidivism, and the mental health and criminal justice systems have not been able to efficiently allocate their resources.

Although much remains to be discovered, scientific knowledge is available to guide policies and practices. In particular, major advances have been made in the assessment of sex offender risk to reoffend; this information should be systematically involved in decisions about offender sentencing, placement, release, and supervision or treatment. Although accurate estimates of risk to reoffend are increasingly available, many decisions involve extraneous factors that are brought in as a result of subjective judgment. Accurate risk assessment is extremely important, because there is, as yet, no effective treatment to reduce sexual recidivism among sex offenders. The studies that are often proffered as support for the efficacy of sex offender treatment are methodologically weak, and the best randomized clinical trial of psychological treatment that has been reported so far found no significant effect of treatment among adult sex offenders against children (Marques, Wiederanders, Day, Nelson, & van Ommeren, 2005). In contrast, two small randomized clinical trials of multisystemic therapy have both shown a significant reduction in the recidivism of adolescent sex offenders, suggesting society might benefit from putting more resources into earlier intervention before criminal attitudes, beliefs, associations, and behaviors become entrenched. I conclude by proposing that innovative treatments are needed and that the null results for current treatments suggest such programs could be considered "treatment as usual" in a future randomized clinical trial. I also argue for increased attention to prevention efforts, including school-based sexual abuse prevention programs, support and treatment for pedophiles before they have initiated sexual activities with children, and public education campaigns to speed disclosure and help responsible adults to protect children. Resources could also be shifted to treatment of children with sexual behavior problems and adolescent sex offenders and to increasing disclosures of sexual offenses against children and apprehension and prosecution of adult sex offenders.

Less is known about pedophilia than about sexual offending against children. Much of what is known about pedophilia has come from studies of clinical or correctional samples of men who have committed sexual offenses against children. More research is needed on pedophiles outside of these settings, especially self-identified pedophiles who have no known history of sexual contacts with children. Such research is difficult to conduct in the current social, political, and legal climates, but it is necessary for full understanding of pedophilia. Because pedophilia appears to be a stable sexual preference—akin to heterosexual or homosexual orientation in the sense that it manifests

early in life and directs a person's sexuality—it is highly unlikely that any treatment can change it, just as no treatments have successfully changed homosexual (or heterosexual) orientation (Shidlo & Schroeder, 2002; Zucker, 2003). Instead, successful interventions are likely to come from teaching pedophiles effective self-management skills, teaching children how to avoid or disclose sexual abuse, and decreasing the perceived benefits and increasing the perceived risks of having sexual contact with children through situational crime prevention efforts. New research on the causes of pedophilia and sexual offending against children will be critical to the development of effective prevention programs.

I have written this book because I want to help prevent children from becoming victims of sexual offenses. Members of advocacy organizations such as the North American Man–Boy Love Association or of online message boards like Girlchat and Boychat have argued that children are capable of giving consent to sex; repression of pedophiles and adult–child sex constitute violations of children's rights; and children are more likely to be harmed by the negative reactions of their families and society than by adult–child sex. Such arguments do not recognize that there is a large asymmetry in the benefits and risks for children and adults. The benefits for adults who are sexually interested in children are obvious, whereas the benefits for children are unclear; there is also some risk of harm to the child, even though the magnitude of harm may be small for many sexually abused children (Rind et al., 1998). In my opinion, the arguments of many adult–child sex advocates are self-serving, and adult–child sex is a moral wrong. To prevent this wrong, I believe pedophiles need to be supported in a way that will encourage them to avoid acting on their sexual interests in children, and sex offenders against children should be treated and managed in a manner that is consistent with what is known about risk to reoffend and effective intervention. I hope that this book will contribute to these efforts.

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In chapter 2, I adapted material from an article I published in the *Journal of Forensic Psychology Practice*[1] and a chapter I published in the proceedings of a 2003 sexual psychophysiology conference at the Kinsey Institute for Research in Sex, Gender, and Reproduction.[2] In chapter 8, I adapted material from a chapter published in the proceedings of a 2002 sex offender treatment conference at Cambridge University's Institute of Criminology and a chapter published in *Gabbard's Treatment of Psychiatric Disorders*.[3] I thank the American Psychiatric Press, Haworth Press, Indiana University Press, and Willan Publishing for their permission to adapt these copyrighted texts. The entire book grew from a broad overview of the literature on pedophilia and sexual offending that I prepared for the *Annual Review of Sex Research*.[4]

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Pedophilia and Sexual Offending Against Children

1

INTRODUCTION: DEFINING PEDOPHILIA

Pedophilia—a sexual preference for prepubescent children—is manifested in persistent and recurrent thoughts, fantasies, urges, sexual arousal, or behavior as defined in the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text revision; *DSM–IV–TR*; American Psychiatric Association, 2000; see also Seto, 2002). A similar definition was used by the World Health Organization (1997): "a sexual preference for children, boys or girls or both, usually of prepubertal or early pubertal age" by an adult. The *APA Dictionary of Psychology* (American Psychological Association, 2007) defined pedophilia as a

> paraphilia in which sexual acts or fantasies with prepubescent children are the persistently preferred method of achieving sexual excitement. The children are usually many years younger than the pedophile (or pedophiliac). Sexual activity may consist of looking and touching, but sometimes includes intercourse, even with very young children. (p. 681)

The word *pedophilia* is derived from the Greek words for love (*philia*) of young children (*pedeiktos*). The term *paedophilia erotica* was coined by Richard von Krafft-Ebing (1906/1999) in his pioneering collection of sexological cases, *Psychopathia Sexualis*. Pedophilia is probably the most commonly discussed paraphilia in the clinical and forensic research literatures (see Appen-

dix 1.1). In its strongest form, it reflects an exclusive sexual preference for prepubescent children in which the pedophilic individual has a strong sexual interest in children who show no signs of secondary sexual development and has no sexual interest in sexually mature adults (see Appendixes 1.2 and 1.3). For the etymologically inclined, John Money coined the term *nepiophilia* (from the Greek *nepion*, meaning infant) for the very rare sexual preference for infants (Greenberg, Bradford, & Curry, 1995), and Kurt Freund modified the term *ephebophilia* (from the Greek *ephebos*, meaning adolescent) into *hebephilia* to describe the sexual preference for pubescent children; unlike pedophiles, hebephiles are attracted to children who show some signs of secondary sexual development, such as the emergence of pubic hair and the initial development of breasts in girls. It is not clear if sexual preference for infants and sexual preference for pubescent children represent variants of pedophilia or instead represent different paraphilias. Pedophilia, nepiophilia, and hebephilia can be distinguished from *teleiophilia*, a term coined by Ray Blanchard to describe the species-typical preference for sexually mature persons (from the Greek *teleios*, meaning full grown).[1]

Pedophilia is not synonymous with sexual offending against children, though these concepts are often used interchangeably in public, political, and media accounts. Commentators also often refer to individuals who have committed sexual offenses against postpubertal adolescents (e.g., a sexually maturing 15-year-old who is under the legally defined age of consent in a particular state) as pedophiles, though this behavior would not meet any of the definitions outlined previously. As I discuss in this book (see chaps. 3 and 4, this volume), some pedophiles are not known to have ever committed sexual offenses against children, and many sex offenders against children commit their crimes for reasons other than pedophilia. Such reasons can include general antisocial tendencies, high sex drive, and temporary disinhibition due to alcohol or drug use. The distinction is important because pedophiles who refrain from sexual contacts with children are unfairly placed in the same categories as men who have committed crimes against children and because pedophilic and nonpedophilic sex offenders differ in their risk to reoffend and in the kinds of interventions that are most likely to be effective in preventing future crimes against children.

THE IMPORTANCE OF PUBERTY

A key element of any operational definition of pedophilia is the pubertal status of the children of interest. Sexual contact with postpubertal adoles-

[1]A few case reports have been published regarding men with *gerontophilia*, a sexual preference for elderly persons. This may reflect the fact that seeking sexual contacts with elderly persons is not illegal and is less likely than pedophilia to bring someone to clinical or legal attention unless coercion or violence is involved (Ball, 1998; Kaul & Duffy, 1991; Oules, Boscredon, & Bataille, 1977). It may also reflect the fact that gerontophilia is very rare and even less common than pedophilia.

cents is prohibited by law in many jurisdictions, but these prohibitions are arbitrary in the sense that they vary from country to country (and state to state in the United States) and are based on a legally defined age criterion (current ages for many jurisdictions are provided by http://www.ageofconsent.com), which is usually justified in terms of the level of cognitive and emotional development of the legally defined minors and their potential vulnerability to exploitation by adults. In contrast to the relativity of legally defined age of consent, puberty and the concomitant development of secondary sexual characteristics is a nonarbitrary and objective event that is reproductively relevant. From a biological perspective, being sexually attracted to nonfertile, prepubescent children would have been maladaptive in the past (because sexual behavior with prepubescent children would not have led to successful reproduction) and likely continues to be maladaptive now, regardless of place or time. Why pedophilia exists at all is a major biological puzzle.

The age at which puberty occurs can vary. For example, there is some evidence that the average age of puberty decreased in the 20th century, at least in industrialized nations (Herman-Giddens et al., 1997), a decline that has been attributed to improvements in nutrition and overall health (Thomas, Renaud, Benefice, De Meeüs, & Geugan, 2001).[2] A substantial proportion of young girls show some signs of secondary sexual development by the ages of 12 or 13. Thus, adults who now have sexual contact with girls between the ages of 12 and 14 violate age of consent laws in most jurisdictions, but these individuals may not be acting on pedophilic interests, because the girl victims may show secondary sexual characteristics such as breasts and pubic hair. Historical accounts of sexual contacts with girls between the ages of 12 and 14, however, may indeed represent pedophilic behavior.

A reliable system for determination of pubertal stage was described by Tanner (1978). For girls, Tanner scores are based on pubic hair growth, morphology of the vulva, breast development, and development of axillary hair. Tanner described five stages. Stage 1: no secondary sexual development; Stage 2: budding of breasts, beginning of axillary and pubic hair growth, and mucosal changes in labia minora and vagina; Stage 3: further enlargement of breasts with elevation of areola, no separation of contours of breasts and nipples, darker and coarser pubic hair, and more axillary hair; Stage 4: projection of areola and papilla to form a second mound above the level of the breasts and adultlike axillary and pubic hair; and Stage 5: mature breasts and mature distribution of axillary and pubic hair. For boys, Tanner scores are

[2]The fact that the average age of puberty has declined over the past century suggests that the average age of child victims may have decreased as well, and the proportion of pedophiles among sex offenders who have targeted young adolescents has declined. I am not aware of any epidemiological data to test this idea. B. J. Ellis (2004) reviewed psychosocial factors that can also influence pubertal timing in girls.

based on genital development, again in five stages. Stage 1: testes, scrotum, and penis are the same as they are in early childhood; Stage 2: scrotum and testes become enlarged and the skin of the scrotum reddens and changes in texture; Stage 3: penis grows larger, mainly in length at first, with further growth of testes and scrotum; Stage 4: penis increases in size, with increased circumference and development of glans, larger testes and scrotum, and darkening of scrotal skin; and Stage 5: genitalia are adultlike in size and shape.

Although age and Tanner stage are strongly and positively correlated, Lang, Rouget, and van Santen (1988) noted that using chronological age to define pedophilia is less precise than using the pubertal status of the children of interest (see also Cooper, 2005; Rosenbloom & Tanner, 1998). Most studies of pedophilia have referred to the age of children, however, either in terms of self-reported preferences of self-identified or clinically identified pedophiles or age of child victims for sex offenders. Whatever a child's chronological age, the biological significance of sexual immaturity remains the same. Lang, Rouget, et al. (1988) found that two thirds of a sample of child sexual abuse victims were in Tanner Stage 1, with another 15% in Tanner Stages 2 and 3. None of the victims age 10 or younger were menstruating. Victims in Tanner Stages 4 and 5 were more likely to experience oral, vaginal, or anal intercourse (and were probably more likely to have been offended against by nonpedophilic men). The Tanner system does not take into account other physical features, however, and it is likely that features such as body shape and size are also important determinants of pedophilic attraction to children (e.g., Lang, Rouget, et al., 1988; Rice, Chaplin, & Harris, 2003).

EPIDEMIOLOGY OF PEDOPHILIA

The prevalence of pedophilia in the general population is unknown. Epidemiological surveys with the questions that are needed to identify pedophilia—particularly those having to do with persistence and intensity of sexual thoughts, fantasies, urges, arousal, or behavior involving prepubescent children—have not yet been conducted. Ever having thoughts of sex with a prepubescent child or even ever having sexual contact with a prepubescent child would not be sufficient to meet the standard diagnostic criteria for pedophilia because persistence and intensity are two key features of these definitions.

The following surveys of adult men and women provide upper limit estimates of the prevalence of pedophilia in the general population because they do not include questions about persistence or intensity. For example, finding that 5% of adult men have fantasized about sex with a prepubescent child would mean the prevalence of pedophilia must be lower than 5% because only those who have persistent fantasies could qualify for the diagnosis of pedophilia. Men are more likely than women to be sexually interested in

children (Smiljanich & Briere, 1996). Crépault and Couture (1980) surveyed 94 men about specific sexual fantasies during masturbation or intercourse and found that 62% had fantasized about having sex with a young girl, and 3% had fantasized about having sex with a young boy. Briere and Runtz (1989) surveyed 193 male university students and found that 9% had fantasized about having sex with a young child (age unspecified); 5% masturbated to fantasies of sex with children; and 7% indicated some likelihood of having sex with a child if they were guaranteed they would not be punished or identified. The percentages of those who had sexual fantasies about prepubescent children, masturbated to these fantasies, or acted on these fantasies are not known. Templeman and Stinnett (1991) surveyed 60 male college students and found that 5% expressed an interest in having sex with a girl under the age of 12. Fromuth, Burkhart, and Jones (1991) found that 3% of the 582 college men they surveyed reported having had a sexual experience with a child when the respondent was age 16 or older (thereby excluding peer sexual activity among children). The majority of the contacts were made by 4 men who admitted committing multiple offenses. T. P. Smith (1994) found that 6 (3%) of her sample of 183 male college students, under condition of anonymity, admitted they had had sexual contact with a prepubescent girl aged 12 or younger. None admitted sexual contact with a prepubescent boy aged 12 or younger. In addition, 11% acknowledged sexual contact with an adolescent girl between the ages of 12 and 15 since they had reached the age of 18 themselves. Beier, Alhers, Schaefer, and Feelgood (2006) found that 4% of the 373 men who responded to a sexual survey under conditions of anonymity admitted having sexual contact with a child, 9% admitted having sexual fantasies about children, and 6% admitted masturbating to sexual fantasies about children. Together, these survey results suggest that sexual fantasies about children and sexual contacts with children are uncommon (excluding the outlier regarding fantasies about girls reported by Crépault & Couture, 1980), and thus pedophilia is rare in the male population, occurring at a frequency of less than 5%.

At the same time, Kurt Freund and other investigators have demonstrated that heterosexual men recruited from the community exhibit some sexual arousal to prepubescent girls, less than they respond to pubescent girls or adult women but more than they respond to male stimuli (Freund, McKnight, Langevin, & Cibiri, 1972; G. C. N. Hall, Hirschman, & Oliver, 1995; Seto & Lalumière, 2001). These laboratory findings suggest that men in the community have the potential to become sexually aroused by prepubescent girls; however, most men do not show a preference for prepubescent girls (or boys).

In a rare survey of female respondents, Fromuth and Conn (1997) asked 546 college women about their sexual experiences with children at least 5 years younger than they were. Of the sample, 4% acknowledged at least one such experience (92% of these incidents involved physical contact, mostly

touching and kissing). The average age of the respondent at the time was 12, and the average age of the child was 6. Of the respondents, 13% said they did not initiate the experience. Unlike the predominantly female child victims of convicted sex offenders, the majority of children identified in this anonymous survey were boys (70%). The majority of children were related (69%) to the women. None of these incidents were detected by police or other authorities. Women who admitted engaging in sexual contact with a child were more likely to report attraction to or fantasies involving children than those who denied such contact (18% vs. 5%).

PEDOPHILIA AND SEXUAL CONTACTS AGAINST CHILDREN

Most of what researchers know about pedophilia has come from the study of men who have had sexual contact with children, especially those who have been convicted of crimes for such contact. Thus, much of this book draws on research about men who commit sexual offenses against children, not all of whom are pedophiles. Conservatively, the prevalence of pedophilia among men who commit sexual offenses against children is around 50%, depending on the criterion used to identify pedophilia (see Table 1.1). The distinction—between pedophiles and men who have committed sexual offenses against children—needs to be kept in mind throughout this book. Another distinction is one between those men who are exclusively interested in children and those who are interested in both children and adults; this distinction is reflected in the *DSM–IV–TR* (American Psychiatric Association, 2000) recognition of exclusive and nonexclusive types of pedophilia.

In the next sections, I review historical and cross-cultural evidence about adult–juvenile sex, including adult–child sex, to examine the extent to which this behavior has appeared across time and across cultures and to provide a context for examining pedophilia in modern societies. Some of these historical or cross-cultural examples are clearly relevant to pedophilia, involving prepubescent children, whereas others are less so, referring to adult sexual contacts with adolescent boys or girls.

HISTORICAL EVIDENCE

Adult–juvenile sex has been a social and legal concern for a long time. Quinsey (1986) provided an overview of historical sources on adult–child sex. Killias (1990) described the Western history of laws against adult–child sex. For example, Roman law fixed the minimum age for marriage as 12 for girls and 14 for boys, and following this tradition, the Roman Catholic Church adopted the same rule. Killias claimed there was no minimum age for marriage in the Middle Ages; instead, what mattered was whether the person

TABLE 1.1
Percentage of Sex Offenders With Child Victims Who Are Pedophilic (Selected Samples)

Study	Sample size	% pedophilic	Major criterion
Blanchard, Klassen, Dickey, Kuban, and Blak (2001)	217 adults	50	Phallometric responses
Maletzky and Steinhauser (2002)	5,223 adults	43	Sexual offense history
Seto and Lalumière (2001)	1,113 adults	40	Phallometric responses
Seto, Murphy, Page, and Ennis (2003)	253 adolescents	30	Phallometric responses

Note. These studies were included in this table for the following reasons: Blanchard et al. (2001) had a sample of men who denied being sexually interested in children (nonadmitters), and nonadmitters are typically less responsive in the laboratory. Maletzky and Steinhauser (2002) reported on the largest published sample of sex offenders against children. Seto and Lalumière (2001) had a large and unselected sample of sex offenders against children (i.e., no men were excluded because they denied or admitted being sexually interested in children; men could have both boy and girl victims). Seto et al. (2003) reported on the largest published sample of adolescent sex offenders; the results for this study should not be interpreted as the prevalence of pedophilia among adolescent sex offenders, given the age requirement in the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text revision; American Psychiatric Association, 2000; the individual must be at least 16 years old).

had reached physical maturity, and in fact, anyone who had attained puberty could be expected to fulfill adult roles. Killias stated that the common law tradition treated any person who had reached puberty as the equivalent of an adult and suggested that the notion of a developmental stage of adolescence did not appear until the 19th century.

Lloyd (1976) provided a brief social history of boy prostitution. He suggested that the first evidence of boy prostitution appeared in Roman records and claimed it was fashionable for wealthy Romans to buy young male slaves (Lloyd did not specify the age or pubertal status of these slaves) as sexual companions for their sons until the sons were married. Lloyd added that most Roman cities had brothels with boy prostitutes who were purchased as slaves and made available to poorer citizens for a price. Particularly attractive slaves were selected and raised in special schools before being made available to wealthy citizens. According to Lloyd, one of the most famous of these youths was Antinous, who so enraptured Emperor Hadrian that statues of Antinous were erected all over the Roman Empire upon the youth's death in 130 CE.[3]

Probably one of the best known historical examples of adult–juvenile sex is the custom in ancient Greece of adult men taking young male adolescents as lovers. According to Killias (1990), this was considered to be a mentoring relationship; the word for *lover* is *inspirer* in the Doric dialect. A famous inspirer relationship was that between Alexander the Great and

[3]Several of these statues can still be found, depicting Antinous as a 19-year-old. Historical accounts suggest Antinous entered the service of Emperor Hadrian in 123 or 124 CE, which would have meant Antinous was 12 or 13 years old when they met.

Hephaiston, his boyhood friend. The Greek word for this kind of relationship was *paiderastia* (from which the word *pederasty* is derived). A common synonym in ancient Greek writings for favored youths was *ta paidika* (the boyish).

Killias (1990) suggested that taking a young ward was expected of adult men, and not doing so was considered a dereliction of one's mentoring duty. It is noteworthy that relationships with sexually immature boys were severely punished, but boys who had begun puberty were idealized. Many Greek writers described this relationship as special and beautiful, but it cannot be determined from the historical record if this reflected the views of Greek society in general.

There are examples of adult–child sex, child prostitution, and incest from the Byzantine Empire (see Lascaratos & Poulakou-Rebelakou, 2000). The Byzantine Empire emerged following the decline of the Roman Empire and was the largest world state for over a millennium, from 324 to 1453. Both adult–child sex and incest were regulated by law, suggesting that incidents of adult–child sex and incest occurred frequently enough at some point to require legal and formal social control. Marriages involving children were frequently arranged for political and social reasons, but the couple was supposed to wait until the younger person had reached the age of 12 to begin having sex. According to Lascaratos and Poulakou-Rebelakou (2000), the best known example of this prohibition (and its violation) was the marriage of Princess Simonis, the only daughter of Emperor Andronicus II (reigned 1282–1328). She was married at the age of 5 to the 40-year-old Sovereign of the Serbs, Stephan Milutin, to foster a political alliance between the two states. Milutin did not wait for her to reach the legal age and raped her at the age of 8, "causing injuries of the womb, which prevented her from bearing children, and mental suffering which obliged her to return in tears to her homeland to be a nun" (Nicephorus Gregoras, cited in Lascaratos & Poulakou-Rebelakou, 2000, p. 1087). Her parents, apparently more concerned with the political alliance that had been formed than with their daughter's well-being, forced her to return to Milutin.

Lascaratos and Poulakou-Rebelakou (2000) also claimed that the opportunity to broach the virginity of child prostitutes could be purchased at public auctions. They further reported that Byzantine writers specifically wrote about the problem of child sexual abuse, accusing eminent Byzantines of being pedophiles. These eminent persons included the Emperor Theodosius; Constantine V; and the Eparch of Constantinople, John Cappadoces, who "regularly assaulted small pre-adolescent children who had not acquired the signs of manhood, especially hair" (Kukules, quoted in Lascaratos & Poulakou-Rebelakou, 2000, p. 1087). The Orthodox Church recognized the problem of child sexual abuse and considered it to be one of the most serious sins, resulting in a penalty of Holy Communion being withheld for a period of 19 years. Legal punishments for sexual contacts with children outside of formal engagement or marriage could be severe, including fines; dragging the of-

fender through the street; cutting off the offender's nose; exile; and, in the most extreme cases, execution. A group of men who had sex with children during the reign of Justinian I were genitally mutilated, dragged naked through the streets, and then put to death.

There are also non-Western historical references to adult–child sex. Lloyd (1976) noted that ancient Chinese literature also describes men having sex with boys (again the boys' ages or pubertal status are unspecified) but with a preference for effeminate, heavily made-up boys rather than the masculine, athletic boys idealized by ancient Greek writers. Ng (2002) cited a number of Chinese literary references regarding these relationships. Schild (1988) described Arabic literary references to sexual relationships between adult men and male youths and suggested that "the irresistible seductive power of beautiful youths is an often-repeated theme in Arabian and Persian poetry and literature" (p. 40). He suggested that these sexual contacts were an alternative sexual outlet for men who were unmarried because unmarried males and females were segregated, prostitutes were expensive to hire, and masturbation was considered to be against Islamic practices. Again, puberty was an important demarcation, because the sexual attractiveness of boys was considered to wane once boys had reached a certain degree of physical maturity.

At the end of the 19th century, Krafft-Ebing (1906/1999) was one of the first sexologists to provide clinical case descriptions of men who were sexually attracted to children (e.g., Case 228, an individual who was only interested in boys between the ages of 10 and 15 and reported no interest in girls or adults of either sex).[4] Krafft-Ebing thought pedophilia was rare—he had only seen 4 cases, all men who he believed had a primary sexual interest in children—and proposed that many cases of sexual contacts with children could be explained by boredom (men who were very sexually experienced with women and were seeking novel sexual stimulation), sociosexual deficits (men who were afraid of women or were anxious about their virility with adult women), or disinhibition (e.g., men who were intoxicated, experiencing senile dementia, or who had mental retardation). As I discuss in chapter 4, some of these ideas continue to be represented in contemporary explanations of sexual offending against children.

CONTEMPORARY CROSS-CULTURAL EVIDENCE

Much of the available scientific data about sex offenders with child victims has been gathered in Australia, Canada, New Zealand, the United

[4]Around the same time, privately produced books contained materials of interest to those who were sexually attracted to children. The Kinsey Institute Library in Bloomington, Indiana, contains original editions of *When a Child Loves and When One Hates: A Tale of Birch and Bed by a Gentleman* (Anonymous, 1890) and *Private Letters From Phyllis to Marie, or the Art of Child-Love, or the Adventures and Experiences of a Little Girl* (Anonymous, 1898). Both of these books described sexually explicit contacts with girls who had only just begun to show signs of puberty and were presumably produced as pornography for private purchasers.

States, and Western European countries in the 20th century. However, Finkelhor (1994) reviewed surveys about child sexual abuse from 20 different countries. In addition to the countries listed above, these surveys included Costa Rica, the Dominican Republic, and South Africa. All of these countries had records of child sexual abuse. Finkelhor noted the absence of comparable epidemiological data on African, Middle Eastern, and Asian countries. Other cross-cultural evidence includes that of Law (1979), who studied 155 offenders against children age 15 or younger in Hong Kong and found similarities in victim and offense characteristics (more girl victims than boy victims, boy victims older on average, and fondling as the most common act) between this Asian sample and North American and Western European samples.

Bauserman (1989) reviewed ethnographic evidence on adult–child sex (he excluded contacts with prostitutes, one-time encounters, stranger contacts, incidents involving obvious coercion, and father–son incest). Bauserman described ritualized relationships between men and boys among tribes in New Guinea and the Melanesian islands in the South Pacific. Among the Marind-Anim, a man would begin having a sexual relationship with his maternal nephew when the boy's pubic hair first began to appear at the age of 12 and 13. The boy would live with the man and his wife and would receive instruction in hunting and gardening in exchange for his participation in anal intercourse. The relationship ended when the boy married at the age of 19 or 20. Among the Etoro, boys were expected to fellate older males to the point of ejaculation because semen was thought to promote their physical growth; this practice began around the age of 10 and continued into the early 20s (R. Kelly, 1976). Similar beliefs were held among the Kaluli, with boys beginning this practice around the age of 10 or 11 with a man who was selected by the boy's father (Schieffelin, 1976). In probably the best known example of this kind of practice, Herdt (1981) described the Sambian initiation of prepubescent boys through the ritualistic fellatio of older boys. Semen was thought to help build up the boy's life force and was considered necessary for boys to be able to reach puberty. Boys were reportedly reluctant to engage in this practice but complied because of fear of punishment. The boys would eventually undergo puberty, which was interpreted as support for the Sambian theory, and could then expect to receive fellatio from younger boys who were beginning the practice. Older boys stopped receiving fellatio from adolescent boys when the older boys married.

Lloyd (1976) claimed that prostitution of boys can be found all over the world and mentioned examples of brothels in the Middle East, the custom of *basket-boys* in Vietnam who offered to carry groceries home for adult men and then offered sex in exchange for money, *bini boys* in Manila, and juvenile street prostitution in Western societies.

There are fewer ethnographic accounts of sexual contacts between adult men and young girls, though there have been anthropological descriptions of

arranged marriages between prepubescent girls and older men in some aboriginal tribes such as the Tiwi of Melville Island (Goodale, 1971). I could not find any ethnographic accounts of adult women having sex with children, suggesting the disproportionate representation of men in clinical and forensic samples of pedophiles (and sex offenders against children) cannot be solely attributed to a detection bias.

Finally, Graupner (2000) claimed that the minimum age criterion in laws regulating sexual conduct is a recent invention. All of the modern jurisdictions he studied had a minimum age criterion; in no jurisdiction was the age limit younger than 12 years (see also http://www.ageofconsent.com). Also, Graupner argued that sexual contact with a prepubescent child has always been illegal when it has been addressed, although the legality of sexual contact with a postpubertal minor has varied across jurisdictions.

PEDOPHILIA MAY BE A HUMAN UNIVERSAL

The extent to which a phenomenon appears across time and across cultures informs us about its underlying predispositions. Something that appears in most or all human cultures is more likely to be a universal characteristic of humans than something that is highly varied in its expression. The available evidence suggests that adult–minor sex has appeared both historically and across cultures, and this has included sexual contacts with prepubescent children. Because adult–child sex is correlated with pedophilia (though not synonymous with it), this suggests pedophilia has also appeared historically and cross-culturally. There is no theoretical reason to expect pedophilia to be culturally or temporally bound, though there may be large differences in the likelihood that pedophilic interests are expressed, depending on legal or social sanctions for sexual contact with children.

Overall, the historical and cross-cultural evidence supports the idea that puberty is a critical event, represented by minimum ages for marriage and the punishment of sex with prepubescent children in many societies. Adult–minor relationships in New Guinea and Melanesia are circumscribed cultural practices that are intended to bring about the onset of puberty. There is no evidence that adults are allowed to have sexual contacts with children outside of these practices. All of these different lines of evidence suggest that puberty has consistently been an important liminal event, consistent with the operational definition of pedophilia used in this book.

Some authors have argued that the designation of a sexual preference for prepubescent children as a disorder is socially and culturally arbitrary, reflecting prevailing social values, attitudes, and biases (e.g., Sandfort, Brongersma, & Van Naerssen, 1990). Sandfort et al. (1990) described evidence of adult–minor sex in other times or in different cultures as support of this position, although the review presented here suggests that sexual con-

tact with prepubescent children (compared with sexual contacts with adolescents) has usually been strictly regulated. As discussed further in Appendix 1.1, the identification of a phenomenon as a disorder can be made on the basis of *biological pathology*, which can be defined as a disturbance in a biological process or mechanism that interferes with the ability of that process or mechanism to perform as designed by natural selection (Spitzer & Wakefield, 2002; Wakefield, 1992). In the case of pedophilia, the preference for prepubescent children is rare (less than 5%, although its prevalence in the general population is not precisely known), it is negatively sanctioned in most cultures and across time, and it is biologically pathological because a preference for prepubescent children interferes with reproductively viable sexual behavior (i.e., engaging in sexual behavior with sexually mature, opposite-sex persons with whom production of offspring could occur, at least in principle). Given the reproductive significance of preferring fertile sexual partners, pedophilia would seem to meet Wakefield's (1992) evolutionarily informed functional criterion for mental disorder and can be conceptualized as the result of disruptions in the mechanisms underlying sexual age preferences. Wakefield's definition applies specifically to the sexual preference for prepubescent children; it does not necessarily apply to individuals who have sexual contacts with prepubescent children, unless the person gives up opportunities to have sex with potentially fertile partners. From this perspective, the central feature of any set of diagnostic criteria for pedophilia is a persistent sexual preference for prepubescent children when sexually mature partners are potentially available, whether it is reflected in recurrent self-reported thoughts, fantasies, or urges about sexual contact with children; exhibited in greater sexual arousal to stimuli depicting prepubescent children relative to stimuli depicting adults; or manifested in a pattern of sexual behavior involving children. Whether the individual is distressed by this sexual interest or whether the sexual interest causes interpersonal or other difficulties is not germane.

A DARWINIAN PERSPECTIVE

Readers who are unfamiliar with modern Darwinian theories are referred to books by Buss (1999), Ridley (1995), and Williams (1996) for more detailed discussions of evolutionary biology, evolutionary psychology, and Darwinian thinking as well as responses to common criticisms of Darwinian theories. Wrangham and Peterson (1997) have written a highly readable example of the Darwinian approach with regard to male violence, and my colleagues have written excellent Darwinian analyses of rape (Lalumière, Harris, Quinsey, & Rice, 2005) and juvenile delinquency (Quinsey, Skilling, Lalumière, & Craig, 2004). Key Darwinian concepts for this book include sex differences in minimal parental investment and the consequent sex differences in mating strategies, partner age preferences, and risk taking (Trivers,

1972) as well as the application of inclusive fitness theory to understanding incest avoidance (Hamilton, 1964). These concepts are briefly discussed in the paragraphs that follow to provide the theoretical framework for some of the ideas presented in this book.

Some men have many offspring, whereas many others have none; in contrast, women can have only a certain number of children during their fertile years. Men are expected to be more willing to take physical risks to gain status, resources, or access to mates because of their much greater variance in reproductive success (Daly & Wilson, 2001; Quinsey, 2002; Quinsey & Lalumière, 1995; Rowe, 2002). Men who take risks and succeed could have many children, whereas those who take no risks are likely to end up with none. Physical risk taking includes antisocial and criminal behavior, so men are expected to be more likely to engage in antisocial or criminal behavior than women.[5] This can include fighting to gain status, theft to gain resources, and sexual coercion to increase sexual access (Lalumière et al., 2005; Quinsey et al., 2004). This risk taking is particularly notable among young men, so much so that the evolutionary psychologists Margo Wilson and Martin Daly coined the term *young male syndrome* to describe the co-occurrence of these behaviors in male–male competition for access to females (Daly & Wilson, 2001; M. Wilson & Daly, 1985).

In humans, there is a robust sex difference in preferred partner age. On average, men prefer younger female partners, and women prefer older male partners (Kenrick & Keefe, 1992). This sex difference (and many other sex differences) is predicted by Trivers's (1972) parental investment theory, which observes that there is an obligate sex difference in the minimum required investment for reproduction, which leads to different benefits and costs for pursuing mating opportunities versus caring for offspring. In humans, women have a greater minimum investment than men because of the time and energy required by pregnancy. In principle, a man's contribution could be a few moments and a single ejaculation, although the reality is that men usually invest a great deal in their offspring, forming committed relationships with their partners and contributing to child care. Following Trivers's logic, ancestral male reproductive success was maximized by pursuing sex with many

[5]It is worth commenting about the naturalistic fallacy regarding evolutionary theories of human behavior. This fallacy confuses what is with what ought to be, for example, claiming that criminal behavior is justified because there may have been Darwinian selection for men to be predisposed to engage in such behavior. Whether criminal behavior is justified is a moral question, whereas whether criminal behavior may be the result of selectionist pressures is a scientific question. It is also worth pointing out that discussion of the impact of Darwinian selection on human behavior does not mean that people are consciously aware of the potential reproductive effects of their actions. It is highly unlikely that most men who engage in physical risk taking do so to inseminate a female partner. In fact, many people explicitly use birth control methods to reduce the likelihood of pregnancy. Instead, the men may be motivated by the status or resources they accrue as a result (e.g., fighting to earn the respect of others and stealing to obtain money), which can then increase their access to sexual partners (women who are impressed by fighting prowess or who enjoy the gifts and opportunities that resources can provide).

fertile female partners; female reproductive success was maximized by pursuing relationships with men who were able and willing to commit time, energy, and resources. These tendencies are expressed as mate preferences; thus, men tend to be attracted to women who show physical and behavioral signs of potential fertility, and women tend to be attracted to men who are physically dominant, high in status, and willing to commit.

Female fertility is correlated with youthfulness. Men who prefer youthful but sexually mature partners are more likely to produce offspring and thus pass on the preference than those men who are indifferent to age or those who prefer prepubescent partners or postmenopausal partners. It follows that cues of youthfulness such as unwrinkled skin, lustrous hair, and neotenous (juvenile-like) facial features are highly correlated with heterosexual men's ratings of women's physical attractiveness (e.g., Marcus & Cunningham, 2003). Other relevant cues include a waist-to-hip ratio near 0.70, which reflects a particular pattern of fat distribution (and pelvic bone development) and is predictive of physical health and fertility (for a brief overview and evidence of male responses to female waist-to-hip ratio, see Henss, 2000; Singh, 1993); firm breasts and buttocks; and a vivacious personality and demeanor.

Quinsey and Lalumière (1995) suggested that pedophilia may represent a disorder in mechanisms that regulate men's preferences for youthfulness. In other words, pedophiles pay attention to youthfulness cues such as smooth skin and neotenous facial features but not to fertility cues such as a waist-to-hip ratio around 0.70 or firm breasts and buttocks. I discuss this idea further in chapter 5. In chapter 2, I address how knowledge about the important physical cues of female sexual attractiveness could greatly inform research attempting to understand pedophilia, at least with regard to sexual interests in young girls.

The key premise of inclusive fitness theory is that preferential treatment of one's kin over unrelated others has been selected over ancestral history because one's kin share more genes. Individuals who did not discriminate between their genetic kin and nonkin in sharing food, shelter, help, and other important resources would have been less likely to pass on their genes than those who did. One of the key postulates of inclusive fitness theory is the existence of an incest avoidance mechanism that minimizes the risk of deleterious inbreeding (for reviews, see Thornhill, 1993; Welham, 1990). This incest avoidance mechanism is presumably disrupted, overwhelmed, or absent when incest occurs (Seto, Lalumière, & Kuban, 1999). I discuss incest avoidance in much greater detail in chapter 6.

PLAN FOR THIS BOOK

My plan for this book is to present a consilient synthesis of available knowledge on pedophilia and sexual offending against children. By *consilient*,

I mean a synthesis that integrates findings from different scientific disciplines and is coherent across their different levels of analysis, consistent with E. O. Wilson's (1998) cogent articulation of this principle. In particular, I attempt to integrate findings from many different disciplines—anthropology, criminology, neuroscience, psychiatry, psychology, and sociology—in a manner that is consistent with current knowledge of evolutionary biology. In chapter 2, I discuss methods to assess pedophilia, a fundamental starting point for the scientific study of this atypical sexual preference. Such methods include self-report, inferences from sexual behavior, performance in laboratory tasks, and the objective recording of sexual arousal in response to sexual stimuli.

In chapter 3, I describe some of the characteristics and correlates of pedophilia, drawing from different study groups, including self-identified pedophiles, child pornography offenders, and clinical and correctional samples of men who have committed sexual offenses against children. I review theoretical explanations of sexual offending against children and pedophilia in chapters 4 and 5, focusing on the explanations that I believe to be the most promising in terms of advancing understanding of these phenomena. In chapter 6, I address the problem of incest, which involves sexual offenses against relatives committed predominantly by individuals who are not pedophiles. Chapters 7 and 8 are the most applied, focusing on the current state of knowledge about the assessment of risk to sexually reoffend and interventions to prevent sexual offenses against children. In the afterword, I highlight the most important points of this book and make additional recommendations about future directions for research on etiology, assessment, and treatment. I also discuss how the research reviewed in this book might help clinicians, criminal justice officials, and policymakers.

APPENDIX 1.1
PARAPHILIAS

DEFINITION

According to the most recent edition of the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text revision; *DSM–IV–TR*; American Psychiatric Association, 2000), the primary nosological system used by mental health professionals in Canada and the United States, the diagnostic criteria for paraphilias are (a) recurrent and intense sexual fantasies, urges, or behaviors directed toward body parts or nonhuman objects; suffering or humiliation of either partner in a sexual situation; or sexual activity with a nonconsenting person and (b) that these fantasies, urges, or behaviors cause clinically significant distress or impairment in functioning. The *DSM–IV–TR* specifically mentioned a number of the more commonly known paraphilias (see Table 1A.1). Outside of Canada and the United States, the paraphilias listed in *The ICD–10 Classification of Mental and Behavioural Disorders: Clinical Descriptions and Diagnostic Guidelines* (World Health Organization, 1997) are generally similar in content to those listed in the *DSM–IV–TR*.

TYPES OF PARAPHILIAS

Paraphilias can be broadly divided into two categories: anomalous targets and anomalous activities. In the former category, the foci of sexual thoughts, fantasies, and urges are targets other than sexually mature humans; in the latter category, the foci of sexual thoughts, fantasies, and urges are activities that are highly atypical for individuals who usually prefer sexually mature humans. A target or activity is considered to be an exclusive paraphilic preference when it is essential for someone to be sexually gratified. For example, a minority of sadomasochistic individuals who responded to a survey by Moser and Levitt (1987) indicated that they required sadomasochistic activity to be sexually gratified. An extreme example of the strength of some paraphilic interests are individuals with *acrotomophilia* (a sexual interest in amputations) who have undergone surgical procedures that place them at risk of complications or even death to feel sexually satisfied (First, 2004).

A wide variety of paraphilias have been described in the clinical or research literature. Most are rare. Better known examples include *pedophilia* (prepubescent children), *fetishism* (nonliving objects), *sadism* (physical or psychological suffering of others), and *masochism* (being humiliated, bound, or otherwise made to suffer). It is known that paraphilic individuals are likely to exhibit multiple paraphilic behaviors, at least in clinical and criminal samples, and the etiology of paraphilias are only beginning to be understood (see chap. 5, this volume, for a discussion of etiological theories about pedophilia).

TABLE 1A.1
Examples of Clinically Identified Paraphilias

Paraphilia	Preferred target or activity
Acrotomophilia	Stump of an amputee or the desire to amputate someone's limb
Asphyxiophilia	Self-induced asphyxiation almost to the point of unconsciousness, also known as autoerotic asphyxiation
Coprophilia	Handling or eating feces
Klismaphilia	Receiving or giving enemas
Morphophilia	A particular body shape and size
Necrophilia	A corpse or someone pretending to be dead
Stigmatophilia	A partner who has been tattooed, scarified, or pierced in the genital area
Urophilia	Being urinated on or drinking urine
Zoophilia	Engaging in sex with nonhuman animals

DEFINING PARAPHILIAS AS DISORDERS

One can conceptualize sexual preferences along a continuum of universality, ranging from species-typical preferences for partner age; body shape; and other physical and psychological characteristics such as intelligence, agreeableness, and kindness to culturally specific or idiosyncratic preferences for features such as ethnicity, eye color, and weight. One can also arrange sexual interests along a continuum of intensity from individuals who are selective in their preferences (e.g., a heterosexual man who sexually prefers tall, blonde, and slim women but who is still sexually aroused by other women) to extreme forms of paraphilia in which certain activities or targets are necessary for sexual gratification.

The distinction between normality and abnormality can be made on a number of dimensions, including statistical frequency, sociocultural norms, and biological pathology. These ways of defining abnormality are not independent and do not necessarily agree with each other (e.g., Ernulf, Innala, & Whitam, 1989). An illustration is the debate over the normality or abnormality of homosexuality. Statistically, individuals who are attracted to and choose same-sex partners are uncommon, with population prevalence estimates among men of approximately 2% to 5%, depending on the survey methodology being used (e.g., Sell, Wells, & Wypij, 1995). In contrast, attitudes about homosexuality appear to have shifted toward greater tolerance over the past 30 years, at least in terms of legal and social discrimination (e.g., the legalization of same-sex marriages in Canada in 2005 and the inclusion of same-sex spouses in corporate benefits programs). Finally, recent evidence suggests that neurodevelopmental perturbations can increase the likelihood of a homosexual orientation (Lalumière, Blanchard, & Zucker, 2000). Of course, whether a particular sexual preference is a disorder does not speak to whether it should be legally or socially discriminated against. The former is a scientific question, whereas the latter are political and social questions.

EPIDEMIOLOGY

Paraphilic individuals are a heterogeneous group and do not consistently differ from nonparaphilic individuals in most sociodemographic or personality characteristics. Paraphilias are much more likely to be manifested by males, however, and tend to appear in adolescence or early adulthood. Individuals with paraphilias such as pedophilia, exhibitionism, or *biastophilia* (a sexual preference for rape; see Lalumière et al., 2005) are more likely to be studied by researchers because these individuals are more likely to be referred to clinical or forensic settings. Also, there is greater concern about the consequences of pedophilic, exhibitionistic, or biastophilic behavior for others compared with paraphilias that do not involve other people, such as fetishism, or that take place between consenting adults, such as consensual sadistic or masochistic practices involving bondage, spanking, and discipline.

Money (1984) described a complex descriptive typology of paraphilias, and Freund (1990) proposed that certain activity paraphilias—voyeurism, exhibitionism, frotteurism, and preferential rape—reflected disturbances in the species-typical male courtship process (see Appendix 5.2, this volume). Money's typology and Freund's notion of courtship disorder are descriptive rather than explanatory. No satisfactory theory exists that explains why some targets and activities appear to be more likely than others to become the focus of paraphilias. For example, fetishistic interest in synthetic materials such as rubber or vinyl is much more likely to occur than fetishism for natural materials such as wood or feathers. Mason (1997) has made the interesting observation that fetish categories may be stable over time, but the objects in those categories change (e.g., a fetishistic interest in clothing material has been observed over at least the past century, but interests in velvet or silk in the 19th century have been displaced by interests in vinyl, rubber, or leather).

There is an extraordinary diversity in the manifestation of paraphilic interests, ranging from those that are relatively well-known in popular culture, such as *zoophilia* (bestiality) and *necrophilia* (sexual interest in corpses), to those that are obscure and seemingly implausible at first glance (e.g., *plushophiles*, those with a fetishistic sexual interest in stuffed animals). The Internet is a fascinating forum to learn more about these myriad interests because it has allowed paraphilic individuals to associate and share sexually arousing stories, pictures, and videos in a seemingly anonymous environment. To the extent that Internet pornography is efficient in classical economic terms, the prevalence of pornographic content on the Internet, commercial and otherwise, may reflect the relative prevalence of paraphilias (Mehta, 2001; Mehta, Best, & Poon, 2002). I discuss research on child pornography and pedophilia in chapter 3.

APPENDIX 1.2
CLINICAL CASE EXAMPLE

This case is a composite of a number of men whom I assessed while they were serving prison sentences for sexual offenses against children. Details have been changed or merged to protect confidentiality.

Mr. Smith was a 27-year-old man attending a sex offender treatment program while he was in prison serving a sentence for sexually offending against a boy. At the age of 26, Mr. Smith befriended a 13-year-old boy's mother. Mr. Smith volunteered to help when the boy expressed an interest in working in the fast-food delivery business. He made arrangements to take the boy on his delivery rounds from 8:00 p.m. to 4:00 a.m. and asked for and received permission from the boy's mother to have the boy sleep over at his place afterward in order not to disturb the mother after they were finished making deliveries. On returning to his apartment, Mr. Smith gave a mixed alcoholic drink to the boy, telling him it was only a soda. When the boy fell asleep on the couch, Mr. Smith performed fellatio on the boy. The boy regained consciousness while this was happening and ran out of the apartment. He notified a neighbor, and police were called. Mr. Smith was convicted of a sexual offense for the first time.

On entering treatment, Mr. Smith denied that he had ever committed a sexual offense, claiming that his conviction was a result of a misunderstanding. He was assessed in a phallometric laboratory (see chap. 2, this volume) and was found to have strong sexual arousal to depictions of young boys and little sexual arousal to adult men or women. During his treatment, Mr. Smith admitted to a long history of sexual interactions with children, beginning in his own childhood after he was sexually abused by older boys. He estimated that he had had sexual contacts with dozens of boys over the years. Mr. Smith said he had committed these sexual offenses in public places such as parks or malls over many years without ever being caught or detected. On the basis of his sexual history and phallometric test results, Mr. Smith was diagnosed as having pedophilia.

APPENDIX 1.3
EXCERPT FROM A PEDOPHILE'S AUTOBIOGRAPHICAL ESSAY*

Mr. D. C. Silva was serving a long prison sentence at the time he wrote this essay. In the essay, Mr. Silva provided a brief account of his personal history and his sexual contacts with both boys and girls of different ages. He preferred boys to girls. Mr. Silva claimed he was not interested in very young children and primarily sought boys around the ages of 10 to 13 years. He believed the boys reciprocated his love and pleasure.

In his essay, Mr. Silva recalled sharing a bed with his brother until the age of 10 and thwarting his brother's attempts to fondle him. He also recalled getting an erection at the age of 9 when he was in bed with his 11-year-old female cousin. He had no history of contact with the law until he was convicted of his present offenses and was able to complete medical school and get married to a much younger woman (he was 30, and she was 17), whom he eventually divorced. Coincidentally, perhaps, his parents also had a 13-year age discrepancy when they were married.

One quotation illustrates Mr. Silva's views about the origins of his pedophilia:

> I believe that I was born a pedophile, because I have had feelings of sexual attraction towards children and love for them as long as I can remember. . . . Just as homosexuals and heterosexuals discover their sexual orientation, I discovered my age orientation as I grew, and I have been aware of it from a young age. (Feierman, 1990, p. 464)

*From Feierman (1990)

2

ASSESSMENT METHODS

Valid methods of assessing sexual interest in children are needed to study pedophilia scientifically. In this chapter, I review methods for assessing pedophilia. I focus in particular on the measurement of penile responses (*phallometry*) to sexual stimuli in the laboratory, because many of the key studies on pedophilia have used this psychophysiological method, and it has the best validity for assessing pedophilic sexual interests. I also discuss assessment methods based on self-report (interview or questionnaire), behavior (sexual offense history or performance on laboratory tasks), and viewing time. I then suggest future directions for assessment research and discuss implications of assessment research for the understanding of pedophilia. The specific assessment question of how to determine an individual's risk for committing a sexual offense involving a child is discussed in chapter 7.

SELF-REPORT

The utility of self-report will depend on the assessment context. Nonforensic evaluators will see individuals who are concerned about their sexual thoughts, fantasies, urges, or behavior regarding children, whereas forensic evaluators are more likely to see someone referred by mental health,

social service, or criminal justice agencies because of alleged sexual contacts with children. Forensic evaluators benefit from the availability of collateral information such as previous assessment reports and criminal records, but at the same time the individuals they see will likely be reluctant to disclose pedophilic thoughts, fantasies, urges, or behavior. Nonforensic evaluators usually do not have the same level of access to collateral information, but they can often obtain more information through self-report as the client is self-referred and presumably more willing to talk about their sexual interests.

Clinical Interviews

Sexual histories are typically obtained through clinical interview (see Resource A, this volume). Respondents are asked questions pertaining to their sexual thoughts, interests, and behaviors, especially with regard to children. Men who have committed sexual offenses against children are asked about the details of these crimes. Pedophilia can be diagnosed after a careful consideration of the person's entire sexual history. For example, someone who acknowledges having frequent and intense fantasies about having sex with children, collects and masturbates to media depicting children, and engages in repeated sexual acts involving children would clearly meet the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text revision; *DSM–IV–TR*; American Psychiatric Association, 2000) diagnostic criteria for pedophilia. Self-reported sexual interest in children is informative and related to the likelihood that someone will sexually reoffend (e.g., Worling & Curwen, 2000).

Interviewers often ask questions about social contacts with children through family, friends, and neighbors and about employment that involves close proximity to children. It is assumed that men who have limited sexual contacts with adults and a high level of emotional and social affinity for children are more likely to be pedophiles (e.g., Finkelhor & Araji, 1986). There is some support for this idea; for example, the number of adults with which a man has had sexual contacts is inversely related to the amount of sexual arousal he exhibits to stimuli depicting children in the laboratory, suggesting that pedophiles tend to have fewer sexual contacts with adults (Blanchard, Klassen, Dickey, Kuban, & Blak, 2001). In addition, many self-identified pedophiles have never been married, and those who are married report having poor sexual relationships with their spouses (Bernard, 1985; Rouweler-Wuts, 1976).

Comprehensive interviews also include questions to help clinicians rule out other explanations for sexual thoughts, urges, fantasies, or behavior involving children. For example, some individuals with obsessive–compulsive disorder may report being disturbed by thoughts about molesting a child (Freeman & Leonard, 2000; W. M. Gordon, 2002). The differential diagnosis is made by determining if the thoughts are associated with sexual arousal or

pleasure instead of anxiety or disgust and by inquiring about other symptoms of obsessive–compulsive disorder.

Interviews can be informative, but there are potential problems with recall and other report biases in gathering data on sexual behavior in this way (for a review of research on the impact of self-report methods to study sexuality, see Wiederman, 2002). With regard to violent behavior, Hilton, Harris, and Rice (1998) used anonymous reports of aggression and found that the average number of violent incidents in the past month reported by a randomly selected sample was equal to the average number of violent incidents reported in the past year by another randomly selected sample. The respondents were not necessarily lying; instead, the logical implausibility of equal estimates over the past month and over the past year might have been due to selective memory or other reporting effects.

Offenders may lie because of the obvious nature of the questions and the legal or social sanctions they could face in acknowledging illegal sexual behavior. Many jurisdictions have mandatory reporting laws regarding the occurrence of child sexual abuse that can constrain what offenders can disclose without guarantees of confidentiality that protect the information they reveal from being used against them in criminal or civil proceedings. Moreover, whether as a result of unconscious self-deception or a conscious effort to present oneself in a socially desirable manner, many sex offenders minimize or deny their pedophilic sexual interests and behavior (e.g., G. T. Harris, Rice, Quinsey, & Chaplin, 1996; Kennedy & Grubin, 1992).

These limitations of self-report are not unique to sex offenders or offenders in general: Questions about sexual history are sensitive, and many interviewees may minimize or deny certain sexual interests or behaviors. For example, male adolescents are more willing to disclose criminal acts they have committed than the fact that they have masturbated, even though many of them have engaged in both (Halpern, Udry, Suchindran, & Campbell, 2000).

Questionnaires

One way to reduce the reluctance of individuals to disclose sexual interests or behavior in face-to-face interviews is to administer questionnaires, either on paper or by computer. For example, Koss and Gidycz (1985) found that male respondents were more likely to admit sexually coercive acts in a questionnaire than in interviews. Using questionnaires also addresses the potential problem of interviewers who skip or forget important questions about conventional and atypical sexual interests.

A number of questionnaires have items to assess pedophilia, including the Clarke Sexual History Questionnaire—Revised (Langevin & Paitich, 2001), the Multiphasic Sex Inventory (Nichols & Molinder, 1984), and the Sexual Fantasy Questionnaire (Daleiden, Kaufman, Hilliker, & O'Neil, 1998).

The Clarke Sexual History Questionnaire—Revised is intended for adults and contains 508 items tapping different aspects of conventional and paraphilic sexuality, including early childhood experiences, sexual dysfunction, fantasies, exposure to pornography, and behavior. The Sexual Fantasy Questionnaire has been administered to adolescents and contains items about sexual fantasies involving sex with children under the age of 12 as well as items about other atypical sexual fantasies. The Multiphasic Sex Inventory contains 200 items organized into 20 scales pertaining to different aspects of conventional and paraphilic sexuality, including 6 validity scales and a scale assessing attitudes regarding treatment.

The Sexual Interest Cardsort Questionnaire contains 75 descriptions of explicit sexual acts that are relevant to different paraphilia diagnoses. Respondents rate each description on a 7-point scale in terms of their sexual interest in it. The measure is called a *cardsort* because it was originally developed as a set of cards that were sorted by respondents. Holland, Zolondek, Abel, Jordan, and Becker (2000) reported that cardsort questionnaire responses were significantly correlated with group classifications made by clinicians in a sample of 371 men seeking assessment or treatment because of their paraphilic interests or sexual offending. Laws, Hanson, Osborn, and Greenbaum (2000) reported that the cardsort questionnaire could distinguish between offenders who victimized only boys from offenders who victimized only girls.

Like interviews, questionnaires are vulnerable to self-report biases, although the Clarke Sexual History Questionnaire—Revised and the Multiphasic Sex Inventory contain validity scales to detect lying. There are published data regarding the psychometric properties of the Clarke Sexual History Questionnaire—Revised (Curnoe & Langevin, 2002; Langevin, Lang, & Curnoe, 2000) and the Multiphasic Sex Inventory (Day, Miner, Sturgeon, & Murphy, 1989; Kalichman, Henderson, Shealy, & Dwyer, 1992; Simkins, Ward, Bowman, & Rinck, 1989), but there are no studies on the predictive validity of these questionnaires. Many other questionnaires in clinical use have not been empirically validated. Because of concerns about the limitation of self-reports, there is a great deal of clinical and research interest in measures that draw on other sources of information.

BEHAVIOR

Information about past behavior that does not rely on self-report is useful in evaluations when the individual is unwilling to disclose pedophilic thoughts, fantasies, urges, arousal, or behavior. In forensic evaluations of sex offenders, information about past sexual offenses is particularly helpful. Moreover, recent research has identified laboratory tasks from the cognitive science field that can shed light on a person's sexual interests.

Sexual Offense Characteristics

Clinicians have used information about sexual victim characteristics that are empirically related to pedophilic sexual interests to make the diagnosis of pedophilia. Among adult sex offenders with child victims, those who have multiple victims, very young victims, boy victims, or victims outside the offender's immediate family are more likely to be pedophilic than those who do not. This information has typically been combined in a subjective and unstructured fashion in clinical judgments. In response, a colleague and I developed a four-item scale, the Screening Scale for Pedophilic Interests (SSPI), to summarize an offender's sexual victim characteristics and identify those who were more likely to be pedophilic in their sexual arousal patterns (Seto & Lalumière, 2001). The SSPI was developed in a large sample primarily of adult men who had been convicted of at least one sexual offense against a child (N = 1,113 offenders, including 40 adolescent sex offenders). Four easily coded correlates of pedophilia that were identified from the empirical literature independently contributed to the prediction of phallometrically assessed sexual arousal to children. Having boy victims explained approximately twice the variance in sexual arousal and thus was given twice the weight of the other variables. These four variables were scored as present or absent, using all available information about sexual offenses: having any male victims, having more than one victim, having a victim aged 11 or younger, and having an unrelated victim (see Resource A, Table 2). Total SSPI scores range from 0 to 5. An offender scoring 5 would have multiple child victims, at least one of them male, at least one of them 11 years old or younger, and at least one of them unrelated to him; in contrast, an offender scoring 0 would have a single victim, a related girl who was 12 or 13 years old. File information such as police synopses or probation or parole reports is preferred over self-report as a means of obtaining information about sexual offense history, unless the individual reported sexual offenses that were not previously known.

Sex offenders who have higher scores on the SSPI are much more likely to be pedophilic than are offenders with lower scores (see Figure 2.1). Approximately 1 in 5 sex offenders with a score of 0 showed greater sexual arousal to children than to adults when assessed phallometrically, whereas almost 3 in 4 sex offenders with a score of 5 showed this pattern of sexual arousal. Recent studies have demonstrated that the SSPI is also valid for adolescent sex offenders with child victims (Madrigano, Curry, & Bradford, 2003; Seto, Murphy, Page, & Ennis, 2003). Moreover, SSPI scores predict new serious (nonsexually violent or sexual) offenses among adult male sex offenders with child victims (Seto, Harris, Rice, & Barbaree, 2004); however, the SSPI might not accurately predict sexual offenses among adolescent sex offenders (Fanniff & Becker, 2005).

A potential problem with using measures based on sexual victim characteristics is that first-time offenders may not yet have a history that reflects

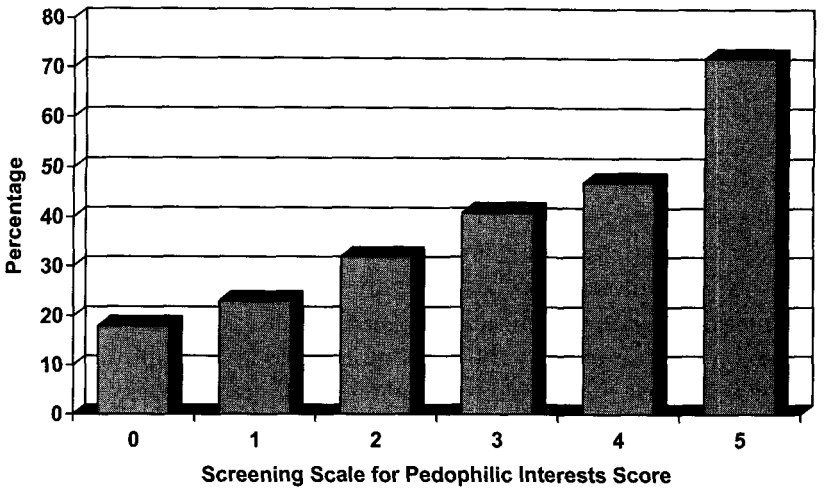


Figure 2.1. Sexual victim characteristics and likelihood of responding equally or more to children than to adults in phallometric testing.

their pedophilia. However, a recent study found that the SSPI correlated with recidivism among first-time offenders as well as it did for repeat offenders in two different samples (Seto et al., 2004). Moreover, the scale is valid for adolescent sex offenders who have had less time to accumulate a sexual offense history that reflects their sexual interests. These results suggest that even the choice of a first child victim is influenced by whether the offender is pedophilic.

Laboratory Tests

Polygraphy and phallometry are reviewed in the next section, Psychophysiological Measures. Research on other tasks pertaining to behavioral responses in the laboratory is reviewed here, beginning with viewing time measures (sometimes referred to as *visual reaction time measures* in the clinical literature).

Unobtrusively recorded viewing time has been correlated with self-reported sexual interests and phallometric responding in samples of nonoffending male volunteers recruited from the community (Quinsey, Ketsezsis, Earls, & Karamanoukian, 1996; Quinsey, Rice, Harris, & Reid, 1993). The basic viewing time procedure for assessing age preferences involves showing a series of pictures depicting girls, boys, women, or men; these pictures can depict clothed, semiclothed, or nude figures. Respondents are either asked to examine the pictures to answer questions later or they are asked to rate each picture on certain attributes (e.g., how attractive the person is and how sexually interesting he or she is). Respondents are instructed

to proceed to the next picture at their own pace and are supposed to be unaware that the key dependent measure is the amount of time they spend looking at each picture.

Several studies have shown that adult sex offenders with child victims can be distinguished from other men by the amount of time they spend looking at pictures of children relative to pictures of adults (G. T. Harris et al., 1996) or by a combination of viewing time and self-reported sexual interests, arousal, and behavior (Abel, Jordan, Hand, Holland, & Phipps, 2001; Abel, Lawry, Karlstrom, Osborn, & Gillespie, 1994). Viewing time can also distinguish sex offenders with boy victims from those with only girl victims (Abel et al., 2004; Abel, Huffman, Warberg, & Holland, 1998; Worling, 2006). However, G. Smith and Fischer (1999) were not able to demonstrate discriminative validity in a study of adolescent sex offenders and nonoffenders using the viewing time component of the Abel Assessment of Sexual Interests. No published studies have yet demonstrated that scores on such viewing time measures, whether alone or in combination with self-reports, predict recidivism among sex offenders.

A potential problem for viewing time measures is that they may become vulnerable to faking once the client learns that viewing time is the key variable of interest (e.g., see http://www.innocentdads.org/abel.htm). No published studies have reported on the ability of participants to fake their responses on viewing time measures or the ability of examiners to detect such efforts.

A choice reaction time task was described by Wright and Adams (1994, 1999). In this procedure, participants are instructed to locate a dot that appears on slides of nude men and women as quickly as possible. In both studies, heterosexual and homosexual male and female volunteers took longer to react to the appearance of the dot when examining a picture of someone of their preferred sex (women for heterosexual men and homosexual women, and men for heterosexual women and homosexual men). Gaither (2001), however, found that scores on a choice reaction time task did not correlate highly with self-reported sexual arousal or phallometric responses in a sample of college men. No researchers have yet reported whether choice reaction time can distinguish pedophilic individuals from others while they view pictures of children or adults.

P. Smith and Waterman (2004) examined the utility of a modified Stroop task to distinguish among sex offenders, violent offenders, and nonoffenders. In the P. Smith and Waterman task, participants had to name the colors in which different words—sexual, violent, or neutral in their meaning—were printed. Sex offenders were distinguished from the violent offenders and nonoffenders in their response latencies to sexual words. Sex offenders against adults and sex offenders against children did not differ in their responses to sexual words but did differ in their responses to violent words.

This modified Stroop task might be further refined by including more words associated with children or associated with adults.

As another example of a laboratory task adapted from the cognitive science field, Beech and Kalmus (2004) described a rapid serial visual presentation task in which pictures of clothed children or an animal (comparison object) were embedded in a rapidly presented sequence of ordinary images, followed by a choice task (whether a target object had appeared and whether it faced left or right). Compared with nonoffenders, sex offenders with child victims made more errors in the task of identifying whether the target object had appeared and whether it faced left or right when the target image was presented in a series that included an image of a child.

There is a rich cognitive science literature on laboratory tasks that could be drawn on to increase the methods available to assess pedophilia (see Kalmus & Beech, 2005). Recent articles have discussed the use of cognitive science methods such as the implicit association task to study sexuality (Spiering, Everaerd, & Laan, 2004; Treat, McFall, Viken, & Kruschke, 2001). Ideally, these laboratory tasks would be unobtrusive, inexpensive, difficult to fake, and reveal information about pedophilia not tapped by current assessment methods. For example, people are faster at detecting an angry face in a crowd of happy faces than a happy face in a crowd of angry faces, reflecting a preparedness in our visual information processing regarding the emotions of others (the *face-in-the-crowd effect*; C. H. Hansen & Hansen, 1988; Öhman, Lundqvist, & Esteves, 2001). A similar paradigm might be able to detect a preparedness in the visual information processing of pedophiles such that they differ from nonpedophilic individuals in the speed with which they identify a young-looking face in a crowd of mature faces versus a mature face in a crowd of young-looking faces or a vulnerable-looking child's face in a crowd of confident faces versus a confident child's face in a crowd of vulnerable-looking faces.

PSYCHOPHYSIOLOGICAL MEASURES

In addition to information about past sexual offenses, forensic evaluators in particular often seek objective information about an individual's sexual interests. In this section, I discuss polygraphy, which is used to increase the validity of self-report, and phallometry, which is used to measure sexual arousal to stimuli presented in controlled laboratory conditions.

Polygraphy

Polygraphy is a psychophysiological method for assessing changes in heart rate, blood pressure, skin conductance, and respiration while participants are asked specific questions about their behavior. Polygraphy is not a

method for assessing sexual interests per se, but it is being used as a method to check the validity of self-reported information.

There are two main types of polygraph test: the *control question test* and the *guilty knowledge test*. In the control question test, participants are asked relevant questions about their behavior (such as their sexual offense history or their involvement in potentially risky activities such as spending time alone with children) and control questions about neutral topics. It is assumed in this type of test that deceptive individuals will react more strongly to relevant questions than to control questions in terms of physiological parameters such as breathing rate, heart rate, and skin conductance. In the guilty knowledge test, participants are asked questions about the specific details of a crime that are thought to be known only to investigators and the person who committed the crime. It is assumed in this test that participants will respond more strongly to questions containing relevant information about the crime than to control questions.

The control question test is more commonly used than the guilty knowledge test in the polygraphic assessment of sex offenders. More than half of the probation and parole agencies responding to a nationwide American survey reported regularly using polygraph testing to monitor the treatment and supervision compliance of sex offenders living in the community under their jurisdictions (English, Jones, Pasini-Hill, Patrick, & Cooley-Towell, 2000). In different versions of the control question test, offenders are questioned about their past offenses, officially unknown victims, sexual thoughts and fantasies, and current behavior.

There is little methodologically strong research on the accuracy of polygraph testing (for a discussion of polygraphy testing of sex offenders under supervision, see Lalumière & Quinsey, 1991; for a recent literature review, see National Research Council, Committee to Review the Scientific Evidence on the Polygraph, 2003). There is some empirical support for the validity of the guilty knowledge test, but this test is unlikely to be of much assistance in assessing pedophilic behavior or monitoring treatment and supervision compliance. The validity of polygraph testing as it is commonly used in sex offender assessment has not been established. Nonetheless, some research suggests that offenders who undergo polygraph testing report more victims and offenses than are officially known (Ahlmeyer, Heil, McKee, & English, 2000; Emerick & Dutton, 1993; Hindman & Peters, 2001).

It is possible that polygraph testing can increase disclosures through its operation as a "bogus pipeline" technique (for a review, see Roese & Jamieson, 1993). In this technique, participants are connected to a nonfunctioning machine that they are told can detect deception. Once connected to the machine, participants reveal more information than they would otherwise. One outcome that is rarely discussed in the polygraphy literature is the possibility that polygraph testing may induce false disclosures. The false confession literature suggests that individuals who are suggestible and lower in in-

telligence would be more likely to make false disclosures, especially in conjunction with coercive interrogation techniques (see Kassin, 2005).

Phallometry

Phallometry involves the measurement of penile responses to stimuli that systematically vary on the dimensions of interest, such as the age and sex of the figures in a set of pictures depicting female children, adolescents, and adults and male children, adolescents, and adults. Phallometry was developed as an assessment method by Kurt Freund, who first showed that it could reliably discriminate between homosexual and heterosexual men (Freund, 1963) and then showed it could distinguish between sex offenders against children and other men (Freund, 1967).

Phallometric responses are recorded as increases in either penile circumference or penile volume; bigger increases in circumference or volume are interpreted as greater sexual arousal to the presented stimulus. Circumferential gauges, typically a mercury-in-elastic strain gauge placed over the midshaft of the penis, are the most commonly used phallometric devices (see Figure 2.2). Changes in the electrical conductance of the mercury represent changes in penile circumference and can be calibrated to give a precise measure of penile erection. Erectile response (except for erections that occur during sleep) is a specifically sexual measure, unlike other psychophysiological responses such as pupillary dilation, heart rate, viewing time, and skin conductance (Zuckerman, 1971). Phallometric responses correlate positively and significantly with viewing time and self-report among nonoffenders (G. T. Harris et al., 1996) and with a measure based on both viewing time and self-report among sex offenders (Letourneau, 2002).

Phallometric data are optimally reported as the relative response to the category of interest, for example, penile response to pictures of prepubescent children minus penile response to pictures of adults; more positive scores indicate greater sexual interest in children. Relative responses are more informative because they take individual differences in responsivity into account, unlike absolute penile responses (such as millimeters of change in penile circumference to child stimuli). Responsivity can vary for a variety of reasons, including the man's age, health, and the amount of time since he last ejaculated. To illustrate the value of relative response, the observation that an individual exhibits a 10-millimeter increase in penile circumference in response to pictures of children is more interpretable when we know whether he exhibits a 5-millimeter or 20-millimeter increase in response to pictures of adults. The first pattern of responses is from someone who is more sexually aroused by pictures of children compared with pictures of adults, indicating a sexual preference for children; the second pattern of responses is from someone who is relatively more responsive in the laboratory, but who is more sexually aroused by pictures of adults relative to pictures of children,

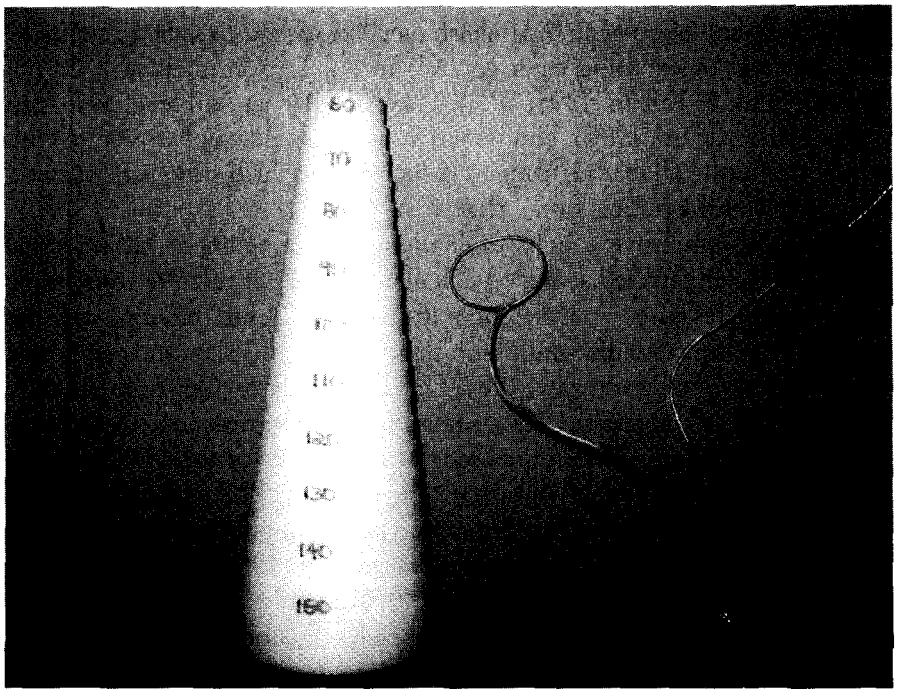


Figure 2.2. Circumferential gauge for phallometric testing.

indicating a sexual preference for adults. More details about phallometric testing are provided in Resource A.

Discriminative Validity

Indices of relative phallometric responding can significantly discriminate sex offenders against children from other men. Using a differential index (average response to stimuli depicting children minus average response to stimuli depicting adults), sex offenders with child victims respond relatively more to stimuli depicting children than do men who have not committed such sexual offenses, including sex offenders with adult victims, nonsex offenders (e.g., men convicted of nonsexual assault), and nonoffenders (e.g., Barbaree & Marshall, 1989; Freund & Blanchard, 1989; Quinsey, Steinman, Bergersen, & Holmes, 1975). Moreover, phallometric responses are associated with victim choice, so that men who have offended against girls tend to respond relatively more to stimuli depicting girls, and those who have offended against boys tend to respond relatively more to stimuli depicting boys (G. T. Harris et al., 1996; Quinsey et al., 1975). Rapists respond relatively more to depictions of sexual aggression than nonrapists (for a quantitative review, see Lalumière & Quinsey, 1994; for a recent update, see Lalumière, Quinsey, Harris, Rice, & Trautrimas, 2003), and other investigators have

shown that phallometry can distinguish men who admit to sadistic fantasies, cross-dressing, or exposing their genitals in public from men who do not (Freund, Seto, & Kuban, 1996; W. L. Marshall, Payne, Barbaree, & Eccles, 1991; Seto & Kuban, 1996). Phallometrically assessed sexual arousal to children is the most reliably identified characteristic that distinguishes sex offenders with child victims from other men.

The discriminative validity of phallometry can be improved in several ways. Using standardized scores to calculate indices of relative responding and using indices based on differences in the responses to different stimulus categories can increase discrimination between sex offenders and other men (Earls, Quinsey, & Castonguay, 1987; G. T. Harris, Rice, Quinsey, Chaplin, & Earls, 1992). The addition of a semantic tracking task that requires offenders to push buttons when they see or hear violent or sexual content reduces faking (by individuals who are not paying attention to the stimuli) and subsequently increases the discriminative validity of phallometry for sex offenders (G. T. Harris, Rice, Chaplin, & Quinsey, 1999; Proulx, Côté, & Achille, 1993; Quinsey & Chaplin, 1988). Response artifacts can also be used to detect attempts to manipulate test results (Freund, Watson, & Rienzo, 1988). Tactics to reduce faking are important in phallometric testing, because some men can voluntarily control their penile responses during phallometric testing (Quinsey & Bergersen, 1976; Quinsey & Carrigan, 1978). The use of audiotaped descriptions of sexual scenarios also yields very good discrimination (Chaplin, Rice, & Harris, 1995; Quinsey & Chaplin, 1988).

At the level of individual diagnosis, the sensitivity of phallometric tests, defined as the proportion of sex offenders with child victims identified as pedophilic on the basis of their phallometric responses, can be calculated after setting a suitable cutoff score (there is no gold standard for identifying someone as a pedophile, although showing greater arousal to children than to adults is often used as a cutoff in research studies). This is a conservative approach to estimating sensitivity, because not all sex offenders with child victims are pedophilic. For example, a study may find that 60% of a sample of sex offenders show a pedophilic sexual arousal pattern when assessed phallometrically, producing a sensitivity estimate of 60%; however, the sensitivity is actually higher (66%) if 90% of the sample is truly pedophilic, as Freund and Watson (1991) estimated on the basis of their clinical experiences.

Given the highly negative consequences of being identified as pedophilic, cutoff scores providing high specificities are typically used in clinical settings. Specificity is defined as the percentage of nonoffenders who are identified as not being sexually interested in children. In a sample of 147 sex offenders with unrelated child victims, using a cutoff score that produced 98% specificity, sensitivity was 50% in Freund and Watson (1991). In a sample of sex offenders with child victims who denied being sexually interested in children, Blanchard et al. (2001) reported that sensitivity was 61% among

men with many child victims, and specificity was 96% among men with many adult victims and/or adult sexual partners.

If one considers admission of pedophilia to be a suitable standard, then the sensitivity of phallometry is very high. In a series of three studies, Freund and his colleagues reported on the results of phallometric testing for 137 sex offenders with child victims who admitted to having pedophilia; the sensitivity of phallometric testing in this group of self-admitted pedophiles was 92% (Freund & Blanchard, 1989; Freund, Chan, & Coulthard, 1979; Freund & Watson, 1991).

Because the cutoff scores in these phallometric tests are purposefully set high (typically equal or greater sexual arousal to children than to adults), someone who exceeds the cutoff score is very likely to be a pedophile. Having an index score below the cutoff means the individual is either not pedophilic or was not detected as such by the phallometric test.

Predictive Validity

Phallometry has good predictive validity. A recent meta-analysis of 10 studies with a combined sample size of almost 1,278 sex offenders found that phallometrically measured sexual arousal to children was one of the single best predictors of sexual recidivism among sex offenders; its correlation with sexual recidivism (r = .32) was similar to the correlation obtained by measures of psychopathy or prior criminal history, and both psychopathy and prior criminal history are strong and robust predictors of recidivism across types of offender (Gendreau, Little, & Goggin, 1996; Hanson & Morton-Bourgon, 2004, 2005; Hare, 2003).

Criticisms

Despite the consistent evidence supporting the clinical and research use of phallometry to assess pedophilia, there is disagreement about the utility of this assessment method, and the number of phallometric laboratories has declined over the past decade (Howes, 1995; Knopp, 1986; McGrath, Cumming, & Burchard, 2003). Critics such as Launay (1999) and W. L. Marshall and Fernandez (2000) have discussed their practical and ethical objections to phallometry. One of the main criticisms of phallometric testing is its lack of standardization in stimuli, procedures, and data analysis (though this is more a criticism of how phallometric testing is conducted in practice than the methodology itself). Howes (1995) identified a great deal of heterogeneity in methodologies in a survey of 48 phallometric laboratories operating in Canada and the United States. For example, laboratories vary in the number and nature of stimuli they present, duration of stimulus presentations, and the minimum arousal level accepted for clinical interpretation of individual response profiles. Unfortunately, many laboratories do not use validated procedures and scoring methods.

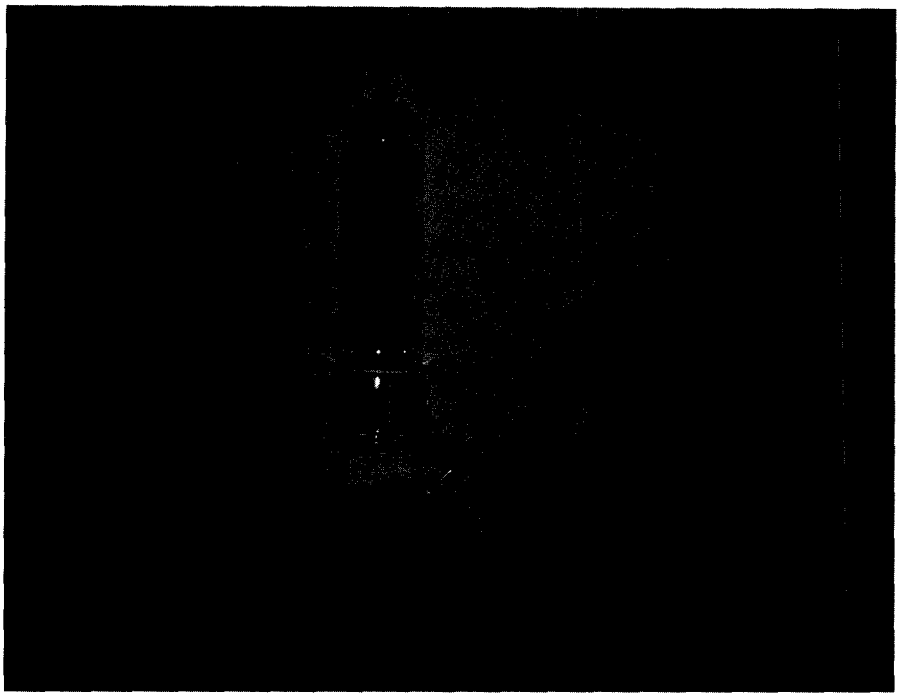


Figure 2.3. Volumetric apparatus for phallometric testing.

Standardization of procedures is needed because some phallometric testing procedures have been validated, but many others in use have not. Standardization would also facilitate the production of normative data and thereby aid in the interpretation and reporting of phallometric test results. Unfortunately, there have been repeated calls for standardization in the field but little progress has been made. There is empirical evidence to guide decisions about these methodological issues, such as the number and kinds of stimuli to present, the use of circumferential or volumetric devices (see Figure 2.3), and the optimal transformations of data for interpretation (see Lalumière & Harris, 1998; Quinsey & Lalumière, 2001). General guidelines on phallometry have been developed by the Association for the Treatment of Sexual Abusers (1993; Association for the Treatment of Sexual Abusers, Professional Issues Committee, 2001).

Phallometric testing has been criticized for its lack of reliability. Traditional internal consistency and test–retest analyses suggest that the reliability of phallometric testing is moderate at best (Barbaree, Baxter, & Marshall, 1989; P. R. Davidson & Malcolm, 1985; Fernandez, 2002; but see Gaither, 2001). The validity of a test is constrained by its reliability, yet both the discriminative and predictive validity of phallometric testing are good, suggesting that it must be reliable. This apparent contradiction in test proper-

ties suggests two nonexclusive possibilities: (a) The discriminative and predictive effect sizes that have been obtained for phallometry are conservative estimates of its validity and would be even higher if reliability could be increased, and (b) phallometric testing is different from traditional paper-and-pencil tests, and different indices of reliability are required for evaluations of phallometric test properties.

Phallometry has also been criticized because it is an intrusive procedure, requiring men to partially undress, place a device around their penis, and have their erectile responses recorded while a laboratory technician monitors the session. In addition, testing sessions are sometimes conducted with a camera trained on the upper body of the subject to minimize attempts to fake the test such as looking away or tampering with the phallometric device.

It is true that phallometry is more physically intrusive than interviewing or administering a questionnaire, but it provides valuable information that cannot otherwise be obtained, because phallometry can identify pedophilia among men who deny any sexual interest in children. Moreover, it is not redundant in the assessment of sex offenders who admit pedophilia, because it is the relative strength of those interests that predicts sexual recidivism. For example, two sex offenders may both identify themselves as pedophiles, but in phallometric testing, only one of them may respond substantially more to stimuli depicting children than to pictures of adults, suggesting his risk for sexual recidivism is higher, all other things being equal.

Two other ethical objections that have been raised about phallometry are that presenting visual stimuli depicting children is unethical because the children depicted in the stimuli could not provide informed consent when the photographs were taken (some laboratories use child pornography seized by police), and presenting stimuli depicting child pornography images is unethical because it could have harmful effects on the males being assessed, such as providing new content for sexual fantasies, particularly for adolescent sex offenders or first-time offenders.

Regarding the first ethical objection, audiotaped stimuli can be used to gauge interest in sexual interactions with fictional children, and digital image manipulation software allows evaluators to create realistic human figures that do not depict real individuals (morphed images of children are still illegal in the United States under the Child Pornography Prevention Act, 2000). Regarding the second objection, offenders who are clinically assessed using phallometry have already engaged in illegal sexual behavior and are likely to be exposed to graphic accounts of sexual offenses in group therapy, reading materials, and video presentations. Although comparable research has not been completed with sex offenders, Malamuth and Check (1984) showed that research volunteers who were exposed to depictions of rape were less accepting of rape myths after a short debriefing procedure. Sex offenders receive much more than a short debriefing in any treatment or supervision

that takes place after their phallometric assessment; in fact, common targets of sex offender treatment programs are antisocial attitudes and beliefs about sex with children.

Finally, it has been suggested that phallometry is not useful for some groups of sex offenders, such as adolescent sex offenders or first-time incest offenders. However, there are data to suggest this is not the case. We have evaluated the use of phallometric testing for adolescent sex offenders with child victims (Seto, Lalumière, & Blanchard, 2000). Because an age-matched comparison group was not available, these adolescents were compared with young adults ages 18 to 21 who had not committed sexual offenses involving children. As a group, adolescents with male victims had relatively higher responses to pictures of children than the young adult comparison participants. Adolescents with both male and female children as victims responded more to pictures of children than to pictures of adults. Similar findings were reported by Robinson, Rouleau, and Madrigano (1997), who compared adolescent sex offenders with 18-year-old comparison participants. Finally, Blanchard and Barbaree (2005) phallometrically classified 48 adolescents between the ages of 13 and 16 into those who showed a sexual preference for prepubescent children, pubescent children, or adults. Those who showed a sexual preference for prepubescent children had significantly more child victims under the age of 12 than those who showed another sexual preference.

Several studies have examined the phallometric responses of sex offenders distinguished according to their genetic relatedness to the child victim (Blanchard et al., 2006; Rice & Harris, 2002; Seto, Lalumière, & Kuban, 1999). A majority of the incest offenders in Seto et al. were convicted for the first time for a sexual offense. Nonetheless, all incest offender groups had higher average indices of relative responding to children than did the comparison groups of rapists or nonoffenders. Together, these studies suggest that phallometry can be useful for both adolescent sex offenders and first-time incest offenders.

Neuroimaging

An intriguing development in the assessment of sexual interests is the introduction of neuroimaging methods. Early research by Lifshitz (1966) showed that differences in patterns of neural activity could be detected when presenting sexual versus nonsexual stimuli to male participants, and Costell, Lunde, Kopell, and Wittner (1972) found that both men and women showed differences in electroencephalogram readings for their preferred compared with nonpreferred sex. Cohen, Rosen, and Goldstein (1985) reported that electroencephalogram activation was relatively higher in the right temporal region of the brain when men were presented with sexual stimuli. Finally, several more recent studies using higher resolution neuroimaging technologies have described different areas of relatively higher brain activation when

volunteers are exposed to sexual versus neutral stimuli (Karama et al., 2002; Park et al., 2001; Redouté et al., 2000; Stoléru et al., 1999). There is variability across studies, but some structures have been consistently reported, including the anterior cingulate gyrus, associated with attention; the insular cortex, associated with sensory integration and object recognition; and the inferior frontal cortex, associated with language processing.

A case study that suggests neuroimaging methods might someday be used in the assessment of pedophilia was reported by Dreßing et al. (2001). These investigators used functional magnetic resonance imaging to detect differential activation of the anterior cingulate gyrus and right orbitofrontal cortex of a 33-year-old pedophile who preferred boys compared with two men who preferred adult women. The pedophile showed differential activation of the anterior cingulate gyrus when he looked at pictures of boys in swimsuits but not when he looked at pictures of adult women in swimsuits; the two other men showed the same pattern of activation when presented with pictures of adult women in swimsuits, but not with pictures of boys in swimsuits. The pedophile also differed from the two teleiophilic controls in not showing left hemispheric activation during the stimulus presentations. It is an intriguing possibility that the same areas of the brain are involved in processing of sexual stimuli by pedophiles and nonpedophiles. In a similar vein, Nancy Kanwisher and her colleagues have identified specific brain regions that are selectively activated by seeing faces or body parts (Downing, Jiang, Shuman, & Kanwisher, 2001; Grill-Spector, Knouf, & Kanwisher, 2004; Kanwisher, 2003). One wonders if the level of brain activation is influenced by the attractiveness or interest elicited by the faces or body parts that are viewed and if pedophiles and nonpedophiles would differ in their brain activation when presented with images of child faces versus adult faces or with childlike body shapes versus adultlike body shapes.

The development of neuroimaging methods could reveal the brain structures involved in processing of sexual stimuli. Neuroimaging could provide an assessment that is more difficult to fake than phallometry and viewing time and less dependent than sexual offense history on opportunities to offend, detection by authorities, or self-report biases. Refining the child stimuli used in psychophysiological and other laboratory tasks could also produce greater discriminative and predictive validity.

PEDOPHILIA AND CHILD CUES

What is it about children that pedophiles find sexually attractive? A number of researchers have investigated this question, both in terms of the psychological and physical cues that characterize child victims and what pedophiles themselves have reported to be attractive. The 77 self-identified pedophiles in G. D. Wilson and Cox's (1983) survey of members of a pedo-

TABLE 2.1
Important Personality Characteristics of Children, as Identified by 77 Pedophiles

Personality characteristics	Number out of 77
Innocence	17
Openness	7
Curiosity	7
Spontaneity	6
Vitality, enthusiasm	5
Lack of inhibition	5
Honesty	5
Warmth, affection	5
Conversation, companionship	4
Charm	4
Friendliness	4
Sense of humor, fun, mischief	3
Softness, simplicity, energy, vulnerability, modesty, nostalgia, kindness, understanding	1 or 2

Note. Data from G. D. Wilson and Cox (1983). Responses ranked by frequency of endorsement.

phile advocacy group described the personality and physical characteristics they preferred in children. These results are summarized in Tables 2.1 and 2.2. G. D. Wilson and Cox suggested that the majority of men who preferred boys preferred feminine features and gave as an example Respondent 50, who said he preferred young boys because "they have little or no body hair and their bodies are more effeminate" (p. 22). Lang, Rouget, and van Santen (1988) found that child sexual abuse victims tended to be lighter and smaller than age-matched comparison children. Other physical features that have been reported by offenders to be attractive include soft and smooth skin, a slim body, lack of body hair, appearance of the genitals, and appearance of the buttocks (Conte, Wolf, & Smith, 1989; Freund, McKnight, Langevin, & Cibiri, 1972; W. L. Marshall, Barbaree, & Butt, 1988). Consistent with Quinsey and Lalumière's (1995) speculation, these features indicate youthfulness, and many of them are correlated with heterosexual men's appraisals of female attractiveness. However, unlike other men, pedophiles are not attracted to cues of sexual maturity such as breasts.

Kurt Freund, a pioneer in the study of pedophilia, speculated that the critical features for pedophiles were body size and shape. His intuition is supported by a pair of studies by Rice, Chaplin, and Harris (2003) that seemed at first to find a paradoxical effect. In the first study, sex offenders with girl victims responded relatively more to adult women over the age of 25 than to younger adult women between the ages of 18 and 25, unlike nonoffending controls, who responded relatively more to the younger adult women. In the second study, sex offenders who targeted prepubescent children also responded relatively more to stimuli depicting older adult women; in fact, the magni-

TABLE 2.2
Important Physical Characteristics of Children, as Identified by 77 Pedophiles

Physical characteristics	Number out of 77
Good looks (unspecified)	12
Smooth skin (hairlessness)	11
Eyes	5
Slim stature	5
Face	3
Physique (unspecified)	3
Bottoms, buttocks	3
Smallness	2
Complexion (clear)	2
Firm body, smile, feminine features, health, muscles, genitals, "Black or Oriental," unbroken voice, blond hair, school uniforms	1 each

Note. Data from G. D. Wilson and Cox (1983). Responses ranked by frequency of endorsement.

tude of their responses to older adult female and child stimuli were similar. Rice et al. speculated that the pedophiles in the sex offender group were responding to the waist-to-hip ratio[1] of the depicted persons, which was around 0.80 for both the older adult women and prepubescent children, in contrast to around 0.70 for the younger adult women.

It is possible that male pedophiles differ from other men in their response to waist-to-hip ratio. This divergence may be developmental: Connolly, Slaughter, and Mealey (2004) examined waist-to-hip ratio preferences in a sample of 511 children and adolescents ranging in age from 6 to 17. They found a gradual difference in the participants' preferred waist-to-hip ratios across age, such that the 285 boys showed an increasing preference for smaller waist-to-hip ratio among female figures (and larger waist-to-hip ratios for male figures). This tendency was not present among the youngest respondents (age 6), and the boys' preferences resembled the waist-to-hip ratio preferences of adult men by the time the boys were 15.

T. P. Smith (1994) examined perceptions of attractiveness and apparent age and the likelihood of being a sexual abuse victim in a series of three studies. In the first study, she showed photographs of sexually abused girls and age-matched nonabused girls to university students who were blind to the girls' abuse status; the abused girls were rated as more attractive and younger looking than the nonabused girls. In the second study, T. P. Smith gave photographs of girls who were aged 11 or 12 to university students and

[1]Singh (1993) and others have shown that male perceptions of attractiveness are related to female waist-to-hip ratio, defined as the ratio of the waist circumference relative to the circumference at the hips. There is cross-cultural, contemporary, and historical evidence that the optimal waist-to-hip ratio is around 0.70.

asked them to judge the likelihood the girl might be sexually abused. Attractive girls were rated as more likely to be sexually abused by an adult, although there was no effect of their perceived age (the girls might look older or younger than their chronological age). There was an interaction between attractiveness and age, such that older attractive girls and younger unattractive girls were rated as more likely to be sexually abused by an adult. In the third study, T. P. Smith compared the ratings of 34 university students and 38 men in treatment for paraphilias or sexual offending (71% of the treatment group met the diagnostic criteria for pedophilia). The students rated girls who looked older as being at greater risk, but only if they were attractive; there was no effect of perceived age for unattractive girls. In contrast, the predominantly pedophilic men in the treatment group rated pubescent girls as at greater risk if they looked older and prepubescent girls as at greater risk if they looked younger. This last finding suggests the sex offenders recognized two distinct groups at risk: one that was sexually maturing or mature (pubescent girls who looked older than their actual age) and one that was clearly sexually immature (prepubescent girls who looked younger than their actual age).

Summarizing and integrating these results with the research literature on sexual offending against children, T. P. Smith (1994) suggested there are two pathways to sexual offending against girls, consistent with the two major risk dimensions identified in sex offender follow-up research and current theories about sexual offending against children (see chaps. 4 and 7, this volume). The first pathway can be described as nonpedophilic because the offenders target pubescent girls who look older than their actual age; in other words, these men target girls who are sexually maturing or mature but below the legal age of consent. The second pathway can be described as pedophilic because the offenders target sexually immature girls who look younger than their actual age. Consistent with this dual-pathway view of sexual offending against girls, Finkelhor and Baron (1986) reviewed six surveys of child victims and found a peak in victim age around the ages of 6 and 7 (pedophilic pathway) and a second peak at the age of 10 onward (nonpedophilic pathway). Girls around the ages of 10 to 12, some of whom would be showing signs of puberty, had twice the rate of victimization as other girls.

SUMMARY AND DISCUSSION

Although pedophilia can most easily be assessed using self-report, either through interviews or questionnaires, sex offenders often minimize or deny their sexual interest in children in part because of the social or legal consequences of being identified as a pedophile. As a consequence, self-report is informative when someone acknowledges having sexual thoughts, fantasies, urges, arousal, or behavior involving prepubescent children, but it is less informative if someone denies pedophilic interests. Self-disclosure may

be increased by the use of polygraphy (likely reflecting a bogus pipeline effect), but the validity of polygraph determinations of deception has not been clearly demonstrated, and there is an unknown level of risk of inducing false confessions.

Studies have demonstrated that phallometric responses can reliably distinguish groups of sex offenders against children from other men, and a phallometric index of relative sexual arousal to children is one of the strongest single predictors of sexual recidivism. Some of the criticisms made regarding the clinical use of phallometry have a great deal of merit, but they can be addressed through standardization of stimuli and procedures, the use of audio stimuli, and the use of new technologies such as digital image manipulation software. It might even be possible to develop portable phallometric devices to conduct assessments of men as they encounter children and adults in real-life settings (Rea, DeBriere, Butler, & Saunders, 1998).

For these reasons, and especially for its predictive value, I believe phallometry is the preferred method for assessing pedophilia in clinical or correctional settings. When phallometric testing is unavailable or the individual refuses to participate in the phallometric procedure, alternative measures based on viewing time or sexual offense characteristics (if a sexual offense history is available) can be used. Sexual offense information is preferred, because one study has shown that it can predict recidivism among sex offenders against children, whereas no studies have yet demonstrated that viewing time measures are predictive (see Seto et al., 2004). Self-report is also useful, though it is more likely to be honest once legal proceedings have been completed (so the person is no longer anticipating trial or sentencing if found guilty) and once rapport has been established in the context of treatment or supervision (Barbaree, 1991; Bourke & Hernandez, in press; Worling & Curwen, 2000). Regardless of the source, there is an asymmetry such that indications that the person is pedophilic are important to note in terms of risk assessment and management, whereas the absence of such indications may mean the person is not pedophilic or has successfully avoided detection.

There is research to guide the optimization of phallometric methods, which can already achieve sensitivities over 90% among sex offenders with child victims who admit having pedophilic sexual interests. The challenge is to convince phallometric laboratories to change their procedures and their stimulus sets to emulate one of the validated assessment protocols, such as those used at my institution, the Centre for Addiction and Mental Health, Toronto, Ontario, Canada.[2] Many of the phallometric studies cited in this

[2]Other phallometric laboratories using validated procedures and stimulus sets include the Mental Health Centre Penetanguishene (contact Grant Harris, gharris@mhcp.on.ca), Correctional Service of Canada's Regional Treatment Centre (contact Jan Looman, loomanja@csc-scc.gc.ca), and the Royal Ottawa Hospital (contact John Bradford, jbradfor@rohcg.on.ca). The Association for the Treatment of Sexual Abusers (http://www.atsa.com) also maintains a referral directory of its members, some of whom provide phallometric testing.

book were completed using data collected in these laboratories. Consumers of phallometric assessment reports should confirm that the procedures and stimulus sets that were used were validated, just as they would expect paper-and-pencil questionnaires to have acceptable psychometric properties.

Alternatives to phallometry have shown promise, but more research is needed on these measures. Of particular interest are recent advances in neuroimaging and the modification of cognitive science methods (e.g., rapid serial visual presentation and a Stroop task) to the assessment of pedophilia. Ideally, alternative measures will be less intrusive, less vulnerable to faking, and less technically complex than phallometry.

Though reliable and valid methods for assessing pedophilia have been developed, the psychiatric diagnostic criteria of pedophilia itself have been challenged. O'Donohue, Regev, and Hagstrom (2000) and W. L. Marshall (2006b) pointed out problems with the *DSM–IV–TR* diagnostic criteria, including the absence of data on interrater reliability (the extent to which two clinicians would agree in assigning the diagnosis) and test–retest reliability (whether someone diagnosed as a pedophile at Time 1 would continue to be identified as such at Time 2). Consistent with these critiques, J. Levenson (2004a) reported diagnostic reliability in a sample of 295 adult male sex offenders (three quarters of the sample had committed sexual offenses against minors) and found that the interrater reliability for a diagnosis of pedophilia was acceptable but not impressive. R. J. Wilson, Abracen, Picheca, Malcolm, and Prinzo (2003) compared the classification provided by different measures of pedophilia—sexual history, strict application of *DSM–IV–TR* criteria, phallometric responding, and an expert diagnosis—and found that scores on these measures were not highly correlated in a sample of sex offenders against children, suggesting each was identifying different groups of pedophiles. An unpublished analysis of the data reported in Seto, Cantor, and Blanchard (2006) found that self-reported sexual interests, sexual history, and possession of child pornography independently contributed to the prediction of phallometric responding. These results suggest that the most accurate identification of pedophiles would come from using multiple sources of information. Given the challenges in subjectively combining different pieces of information, creating an algorithm that incorporates different valid measures of pedophilia—self-report, sexual history, and phallometric responding—might be the best approach (Ægisdóttir, Spengler, & White, 2006; Grove et al., 2000).

Though the criteria seem straightforward, the interrater reliability of the diagnosis of pedophilia is constrained because of the subjective way in which information about sexual interests is typically combined; in addition, this information is usually inferred from behavior, because many individuals are unwilling to admit to sexual thoughts, fantasies, or urges regarding prepubescent children. Thus, one of the complications in reviewing the literature on pedophilia is the fact that different assessment methods (and operational

definitions of pedophilia) have been used, and thus the groups that have been studied are not equivalent. The types of study group that are available are discussed in chapter 3.

3

DIFFERENT APPROACHES TO STUDYING PEDOPHILES

Research on pedophilia has been conducted primarily on men who have committed sexual offenses against children. This group has received the most empirical attention because it is of the greatest immediate public and professional concern. However, there are some disadvantages in studying pedophilia by focusing on this group. First, only about one half of the men who commit sexual offenses are pedophiles (see Table 1.1, this volume). As I discuss in chapter 4, nonpedophilic offenders against children might seek sexual gratification with a nonpreferred sexual partner for a variety of reasons, including an antisocial disregard for the risks and possible harm to the child; disinhibition by alcohol or other substances; and a lack of other sexual opportunities because of poor social skills, unattractiveness, or lack of resources.

Men who have committed sexual offenses against children have, by definition, engaged in criminal and antisocial behavior. Thus they might differ in a number of ways from pedophiles who have not committed such offenses, such as by scoring higher on measures of antisocial attitudes, beliefs, and antisocial personality traits and having a criminal history. Relatively prosocial pedophiles who have not engaged in significant antisocial and criminal behavior would not be represented in criminal justice samples.

A different selection effect may occur when studying pedophiles who have been seen in clinical settings. These pedophiles may differ from other pedophiles in having more psychological problems because they are distressed by their sexual interests in prepubescent children, receiving pressure (e.g., from a spouse) to see a mental health professional, or facing criminal charges. Pedophiles who are not distressed by their sexual interests or who are not feeling pressure from others would be much less likely to be represented in clinical samples.

It would be informative to study self-identified pedophiles who are not involved in clinical or criminal justice settings. This research is difficult to conduct because of the social, legal, and political climates that currently exist, as discussed in the Preface to this volume. People would risk a great deal if they were to be identified as pedophiles, even if they had never committed an illegal sexual act. Thus, the few studies on self-identified pedophiles (some of whom may still have been seen in clinical or correctional settings) are quite useful. At the same time, these studies of self-identified pedophiles have relied almost entirely on self-report, with the concomitant problems with regard to the reliability and validity of information that is obtained (as discussed in chap. 2, this volume). Research on clinical and criminal samples of pedophiles often obtains information from sources other than the self-report of the individual (e.g., family members, sexual partners, and criminal records) with regard to sexual offense history, sexual interests, and sexual behavior.

Each of these different study groups—self-identified pedophiles, pedophiles seen in clinical settings, and sex offenders with child victims seen in criminal justice settings—has its advantages and disadvantages for the study of pedophilia. Convergence in the findings from studying the different groups would increase confidence that the knowledge obtained about pedophilia is not better explained by the clinical or criminal status of the participants in the research (another approach, comparing sex offenders with other offenders and comparing pedophiles with other men, is described in chaps. 4 and 5, this volume). In the three sections that follow, I provide an overview of studies of self-identified pedophiles, clinical samples of pedophiles, and criminal justice samples of men who have been charged or convicted of sexual offenses involving children, seeking to identify differences and similarities in the study findings. Several questions are of particular interest: What are the features of children that pedophiles find attractive? What do we know about pedophiles who have not come into contact with clinical or criminal justice systems? What are the other options for studying pedophilia?

SELF-IDENTIFIED PEDOPHILES

In 1978 and 1979, G. D. Wilson and Cox (1983) contacted members of the Paedophile Information Exchange, a now-defunct group of advocates of

adult–child sex based in London, England. With the support of the organization's chairperson, they were able to send out questionnaires to all of the members on the organization's mailing list, estimated to be approximately 150 to 160 individuals. G. D. Wilson and Cox received a total of 77 responses from these members. All the respondents to the survey were men between the ages of 20 and 60 years, with a modal age category of 35 to 40. Of the respondents, 71% said they preferred boys, 12% preferred girls, and 17% were attracted to both sexes. The preferred age range for boys was 12 to 14 years of age, whereas the preferred age range for girls was 8 to 10 years. Those who were sexually attracted to both boys and girls still reported younger preferred ages for girls compared with boys. This is likely explained by the pubertal status of the children, because girls experience puberty earlier than boys. Recent pediatric data suggest the average age of menarche (onset of menstruation) is around 11, whereas the average age of male puberty is around 13 (Abbassi, 1998; Herman-Giddens et al., 1997; Tanner & Davies, 1985). A few respondents indicated their preferred age was well over the expected age of puberty, that is, a preference for 16- to 18-year-olds, which would mean they were either not pedophiles or had made a mistake in filling out the questionnaire.

When asked about their fantasies about children, 39 of the 77 respondents reported having fantasies of sex with children, 22 reported romantic or caring fantasies, 18 reported having no fantasies, and 7 gave no response. The psychological and physical characteristics that the respondents found attractive in children are listed in Tables 2.1 and 2.2. With regard to their attitudes about sex with adults, 14 reported negative feelings about the idea (e.g., disgust, fear, or horror), 33 were indifferent, 14 reported positive feelings about it, 9 misunderstood the question as referring to their attitudes about sex with children, and 7 did not respond or their responses could not be classified by the investigators. Many of the respondents in G. D. Wilson and Cox (1983) reported that they were troubled about their pedophilia, but not all of them were. G. D. Wilson and Cox obtained the following responses to an open-ended question about their feelings regarding their sexual interest in children: happy, proud, positive (27); disturbed (21); frustrated (13); puzzled (11); sad, hopeless, depressed (5); accepting, reconciled (5); guilty, ashamed (4); and bitter or angry with society (3).

Bernard (1985) surveyed 50 members of a Dutch pedophilia advocacy group.[1] The majority were under the age of 40, with a wide range of occupations, and most (90%) were unmarried and had no children of their own. Most (96%) of the respondents preferred boys, with the peak preferred age

[1]Bernard (1987) provided a history of the Dutch pedophile emancipation movement. This movement and its working groups were particularly active in the 1970s, which could explain why Bernard (1985), Pieterse (1982), and Rouweler-Wuts (1976) were successful in recruiting self-identified pedophiles.

being 12 or 13; the remaining two respondents indicated they preferred boys and girls equally. A slight majority of the respondents (56%) were currently sexually involved with a child, and approximately one half (54%) had previously been convicted of sexual behavior involving children. A minority (14%) reported having had sexual contact with more than 50 children. Twenty-four percent of the respondents indicated that they became aware of their sexual interest in young children before the age of 15, and 64% said they had had sexual contact with a child by the age of 20. Most of the respondents (90%) indicated that they did not wish to give up their sexual interest in children, even if it were possible.

More recently, Li (1991) interviewed 27 self-identified pedophiles in a small descriptive study. One third of the sample reported that they thought their sexual attraction to children was innate. More than one half mentioned specific characteristics about children that they found particularly attractive. Like the respondents in G. D. Wilson and Cox (1983), the pedophiles said they saw children as gentle, warm, generous, innocent, truthful, broad-minded, affectionate, and perceptive. They also indicated that they thought relationships or sex with children was much more satisfying than relationships or sex with adults. Relationships with children were portrayed as loving, and the sexual behavior was often construed as a form of play. "Bruce" (all the interviewees were given pseudonyms by Li), stated,

> My contention is that an adult can have a relationship with a child in a way that does not harm, and indeed, helps, the child. I consider myself to be an adult capable of such a relationship. Other adults might be more selfish in an adult–child encounter and end up harming the child. (Li, 1991, p. 137)

Similarly, "Nick" told Li, "Sex, to me, is a very small part, you know, in a relationship with a boy. Sex is, you know, the smallest part. . . . Sex isn't the main thing, the main thing is being wanted I suppose" (p. 135). Eight of the participants defended pedophilia as culturally relative, that is, their sexual interest in children would be accepted in other places or other times. Li argued that the current repression of pedophiles guarantees that individuals who are detected by the clinical, social service, or criminal justice systems are more likely to be exploitative in pursuing their sexual interests in children, implying that those who are not exploitative either do not act on their pedophilic interests or make efforts to ensure that the children are not harmed and therefore do not report the contacts to authorities.

Riegel (2004) conducted an Internet survey and found that most of the 290 anonymous respondents reported being sexually attracted to boys. Most of the respondents also reported viewing child pornography on the Internet, and a majority of respondents thought that viewing child pornography reduced their urges to engage in sexual contact with boys; the veracity of this claim was not examined (e.g., by comparing users and nonusers of child por-

nography in their sexual contacts with boys). In contrast to Riegel's findings, Wheeler (1997) surveyed 150 sex offenders with child victims and found that one third claimed they used pornography before committing a sexual offense. However, most of the offenders said they used mainstream pornography rather than child pornography. Langevin and Curnoe (2004) reported that sex offenders against children were more likely than sex offenders against adults to use pornography as part of their crimes, with one quarter of the offenders against unrelated children using pornography and one half of these individuals showing pornography to their child victims. Bourke and Hernandez (in press) reported anecdotally that the large majority of the 131 child pornography offenders they studied who admitted to contact sexual offenses reported they committed these offenses prior to seeking child pornography.

Other surveys of self-identified pedophiles have been conducted in the past 30 years, but they were not reported in English. I have had to rely on English summaries of these articles. Rouweler-Wuts (1976) interviewed 60 members of a Dutch pedophilia working group and found that the respondents who were married reported having a good emotional relationship with their adult partner but a poor sexual relationship. Pieterse (1982) distributed questionnaires among 161 members of a Dutch pedophilia working group and found that most of the respondents reported that they were interested in an ongoing friendship with children rather than a purely sexual relationship. Leonard des Sables (1976, 1977) surveyed a French group of boy-preferring pedophiles, and Lautmann (1994) interviewed 60 pedophiles for a sociological study published in German. I am not aware of surveys of members of such advocacy groups as the North American Man–Boy Love Association or active participants in Web sites that support pedophiles.[2]

CLINICAL SAMPLES

Clinical samples can provide another means of studying pedophiles. However, there are few data on clinically referred men who were not known to have committed sexual offenses against children. Fedoroff, Smolewska, Selhi, Ng, and Bradford (2001) found that 26 (8%) of 316 consecutively assessed pedophiles seen at an outpatient sexology clinic were self-referred and had no known child victims. The 26 self-referred pedophiles who had no

[2]All of these propedophilia or adult–child sex advocacy Web sites were accessed between June 1, 2005, and March 31, 2006. I found that many of the posts on these Web sites were about children who were considered to be attractive and included links to legally available pictures of children, statements of caring and love for children, discussion of legal cases and other media stories regarding pedophilia and men who had sexually offended against children, and criticisms of the societal repression of pedophilia and child sexuality. Jenkins (2001) and Malesky and Ennis (2004) read posts to newsgroups that involved discussions of adult–child sex and images of children and described similar themes. De Young (1988) read publications of adult–child sex advocacy groups and also found similar themes.

known victims were significantly less likely than the other pedophilic men who were seen at the clinic to have any kind of criminal history (although 35% still reported having a criminal record of some kind), were more likely to report a history of being sexually abused, were more likely to be virgins, and were more likely to use pornography (whether the pornography depicted children or adults was not specified). There were no group differences in biographic characteristics such as age and education, drug and alcohol use, age at first intercourse, or age of first sexual partner. Because the data reported by Fedoroff et al. were all derived from self-report, it is possible that some participants lied (e.g., pedophiles with child victims may have exaggerated their sexual involvement with adults and minimized their pornography use).

CRIMINAL SAMPLES

As mentioned, most of the empirical research on pedophilia has been conducted with samples of men charged or convicted of sexual offenses against child victims. Other criminal groups—especially users of child prostitutes and child pornography offenders—could also contribute to the understanding of pedophilia. However, relatively little research has been conducted on these other criminal groups.

Users of Child Prostitutes

Studying child prostitution could reveal something about men who are sexually interested in children and act on their interests by offering money in exchange for sexual access. Lloyd (1976) described a cheaply produced travel guide, *Where the Young Ones Are*, which listed 378 places in 59 cities across 34 states where male youth involved in prostitution congregated; O'Brien (1983) claimed that the Los Angeles listings in this guide were confirmed by local police. Because prostitution is hidden and those involved are less likely to report occurrences to police or other authorities, such men are less likely to be detected than men who commit sexual offenses against children. Unfortunately, little is known about child prostitution or about the clients (for a review, see Bittle, 2002; Cusick, 2002).

Prostitution involving children under the age of 12 seems to be rare compared with prostitution involving minors between the ages of 12 and 17; surveys of North American prostitutes indicate that the average age of entry into prostitution is in adolescence or early adulthood (McClanahan, McClelland, Abram, & Teplin, 1999; Potterat, Rothenberg, Muth, Darrow, & Phillips-Plummer, 1998; Silbert & Pines, 1982). The Badgley Committee (1984) in Canada found that a minority of the 229 juvenile prostitutes they interviewed were under the age of 16. It is possible that the age of entry into

prostitution may be lower in countries where child labor is more common and where poverty increases the likelihood that children will enter prostitution or be forced into it.

North American surveys of jail detainees or commercial sex workers do not necessarily include prostitution involving younger children. Inciardi (1984) reported a small qualitative study of nine 8- to 12-year-old girls who were involved in prostitution. Inciardi also noted that the Federal Bureau of Investigation's Uniform Crime Report indicated that a small number of children under the age of 12 were apprehended for prostitution between 1971 and 1980. There is anecdotal evidence that some individuals use their children to make child pornography that is then distributed to others in exchange for other child pornography content or money. Faller (1991) found that children were allegedly used in child pornography or for prostitution in one third of the 48 families she studied in which there were multiple incest offenders.

ECPAT International (the acronym stands for "End Child Prostitution, Child Pornography and Trafficking of Children for Sexual Purposes") is an organization concerned with child exploitation around the world (see http://www.ecpat.net), but there are few substantiated estimates on the extent of juvenile prostitution in countries with reputations for sex tourism involving minors—travel destinations in which foreign visitors can purchase sexual access to minors with less concern about arrest than in their home countries—such as Cambodia, Cuba, the Dominican Republic, India, and Thailand. The prevalence estimates that are available vary widely and appear to depend more on the source of the estimate than on any reliable data collection (e.g., government agencies vs. nongovernmental agencies or social activists; see Estes & Weiner, 2005; Hughes, 2000).[3] The International Labour Office estimated that 1.8 million minors were involved in prostitution or pornography in 2000 (United Nations, 2006). The most conservative estimate I found for Thailand (which has been active in sex tourism since the 1960s and 1970s with the influx of American soldiers on leave during the American–Vietnamese conflict) was 12,000 to 18,000 minors in 2004; the percentage of these minors who were prepubertal is not known.

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[3]This is a common problem in non-peer-reviewed reports. Estimates are made without substantiation and are then cited by others who use these sources, and thereby estimates are perpetuated (e.g., Schell, Martin, Hung, & Rueda, 2006). For example, claims are often made about how the adult pornography industry is so large that it rivals mainstream media such as feature films and magazines, but the numbers do not add up (e.g., Ackman, 2001). Similarly, a recent United Nations (2006) study cited World Health Organization estimates that 150 million girls and 73 million boys under 18 experienced some form of sexual violence in 2002. These numbers are implausible, because there are approximately 2.2 billion people age 19 or younger worldwide, according to the international database of the U.S. Census Bureau. This would mean a 1-year incidence rate of 9% in 2002, yet the lifetime prevalence rates of childhood sexual abuse obtained by Finkelhor (1994) were 7% of girls and 3% of boys. Of course, the definitions of sexual violence and sexual abuse and the methodologies differ from study to study, but such differences are unlikely to fully account for the large discrepancy in 1-year incidence and lifetime prevalence estimates.

One half of Bernard's (1985) sample of self-identified pedophiles surveyed in the Netherlands reported that they had traveled outside of the country to have sexual contact with a child elsewhere in Europe or in northern Africa. Estes and Weiner (2005) interviewed juveniles who had emigrated to the United States and had become involved in prostitution, often in the context of organized crime networks. On the basis of interviews with these juveniles and focus group meetings with law enforcement and social service professionals, Estes and Weiner concluded that men who paid for sex with these minors included pedophiles and transient men such as truck drivers, business travelers, and seasonal workers.

In summary, reports of men who seek sexual contacts with minors through prostitution are mostly anecdotal, with few concrete data about this phenomenon in terms of its extent, the age and pubertal status of the children who are involved, and the characteristics of the clients.

Child Pornography Offenders

In contrast to the lack of empirical research on users of child prostitutes, research on child pornography offenders is beginning to appear. Consistent with Canadian and American federal laws, *child pornography* is defined in this volume as visual depictions of children that are sexually provocative or that show children engaged in sexual activity whether with other children or with adults (in the United States, the Child Pornography Prevention Act, 2002; in Canada, the Criminal Code of Canada, 1985; note that in the United States, state laws vary in their definitions of child pornography). This may be attributed to the increasing number of child pornography prosecutions over the past 5 years, though the total number is still small compared with the number of prosecutions for sexual offenses involving contact with children (Finkelhor & Ormrod, 2004; Oosterban, 2005; Wolak, Finkelhor, & Mitchell, 2005; Wolak, Mitchell, & Finkelhor, 2003). Wolak et al. (2005) estimated there were 1,713 arrests for Internet-related child pornography possession from July 1, 2000, to June 30, 2001, in comparison with the approximately 65,000 arrests for sexual offenses against minors recorded in 2000 according to data from the National Incident-Based Reporting System (Bureau of Justice Statistics, 2007).

It has been suggested that this increase in criminal justice attention is related to an increase in child pornography offending, which is attributed in turn to the emergence of the Internet as an easily accessible, affordable, and seemingly anonymous medium for distribution of child pornography (e.g., Galbreath, Berlin, & Sawyer, 2002). Prior to the advent of the Internet, men who were interested in obtaining child pornography would have to directly contact others who could sell, trade, or share materials (e.g., pictures, films, or magazines). This meant exposing oneself to the risk of being detected by police or blackmailed. With the enormous amount of traffic on the Internet,

in contrast, downloading images of child pornography is unlikely to be detected unless a family member or someone else accidentally discovers the images or the individual's Internet activities are discovered and tracked by police officers as part of undercover investigations of distribution networks. It is possible that more individuals are now involved in the collection and distribution of child pornography because the perceived risk is low and because the process can be relatively quick and easy.

Fulda (2002) argued that proactive investigations by undercover police officers posing as child pornography traders or as minors who might be interested in meeting an adult they contact through the Internet are likely to capture men with no known history of criminal behavior. In the National Juvenile Online Victimization study, 29% of the suspects were initially detected because they made contacts with undercover police investigators posing as minors online (Wolak et al., 2003). Consistent with Fulda's hypothesis, few of these suspects had any prior criminal history. If the hypothesis that the Internet has made access to child pornography easier is correct, then there is a larger pool of child pornography offenders in the Internet era than in the past, when child pornography was distributed in nondigital media. Whereas child pornography offenders in the past may have been more antisocial individuals who were willing to take the risk of breaking the law and being detected by directly contacting others, relatively prosocial pedophiles may be more likely to be caught in Internet child pornography investigations. If this is true, then one would expect that individuals who began collecting child pornography after the advent of the Internet would be less likely to offend again than individuals who began collecting child pornography before the Internet. There have been no comparisons of child pornography offenders pre- and post-Internet to test this hypothesis.

Although the increasing number of arrests for child pornography offenses has been attributed to the greater accessibility of child pornography via the Internet, child pornography content is becoming less visible on the Internet, suggesting that criminal prosecutions are leading to greater secrecy and efforts to avoid detection. Jenkins (2001) found evidence that child pornography was openly traded in Internet newsgroups in the late 1990s. Bagley (2003) surveyed child pornography content on publicly accessible Web sites and newsgroups and found that it decreased from 1998 to 2002. He identified a total of 7,725 "indecent" images of minors in his survey, with no Web sites depicting child pornography in 2001 and 2002.

Child pornography may become less readily available, though still accessible, as more sophisticated methods are used to hide possession and distribution, including file encryption, use of services that make e-mail addresses and Internet protocol addresses anonymous, and software programs designed to obscure evidence of Internet-related activities. It is likely that the most computer-savvy child pornography offenders are not being detected by police (Jenkins, 2001; Malesky, 2005; Wolak et al., 2005). In particular, Jenkins

(2001) described posts from individuals who boasted about being active in child pornography trading for decades without ever being arrested.

Pedophilia and Child Pornography

One can surmise intuitively that child pornography possession is indicative of pedophilia. There is empirical evidence to support this idea. Three quarters (74%) of Bernard's (1985) sample of self-identified pedophiles reported they collected photographs of seminude or nude children. A majority of this group (22 of 37 respondents) said they took the photographs themselves. Quayle and Taylor (2002) interviewed 13 men who were convicted of downloading child pornography from the Internet. Many acknowledged that the material they downloaded was sexually arousing to them and matched their sexual fantasies. Although these men selected content that was most interesting to them, they claimed that they also downloaded other pornographic content because it was novel or because it completed image or video clip series.

Seto, Cantor, and Blanchard (2006) found evidence for a link between child pornography possession and pedophilia in a larger study in which the phallometric test results of 100 child pornography offenders were compared with those of 178 sex offenders with child victims, 216 sex offenders with adult victims, and 191 general sexology patients. None of the men in the comparison groups had any known history of child pornography possession. As a group, the 100 child pornography offenders showed significantly greater sexual arousal to children than the offenders against children, offenders against adults, or sexology patients (see Figure 3.1). The 57 child pornography offenders who had no prior history of sexual offenses against children were not significantly different in their genital responses from the 43 child pornography offenders who had such a history. Overall, 61% of the child pornography offenders showed a preference for child stimuli over adult stimuli in the phallometric testing. The results suggested that child pornography offending might be a stronger diagnostic indicator of pedophilia than sexually offending against a child.

Seto et al.'s (2006) explanation for this finding was that some nonpedophilic men victimize children sexually, such as antisocial men who are willing to pursue sexual gratification with girls who show signs of sexual development but are below the legal age of consent. In contrast, people choose the kind of pornography that corresponds to their sexual interests, so relatively few nonpedophilic men would choose illegal child pornography given the abundance of legal pornography that depicts adults. Thus, an undifferentiated group of offenders against children would show less sexual arousal to children, on average, than a group of child pornography offenders.

Child Pornography and Sexual Offending Against Children

Unpublished and published data suggest that approximately one third of men who use child pornography have previously committed sexual of-

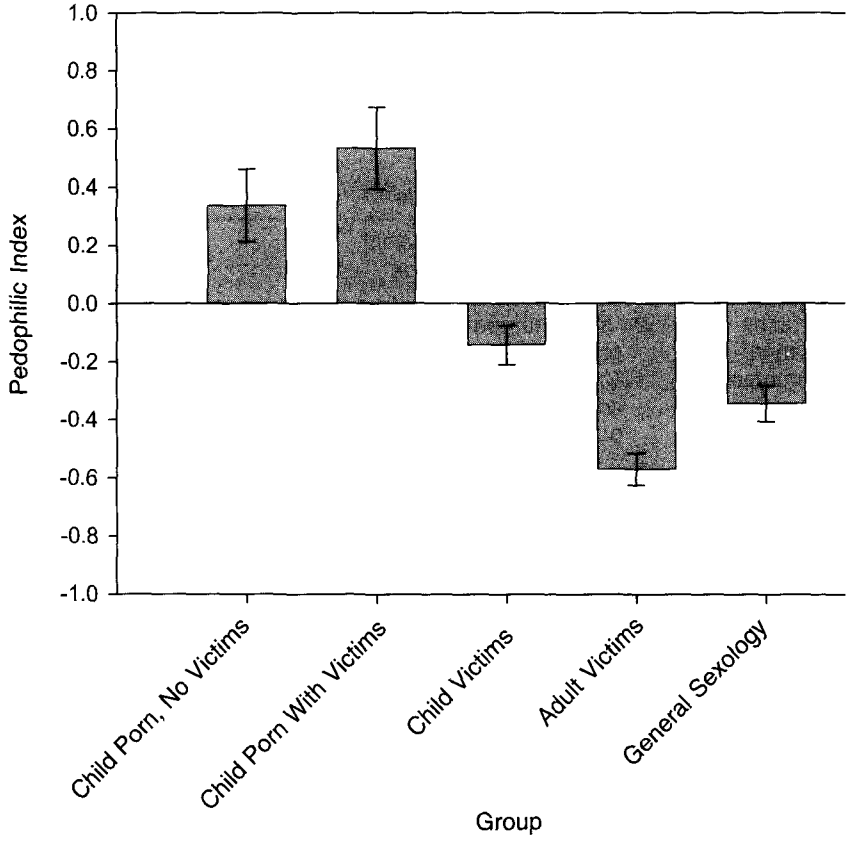


Figure 3.1. Average pedophilic indices (standardized arousal responses to children minus standardized arousal responses to adults) for child pornography offenders without a history of sexual offenses against child victims, child pornography offenders with a history of offenses against child victims, offenders against children, offenders against adults, and general sexology patients. Error bars indicate 95% confidence intervals of the means. From "Child Pornography Offenses Are a Valid Diagnostic Indicator of Pedophilia," by M. C. Seto, J. M. Cantor, and R. Blanchard, 2006, *Journal of Abnormal Psychology, 115,* p. 614. Copyright 2006 by the American Psychological Association.

fenses against children (see the summary in Table 3.1). Raymond Smith, manager in charge of child pornography investigations at the U.S. Postal Inspection Service, reported that 34% of the 1,807 child pornography offenders arrested between January 1997 and March 2004 had a record of contact sexual offending or had engaged in an attempt to contact a child for sexual purposes (personal communication cited in Kim, 2004; see also U.S. Postal Inspection Service, 2002). Smith also stated that investigations of the 620 offenders with a history of attempting or having sexual contact with a child led to the identification of 839 child victims.

The proportion of child pornography offenders who have had sexual contact with children may actually be higher. Bourke and Hernandez (in

TABLE 3.1
Relationship Between Child Pornography Possession and Offense History Involving Sexual Contact with Children

Source	Sample	Known contact sexual offense history (%)
Bourke and Hernandez (in press)	155 men convicted of child pornography offenses	26 (85 with treatment and polygraphy)
FBI Operation Candyman[a]	94 men charged with child pornography offenses	31
Seto, Cantor, and Blanchard (2006)	100 men who were charged for or admitted to possession of child pornography	43
Seto and Eke (2005)	205 male child pornography offenders from provincial sex offender registry	25
Sullivan (2005)	202 offenders (201 male) charged with "obscene materials"; 92% were charged for child pornography	7
Wolak, Finkelhor, and Mitchell (2005)	429 men arrested for possession of child pornography	40

[a]For more information, see http://www.fbi.gov/pressrel/pressrel02/cm031802.htm.

press) studied 155 men convicted of child pornography offenses who were assessed and treated at a medium-security federal prison. Of these men, 40 (26%) were considered to have a known history of contact sexual offending against a child, defined as a criminal conviction for such an offense, admission by the offender, or evidence of an allegation of a contact sexual offense against a child that was investigated and determined to be substantiated by a child protective services agency. However, following treatment and participation in polygraph testing, 131 child pornography offenders (85%) admitted they had committed a contact sexual offense, with an average of more than 13 victims per offender. Those who had a known history of contact sexual offenses prior to entering treatment had twice the number of child victims than those who had no known history. In addition, a higher proportion of child pornography offenders admitted to contact sexual offenses against both boys and girls and against both prepubescent children and postpubescent minors following treatment.

Child pornography offending is an international phenomenon. Child pornography traders, and the computer servers they use to communicate, can be found in different countries, and some of the largest police investigations have required the coordination of multinational investigations. Probably the largest so far was Operation Landslide, an investigation initiated by the U.S. Postal Inspection Service regarding a company run by a Texas couple who brokered online payments for commercial Web sites. At a monthly fee of $29.95, the company's revenue was approximately $1.5 million at its peak. As a result of the police investigation, names and credit card information

were obtained for thousands of subscribers from 37 American states and 60 countries. Subsequent investigations have led to arrests of suspects in Canada, the United States, the United Kingdom, and many other countries.

A New Zealand study of 202 offenders (all but one were men) charged with having objectionable material found that most (92%) were charged for possessing child pornography (Sullivan, 2005). Some of the offenders who possessed child pornography also had other objectionable material, including depictions of sexual violence, involvement of urine or excrement in sexual acts, and bestiality. The majority of the offenders (75%) had no prior criminal history, and only a small percentage had a history of contact sexual offending (7%). Of the 16 men who had a prior sexual offense history, 12 had committed an offense against someone age 16 or younger. The majority of the offenders were students or employed in information technology, and the majority were under 30, suggesting police investigators were more likely to detect suspects who had access to and familiarity with computers. Of particular interest to those who are concerned about the potential risk to children posed by child pornography offenders, 42 of the offenders worked with or had frequent contact with children (e.g., in such jobs as coach and bus driver), and 19 were the sole caregivers of children or youths.

The largest study of child pornography offenses completed so far—the National Juvenile Online Victimization Study (NJOV)—was conducted by Wolak and her colleagues (Wolak et al., 2003, 2005). These investigators obtained data on 429 individuals arrested for possession of child pornography. Most of the NJOV offenders were men (>99%), White (91%), and older than 25 (89%) (for additional information about the characteristics of this sample, see Table 3.2). A minority of the 429 child pornography offenders had a history of prior arrests for nonsexual offenses (27%), sexual offenses involving a minor (11%), violent incidents (11%), or substance use problems (18%). Forty percent of the child pornography offenders were also charged with contact sexual offenses against children. Wolak et al. (2003, 2005) found that child pornography offenders who organized their collections or who distributed child pornography differed from the other offenders in being more likely to have 1,000 or more images and images of children under age 6. These results suggest that organizing or distributing child pornography is associated with pedophilia, assuming that only men who were truly interested in prepubescent children would collect 1,000 or more child pornography images or images of very young children. Both those who organized and those who distributed child pornography were also more likely to use a method to hide their child pornography, suggesting they were aware of the risks of this criminal activity and took some steps to avoid detection.

No research has been conducted to determine what effect child pornography use might have on the likelihood of subsequently having sexual contact with a child. This is an important theoretical and practical question. Theoretically, determining the extent and nature of the link between child

TABLE 3.2
Selected Characteristics of National Juvenile Online Victimization Study's Internet-Related Sex Crime Suspects

Characteristic	% of sample
Living circumstances	
Married or living with partner	38
Lived with minors in household	34
Access to minors through residence, work, or organized activity	46
Criminal history	
Prior arrest for nonsexual offense	22
Prior arrest for sexual offense against a child	11
Child pornography content	
Images of children ages 12 or under only	17
Images of mostly boys	14
Images of both boys and girls	15
Images depicting sexual penetration (more graphic images)	80
Images depicting violence toward minors	21
Images depicting adult–child sexual contact	71
More than 100 images	48
More than 1,000 images	14
Collecting behavior	
Organized collections, for example, in series or by age and gender	27
Used any method to hide child pornography (e.g., file encryption)	20
Distributed child pornography	33

Note. Data from Wolak et al. (2003).

pornography offending and subsequent sexual offending against children would shed light on the role of pedophilia as a causal factor in sexual offending against children. Practically, clinicians and the courts are increasingly being asked to estimate the risk of future sexual offending posed by child pornography offenders. Child pornography might increase (e.g., increasing the user's desire for sexual contact with a child), decrease (e.g., by facilitating masturbation to orgasm as a substitute for sexual contact with a child), or have no effect on the likelihood of future sexual contact with a child. Experimentally demonstrated effects of mainstream adult pornography on negative attitudes about women and sex and increased aggression in the laboratory suggest that exposure to child pornography is more likely to increase attitudes tolerant of sex with children and increase the likelihood of nonsexual and sexual contacts with children (see Appendix 3.1). Violent child pornography may also have an additional effect on aggression against children, given the reliable, experimentally demonstrated effects of violent content in television, film, and video games on aggression (see Anderson et al., 2003, for a review).

At the same time, aggregate crime data suggest that cases of child sexual abuse have declined dramatically since the early 1990s, with a 40% decline in substantiated cases of child sexual abuse during the 1990s (Finkelhor & Jones, 2004), paralleling the emergence of Internet child pornography. Similarly, analyses of aggregate crime data suggest that rates of sexual assault declined as legal restrictions on adult pornography were removed (Kutchinsky,

1991). These data have been interpreted by some authors as evidence that pornography use can have a cathartic effect, thereby reducing sexual offending. However, these are group-level data, and it has not been demonstrated that individuals who use more pornography are less likely to commit sexual offenses. The declines in sexual crimes may be better explained by a broader shift in risk taking, as Martin Lalumière and his colleagues have identified similar declines in other crime, workplace accidents, and unhealthy practices such as smoking (Lalumière, Harris, Quinsey, & Rice, 2005; Mishra & Lalumière, 2006). All of the other explanations that have been proposed to explain this decline—such as increased incarceration of pedophilic sex offenders and more sexual abuse prevention campaigns—are not sufficient to explain the magnitude of the crime drop. The decline in child sexual abuse has happened too quickly to be explained by a decline in the prevalence of pedophilia.

Internet Luring Offenders

A new category of sexual offense has been created with the advent of laws designed to prevent individuals from using the Internet to lure children into situations in which they may become victims of child pornography or contact sexual offenses. Internet luring offenders (also referred to as *travelers*, e.g., Alexy, Burgess, & Baker, 2005) are different from child pornography offenders, though most child pornography offenses now involve the Internet. The concern about this group of offenses is that some pedophiles are using the Internet to meet children, either to find out information about them for a potential kidnapping (home address, name of school, and daily routines) or to arrange meetings. For example, Malesky (2005) surveyed 101 men convicted of Internet-related sexual crimes (most for child pornography offenses). Of these men, 35 corresponded with a minor they met online in the hope of establishing a sexual relationship, and 18 attempted to set up a face-to-face meeting with a minor. Such behavior can occur in the real world as well, where it is referred to as *grooming*, but the Internet increases the reach of potential offenders, for example, when they contact a child in another city or even another country.

Recent research suggests that luring and traveling for sexual purposes do occur, but they typically involve adults seeking teenagers rather than young children. A survey of 1,500 youths between the ages of 10 and 17 was conducted by the Crimes Against Children Research Center in 2005, repeating a survey they first conducted in 2000 (Wolak, Mitchell, & Finkelhor, 2006). Approximately 1 in 7 youths had received an online sexual solicitation, which represented a decline from 2000 when approximately 1 in 5 youths had received such a solicitation. Sexual solicitations involved sexual talk, requests for personal sexual information, or requests to engage in sexual activity (e.g., invitations to engage in "cybersex"). The authors attributed this decline from

2000 to 2005 to greater awareness among young people about this issue and more cautious online behavior. Of the solicitations reported in 2005, 39% involved a solicitation by an adult; the rest involved solicitations from peers. Girls and older youths were more likely to be approached than boys or younger youths; teenage girls (ages 14 to 17) were the most likely to be solicited. Contrary to the perception that Internet luring is common, only 4% of the solicitations were deemed to be "aggressive," meaning the person who approached the youth made attempts to meet or contact the person offline (e.g., asking to meet, telephoning, or sending mail). Only two aggressive solicitations resulted in sexual assaults, both involving teenage girls.

Walsh and Wolak (2005) found that most sexual crimes that occurred after online meetings involved teenage minors who engaged in what they viewed as a sexual or romantic relationship; such offenses have more in common with statutory sexual crimes involving teens than sexual crimes committed against children and are unlikely to involve pedophiles. Wolak, Finkelhor, and Mitchell (2004) examined data on 129 sexual offenses that had taken place as a result of online contact. Three quarters of the victims were girls between the ages of 13 and 15, and three quarters of the offenders were over the age of 25. Most of the offenders were honest about their age, so the teenage girls knew they were meeting with an adult man (Malesky, 2005, found that one half of his sample of Internet-related offenders misrepresented their ages). One half of the girls described being in love or having a close bond with the adult.

In the NJOV study, approximately one half of the adults who used the Internet to communicate with minors for a sexual purpose were family members or acquaintances such as a neighbor, friend's relative, or family friend (Mitchell, Finkelhor, & Wolak, 2005). In other words, there was already a relationship, and the Internet was used to communicate privately with the minors. Unlike the online solicitations described previously, which resemble statutory sexual offenses, the sexual offenses committed by family members or acquaintances are more similar to sexual offenses against children that do not involve the Internet. Most of the offenders were male (99%), and the majority of victims were girls, approximately one half between the ages of 6 and 12. There was a significant difference between family members and acquaintances, with family members predominantly targeting girls (93%) below the age of 12 (82%), and acquaintances being more likely to target boys (49%) and teenagers (71%). Family members were more likely to use force or threats of force. Thus, there seems to be a distinction between offenders who were using the Internet as part of their sexual offending against a known young child and offenders who were using the Internet to solicit teenage minors. Approximately one half of the family members (49%) and a minority of the acquaintances (39%) possessed child pornography; some of these men also traded child pornography, including images of their victims. The nature of this content was not reported, but I would expect the illegal por-

nography possessed by acquaintances to be more likely to involve sexually maturing minors, whereas the illegal pornography possessed by family members would be more likely to involve prepubescent children, including their potential and actual victims. A small number (2%) of the family member or acquaintance offenders used the Internet to advertise children for sexual purposes.

Sex Offenders With Child Victims

Because of public and professional concerns about the sexual abuse of children, many fields have focused on sex offenders with child victims, including forensic psychiatry and psychology, criminology, sexology, law, and public policy. As suggested by the studies cited in Table 1.1, perhaps one half of these sex offenders against children are pedophiles. I review findings about distinguishing characteristics of these offenders that are most relevant to understanding of the etiology of pedophilia in chapter 4. Characteristics associated with risk to reoffend are discussed in chapter 7. In this section, I provide a summary of sex offender research, focusing on sexual victim characteristics, offending patterns, and the differences between pedophilic and nonpedophilic offenders. The majority of adjudicated sex offenders against children select female victims. Most offenders are known to their victims, and many have offended against related child victims; the proportion of related victims increases as victim age decreases, likely reflecting the greater access of family members to the youngest children (Snyder, 2000). As I discuss in chapter 6, there are meaningful differences between men who offend only against related victims and those who offend against unrelated victims. There may be an additionally meaningful distinction between those who offend against biologically versus sociolegally related children; children are at relatively greater risk of sexual abuse by steprelatives (Finkelhor, Hotaling, Lewis, & Smith, 1990).

There is a critical distinction between pedophilic and nonpedophilic sex offenders. These two groups differ in the characteristics of their sexual offenses and the likelihood that they will reoffend. As discussed in chapter 2, pedophilic offenders are more likely to have boy victims, multiple victims, prepubescent victims, and unrelated victims. Concomitantly, nonpedophilic offenders are more likely to have only girl victims, single victims, pubescent or postpubescent victims, and related victims. Thus, offenders with multiple, unrelated boy victims are the most likely to be pedophiles, whereas offenders with only a single pubescent daughter, stepdaughter, or other related girl as a victim are the least likely to be pedophiles (Seto & Lalumière, 2001). The prevalence of pedophiles among sex offenders with child victims depends on the average age of the sample and the pedophilia criteria used. A few studies have found higher proportions of men showing a sexual preference for children in phallometric testing, possibly reflecting differences in the sources of

those samples, methods used, and comparison groups (e.g., Chaplin, Rice, & Harris, 1995, found a high proportion of pedophiles in a sample of sex offenders against children assessed in a maximum security facility, using an optimized phallometric procedure).

Sex offenders against children vary in other respects as well. Some men groom potential victims, giving the child their attention and gifts to build trust and affection and increase their contacts, whereas other men use threats or physical force to make children comply with their sexual demands (Gebhard, Gagnon, Pomeroy, & Christenson, 1965; Kaufman et al., 1998; Lang & Frenzel, 1988; W. L. Marshall & Christie, 1981). For example, Daleiden, Kaufman, and Cooper (cited in Kaurman et al., 1998) found that 74% of their sample of adolescent sex offenders had used one or more threatening strategies to gain victim compliance. Some men see their sexual contacts with children as part of an ongoing relationship, akin to the romantic relationships that peers establish with each other (cf. Bernard, 1985; Pieterse, 1982), whereas other men simply seek sexual gratification. Some men are specialists, committing only sexual offenses against children, perhaps only against children of a similar age and gender. Other men are not so specialized, committing sexual offenses against children and adults of either gender or committing a variety of sexual offenses such as indecent exposure (exhibitionism), voyeurism, and sexual contact with children (Abel, Becker, Cunningham-Rathner, Mittelman, & Rouleau, 1988; Bradford, Boulet, & Pawlak, 1992; Heil, Ahlmeyer, & Simons, 2003; Sjöstedt, Långström, Sturidsson, & Grann, 2004). To illustrate, 28% of Abel et al.'s (1988) sample of sex offenders against children had offended against both boys and girls, and 8% of this sample had offended against both children and adults. It is incorrect to assume that a man who has only sexually offended against girls between the ages of 10 and 12 poses no risk to younger or older girls or to boys; though it is more likely that any new sexual offense would involve a girl of similar age, other children could also be victims. Finally, some sex offenders with child victims have committed only sexual crimes and otherwise live mostly prosocial lives, maintaining steady employment and stable relationships with others in their community; however, other sex offenders also have extensive histories of nonsexual offenses and other antisocial behavior. Characteristics of sexual offending against children and how they might be relevant to prevention efforts are discussed again in chapter 8.

IMPLICATIONS FOR POLICY AND PRACTICE

The study groups described in this chapter are quite different from each other. They vary in the likelihood that members are truly pedophiles. All of the self-identified pedophiles are at one end of the spectrum; the majority of child pornography offenders are pedophiles, and perhaps half of the sex of-

fenders against children are pedophiles. Too little is known about users of child prostitutes and clinically referred men with no known history of sexual offenses against children to estimate the prevalence of pedophilia in these groups. The study groups also vary in the likelihood that they have acted on their sexual interests in children: Some self-identified pedophiles and clinically identified pedophiles may never have had sexual contact with a child, child pornography offenders have at a minimum engaged in the illegal act of possessing visual depictions of children in sexually suggestive or explicit situations, and users of child prostitutes and sex offenders against children have had sexual contact with a child.

These differences between study groups have implications for policies and practices, which may be misdirected to the extent that study groups are confused with each other. For example, policies and practices that view all sex offenders against children as pedophiles will overestimate the risk posed by nonpedophilic sex offenders, all other things being equal, and might require nonpedophilic sex offenders to participate in treatments that do not make sense (e.g., aversive conditioning of pedophilic sexual arousal and sex-drive-reducing medication). As a second example, child pornography offenders may not pose the same risk or require the same interventions as pedophilic men who have acted on their sexual interests in children. I distinguish between pedophiles and sex offenders against children and between pedophilic and nonpedophilic sex offenders throughout this book, because these groups differ in the risk they pose to children and thus require different responses. An inadvertent consequence of conflating pedophiles and sex offenders against children is that the fear and anger that is directed at men who commit sexual crimes against children is also directed at pedophiles who have never acted on their sexual interest in children. This means pedophiles who want to refrain from committing sexual offenses cannot readily seek support from their family or close friends and are unlikely to seek professional services. In addition, as I suggest in chapter 8, different interventions are required for pedophilia compared with sexual offending against children.

IMPLICATIONS FOR RESEARCH

Each of the study groups described in this chapter has its advantages and disadvantages for empirical research on pedophilia. Self-identified pedophiles have not been selected for psychological distress like clinical samples or for antisocial behavior like criminal samples. On the other hand, self-identified pedophiles may select themselves for impression management such that members of advocacy groups or participants in anonymous online surveys may represent themselves in an overly positive light; studies of self-identified pedophiles have relied on self-report (Bernard, 1985; Li, 1991; Riegel, 2004). Studying child pornography offenders provides an opportu-

nity to examine a group of men who are sexually interested in children but who have not necessarily acted on such interests by having sexual contact with a child. Studying clinical and criminal samples of pedophiles can produce valuable findings because of the varied sources of information that are available, but these individuals may not be representative of pedophiles in general.

The physical characteristics of children whom pedophiles find attractive can be revealed by the nature of the child pornography that child pornography offenders collect. These characteristics can also be deduced by examining the characteristics of victims of sex offenders against children, but such victim characteristics may not fully reflect the offenders' sexual preferences because of constraints on their access to the children they find most attractive. In contrast, child pornography offenders are less constrained because they can readily obtain and keep thousands of images from the Internet, particularly those that closely match their preferred sex and age.

All of the study groups discussed in this chapter contribute to the understanding of pedophilia. Although there is a great deal of heterogeneity within groups, and there are many differences between groups, there are also a number of similarities. It can be concluded that most pedophiles are men, consistent with the generally greater prevalence of paraphilias in men. It can also be concluded that pedophiles are more likely to be interested in boys than in girls. The features of children that are sexually attractive—as reported by self-identified pedophiles, revealed by descriptions of child pornography images, and realized in the stimuli that elicit sexual arousal in phallometric testing—appear to be the same across study groups. The preferred physical features include small body shape and size, smooth skin, and other indicators of youthfulness; preferred psychological features include gentleness, innocence, playfulness, and openness (Freund, McKnight, Langevin, & Cibiri, 1972; Taylor, Holland, & Quayle, 2001; G. D. Wilson & Cox, 1983). Finally, it can be concluded that though many pedophiles have acted on their sexual interest in children, others have not.

More research is needed on self-identified samples of pedophiles. A major challenge to this approach is the fear many pedophiles have of being identified given the current social climate. Another challenge to this approach is that mandatory reporting of child abuse or suspected child abuse in many legal jurisdictions could inhibit disclosures of undetected sexual contacts with children. Future research on pedophilia could benefit by establishing connections with pedophile communities (as G. D. Wilson and Cox [1983] did in contacting the Paedophile Information Exchange, and as Bernard [1985] and Pieterse [1982] did in contacting Dutch pedophilia groups) and by the use of governmental certificates that are available in the United States (but not Canada) to allow the confidential collection of data.

Another approach to studying pedophilia in nonclinical and noncorrectional settings is to use the Internet for participant recruitment or data

collection. This approach has the strength of providing some assurance of anonymity, especially if combined with the use of Web sites that keep Internet Protocol addresses anonymous, free Web-based e-mail accounts for communication, and file encryption. Recent examples of Internet-based research include Malesky and Ennis's (2004) analysis of posts to a chat group for individuals who were sexually interested in boys and Riegel's (2004) online survey of self-identified boy-preferring pedophiles. The main limitation of Internet research is the possibility of self-report biases, because pedophilic respondents might alter their reports of problems to present themselves in a socially desirable manner, and anonymity precludes verifying the self-reports. For example, Riegel found that 87% of his respondents reported that their interest in mentoring a boy was equal to or more important than their interest in sex. This may be a true reflection of their interests, but this cannot be examined by investigators without speaking to the boys with whom the respondents have formed relationships. Another methodological limitation is that some respondents may not actually be pedophiles and may instead participate out of curiosity or mischief. Nonetheless, a unique opportunity exists to test hypotheses about pedophilia that are not susceptible (or less susceptible) to socially desirable responding. For example, as I discuss again in chapter 5, Ray Blanchard and his colleagues have demonstrated that pedophilic sex offenders are significantly more likely than nonpedophilic sex offenders to report having had a head injury resulting in unconsciousness before the age of 13 (Blanchard et al., 2002). It is unlikely that either reporting or denying a childhood head injury is socially desirable, so a future study of self-identified pedophiles could be conducted to replicate this finding.

Whatever research approach is used, comparing the findings obtained from different study groups is a productive strategy in identifying common and unique factors. Garber and Hollon (1991) have discussed how group comparisons of this kind are informative. I discuss the results of such comparisons in chapters 4 and 5, first on the etiology of sexual offending against children (by comparing sex offenders with other offenders and then sex offenders against children with sex offenders against adults) and then on the etiology of pedophilia (by comparing pedophiles with other men).

APPENDIX 3.1
CHILD PORNOGRAPHY AND SEXUAL OFFENDING AGAINST CHILDREN

Meta-analytic reviews of experimental studies of pornography have found that exposure to mainstream adult pornography has a medium-size significant effect on negative attitudes about women and on physical aggression in the laboratory among nonoffenders (Allen, D'Alessio, & Brezgel, 1995; Allen, Emmers, Gebhardt, & Giery, 1995); this effect is also observed for adult pornography containing violent content. There is also evidence that frequency of pornography use and likelihood of engaging in sexual coercion are positively correlated in samples of nonincarcerated men (e.g., Malamuth, Addison, & Koss, 2000). Allen, D'Alessio, and Emmers-Sommer (1999) conducted a meta-analysis of 13 studies and concluded that sex offenders did not significantly differ from nonoffenders in their age at first exposure to pornography or frequency of pornography use. However, there was some evidence that sex offenders were more likely to report engaging in sexual behavior—masturbation, consensual intercourse, or sexual offending—after using pornography. There are no experimental data on the effects of exposure to child pornography, so the impact of exposure to child pornography is not known.

The experimental literature on the effects of adult pornography and the effects of depictions of violence in television programs, film, and video games suggest that exposure to child pornography is likely to have a negative effect on subsequent behavior, especially among individuals who seek out such content and are already predisposed to act on their sexual interests. It is highly unlikely that viewing child pornography has a cathartic effect and thereby reduces the likelihood that an individual will commit a sexual offense against a child. A cathartic effect of child pornography would not be consistent with evidence regarding the impact of sexually explicit media (see Malamuth et al., 2000; Seto, Maric, & Barbaree, 2001). Thus, men who view child pornography are likely to be pedophiles and may be more likely to exhibit an effect of exposure to child pornography on their positive attitudes about sex with children and on the likelihood of engaging in sexual behavior with a child.

There are three methodological limitations to the studies of adult pornography use and sexual offending that were reviewed by Allen et al. (1999): (a) They are retrospective and therefore might be subject to recall biases, (b) they are based on self-report and therefore are vulnerable to social desirability, and (c) they do not usually distinguish between types of pornography. Most studies have focused on mainstream pornography (e.g., nude photographs in magazines such as *Playboy* or *Penthouse* or sexually explicit depictions of intercourse available through photographs, videos, and digital media). It is possible that sex offenders do not differ from controls in their overall pornography use but differ in their use of pornography that corre-

sponds to their particular preferences. For example, Nutter and Kearns (1993) reported that their group of 25 nonincarcerated child molesters did not differ from volunteers in their use of pornography, but the researchers only asked questions about mainstream, commercially available content and did not ask about use of child pornography. W. L. Marshall (1988) found that a higher proportion of sex offenders against children than nonoffenders reported frequent use of pornography; however, only 7 of the 51 sex offenders against children admitted they had ever looked at child pornography, and only 3 admitted they collected child pornography. One third of the sex offenders against children reported that viewing pornography was a precursor of a sexual offense, but they reported that this pornography usually depicted adults. Moreover, sex offenders against children reported that they could begin sexually fantasizing about children simply by seeing children, without any use of pornography. Wheeler (1997) surveyed 150 sex offenders with child victims who were participating in outpatient treatment. Most (93%) of the sex offenders with child victims admitted to sexual fantasies involving children, typically girls. One third of the sex offenders with child victims claimed that they used pornography before committing an offense, and similarly, one third claimed that pornography had influenced their subsequent offending. They admitted using child pornography, but this use was infrequent, and most of the content consisted of nude children rather than explicit depictions of sexual activities. At the same time, the sex offenders against children were more likely to report using adult mainstream pornography than a comparison group of 122 other offenders.

Finally, Langevin and Curnoe (2004) found that sex offenders against children (21%) were more likely to use pornography than rapists (8%) as part of their sexual offenses; offenders against unrelated children (26%) were more likely to use pornography than incest offenders (17%). Among the sex offenders against children who used pornography, approximately one half showed pornography to their victims during the offenses. Approximately one half of the pornography they showed was commercially available adult pornography, but 6 of the offenders showed child pornography, and some of the other offenders took photographs of their child victims. Of the 33 sex offenders against children who took photographs of their victims, 9 subsequently distributed them to others.

CHILD PORNOGRAPHY CONTENT

Depictions of sex with children have existed for a long time; for example, Tannahill (1980) described a Chinese sex manual from the 1400s called *The Admirable Discourses of the Plain Girl*. In the 20th century, prior to the emergence of the Internet and other digital technologies, child pornography offenders would have had to contact individuals or commercial dis-

tributors to purchase or trade materials, or they would have had to produce their own content. Each contact or production might have led to an arrest by law enforcement officials (see Jenkins, 2001; Lloyd, 1976; O'Brien, 1983). Moreover, the content that was available consisted of photographs, magazines, books, or films that would eventually deteriorate with age. Because child pornography involved physical media, tougher law enforcement could have a substantial impact on the availability of child pornography, as it did in the 1970s and the 1980s (Jenkins, 2001). In the past 15 years, however, the production and distribution of child pornography has become much easier and cheaper with the decreasing cost of digital cameras and related technologies. These digital images rarely deteriorate (files can become corrupted as they are copied) and can continue to be distributed long after the children in the images have become adults. The relative difficulty in obtaining child pornography before the widespread availability of the Internet may have been reflected by Howitt (1995), who interviewed 11 adult male pedophiles who reported that they infrequently used child pornography. Instead, they created their own pornographic materials using images from catalogues, magazines, and other freely available and legal sources.

Child pornography makes up only a small percentage of the total pornography content available on the Internet, but given the total number of images and video clips that are available, this still represents hundreds of thousands of unique images and hundreds, if not thousands, of unique video clips (see Jenkins, 2001; Taylor & Quayle, 2003).[4] This estimate does not take text or audio files into account. Mehta (2001) examined 9,800 randomly selected images from 32 Usenet newsgroups between July 1995 and July 1996 and found that 4% depicted prepubescent children and 11% depicted pubescent children. Mehta, Best, and Poon (2002) examined 507 randomly selected film clips obtained through the a peer-to-peer distribution network and found that 4% depicted children in sexual situations. This can be compared with Lebegue's (1991) analysis of over 3,000 pornographic magazine and book titles; less than 1% of the titles suggested pedophilic content (titles from the 1970s or 1980s include *Nymph Lovers*, *Lollitots*, and *Joyboy*), and another 4% of the titles suggested depictions of incest.

Taylor et al. (2001) have proposed that "collections of child pornography are not accidental; they result from deliberate choices by an individual to acquire sexual material" (p. 99). In their article, Taylor et al. described a database of more than 80,000 child pornography images and 400 video clips that had been collected by the COPINE (Combating Paedophile Information Networks in Europe) project. This database, now part of Interpol's Child Abuse Image Database (Noble, 2007), consisted of pictures known to be at least 15 years old (e.g., scans from child pornography magazines) and images

[4]I do not discuss the results of a controversial study by Rimm (1995) because of its serious methodological and conceptual flaws identified by Hoffman and Novak (1995).

downloaded daily from more than 60 newsgroups that sometimes distributed child pornography (averaging 1,000 images per week and images depicting two previously unposted children per month). More than one half of the child pornography images were of girls. Among the more recent images in the database, 41% of girls and 56% of boys were judged by the researchers to be between the ages of 9 and 12; the rest of the depicted children were judged to be younger.[5] Although age is an imperfect indicator of pubertal status, as discussed in chapter 1 of this volume, the judged ages of the children in the COPINE database suggest that a majority of the images depict prepubescent children (especially those judged to be below the age of 9). Taylor et al. (2001) reported anecdotally that child pornography offenders interviewed by COPINE investigators said they preferred thin, fair-complexioned children whose genitals were clearly visible and who did not show secondary sexual characteristics.

Police investigations have also revealed information about child pornography content. For example, Operation Cathedral, a large international police investigation of a child pornography ring called the Wonderland Club, resulted in the arrests of 107 men in 14 different countries (see L. Kelly & Regan, 2000). The participants in this international ring were high-volume traders in child pornography, with the club requiring an initial contribution of 10,000 images to join. At its peak, the Wonderland Club had an estimated 200 members. Almost a million images of 1,263 children were seized, and all of the children were estimated to be under the age of 16; some images were of infants or toddlers.

Finally, approximately four fifths of the child pornography offenders in Wolak et al. (2005) had images of children between the ages of 6 and 12, two fifths had images of children between the ages of 3 and 5, and one fifth had images of children under the age of 3. Many offenders had images of both prepubescent children and adolescents, but 17% had pictures exclusively of children ages 12 and younger. Four fifths of the possessors had images depicting the sexual penetration of children, and approximately one fifth had images depicting violent content such as bondage, rape, and torture.

[5]Taylor et al. (2001) did not describe the reliability of this age estimation, which can be difficult to make (Rosenbloom & Tanner, 1998; Stathopulu, Hulse, & Canning, 2003). Nonetheless, it can be reasonably inferred that many child pornography images depict prepubescent children because distinguishing pubertal status should be a relatively easy judgment to make. S. W. Cooper (2005) discussed using the Tanner criteria (see chap. 1, this volume) for estimating stage of sexual maturation as well as other cues such as motor skills development, dental maturation, and head-height-to-total-height ratio to estimate the ages of children depicted in child pornography.

APPENDIX 3.2
FEMALE SEX OFFENDERS AND FEMALE PEDOPHILES

There is a very large sex difference in sexual offending, with females accounting for fewer than 5% of adult sex offenders (for reviews, see Atkinson, 1995; Grayston & De Luca, 1999; see also Greenfeld, 1996; Motiuk & Vuong, 2002) and fewer than 10% of adolescent sex offenders (Hornick, Bolitho, & LeClaire, 1994). The proportions of female sex offenders may be higher, however, among those who have offended against children compared with those who have offended against peers or adults. A reporting or prosecution bias does not fully account for this sex difference in sexual offending (see Finkelhor & Russell, 1984). Consistent with Trivers's (1972) parental investment theory, men are more likely to be motivated by a desire for novel sexual partners, more interested in youthfulness in potential sexual partners, and more likely to use coercion to obtain sex than are women (see Buss & Schmidt, 1993; chap. 1, this volume; Lalumière, Harris, Quinsey, & Rice, 2005; Symons, 1979).

The literature on female sex offenders consists mostly of small descriptive studies and case reports (e.g., Faller, 1995). It was initially thought that many female sex offenders were accomplices of male offenders such as their husband or boyfriend and participated as a result of pressure by their partner (for a review, see Atkinson, 1995). In fact, the data suggest that the majority of women who commit sexual offenses do so on their own. These studies also indicate that the majority offend against young children, especially those who are in their care. Oral–genital or digital–genital contact is the most common form of sexual contact. Girl victims are more common than boy victims, and girl victims tend to be younger than boy victims, as they are for male offenders against children (Lewis & Stanley, 2000).

Wiegel, Abel, and Jordan (2003) analyzed questionnaire data from a U.S. nationwide sample of 242 women who admitted to committing a sexual offense. The majority (70%) had sexually offended against a child (age unspecified); the rest had engaged in obscene telephone calls or acts of bestiality, exhibitionism, or voyeurism. Just over one half of the respondents acknowledged having a single victim, although a small minority (10%) of the women admitted to sexual offenses against five or more children. The average age of onset of their sexual offending was 19 years. Approximately one fifth (17%) of the women who admitted sexually offending against a child had victimized their own child, and 35% had offended against a niece or nephew. Only 4% of the women had sexually offended against a stranger. These victim characteristics are comparable to those reported for male pedophilic sex offenders. Finally, approximately one third of the women reported being sexually aroused by male or female children, with slightly more admitting to an interest in boys than in girls; a larger proportion of the respondents

were aroused by male or female adolescents and were therefore unlikely to be pedophiles.

Some female sex offenders clearly meet the diagnostic criteria for pedophilia. Fedoroff, Fishell, and Fedoroff (1999) described several women who reported having sexual fantasies about children or reported feeling sexually aroused while engaging in nonsexual acts with children. For example, one woman admitted feeling sexually aroused while play wrestling with her 8-year-old nephew. Another woman reported herself to child protective services after she fellated her 1- and 3-year-old sons, and she admitted that she had sexually fantasized about the boys. Several other women were identified by Fedoroff et al. as potentially pedophilic, but the brief case descriptions are not convincing.

Chow and Choy (2002) described a woman who offended against two girls she was babysitting, both age 4, when she was 18 and 23 years old. This woman met *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text revision; American Psychiatric Association, 2000) criteria for pedophilia: She admitted to having had sexual fantasies about girls who were ages 3 or 4 since she was a child herself (as well as sexual fantasies about adult women and men) and admitted feeling sexually aroused while bathing the girls she was babysitting. She denied any sexual interest, however, in her two young sons. In both incidents, she performed oral sex on the girls, and in the second incident, she masturbated to orgasm while thinking about the sexual acts she had committed. At the time of the assessment, the woman reported having sexual fantasies or feeling sexually aroused by children 12 times a month. Chow and Choy concluded, "In many ways, her history resembled that of men with pedophilia" (p. 213).

A. J. Cooper, Swaminath, Baxter, and Poulin (1990) described the psychophysiological assessment of a female sex offender with child victims. She did not discriminate between sexual stimuli depicting children or adults, using a measure of genital sexual arousal in women (vaginal photoplethysmography, or vaginometry, based on relative vasocongestion of the vaginal wall, just as phallometry measures vasocongestion of the penis). It is interesting that this woman also did not distinguish between depictions of coercive and consensual sex. It is possible that female sex offenders against children will not show age preferences in their genital responses, as male sex offenders against children do, given the results of research by Chivers and her colleagues demonstrating that lesbian, bisexual, and heterosexual women show nonspecificity in their genital arousal to depictions of males or females, despite self-reported sexual arousal that corresponds to their stated sexual orientation (Chivers, 2003; Chivers & Bailey, 2005; Chivers, Rieger, Latty, & Bailey, 2004).

A few case studies outside of clinical or correctional settings were reported in a special issue of the journal *Paidika* (Sax & Deckwilz, 1992), which focused on female adults who had sex with or fantasized about sex with minors (e.g., Sandfort, 1992). "Judith" was 31 and met a 13-year-old girl at a

party she catered; they began a relationship that lasted for approximately 18 months. Conversely, "Heidi" described a passionate relationship that she had with an adult teacher when she was 13. The editors suggested that these women–girl relationships were less genitally focused and less orgasm focused and were in fact more passionate than explicitly sexual (e.g., involving caresses, kisses, and other erotic touching). The ages of the children involved suggest these adult women were not pedophiles.

Fromuth and Conn (1997) conducted a survey of 546 female college students regarding their lifetime sexual experiences with children at least 5 years younger than they were. Of those surveyed, 4% acknowledged having at least one such experience: Most (92%) of these experiences involved physical contact, usually touching and kissing. The average age of the respondent at the time of the sexual contact with a younger child was 12, and the average age of the child was 6. Some of the women (13%) claimed they did not initiate the sexual contact. Contrary to the data available for women who were charged or convicted for sexual offenses, the majority of the children these women reported contacting were boys (70%). None of these incidents were detected by the police or other authorities. Women who had sexual contact with a child were more likely to report any sexual attraction or sexual fantasies about children compared with women who denied any such contact with a child (18% vs. 5%).

An apparent paradox in the female sex offender literature is the proportion of women who are charged with or convicted for having sexual contact with young boys compared with the proportion of adult male sex offenders who report experiencing childhood sexual abuse by a female perpetrator (for a review, see Denov, 2003). This contradiction might be explained by an ascertainment bias such that many female perpetrators are not detected because their male victims do not report the sexual offenses or by a self-report bias on the part of male offenders. More research is needed to determine the extent of sexual offenses against children by women and the role of sexual abuse by a female perpetrator in the etiology of sexual offending.

4

ORIGINS OF SEXUAL OFFENDING AGAINST CHILDREN

In this chapter, I review and critique major theories to explain sexual offending against children. Because the research literature is fragmented, I focus on studies that have compared sex offenders against children with other groups of offenders.[1] A comprehensive theory of sexual offending against children needs to explain the significant differences found in such group comparisons. In the sections that follow, I review this research, organized by domain, and then describe a theory of sexual offending against children that I believe integrates these different findings and produces new and interesting hypotheses. I first begin with an overview of explanations that have been proposed by other investigators.

[1]The logic and available inference of these types of specificity design studies—studies that compare two or more groups on theoretically relevant variables—has been discussed by Garber and Hollon (1991). Briefly, these specificity design studies allow the researcher to determine if a feature of interest is unique (specific) to pedophiles or to sex offenders against children. Failing to show a difference between groups would rule out a simple causal model, that is, that the feature of interest is a necessary and sufficient cause of pedophilia or sexual offending against children. It does not rule out, however, causality in a more complex model that involves multiple factors or interactions between factors.

OVERVIEW OF THEORIES ABOUT SEXUAL OFFENDING AGAINST CHILDREN

In this section, I summarize the similarities and differences among multifactorial theories of sexual offending against children: Finkelhor's (1984) four-factor theory, W. L. Marshall and Barbaree's (1990) integrated theory, G. C. N. Hall and Hirschman's (1992) quadripartite theory, W. L. Marshall and Marshall's (2000) developmental attachment theory, Ward and Siegert's (2002) pathways theory, and Ward and Beech's (2005) integrated theory. Theories focusing on single factors (e.g., poor parent–child attachment) are discussed later in this chapter; theories specifically intended to explain sexual offending against adults are not reviewed here (e.g., Knight & Sims-Knight, 2003; Lalumière, Harris, Quinsey, & Rice, 2005; Malamuth, 2003).

Ward, Polaschek, and Beech (2006) have provided an extensive discussion and critical review of each of the multifactorial theories mentioned here in terms of their ability to unify facts about sexual offending against children (unifying power), internal consistency in the logic of different aspects of the theory, ability to predict future behavior (predictive validity), ability to generate new hypotheses (heuristic value), and ability to generate empirically testable hypotheses (falsifiability). An additional criterion to consider when evaluating theories is their exclusion of extraneous or unnecessary factors to explain the phenomenon of interest (parsimony). Theories that are parsimonious require relatively few assumptions to explain many observations; given two theories that are similar in other properties of a good theory, the simpler of the two is preferred.

Finkelhor (1984) was among the first to describe a multifactorial explanation of sexual offending against children. He suggested that there are four factors that explain sexual offending against children and that such sexual offenses are likely to occur when four conditions are met. The first three factors represent motivations for committing the sexual offenses, including sexual arousal to children (pedophilia), having more affinity for children than for adults (emotional congruence), and feeling unable to meet one's emotional and sexual needs in relationships with adults (blockage). The fourth factor represents the ways in which the individual's inhibitions are overcome (disinhibition) and can include alcohol or drug use, antisocial attitudes and beliefs, or impulsivity. The four conditions for a sexual offense against a child to occur are (a) motivation to commit the sexual offense; (b) overcoming internal inhibitions, such as fear of arrest; (c) overcoming external inhibitions, such as the presence of other adults; and (d) overcoming the resistance of the child.

W. L. Marshall and Barbaree (1990) described a developmental theory that integrates biological vulnerabilities and adverse early experiences (child abuse and neglect) in the development of social skills deficits and self-regulation problems. They proposed that these biological vulnerabilities re-

flect perturbations in male-typical predispositions toward sexual behavior and physical aggression. The social skills deficits and self-regulation problems impede the development of relationships with peers, which can then lead the individual to turn to children as a substitute. Any fantasies about sex with children are reinforced by masturbation to orgasm and increase the individual's motivation to have sexual contact with a child. Combined with access to a potential victim and disinhibition, these predispositions can result in sexual offenses against a child. The subsequent reinforcement (sexual pleasure, sense of control, reduction of negative mood) increases the likelihood of repeating the behavior.

G. C. N. Hall and Hirschman (1992) suggested that four factors explain sexual offending against children, modifying their original model of sexual offending against adults. There is a great deal of conceptual overlap between their quadripartite theory and Finkelhor's four-factor theory: physiological sexual arousal to children, cognitions that justify sexual contacts with children, affective dysregulation, and personality problems. G. C. N. Hall and Hirschman suggested these factors could operate singly or in combination, but a particular factor was likely to be the primary factor for a particular offender; therefore, the quadripartite theory also suggests there are different types of sex offenders against children: Those primarily motivated by sexual arousal to children were expected to have multiple victims, use low levels of force or threat, and be unlikely to engage in nonsexual offenses. In contrast, those offenders who were primarily motivated by cognitions that justified sex with children would engage in a high level of planning and be more likely to commit offenses against related children. Those offenders who were primarily motivated by affective dysregulation would commit offenses opportunistically, use higher levels of violence, and commit both sexual and nonsexual offenses. The factor of personality problems was intended to capture traits that increase an individual's vulnerability to physiological sexual arousal to children, cognitions justifying sex with children, and affective dysregulation.

W. L. Marshall and Marshall (2000) proposed that poor parent–child attachment could initiate a developmental trajectory that increases the possibility that the individual will sexually offend. They suggested that poor attachment leads to low self-esteem and relationship deficits, and all three factors are believed to increase the individual's vulnerability to being sexually abused as a child. Being sexually abused somehow perturbs the individual's sexual development, leading to the increased use of sex as a means of coping with negative affect. In the presence of disinhibiting influences and opportunities to offend, the individual will seek inappropriate sexual outlets, including sex with children. Arousal during the offense and subsequent conditioning through masturbation would lead to an increased sexual response to children.

Ward and Siegert (2002) reviewed these theories and attempted to integrate what they considered to be the best elements of each in explaining

sexual offenses against children. They proposed that there are multiple pathways to such sexual offenses, again based on four clusters of clinical problems: intimacy and social skill deficits; cognitive distortions; emotional dysregulation; and distorted sexual scripts, manifesting in sexual fantasies and sexual arousal to children. Each of these clusters is associated with a particular pathway to offending; a fifth pathway represents sexual offenses by antisocial individuals who have engaged in a variety of different criminal acts.

Ward and Beech (2005) expanded on these pathways in their integrated theory of sexual offending. With this theory, they attempted to encompass evolutionary selection pressures; neurobiological functioning; learning; and psychological systems that are associated with emotional problems, social difficulties, cognitive distortions, and deviant sexual arousal. Ward and Beech suggested that their integrated theory provides a conceptual framework to unify other theories and generate research hypotheses.

There are a number of similarities across these theories. All of them recognize the role of sexual fantasies and sexual arousal to children—although they differ in whether they assume the sexual interest in children is innate and akin to sexual orientation with regard to gender or a preference that is conditioned—and all of them recognize that disinhibition, whether it is a trait (e.g., personality problems) or state (e.g., intoxication) variable, increases the likelihood that individuals will act on their sexual interest in children. All of the theories also focus on sexual offending against children by men, which may not adequately explain sexual offenses committed by women given differences in male and female sexuality and differences in their involvement in crime (see Appendix 3.2).

There are also some notable differences across these theories. Finkelhor's (1984) and G. C. N. Hall and Hirschman's (1992) theories of sexual offending are specific to child victims, whereas the other theories attempt to explain sexual offending in general. In addition, the theories differ in whether all of the factors are thought to play a role or if a subset, or even a single factor, is sufficient to lead to sexual contact with a child. Finkelhor suggested that each factor contributes, as did Ward and Siegert (2002); G. C. N. Hall and Hirschman thought that a single factor was the primary motive for a particular offender. Finally, W. L. Marshall and Barbaree (1990), Ward and Siegert, and Ward and Beech (2005) introduced developmental and biological perspectives.

Ward, Yates, and Long (2006) provided a critique of each of these theories. All of them have limitations according to the criteria of unifying power, internal consistency, ability to predict future behavior, heuristic value, falsifiability, or parsimony. A particular concern is the extent to which these theories can be empirically tested, because many concepts are not clearly operationalized or it is unclear what specific predictions can be deducted. For example, W. L. Marshall and Marshall (2000) did not explain why disturbances in sexual development as a result of poor parent–child attachment,

low self-esteem, and relationship deficits should cause someone to cope by seeking sexual contacts with children as opposed to seeking sex with adult partners or turning to commercial sex outlets such as prostitution and adult pornography. In another example, Ward and Beech's (2005) theory attempts to be consilient in theorizing about sexual offending against children and does well in terms of unifying power and internal consistency. Their integrated theory is vague, however, about the mechanisms and processes involved in sexual offending against children, and it is so broadly described that it is not satisfactory according to the criteria of predictive validity, falsifiability, and parsimony.

A general criticism of all of the theories mentioned here is their lack of attention to conceptual and empirical developments in developmental criminology and theories of offending in general. This gap is surprising given that sexual contact with a child is serious criminal behavior. As I discuss later in this chapter, a great deal is known about the developmental aspects and important correlates of offending in general. Another limitation of many of these theories is that they do not explicitly address the etiology of pedophilia. The exception is W. L. Marshall and Barbaree's (1990) integrated theory; these authors have suggested that sexual arousal to children is the result of conditioning following adverse early experiences. Finally, none of these models has been tested in their entirety. Instead, support for the different models has come from research showing that sex offenders differ from other men on measures of one or more of the factors.

A GENERAL EXPLANATION OF SEXUAL OFFENDING

The first question that needs to be addressed is whether a special theory is required to explain sexual offending against children. Such sexual offenses might be just one manifestation of *antisociality* (general antisocial tendencies, i.e., tendencies to engage in antisocial behavior reflected in attitudes, beliefs, and personality traits) and thus could be accounted for by a general explanation of offending. Males are more likely to be involved in crime in general, including sexual crimes. This greater level of involvement can be explained by parental investment theory (briefly mentioned in chap. 1, this volume; see Daly & Wilson, 2001; Quinsey, 2002; Quinsey & Lalumière, 1995; Rowe, 2002). Because of the greater variance in their potential reproductive success, men are more likely to take risks than women in pursuing status, resources, and access to new sexual partners. This risk taking can be manifested in antisocial and criminal behavior, including fighting (to gain status), stealing (to gain resources), and sexual offending (to gain sexual access to otherwise unavailable mates).

Highly antisocial men are criminally versatile: Analyses of criminal careers show that repeat offenders tend to be generalists (engaging in a vari-

ety of different kinds of crimes) rather than specialists (engaging in one particular kind of crime; Lussier, 2005; Simon, 1997; Smallbone & Wortley, 2004). Many adolescent and adult sex offenders with child victims have histories of nonsexual antisocial behavior and nonsexual crimes, and sex offenders with child victims are more likely to reoffend nonsexually than sexually (for reviews, see Butler & Seto, 2002; Caldwell, 2002; France & Hudson, 1993; Friedrich et al., 2001; Hanson & Bussière, 1998). Finally, as I discuss in further detail in chapter 7, measures of antisociality predict recidivism among sex offenders against children (Hanson & Bussière, 1998; Hanson & Morton-Bourgon, 2005; Rice & Harris, 1997; Seto, Harris, Rice, & Barbaree, 2004) as they do among other groups of offenders, including undifferentiated groups of offenders (Gendreau, Little, & Goggin, 1996), mentally disordered offenders (Bonta, Law, & Hanson, 1998), and juvenile delinquents (Lipsey & Derzon, 1998). Taken together, these observations suggest that many incidents of sexual offenses against children could be explained by general theories of crime (see Gottfredson & Hirschi, 1990; Loeber & Farrington, 1997; Moffitt, 1993).

UNIQUE FACTORS TO EXPLAIN SEXUAL OFFENDING

A first step in establishing the contribution of unique factors is to compare sex offenders with other kinds of offenders. A general explanation would predict no differences between the groups, whereas special explanations would predict differences in theoretically derived domains. To illustrate this approach, all of the theories reviewed earlier in this chapter would predict that male sex offenders as a group would differ on measures of pedophilia and social competence when compared with other offenders or nonoffending men. The theories proposed by Finkelhor (1984), W. L. Marshall and Barbaree (1990), G. C. N. Hall and Hirschman (1992), Ward and Siegert (2002), and Ward and Beech (2005) would also predict that sex offenders against children would differ from other men on measures of attitudes and beliefs about sex with children, emotional congruence with children, emotional dysregulation, and disinhibition. W. L. Marshall and Marshall (2000) have proposed that male sex offenders differ from other men in other ways, including poor parent–child attachment, early sexual development, and experiencing childhood sexual abuse.

In the following sections, I outline the rationale and evidence for the roles of these different factors; some are part of the multifactorial theories described earlier, and others have been specifically posited as unique causes of sexual offending against children. Some of the evidence I present is from a meta-analysis of studies that compared adolescent sex offenders and other adolescent offenders (Seto & Lalumière, 2005, 2007). I also review studies that have compared adult sex offenders and other offenders.

Pedophilia

The link between pedophilia and sexual offending against children is intuitive, based on the assumption that people tend to engage in sexual behavior with the persons they sexually prefer: Heterosexual men seek sexual contacts with women, gay men seek sexual contacts with other men, and pedophiles seek sexual contacts with children. It is also an empirically supported link: As reported in chapter 2, men who sexually offend against children can be distinguished from other men on measures of their self-reported sexual interests, sexual histories, and sexual arousal to children. Moreover, sex offenders with histories of sexual contacts with multiple children, younger children, and boys show greater sexual arousal to stimuli depicting children, and as I discuss in chapter 7, measures of pedophilia predict recidivism among sex offenders. The etiology of pedophilia is discussed in chapter 5.

Social Competence

All of the theories described in the previous section include social incompetence as an explanation. Researchers have hypothesized that sex offenders seek much younger children because they cannot fulfill their sexual and emotional needs in relationships with peers. Thus, one would expect sex offenders to have deficits in such skills as approaching people, engaging them in pleasant conversations, and decoding affective cues during one-on-one interactions (Becker & Kaplan, 1988; Knight & Prentky, 1993; W. L. Marshall, Jones, Hudson, & McDonald, 1993; W. L. Marshall, Serran, & Cortoni, 2000; Worling, 2001). Hunter, Figueredo, Malamuth, and Becker (2003) suggested that adolescent offenders against children would have greater deficits in this regard than those who have offended against peers or adults.

Attitudes and Beliefs About Sex With Children

Different theorists have proposed that attitudes and beliefs about sex with children (often referred to as *cognitive distortions* or *thinking errors* in the clinical literature) play a role in explaining sexual offending against children (G. C. N. Hall & Hirschman, 1992; Ward & Siegert, 2002). Many self-identified pedophiles endorse positive attitudes about sex with children and view children as capable of consenting to sex (e.g., Abel, Becker, & Cunningham-Rathner, 1984; Hanson, Gizzarelli, & Scott, 1994; G. D. Wilson & Cox, 1983). These views might motivate or justify sexual offending, thereby increasing the likelihood of such behavior.

Emotional Dysregulation

Emotional dysregulation (problems in regulating one's mood, resulting in anxiety, depression, or distress) is a common factor in many of the theories

reviewed here. Emotional dysregulation may impede the development of relationships with peers, and predisposed men may cope with their emotional distress by seeking sex with children (G. C. N. Hall & Hirschman, 1992; W. L. Marshall & Barbaree, 1990; W. L. Marshall & Marshall, 2000; Ward & Siegert, 2002). Moreover, emotionally dysregulated individuals may also be more disinhibited in their behavior, especially if they use alcohol or drugs as a way to cope with their distress.

Disinhibition

Many of the theories regarding sexual offending against children assume that disinhibition plays an important role. Among individuals who are motivated to seek sexual contact with a child, only those who can overcome their inhibitions—whether those are fear of being caught, concern about potential negative effects on the child, or resistance to the idea of violating social norms or incurring legal sanctions—can act on their motives. Disinhibition can be a result of individual differences such as personality traits, or it can occur as a result of situational factors such as intoxication. For example, a number of theorists have proposed that sex offenders against children lack empathy or have empathy deficits, thus allowing them to act on their sexual interests despite the fear, distress, or pain they might cause to the children, the children's families, or the offenders' families and friends if the offender is discovered (e.g., Finkelhor, 1984; W. L. Marshall & Barbaree, 1990; for a review, see W. L. Marshall, Hudson, Jones, & Fernandez, 1995). Others have suggested that sexual offending is more likely to occur when the individual is intoxicated, given the well-documented effects of alcohol or drug use on both sexual and antisocial behavior (see George & Stoner, 2000; W. L. Marshall & Barbaree, 1990; Seto & Barbaree, 1995; White, 1997).

Poor Parent–Child Attachment

W. L. Marshall and Marshall (2000) focused on poor parent–child attachment as a specific cause of sexual offending against children. Drawing on Bowlby's (1969) attachment theory, W. L. Marshall and Marshall proposed that male children who formed poor attachments with their parental figures in infancy and early childhood were more likely to later develop relationship and emotional difficulties, including feelings of loneliness, lack of intimacy, and low self-esteem. They further suggested that poor parent–child attachment increases the risk of being sexually abused because vulnerable boys are more likely to seek relationships with adults other than their parents. Sexual fantasies and sexual behavior involving children become means of coping with the negative effects of these adverse early experiences. (Why the fantasies and behavior should involve children rather than adults is not explained by these theories.)

Poor parent–child attachment is also thought to directly increase the likelihood of sexual offending because poorly attached individuals are more likely to try to fulfill their intimacy needs in socially unacceptable relationships. Smallbone (2006) attempted to integrate attachment research and theory into W. L. Marshall and Barbaree's (1990) theory of sexual offending. He suggested that insecure attachment can play a role in sexual offending against children by reducing one's capacity for empathy and perspective taking, increasing emotional regulation problems, and increasing the likelihood of a coercive interpersonal style.

Sexual Development

Some theorists have suggested that male sex offenders differ from other men in their sexual development, particularly in earlier or more frequent exposure to sex in childhood and early adolescence (e.g., Beauregard, Lussier, & Proulx, 2004). This may come in the form of observing others engaging in sexual activities or viewing pornography. At the same time, sex offenders would be expected to be less successful in forming conventional sexual relationships to the extent that they have social skills deficits. Thus, unique explanations involving sexual development suggest sex offenders against children score younger on variables such as age of onset of masturbation and early exposure to sex but older on variables reflecting conventional sexual experiences such as age of first intercourse and number of adult sexual partners.

Childhood Sexual Abuse

Probably the most frequently discussed unique explanation of sexual offending against children is the sexually abused sexual abuser hypothesis, sometimes referred to as the *cycle of sexual abuse* (Johnson & Knight, 2000; Kobayashi, Sales, Becker, Figueredo, & Kaplan, 1995). The cycle of sexual abuse hypothesis proposes that male children who have been sexually abused are more likely to engage in sexual offending later in life. Ryan, Lane, Davis, and Isaac (1987) hypothesized that some adolescents engage in maladaptive strategies to cope with the experience of being sexually abused, become socially isolated and withdrawn from their peers, and then begin to fantasize sexually to compensate for their feelings of powerlessness. These sexual fantasies increase their risk of committing a sexual offense, which in turn leads to further negative thoughts about themselves, perpetuating the cycle. W. L. Marshall and Marshall (2000) suggested that masturbating to fantasies of sex with children might be a coping response to early sexual abuse, subsequently reinforced by regaining feelings of power and control and developing an emotional identification with children. Burton (2003) described plausible social learning mechanisms linking sexual abuse and later sexual offending:

modeling of the perpetrator's behavior in an effort to regain a sense of control, conditioning as a result of pairing any sexual stimulation caused by the sexual abuse with cues such as the type of acts that occurred, and changing cognitions about the acceptability of adult–child sex.

COMPARING SEX OFFENDERS AGAINST CHILDREN WITH OTHER MEN

What is the evidence that the factors I have listed are unique to sexual offending against children? This question is addressed here in two stages. The first stage is to examine whether the putatively unique factors distinguish sex offenders from other kinds of offenders, thereby demonstrating that the factor is not accounted for by criminal status. The second stage is to examine whether the putatively unique factors distinguish sex offenders against children from other sex offenders, thereby demonstrating that the factor is not accounted for by sex offender status.

Much of the evidence discussed for the first stage is drawn from a recent meta-analysis my colleague Martin Lalumière and I conducted of 52 studies that compared adolescent male sex offenders (n = 3,112) and adolescent male nonsex offenders (n = 9,995) on variables reflecting antisociality, family relationship problems, social incompetence, sexual development, and childhood abuse (Seto & Lalumière, 2005, 2007). A similar meta-analysis of the adult sex offender literature has not been completed yet, so I review individual studies where applicable.

Antisociality

One finding of these studies (Seto & Lalumière, 2005, 2007) was that adolescent sex offenders scored significantly lower on different aspects of antisociality—extent of criminal involvement, early conduct problems, antisocial attitudes and beliefs, associations with antisocial peers, and antisocial personality traits such as impulsivity and callousness—than other adolescent offenders. Similarly, samples of adult sex offenders score lower, on average, than samples of other adult offenders on psychopathy (see Appendix 4.1), antisocial attitudes, and association with antisocial peers (Hare, 2003; Mills, Anderson, & Kroner, 2004; Porter et al., 2000).

At the same time, studies of adult sex offenders have consistently shown that those who target adult victims score higher on measures of antisociality than those who target child victims. Lalumière et al. (2005) reviewed the sex offender literature and concluded that offenders against adults are similar to other offenders, whereas offenders against children score significantly lower on measures of antisociality. Rice and Harris (1997) found that 88 sex of-

fenders against adults had more extensive criminal histories and higher scores on a measure of psychopathy than 142 sex offenders against children. The offenders against adults committed nonsexual offenses faster once released, whereas offenders against children committed new sexual offenses faster. Other researchers have found similar results (Bard et al., 1987; Serin, Mailloux, & Malcolm, 2001; Seto & Barbaree, 1999; Weinrott & Saylor, 1991). Lalumière and I found in our meta-analysis of adolescent studies that adolescent sex offenders with peer or adult victims tended to score higher than those with child victims on measures of criminal history, conduct problems, and antisocial personality traits (Seto & Lalumière, 2005, 2007). Taken together, these results indicate that a general explanation is not sufficient to explain sexual offending against children.

Social Incompetence

Lalumière and I (Seto & Lalumière, 2007) found support in our meta-analysis for social incompetence as a unique factor, with adolescent sex offenders scoring lower on measures of social skills deficits than other adolescent offenders. Dreznick (2003) reviewed 14 studies (all but one were of adult male offenders) and found that sex offenders scored significantly lower on both self-report and performance measures (e.g., role-play) of social skills than other offenders.

Abracen et al. (2004) compared 166 adult sex offenders with adult victims, 168 sex offenders with unrelated child victims, and 177 sex offenders with related child victims on measures of social skills deficits. Both groups of men who had sexually offended against children scored significantly higher than the offenders against adults on social skills deficits. In addition, offenders against unrelated children (who would be more likely to be pedophilic) scored higher on social skills deficits than offenders with only related child victims. This finding seems to support a unique role of social skills deficits in sexual offending against children.

It is possible, however, that sex offenders against children may show social skills deficits in their interactions with adults but may not show such deficits in their interactions with children. In other words, men who are socially awkward or hesitant to initiate conversations with other adults may not show the same problems when speaking with children or may even be more skillful because they are more comfortable with children (recall Finkelhor's factor of emotional congruence and the affinity for children reported by self-identified pedophiles). Sex offenders against children may also show no deficits in their associations with other sex offenders against children (Hanson & Scott, 1996; Jenkins, 2001). More research using both self-report and observational measures of social skills in relating to both adults and to children is needed to examine this possibility.

Attitudes and Beliefs About Sex With Children

Racey, Lopez, and Schneider (2000) found no significant difference between adolescent sex offenders and other offenders on attitudes and beliefs about sex with children, and other studies have found no significant differences between adult sex offenders against children and other men (e.g., Abel et al., 1989; Fisher, Beech, & Browne, 1999; Gannon & Polaschek, 2005; Tierney & McCabe, 2001). Some researchers have found that men who sexually offend against children are more likely than rapists to see sex with children as permissible, believe children can consent and benefit from sexual contacts with adults, and perceive sexual intent in children's actions (e.g., Arkowitz & Vess, 2003; Bumby, 1996; Stermac & Segal, 1989).

Emotional Dysregulation

Lalumière and I (Seto & Lalumière, 2007) found in our meta-analysis of adolescent comparisons that sex offenders reported significantly more anxiety or depression than other offenders, suggesting variables in this domain might play a unique role in explaining sexual offending. A similar pattern of results has been found in studies that have compared adult sex offenders against children with other adult offenders (Ahlmeyer, Kleinsasser, Stoner, & Retzlaff, 2003; Chantry & Craig, 1994). However, the timing of symptoms was not clearly distinguished in the studies that we reviewed. The symptoms could have preceded the sexual offenses, but they could also be a consequence of being identified as a sex offender (e.g., becoming anxious and depressed after being arrested and charged for a sexual offense in response to the extremely negative social views about sexual offending). Research that clarifies the timing of psychological problems could help elucidate the relationship between emotional dysregulation and sexual offending (e.g., by examining records of psychiatric admissions or mental health treatments that precede the index sexual offenses; see Appendix 4.2).

Disinhibition

As I noted earlier, disinhibition increases the likelihood of sexually offending against a child among individuals who are motivated to do so. Disinhibition can involve both trait and state components; in particular, researchers have examined empathy deficits and substance use.

Empathy Deficits

Lalumière and I (Seto & Lalumière, 2007) found in our meta-analysis of adolescent comparisons that six studies directly assessed empathy; adolescent sex offenders tended to score higher, rather than lower, on measures of empathy when compared with other adolescent offenders. Among adults,

some studies have observed differences between sex offenders and nonoffending men on measures of general empathy (W. L. Marshall et al., 1993; W. L. Marshall, Hamilton, & Fernandez, 2001; Rice, Chaplin, Harris, & Coutts, 1994), although others have not (Langevin, Wright, & Handy, 1988; Seto & Barbaree, 1993). These studies did not compare sex offenders against children with other offenders. Because sex offenders against children score lower than other offenders on measures of psychopathy, and one of the distinguishing features of psychopaths is lack of empathy, I would predict that adult sex offenders against children would score higher rather than lower than other offenders on measures of empathy.

Focusing on sex offenders with child victims, Chaplin, Rice, and Harris (1995) compared 15 men who had sexually offended against girls and 15 nonoffending men. The offenders scored significantly lower than the nonoffenders on two of three empathy questionnaires. Moreover, scores on the same two empathy questionnaires were correlated with phallometrically assessed sexual arousal to children, such that the sex offenders who scored lower on empathy showed relatively greater sexual arousal to children. The greatest discrimination between the two groups of men was obtained by using stimuli that emphasized the trauma experienced by the child.

W. L. Marshall et al. (1995) suggested that empathy deficits may be specific to the specific victims of the sexual offenses, rather than to children as a class of people or to people in general. An unanswered question is whether the empathy deficits are precursors of the sexual offenses or a result of the universal psychological mechanism of cognitive dissonance following the offense: Cognitive dissonance occurs when people have incompatible cognitions (reflected in their thoughts, attitudes, beliefs, or behaviors) resulting in the adoption of new cognitions or the modification of existing cognitions to reduce this dissonance (Festinger, 1957). Thus, sex offenders may express less empathic views about a specific child victim or may espouse positive attitudes and beliefs about children and sex (e.g., that children benefit from the sexual interactions) to reconcile their criminal and generally condemned behavior with a positive view of themselves. Those who are not able to resolve this cognitive dissonance by feeling less empathic or holding positive attitudes and beliefs about sex with children may be the individuals who experience greater psychological distress (in the form of anxiety or depression) after committing sexual offenses.

Substance Abuse

Lalumière and I (Seto & Lalumière, 2007) found in our meta-analysis of adolescent comparisons that adolescent sex offenders scored significantly lower on measures of substance abuse than other adolescent offenders, both for alcohol and for other drugs. There is surprisingly little research on this topic among adult sex offenders. Two studies found that adult sex offenders engaged in more alcohol abuse than nonsexually violent offenders but did

not differ significantly from the other adult offenders in their use of other drugs (Abracen, Looman, & Anderson, 2000; Looman, Abracen, DiFazio, & Maillet, 2004).

Poor Parent–Child Attachment

Lalumière and I (Seto & Lalumière, 2007) found that poor parent–child attachment was not supported as a unique factor in our meta-analysis of adolescent comparisons because adolescent sex offenders and nonsex offenders did not differ significantly on measures of attachment and other aspects of family relationships. The test of this prediction, however, was weak because only two comparisons examined attachment, and only one of these specifically looked at parent–child attachment.

Two recent studies found that adult sex offenders were significantly more likely than other offenders to report insecure attachment styles (Lyn & Burton, 2004; Marsa et al., 2004). Moreover, sex offenders against children retrospectively report less secure childhood attachment and less secure adult attachment styles than nonsex offenders or nonoffenders (Marsa et al., 2004; Smallbone & Dadds, 1998; but not W. L. Marshall et al., 2000; W. L. Marshall & Mazzucco, 1995). There is also some evidence that men who offend against related children are more likely to report insecure childhood attachment than men who offend against unrelated children or men who have committed property offenses (Smallbone & Dadds, 1998). It has not yet been demonstrated, however, that this factor is unique to sexual offending against children by comparing sex offenders against children and other sex offenders.

Sexual Development

Lalumière and I (Seto & Lalumière, 2007) also found some support for the role of early sexual development in sexual offending. Adolescent sex offenders did not differ from other sex offenders in their early exposure to sex or pornography, but they did score significantly lower on measures of conventional sexual experiences. The latter result is consistent with the finding of social skills deficits among adolescent and adult sex offenders because individuals with less ability to initiate and form relationships with similar-aged peers would have less opportunity for conventional sexual experiences. There were not sufficient studies in the meta-analysis to compare adolescent sex offenders against children and those who offended against peers or adults.

It is surprising, given the sexual nature of the crimes of adult sex offenders, that there have been few studies that have focused on their conventional sexual experiences. Different research groups have demonstrated that conventional sexual history variables such as number of sexual partners and age at time of first intercourse are positively correlated with sexual offending against peers in community samples (Knight & Sims-Knight, 2003; Lalumière, Chalmers, Quinsey, & Seto, 1996; Malamuth, Addison, & Koss, 2000), but

there have been few comparisons of adult sex offenders and other adult offenders. Cortoni and Marshall (2001) found that a combined group of 59 sex offenders against children and adults did not significantly differ from 30 nonsexually violent offenders on age of onset of first intercourse, number of sexual partners, variety of sexual activities they had engaged in, or use of pornography. Gebhard, Gagnon, Pomeroy, and Christenson (1965) found that both sex offenders and other offenders had more extensive sexual experiences (e.g., first heterosexual contact before age 14, first intercourse before age 16, and number of premarital sex partners) than nonoffending men, but sex offenders as a group had less sexual experience than other offenders. Kafka and Hennen (2003) found that sex offenders reported a persistently high level of sexual activity (masturbation and intercourse) but did not differ from a comparison group of paraphilic nonoffending men; however, comparison groups of nonparaphilic nonoffenders or nonparaphilic offenders were not included in this study.

As was found for comparisons of sex offenders and other kinds of offenders, few studies have directly compared sex offenders against children and other sex offenders in their noncriminal sexual histories or conventional sexual experiences. Cortoni and Marshall (2001) compared the sexual histories of 30 sex offenders against children and 29 sex offenders against adults. Those who victimized children reported a significantly later onset of first genital intercourse, but they did not significantly differ in the age of their first sexual partner, average number of sexual partners, or variety of sexual activities engaged in. The two sex offender groups also did not significantly differ in their self-reported use of pornography or weekly frequency of masturbation. Gebhard et al. (1965) found that sex offenders against children were less conventionally sexually experienced than sex offenders against adults.

Childhood Sexual Abuse

Finally, Lalumière and I (Seto & Lalumière, 2007) found a significant difference between adolescent sex offenders and other adolescent offenders in their sexual abuse histories. Whether the comparison was made on the basis of self-report or other sources of information, adolescent sex offenders had approximately five times the odds of having a history of sexual abuse. In contrast, adolescent sex offenders and nonsex offenders did not significantly differ in the likelihood that they were physically abused, even though physical and sexual abuse tend to occur together. To focus on self-report data, 52% of adolescent sex offenders reported a history of sexual abuse compared with 13% of adolescent nonsex offenders.[2] The same pattern of results was

[2]Because very different definitions and measures of childhood sexual abuse were used, these percentages should not be interpreted as prevalence estimates. However, because each study in

obtained in a meta-analysis of 12 studies that cumulatively compared 778 adult sex offenders and 1,506 other adult offenders in their history of childhood sexual abuse. Adult sex offenders were more likely to have histories of sexual abuse than other adult offenders but did not differ from other adult offenders in the likelihood of having a physical abuse history; the difference was found whether the analysis was based on self-report or on other sources of information (Lalumière, Seto, & Jespersen, 2006).

Lalumière and I (Seto & Lalumière, 2007) found in our meta-analysis of adolescent studies that sex offenders with child victims (30%) were twice as likely as those who had peer or adult victims (15%) to have been sexually abused. Moreover, the difference between sex offenders and nonsex offenders was related to the proportion of the sex offender group who had victimized children. In our subsequent meta-analysis of adult studies, adult sex offenders who victimized children were more likely to have been sexually abused than those who victimized peers (Lalumière et al., 2006). The potential role of childhood sexual abuse in explaining pedophilia is discussed in chapter 5.

RECONCEPTUALIZING SOME UNIQUE FACTORS

Some of the unique factors that have been discussed in this chapter can be reconceptualized as offense-specific expressions of universal psychological tendencies. Positive attitudes and beliefs about sex with children have been interpreted as an attempt to minimize responsibility for sexually offending against a child, that is, a conscious effort to reduce unpleasant feelings of remorse or guilt. Such attitudes and beliefs may be unique in their content (sex with children) but not in the underlying psychological mechanisms (cognitive dissonance). Research on offenders in general has also found that they tend to espouse attitudes and beliefs that minimize their personal responsibility (e.g., Simourd, 1997; Simourd & Van de Ven, 1999). Moreover, changing attitudes in response to dissonant behavior is not unique to offenders; it is a general human tendency when people's attitudes and behaviors are not congruent (Festinger, 1957).

Positive attitudes and beliefs about children have also been interpreted as cognitive schema that influence the individual's perceptions about children (e.g., interpreting friendliness as an expression of interest in sexual activity). Although they differ in the age of the persons they target, sex offenders with child victims are not necessarily different from other men in having a tendency to attribute sexual motives to nonsexual behavior. Abbey (1982) and others have found that heterosexual men tend to misperceive female

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Seto and Lalumière's (2007) meta-analysis used the same definition and measure of childhood sexual abuse in comparing adolescent sex offenders and other adolescent offenders, the difference between groups can be meaningfully interpreted.

friendliness, attributing sexual interest or intent in gestures such as smiling. This tendency is exacerbated by alcohol consumption (Abbey, Zawacki, & McAuslan, 2000).

Sex offenders against children, especially those who are pedophilic, may score lower in conventional sexual experiences with regard to adults but may be similar to other men on variables such as age at first sexual experience or number of sexual partners if their sexual contacts with children are taken into account. In this view, sex offenders against children do not differ from other men in their sexual development but do differ in their sexual interests and the ways in which these interests are expressed.

Self-reported psychopathology and empathy deficits may be opposite responses to the negative consequences of committing a sexual offense, such as the distress of the child and arrest and embarrassment for the perpetrator. Some perpetrators feel bad about the offense and about themselves afterward and thus may experience anxiety, depression, and low self-esteem as a result. Others, to protect their self-esteem, will blame the victim or feel less empathy for the victim in response to the cognitive dissonance they experience after committing the sexual offense. In either case, the reaction to distress, embarrassment, or other negative consequences is not unique to sex offenders against children except for the specific circumstances.

Alternatively, low empathy and substance abuse are correlated with antisociality such that highly antisocial individuals are less empathic. All of the factors that Smallbone (2006) suggested are related to insecure parent–child attachment—reduced empathy, emotional dysregulation, and coercive interpersonal relationships—could also be viewed as manifestations of antisociality. Moreover, there is evidence that insecure attachment and early maltreatment play a role in general offending as well (Hicks, Krueger, Iacono, McGue, & Patrick, 2004; Verona & Sachs-Ericsson, 2005; Widom & White, 1997).

These reconceptualizations suggest that some of the putatively unique factors can be explained by the broader considerations of antisociality and pedophilia, leaving only sexual abuse history to be accounted for in a comprehensive theory of sexual offending against children. In the next section, I discuss developmental considerations in a theory of sexual offending against children.

A DEVELOPMENTAL PERSPECTIVE

Several of the theories I reviewed earlier have a developmental perspective (W. L. Marshall & Barbaree, 1990; W. L. Marshall & Marshall, 2000; Ward & Beech, 2005). A developmental perspective is valuable because there are myriad differences among children, adolescents, and adults and because there is both persistence and desistance in sexual offending across

the life span (for a review, see Barbaree, Hudson, & Seto, 1993). Retrospective studies suggest approximately one half of adult sex offenders report that their first sexual offense was committed as a juvenile (Abel, Mittelman, & Becker, 1985; Abel, Osborn, & Twigg, 1993; Groth, Longo, & McFaddin, 1982), and up to one half of adolescent sex offenders have engaged in sexual misconduct when they were under the age of 12 (Burton, 2000; Ryan, Miyoshi, Metzner, Krugman, & Fryer, 1996; Zolondek, Abel, Northey, & Jordan, 2001). In prospective studies, however, only a minority (perhaps 10% to 15%) of adolescent sex offenders commit another sexual offense over 5 years of opportunity (for a review, see Caldwell, 2002). The proportion of children with sexual behavior problems who persist and commit a sexual offense later in life is also relatively small; Carpentier, Silovsky, and Chaffin (2006) found that 2% of a group of children with sexual behavior problems later committed a sexual offense. Taken together, these data indicate that many children with sexual behavior problems and many adolescent sex offenders desist from sexual offending, though they may continue to engage in problematic nonsexual behavior or commit nonsexual crimes. Children's sexual behavior problems may represent a reaction to sexual abuse they have experienced, or it may reflect sexual precocity or normative sexual play. Many adolescents' sexual offenses may represent opportunistic and relatively transient criminal behavior. A small group of people who have sexual behavior problems as children or adolescents, however, are likely to persist in committing sexual offenses into adulthood.

My colleagues and I have proposed a developmental theory of sexual offending that draws heavily on an influential taxonomy described by Moffitt (1993) to integrate diverse findings in the literature on juvenile delinquency (Lalumière et al., 2005; Quinsey, Skilling, Lalumière, & Craig, 2004; Seto & Barbaree, 1997; Seto & Lalumière, 2005). Moffitt's original developmental taxonomy distinguished between life-course-persistent and adolescence-limited offenders. She proposed that the antisocial behaviors of each of these groups have different causes and different developmental trajectories. The life-course-persistent group is much smaller and is characterized by neuropsychological difficulties and early adversities such as family instability and physical abuse or neglect. These early adversities may represent environmental effects that increase the risk of persistent antisocial behavior or may signify the presence of inherited predispositions to engage in persistent antisocial behavior (because antisocial parents often create family instability and are more likely to abuse or neglect their children). Initial differences in neuropsychological difficulties and early experiences (or predispositions) result in contemporary and cumulative consequences that increase the difficulty of desisting from antisocial behavior and engaging in prosocial behavior instead. For example, early academic failure can limit later educational and employment opportunities, and incarceration as a result of arrest can interfere with schooling, employment, and familial and peer relationships. As a

result of these contemporary and cumulative processes, the life-course-persistent group has an early onset of behavior problems and engages in pervasive and persistent antisocial behavior, and its members are likely to continue offending as adults.

In contrast, the adolescence-limited group is much larger, does not show an early onset of behavior problems, is situationally and temporally inconsistent in its offending, and its members usually desist as they enter adulthood. The adolescence-limited group is not characterized by the same early risk factors as the life-course-persistent group. Instead, members of the adolescence-limited group are thought to mimic the life-course-persistent individuals in their midst. Though not necessarily popular or liked, the life-course-persistent individuals obtain indications of status that are not yet accessible to their peers, including money, independence from parents, and sexual opportunities. Moffitt (1993) predicted that adolescence-limited individuals would desist from crime once this "maturity gap" closed and the adolescence-limited individuals gained access to prosocial opportunities to achieve status (employment for money, moving out of the family home, and beginning sexual relationships). Predictions about the long-term outcomes of life-course-persistent and adolescence-limited individuals have been supported by subsequent longitudinal research (e.g., Moffitt, Caspi, Harrington, & Milne, 2002; Raskin White, Bates, & Buyske, 2001), though some investigators have suggested that additional developmental trajectories exist (e.g., Laub & Sampson, 2003).

A recent modification of Moffitt's taxonomy suggests there may actually be three distinct groups (Quinsey et al., 2004). My colleagues distinguish between two life-course-persistent groups. The first, as proposed by Moffitt (1993), is characterized by signs of neuropsychological vulnerabilities and early adversity. The second group is also life course persistent and also very likely to continue offending into adulthood but does not show any sign of neuropsychological vulnerabilities. This nonpathological group consists of psychopaths (Lalumière, Harris, & Rice, 2001). These different developmental trajectories would be expected to have different causes (see Quinsey, 2002; Quinsey et al., 2004; see Appendix 4.1).

If one applies this developmental taxonomy to sexual offending against children, life-course-persistent offenders are expected to account for a disproportionate number of sexual offenses against children. Differences are also expected between psychopathic and nonpsychopathic offenders, with psychopathic offenders being more likely to target postpubescent or pubescent girls than the nonpsychopathic offenders. Both life-course-persistent groups would be more likely to nonsexually or sexually reoffend than adolescence-limited sex offenders, who are expected to represent the majority of sex offenders against children. These adolescence-limited sex offenders, most of whom are heterosexual, do not have the resources or status among peers to compete heterosocially for similar-aged mates. Some engage in delinquent

acts such as stealing, using drugs, and fighting to gain access to resources and to gain prestige among their peers. Others, who do not have the means or opportunities to form and maintain peer relationships, turn to younger children as sexual outlets, but this behavior is both temporally and situationally inconsistent unless the individual is a pedophile.

Some life-course-persistent offenders and some adolescence-limited offenders are pedophiles and will seek prepubescent children, persist in having sexual contacts with children, and be more likely to target boys than girls (see chap. 2, this volume). Psychopathic offenders are less likely to be pedophilic and more likely to seek older girls (G. T. Harris, 2004). The relative likelihood of reoffending in any way will depend on their antisociality, whereas the likelihood of sexually reoffending will depend on both antisociality and pedophilia (Hanson & Bussière, 1998; Hanson & Morton-Bourgon, 2005; see chap. 7, this volume).

This developmental theory of sexual offending against children is similar to the theories reviewed earlier in this chapter, because sexual offenses against children are thought to be explained both by pedophilia and antisociality; antisocial tendencies are reflected in Finkelhor's (1984) disinhibition factor, W. L. Marshall and Barbaree's (1990) self-regulation problems, G. C. N. Hall and Hirschman's (1992) personality problems, and Ward and Siegert's (2002) emotional regulation problems. This developmental theory differs, however, by focusing on the two pathways of antisociality and pedophilia, making distinctions between life-course trajectories, and by explicitly integrating psychopathy, which has been shown to be an important explanation of crime (see Figure 4.1). As shown in the figure, there are two sources of antisociality, one attributed to neurodevelopmental deficits and an adverse early environment (Moffitt's life-course-persistent trajectory) and another attributed to a stable life strategy (psychopathy). As I discuss in chapter 5, pedophilia is also associated with neurodevelopmental deficits and sexual abuse history. Both increase the likelihood of sexually offending against a child in conjunction with situational factors such as access to potentially vulnerable children, intoxication, and sexual dissatisfaction (either with a current relationship or with having no relationship). Given evidence that Moffitt's taxonomy has validity for female delinquency, this theory might also help explain sexual offending by females.

CHILD VULNERABILITIES

A comprehensive theory of sexual offending against children needs to take child vulnerabilities into account. Children are not uniformly at risk of being sexually victimized; some children are more vulnerable than others. As I discuss in chapter 6, many men are related to the children they offend against. Factors that increase risk include parental separation or divorce be-

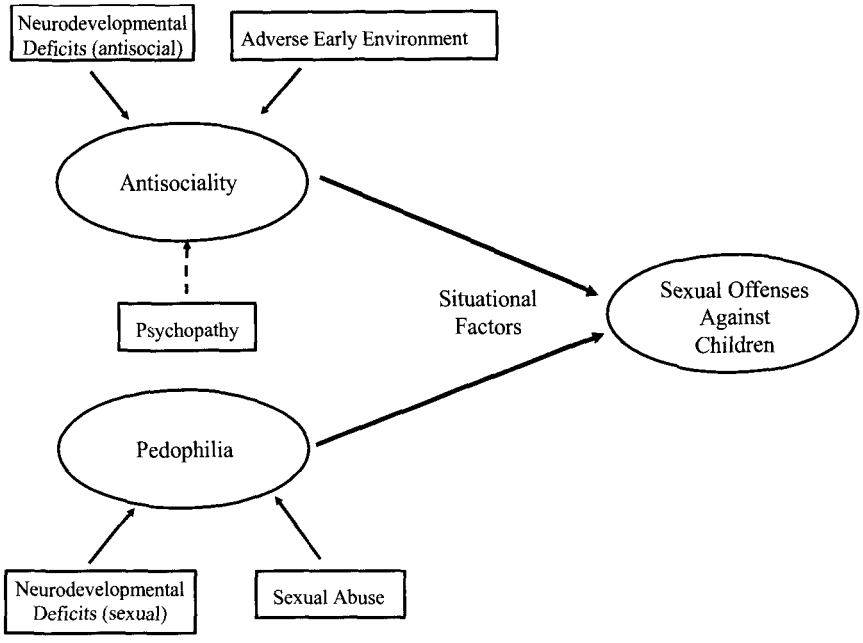


Figure 4.1. A developmental theory of persistent sexual offending against children. Two alternative trajectories to general antisocial tendencies are shown: a life-course-persistent path characterized by neurodevelopmental deficits and adverse early environments and a psychopathic path that is not pathological.

cause stepfathers pose relatively greater risk to children than genetic fathers (Daly & Wilson, 1998); experiencing physical abuse or neglect, which may make children more susceptible to the positive attention of unrelated adult males (Frenzel & Lang, 1989) or may reflect the fact that sexual and nonsexual abuse tend to co-occur within families; and early puberty, which may increase a child's sexual attractiveness to nonpedophilic men (T. P. Smith, 1994). Information about child vulnerabilities and the aspects of children that pedophilic and nonpedophilic men find most attractive is also important for secondary prevention efforts because more intensive interventions are justified for at-risk children.

CONCLUDING COMMENTS

Sexual offending against children—an antisocial and criminal behavior—is explained in part by antisociality. Many sex offenders against children have histories of nonsexual offenses and nonsexually antisocial behavior, and measures of antisociality are good predictors of recidivism among this group of offenders. These consistent findings indicate that theories of sexual offending against children could gain a great deal from drawing on

advances made in developmental criminology, including the important distinction between developmental trajectories and their different etiologies and prognoses.

In addition to the theoretical implications, the role of antisociality in explaining sexual offending against children has implications for clinical practices with regard to the variables to pay attention to in risk assessment and the manner in which interventions are designed and implemented. As I discuss in chapters 7 and 8, antisociality variables play an important role in sex offender risk assessment measures, and there is evidence that certain kinds of treatments can influence antisocial tendencies and thereby reduce the likelihood of reoffending.

A number of ostensibly unique factors that help explain sexual offending against children have been identified: social incompetence, conventional sexual experiences, childhood sexual abuse, and psychopathology. Pedophilia also clearly distinguishes sex offenders with child victims from other men, and in fact, the differences found between sex offenders against children and other offenders in social competence and conventional sexual experiences may be explained by pedophilia as well. Pedophiles may have poorer social skills in their interactions with other adults but may score higher on measures of social skills if their interactions with children are assessed; similarly, pedophiles may score lower on conventional sexual experiences (i.e., sexual interactions with adults) because they are not sexually interested in adults and prefer sexual interactions with children.

APPENDIX 4.1
PSYCHOPATHY AND SEXUAL OFFENDING AGAINST CHILDREN

Psychopathy is characterized by a short-term, impersonal, and antisocial approach to life (Cleckley, 1976; Hare, 2003). Distinguishing characteristics of psychopaths include glibness, insincerity, callousness, impulsivity, need for stimulation, irresponsibility, and persistent and versatile antisocial behavior. There is evidence to suggest that psychopathy represents a *taxon*, that is, a natural class of individuals (G. T. Harris, Rice, & Quinsey, 1994; Skilling, Quinsey, & Craig, 2001). Thus, high scores on a measure of psychopathy such as the Hare Psychopathy Checklist—Revised (Hare, 2003) may indicate the probability of whether someone is a psychopath, rather than representing degree of psychopathy. However, recent taxometric research has not confirmed these initial findings (Abramowitz, 2005; Edens, Marcus, Lilienfeld, & Poythress, 2006).

Psychopathy is an important construct in understanding sexual offending against children because it is consistently related to recidivism as well as other outcomes of concern, such as institutional misconduct, violation of parole or probation conditions, and treatment compliance (for comprehensive reviews, see Patrick, 2006). Although much more is known about psychopathy in adult male offenders, psychopathy can also be detected among adult female offenders, adolescent offenders, and civil psychiatric patients.

Psychopathy is associated with sexual behavior. Men who score high in psychopathy show a keen interest in partner novelty and casual sex and tend to have short-term sexual relationships. In fact, two of the items on the Hare Psychopathy Checklist—Revised specifically refer to this sexual history ("many short-term marital relationships" and "promiscuous sexual behavior"). A recent study suggested that psychopathy is characterized by early involvement in coercive sexual behavior (G. T. Harris, Rice, Hilton, Lalumière, & Quinsey, 2007). In addition, male psychopaths may be more likely than nonpsychopaths to opportunistically have sexual contacts with older girls; G. T. Harris et al. (2007) found that psychopathic sex offenders were less likely than nonpsychopathic sex offenders to have very young victims or boy victims.

My colleagues and others have argued that psychopathy may represent a life strategy that may have been adaptive in ancestral environments if the following conditions were met: Psychopaths (*defectors* in the language of game theory, which has been used by evolutionary theorists to compare different life strategies) can achieve reproductive success when they are difficult to detect, highly mobile, and skilled at manipulating the large majority of cooperative people (Harpending & Sobus, 1987; Mealey, 1995). In this view, psychopaths may be genetically different from other individuals, including other offenders. Unlike the orthodox conceptualization of psychopathy as a disorder, this view of psychopathy suggests it is not a disorder and may in fact

be an evolutionarily stable strategy. Consistent with this view, and inconsistent with the view that psychopathy is a disorder, psychopathic offenders are less likely to have low intelligence, learning disorders, or to have experienced obstetrical complications than nonpsychopathic offenders (G. T. Harris, Rice, & Lalumière, 2001; Lalumière et al., 2001).

Core psychopathic features such as glibness, insincerity, and callousness are not necessarily deficits but may instead be adaptations that allow psychopaths to carry out their antisocial approach to life. This reconceptualization of psychopathy is radical because psychopathy is usually viewed as a major personality disorder that is a result of neuropsychological and social deficits and that leads to problems in a variety of domains, especially interpersonal relationships. The alternative view—that psychopathy may have been an adaptive strategy—has major implications for treatment because most interventions have a deficits-based approach (Seto & Quinsey, 2006). If psychopathy is not a mental disorder, then what should be addressed in treatment?

APPENDIX 4.2
PSYCHOPATHOLOGY AND SEXUAL OFFENDING

Mental health problems such as depression are negatively associated with future offending among adolescent offenders (Katsiyannis, Zhang, Barrett, & Flaska, 2004; Vermeiren, Schwab-Stone, Ruchkin, De Clippele, & Deboutte, 2002), which suggests psychopathology may, in fact, have a protective effect. However, problems such as depression could still play a role in the onset of sexual offending if, for example, they led to the use of sex as a coping strategy and if using sex as a coping strategy increased the likelihood of having sexual contact with a child (Cortoni & Marshall, 2001).

Leue, Borchard, and Hoyer (2004) reported on the psychiatric morbidity of 55 adult sex offenders, 21 of whom had offended against children. The prevalences were high and probably reflected the fact that the sample was recruited from a forensic psychiatric setting; for example, 69% met diagnostic criteria for any anxiety disorder during their lifetime, and 56% met diagnostic criteria for any mood disorder during their lifetime. Dunsieth et al. (2004) also reported high prevalence rates in a sample of 113 male sex offenders seen at a residential treatment facility; for example, 58% met diagnostic criteria for a mood disorder, and 23% met diagnostic criteria for an anxiety disorder. The 84 paraphilic sex offenders, one half of whom were pedophiles, were more likely to have any mood disorder, anxiety disorder, or impulse control disorder than the 26 nonparaphilic sex offenders (3 men were not classified as either paraphilic or nonparaphilic). Långström, Sjöstedt, and Grann (2004) reported on the psychiatric comorbidity of all adult male sex offenders released from prison in Sweden between 1993 and 1997 based on hospital admissions (N = 1,215 sex offenders; 522 had offended against children). Of those who offended against children, relatively few (4.8%) had any psychiatric disorder, and the most common diagnoses for both groups of sex offenders were substance abuse, substance dependence, and personality disorders. Långström et al. suggested that an explanation for the relatively low prevalences found in this study was that the diagnoses were based on hospital admissions, and only some diagnoses were the focus of the inpatient assessments. Finally, N. C. Raymond, Coleman, Ohlerking, Christenson, and Miner (1999) reported on the psychiatric diagnoses of 45 pedophilic sex offenders; a majority had a diagnosable mood disorder (67%) or anxiety disorder (64%) at some point in their lives, and one half (53%) met diagnostic criteria for another paraphilia.

All of these studies indicate there is a great deal of psychiatric comorbidity among adult sex offenders against children. What they do not indicate is whether sex offenders against children differ from other offenders. Only studies that directly compare adult sex offenders and other offenders, using the same measures and recruitment methods, would reveal if psychopathology might be a unique factor. In addition, studies would need to account

for additional factors that might explain the comorbidity of psychopathology and sexual offending against children and establish that psychopathology was present before the onset of sexual offending against children (e.g., by reviewing prior mental health records).

5

ETIOLOGY OF PEDOPHILIA

All of the theories of sexual offending against children discussed in chapter 4 include pedophilia as an important factor. However, clinicians and researchers are still in search of an explanation for pedophilia itself. In this chapter, I discuss three leading candidates in terms of their empirical support: conditioning, childhood sexual abuse, and neurodevelopmental perturbations. The criteria for evaluating theories mentioned in chapter 4—unifying power, internal consistency, predictive validity, heuristic value, falsifiability, and parsimony—should again be kept in mind while considering these explanations. The discussion of childhood sexual abuse extends the research described in chapter 4. The evidence that pedophilia is a neurodevelopmental disorder draws on several lines of neuroscientific research that have found differences between pedophilic and nonpedophilic men. I begin with an account of how conditioning might help explain the development of pedophilia.

CONDITIONING

A number of writers have proposed that masturbatory conditioning plays a role in the development of pedophilia (Laws & Marshall, 1990; McGuire, Carlisle, & Young, 1965). Many people have their initial sexual experiences

as children, with other children. Some individuals, for unspecified reasons, may pair the physical cues of young partners—such as small body size, androgynous body shape, absence of pubic hair, and absence of secondary sexual characteristics—with the sexual pleasure elicited by these initial experiences and eventually learn to associate these cues with the powerful reinforcement of orgasm. Others have the same initial experiences as children, but they continue to have sexual experiences with similar-aged peers and do not develop a conditioned response to prepubescent children. Pedophiles are somehow blocked in making this adjustment, suggesting that conditioning may only affect individuals who are already predisposed for other reasons (such as childhood sexual abuse, poor parent–child attachment, or social incompetence). Thus, conditioning cannot be a sufficient explanation for the etiology of pedophilia.

Dandescu and Wolfe (2003) found that atypical sexual fantasies preceded and accompanied the first sexual offense reported by a sample of 57 sex offenders with child victims; the sexual fantasies then increased in frequency after their first sexual offense. Approximately two thirds of the offenders reported having some "deviant sexual fantasies" prior to their first contact with a child, and 81% reported having such fantasies afterward. Those who offended against both boys and girls and were therefore more likely to be pedophilic (see chap. 2, this volume) were more likely to report having deviant sexual fantasies both before and after their first sexual contact with a child. This finding suggests that the sexual arousal and gratification experienced during the first sexual offense increased the frequency of sexual fantasies among men who already had such fantasies (and may have preceded the onset of deviant sexual fantasies about children in a small group of men who did not already acknowledge having such fantasies).

There is equivocal evidence about the ability to conditionally increase sexual arousal in humans, especially to initially neutral stimuli. Rachman (1966) and Rachman and Hodgson (1968) reported significantly increased sexual arousal to pictures of boots among normal volunteers, but these studies did not have control conditions. Lalumière and Quinsey (1998) presented 10 nonoffending men with 11 pairings of a slide of a moderately attractive, partially nude adult woman with a highly arousing videotaped segment depicting heterosexual intercourse, and another 10 men were exposed to 11 presentations of the slide alone. The men in the paired condition showed a 10% increase in their sexual arousal to the slide, whereas the men in the unpaired condition showed an 11% decrease in sexual arousal (the decrease was interpreted by the researchers as evidence of habituation). Plaud and Martini (1999) reported mixed results in a conditioning study of 9 male volunteers, and Hoffmann, Janssen, and Turner (2004) found a significant effect of conditioning on sexual arousal among nonoffending men.

The paraphilia and sex offender treatment outcome literature on conditioning of sexual arousal is not informative about whether pedophilia is developed through conditioning, but it does provide information about the impact of conditioning on sexual arousal. Aversive conditioning procedures are typically used to suppress sexual arousal to children, and masturbatory reconditioning procedures are used to enhance sexual arousal to adults. In aversion procedures, unpleasant stimuli such as mild electric shocks or ammonia odors are paired with repeated presentations of sexual stimuli depicting children. In a variation called *covert sensitization*, the aversive stimulus is imagined, for example, being discovered by family, friends, or coworkers while engaging in sexual behavior involving children. Masturbatory reconditioning involves associating sexual arousal with adult cues; techniques include thematic shift in which the participant masturbates to a pedophilic sexual fantasy until the point of orgasm and then switches to a sexual fantasy involving an adult.

The efficacy of conditioning approaches for changing sexual arousal patterns has been reviewed elsewhere (e.g., Barbaree, Bogaert, & Seto, 1995; Barbaree & Seto, 1997). Overall, the research suggests that behavioral conditioning can significantly decrease pedophilic sexual arousal among sex offenders, but it is unclear how long these changes are maintained, what mechanisms are actually responsible for the changes in sexual arousal patterns, and whether the changes reflect an actual change in sexual preference or greater voluntary control over sexual arousal (Lalumière & Earls, 1992; Mahoney & Strassberg, 1991).

These different research findings suggest that conditioning is unlikely to explain the development of pedophilia. Experimental efforts to increase sexual arousal to nonpreferred stimuli have produced small effects, and it is unclear how long conditioned sexual responding (e.g., suppression of sexual arousal to child stimuli through aversive conditioning) can be maintained. There are other problems with conditioning explanations of pedophilia. Logically, though conditioning is a well-established process, these explanations do not address why only some individuals are susceptible to this effect. Empirically, there is no evidence that pedophilic men are more likely to have had sexual experiences with other children when they themselves were young, and retrospective accounts indicate that some pedophiles report an onset of sexual interest in children before they had any sexual contact with children (Dandescu & Wolfe, 2003; Freund & Kuban, 1993b). If conditioning does play a role in the development of pedophilia in some cases, as suggested by Dandescu and Wolfe's (2003) study, then there must be an interaction between conditioning experiences and other factors. I discuss two possibilities—childhood sexual abuse and neurodevelopmental factors—in the next two sections.

CHILDHOOD SEXUAL ABUSE

I reviewed the evidence demonstrating a link between childhood sexual abuse and sexual offending against children in chapter 4. There is additional evidence to suggest the link may be particularly strong for pedophilia. Adult sex offenders who reported being sexually abused were more likely to admit being sexually aroused by children (Fedoroff & Pinkus, 1996; Freund, Watson, & Dickey, 1991), and adolescent sex offenders who were sexually abused showed relatively greater sexual arousal to children when assessed phallometrically than those who were not abused (Becker, Hunter, Stein, & Kaplan, 1989; Becker, Kaplan, & Tenke, 1992; Hunter & Becker, 1994). In addition, sexual abuse history is correlated among both adolescent and adult sex offenders with having a boy victim (Becker et al., 1992; Hanson & Slater, 1988; Hilliker, 1997; Kaufman, Hilliker, & Daleidin, 1996; Worling, 1995; but see Aylwin, Studer, Reddon, & Clelland, 2003). Sexual abuse history is also associated with having multiple child victims (Becker & Stein, 1991; Hilliker, 1997; Renshaw, 1994), younger victims (Kaufman et al., 1996), and an earlier onset of sexual offending (Friedrich & Luecke, 1988; Hilliker, 1997; Knight & Prentky, 1993). As noted in chapter 2, all of these sexual offense history variables are significant correlates of pedophilia.

Further evidence for a specific association between childhood sexual abuse and pedophilia comes from a study by Lee, Jackson, Pattison, and Ward (2002), who compared 64 adult sex offenders with 33 nonviolent offenders. The sex offenders were further distinguished into subgroups according to the paraphilias they had: those with pedophilia, biastophilia, exhibitionism, or multiple paraphilias. Childhood emotional abuse and childhood behavior problems were common across the paraphilia subgroups and were more prevalent in all the subgroups compared with the nonviolent offenders. However, childhood sexual abuse was specifically associated with pedophilia; it did not distinguish exhibitionists or biastophiles from the combined group of other sex offenders and nonviolent offenders, although it did distinguish pedophiles from this combined group.

There is less evidence regarding the link between childhood sexual abuse and pedophilia outside of correctional samples. In contrast to the studies of adjudicated (criminally charged or convicted) sex offenders mentioned previously, Fromuth, Burkhart, and Jones (1991) found no difference in sexual abuse history between male students who admitted to having sexual contact with a child and those who denied such contact. In a sample of 99 sexually abused boys and girls between the ages of 3 and 7 years, D. K. Hall, Mathews, and Pearce (1998) found that children who became sexually aroused during the sexual abuse (n = 62) were more likely to engage in problematic sexual behavior directly involving others (e.g., unwanted touching—in contrast to public masturbation, a sexual behavior problem that does not directly involve others) than those who did not (n = 37). Arousal during abuse was

coded as present if the child reported physical changes (e.g., "my dinky got hard like this") or showed signs of sexual arousal when disclosing or acting out sexual abuse (e.g., obtaining an erection during the treatment sessions). Other aspects of sexual abuse that distinguished children who engaged in problematic sexual behavior involving others from those who did not were the use of grooming tactics by the perpetrator, perpetrator's sadism, the perpetrator requiring others to watch him or her engage in sexual acts and be actively involved, and the child being less likely to blame the perpetrator for what happened. All of the sexual abuse reports were confirmed with child protection services.

The large majority of sexually abused children do not go on to offend, so there must be individual differences in vulnerability to any effect of sexual abuse. An obvious one is being male: The large majority of sex offenders against children are male, yet the majority of child victims of sexual abuse are female. Salter et al. (2003) found that 26 of 224 (12%) sexually abused boys later committed sexual offenses, most involving sexual contacts with children. The follow-up period was 7 to 19 years in duration, but most of the sexual offenses took place only a few years later; the average age of the boys at the time of their sexual abuse was 11, and the average age at the time of their sexual offense was 14. Sexually abused boys who later committed sexual offenses were significantly more likely to have experienced neglect, lacked parental supervision, and witnessed serious intrafamilial violence. They were also significantly more likely to have had a female perpetrator. W. L. Marshall and Marshall (2000) have suggested that another vulnerability is poor parent–child attachment.

Another potential source of variation in the link between childhood sexual abuse and pedophilia is the nature of the sexual abuse. A number of investigators have suggested that aspects of the sexual abuse such as the victim–perpetrator relationship, type of sexual abuse, and duration and timing of the sexual abuse are related to the likelihood of problematic sexual behavior (Burton, 2003; Finkelhor, 1979; Hunter, Figueredo, Malamuth, & Becker, 2003; Knight & Prentky, 1993). Burton, Miller, and Tai Shill (2002) found that sexually abused youths were much more likely to later commit sexual offenses if they were sexually abused by both men and women, if the perpetrator was related to them, if the perpetrator used violence, if the abuse took place over several years, and if the abuse included penetration.

Given this evidence of a specific link between childhood sexual abuse and pedophilia, what are the possible mechanisms underlying this association? I discuss these possibilities next.

Learning

Burton (2003) suggested that learning could help explain the link between childhood sexual abuse and later sexual offending against children

(and sexual arousal to children), either through imitation of the perpetrator's behavior, conditioning as a result of pairing any sexual stimulation caused by the sexual activity with cues of the sexual abuse such as the type of acts that occurred, and reinforcing attitudes and beliefs about the acceptability of adult–child sex. Consistent with the idea that learning explains the link, Burton found that adolescent sex offenders who had been sexually abused themselves tended to commit the same offending acts as those they had experienced. One question that is not addressed by a learning explanation is why the learning results in sexual behavior directed toward children instead of sexual behavior directed toward older adults; after all, the perpetrator is an older adult, and he or she is the one who is presumably paired with any sexual stimulation that might occur.

Sexual Development

Childhood sexual abuse may have a pervasive impact on subsequent sexual development, increasing the possibility that atypical sexual interests such as pedophilia emerge. There is some evidence for this association, though the mechanism is unclear. Two studies have found that sexually abused adult sex offenders reported an earlier onset of masturbation than other adult offenders (Cortoni & Marshall, 2001; Smallbone & McCabe, 2003). Brown, Cohen, Chen, Smailes, and Johnson (2004) found a relationship between experiencing two or more episodes of childhood sexual abuse and an early onset of puberty in a nonoffender sample of both men and women. Specifically, the mean age of puberty onset (as indicated by beard growth and voice change) was 11 years for the subgroup who were sexually abused two or more times compared with a mean of 13 years for the comparison group of nonabused individuals. (An alternative explanation for this finding is that early maturing children were at greater risk of being sexually victimized by nonpedophilic men.) Child sexual abuse also appears to be linked to later sexual orientation, with gay men being more likely to report having experienced sexual abuse by a male perpetrator when compared with their heterosexual brothers (Balsam, Rothblum, & Beauchaine, 2005).

Genetic Predisposition

Because a great deal of the sexual abuse experienced by children is perpetrated by parents or other family members, it is possible that the link between sexual abuse and sexual offending is genetically mediated. The only genetically relevant study to date has been one small study examining the familiality of paraphilias (Gaffney, Lurie, & Berlin, 1984). Otherwise, there have only been a small number of case reports suggesting father–son transmission of transvestism (Buhrich, 1977; Krueger, 1978). Liakos (1967) described a family in which an adolescent engaged in cross-dressing, and his

father was suspected of having sexual contact with young girls, collecting his wife's clothes and underwear and urinating on them, and attempting to rape his wife after incapacitating her with chloroform. One of the adolescent's brothers had served a prison sentence for sexually assaulting his stepdaughter and stealing female neighbors' undergarments (bras and stockings) from clothing lines. (The adolescent had two other brothers and two sisters without any known sexual behavior problems.)

No behavioral genetic studies have been conducted on pedophilia, but it is worth noting that there is good evidence of moderate heritability for other aspects of sexuality, including sexual orientation (see Bailey & Pillard, 1995), age at first intercourse (Dunne et al., 1997), interest in casual sex (Bailey, Kirk, Zhu, Dunne, & Martin, 2000), and excessive or public masturbation among children (Långström, Grann, & Lichtenstein, 2002). These studies suggest that there could be a heritable component to pedophilia and sexual behavior involving prepubescent children. Given the reproductive costs of exclusive pedophilia (people with a sexual preference for prepubescent children and disinterest in sexually mature partners would be unlikely to have children), the heritable component would not involve pedophilia per se; instead, it is possible that the male-typical preference for youthfulness is at least moderately heritable. Pedophilia may represent an extreme on a continuum of attraction to youthfulness or a failure of the psychological mechanisms underlying the regulation of youthfulness attraction (see Quinsey, 2003; Quinsey & Lalumière, 1995). Recall from chapter 1, this volume, that there is good evidence that nonpedophilic heterosexual men are attracted to youthful female features. In this view, pedophiles are attracted to youthful features like smooth skin, hairlessness, and neotenous facial features but are not attracted to adult features like a waist-to-hip ratio closer to 0.70 and full breasts.

Alternatively, there may be a gene–environment interaction in the relationship between childhood sexual abuse and subsequent sexual development. Physical maltreatment does not appear to be genetically mediated, suggesting that it has a causal effect on subsequent antisocial behavior but in interaction with genetic vulnerabilities (Jaffee, Caspi, Moffitt, & Taylor, 2004; Jaffee et al., 2006).

NEURODEVELOPMENTAL FACTORS

There is a growing literature on the association between child maltreatment and brain development, particularly in *corpus callosum* (a band of tissue that connects the left and right hemispheres of the brain) morphology (e.g., Teicher et al., 2004). Animal experiments have demonstrated a causal effect of early adverse experiences on brain development (e.g., Sanchez, Hearn, Do, Rilling, & Herndon, 1998). It is also possible that children who already

differ in their brain development might be more vulnerable to physical and sexual abuse, for example, by behaving more impulsively or by behaving in awkward ways that draw the attention of potential perpetrators (child vulnerabilities are discussed in more detail in chap. 8, this volume). To the extent that sexual abuse is experienced as traumatic, one would expect that sexually abused children differ from those who are not abused in their subsequent development. Other possible sources of neurodevelopmental perturbations include maternal malnutrition, illness, exposure to toxins, chromosomal abnormalities, birth complications, child illness, or head injury.

Brain abnormalities have long been suspected as a cause of pedophilia. For example, Krafft-Ebing (1906/1999) observed that an autopsy of a homicidal pedophile's brain showed "morbid changes of the frontal lobes, of the first and second temporal convolutions, and of a part of the occipital convolutions" (p. 86; this was Case 15, who sexually assaulted and then killed a 4-year-old girl). Other case studies have suggested that brain injuries are associated with *pseudopedophilic* sexual behavior, including collection of child pornography and sexual contacts with children (e.g., Burns & Swerdlow, 2003; Casanova, Mannheim, & Kruesi, 2002). The case described by Burns and Swerdlow (2003) is particularly interesting because the male patient was in his 40s; there was no evidence of a prior sexual interest in children; and his interest in children disappeared after the removal of a right orbitofrontal tumor. At the same time, the orbitofrontal region is associated with inhibition of behavior, so it is possible that the man had a preexisting sexual interest in children that was never expressed or was successfully concealed but became apparent when the tumor grew (and then disappeared after removal of the tumor).

Information on brain functioning can be obtained both indirectly and directly. In indirect research, investigators have compared the performance of sex offenders with child victims with other groups of men on measures of intelligence and other aspects of cognitive functioning. Some studies have found that sex offenders with child victims are lower in intelligence than other offenders (A. Ellis & Brancale, 1956; Hucker et al., 1986; Langevin, Wortzman, Wright, & Handy, 1989), but others have not found differences between these groups on standardized neuropsychological test batteries (e.g., Hucker et al., 1986).

As noted by my colleagues at the Centre for Addiction and Mental Health (CAMH)—Ray Blanchard, James Cantor, and their research group—much of this research has been limited by small sample sizes and mixed samples of sex offenders and comparison cases (Cantor, Blanchard, Robichaud, & Christensen, 2005). Cantor et al. (2005) addressed these limitations by conducting a meta-analysis of 236 samples. Cumulatively, there was a significant difference between adult sex offenders and other men, with sex offenders scoring lower on measures of intelligence than other offenders, who in turn scored lower than nonoffending controls. This finding demonstrates that the

effect is not explained by criminal status alone. Adolescent sex offenders also scored significantly lower on measures of intelligence than other adolescent offenders. Among the sex offenders, Cantor et al. (2005) found that intelligence score was related to the proportion of the sample who were pedophilic because sex offenders with child victims scored lower than sex offenders without any child victims, and there was a positive relationship between the age cutoff used by the original study authors to define child victims and the sex offenders' mean intelligence score. In other words, samples composed of men who offended against younger children tended to produce lower mean IQ scores than samples composed of men who offended against older children.

The CAMH research group has been engaged in a productive program of research on the neurodevelopmental aspects of pedophilia over the past decade. Their studies are characterized by the methodological strengths of large samples and pure groups of pedophiles. In this work, the CAMH group has demonstrated that patients diagnosed as pedophilic on the basis of their sexual offense histories and their phallometric responding scored lower on intelligence tests than nonpedophilic patients (Cantor et al., 2004). Moreover, the offenders' number of child victims under the age of 12 was significantly and negatively related to total intelligence score, whereas their number of older victims was not significantly (though still negatively) related to this score. In contrast, the number of adult sexual partners reported by the subjects was positively and significantly correlated with intelligence score, indicating that the relationship between sexual victim history and intelligence score could not be explained by a relationship between overall sexual activity and intelligence. Cantor et al. (2004) also found a similar pattern of results for measures of verbal and visuospatial learning and memory. Taken together, the CAMH group's findings suggest pedophiles differ from other men in their cognitive functioning.

In other studies, the CAMH research group also found that pedophilic sex offenders were more likely to report experiencing head injuries—one possible source of brain damage—before age 13 but did not differ in reports of head injuries after age 13 (Blanchard et al., 2002, 2003). The fact that there was no difference in reports of head injuries after age 13 counters the possibility that pedophiles have a retrospective reporting bias in recalling head injuries, because there would be no reason to think that head injuries before the age of 13 are somehow more exculpatory or socially desirable than head injuries after this age. The fact that there was no difference after age 13 also suggests there is a critical age window in terms of the possible impact of head injury on the development of sexual interests, consistent with other work that suggests the time before and during puberty is critical in the emergence of sexual preferences.

Given the variety of indirect evidence for the role of neurodevelopmental factors in the etiology of pedophilia, an intriguing question is how this difference in cognitive functioning is manifested in the brain. Re-

searchers have attempted to directly assess brain function or structure, especially in the frontal (associated with executive control) and temporal (associated with emotional processing and regulation of sexual behavior) regions. Two early studies compared pedophilic sex offenders with nonoffending age-matched controls in the electrical activity of their frontal and temporal regions of the brain (Flor-Henry, Lang, Koles, & Frenzel, 1991; Yeudall & Fromm-Auch, 1979). Hucker et al. (1986) found significant temporal abnormalities in a comparison of 29 pedophilic sex offenders and 12 controls using computerized tomography, but this finding was not confirmed by the same research group in subsequent studies using larger samples (Langevin, Wortzman, Dickey, Wright, & Handy, 1988; Langevin et al., 1989). Wright, Nobrega, Langevin, and Wortzman (1990) found that a mixed group of 64 sex offenders (30 with child victims and 34 with adult female victims) had smaller cross-sectional areas in the left frontal and left temporal regions of the brain compared with 12 nonsexually violent offenders. Like much of the research on cognitive functioning, these studies are hampered by small sample sizes and the inclusion of mixed samples of sex offenders and comparison groups.

Neurostructure

The CAMH group recently completed a study to examine structural differences between pedophiles and other sex offenders using magnetic resonance imaging and neuropsychological testing. In their literature review, the CAMH group identified three plausible hypotheses about the development of pedophilia. The first hypothesis implicates frontal brain regions and views sexual offending against children as the result of an inability to inhibit sexual behavior (Flor-Henry et al., 1991; Graber, Hartmann, Coffman, Huey, & Golden, 1982; Stone & Thompson, 2001). Recall that nonoffending heterosexual men show some sexual arousal to prepubescent girls; these men might be capable of initiating sexual contacts with girls but normally refrain from doing so unless they are disinhibited. The second hypothesis implicates deep temporal structures such as the limbic system in regulating sexual behavior (Hucker et al., 1986; Kolarsky, Freund, Machek, & Polak, 1967; Langevin et al., 1989; Langevin, Wortzman, et al., 1988). The third hypothesis implicates sex-dimorphic structures affected by masculinization of the developing male brain. The CAMH group predicted that pedophilia would be more strongly correlated with the volumes of sexually dimorphic brain structures, and differences in frontal or temporal areas would be limited to sexually dimorphic structures.

The results did not support any of these hypotheses (Cantor et al., 2006). Unexpectedly, pedophilic offenders had significantly less *white matter* (the neuron fibers connecting areas of the cortex and other structures) than nonpedophilic offenders, particularly in two tracts: the superior occipitofrontal

fasciculus and the right arcuate fasciculus. Both of these tracts are thought to connect cortical regions that are involved in the evaluation of stimuli as being sexually relevant, suggesting that pedophilic men may differ from other men by being less coordinated in their recognition of sexual cues.

Neurochemistry

There has been relatively little research on the neurochemical correlates of pedophilia. Maes and his colleagues compared 8 pedophiles with 11 controls and found that the pedophiles had lower baseline cortisol and prolactin levels, higher baseline epinephrine, and higher cortisol and epinephrine responses to a challenge with a chemical probe that selectively affects central serotonergic receptors (Maes, De Vos, et al., 2001; Maes, van West, et al., 2001).

Kafka (1997, 2003) has argued that serotonin plays a role in paraphilic sexual behavior, including pedophilia. He cited several lines of evidence to support this idea. First, both human and nonhuman evidence has shown that serotonin is important in regulating sexual behavior, with low serotonin levels associated with increased or disturbed sexual behavior (for a review, see Meston & Gorzalka, 1992). Second, there is evidence of high comorbidity of mood disorders and paraphilias, suggesting overlap in their etiologies. Third, antidepressants that increase serotonin levels (e.g., selective serotonin reuptake inhibitors such as fluoxetine, better known by its trade name Prozac) often have side effects such as loss of sexual desire, erectile dysfunction, and inhibition of ejaculation and orgasm. Finally, Kafka cited case reports and small, uncontrolled studies suggesting that administration of drugs that increase serotonin levels result in decreased paraphilic sexual fantasies, thoughts, urges, and behavior (for a review, see Gijs & Gooren, 1996; see also chap. 8, this volume). Not clear in this account, however, is why serotonin dysfunction would lead to paraphilic sexual behavior instead of increased or dysregulated conventional sexual behavior (e.g., pursuing more adult sexual partners and engaging in more frequent sexual intercourse with adult sexual partners) and why serotonin dysfunction might be manifested in sexual behavior directed toward children instead of other targets (or other activities).

A DEVELOPMENTAL PERSPECTIVE ON PEDOPHILIA

Etiological theories of pedophilia need to incorporate what we know about normal sexual development. In particular, heterosexual or homosexual orientation emerges before the onset of puberty and can be described phenomenologically as a process of discovery (McClintock & Herdt, 1996). One's developing awareness of sexual interest in opposite-sex or same-sex persons typically precedes identifying oneself as heterosexual or homosexual and also

typically precedes engaging in sexual behavior and self-identification of sexual orientation (Remafedi, Resnick, Blum, & Harris, 1992; Savin-Williams & Diamond, 2000). Through large-scale sexuality surveys, researchers are beginning to accumulate normative data for older adolescents and adults on aspects of sexuality such as age of first genital intercourse and lifetime number of sexual partners (e.g., ACSF Investigators, 1992; Laumann, Gagnon, Michael, & Michaels, 1994). Researchers are also beginning to accumulate normative data on the sexual behavior of children and younger adolescents (Brener et al., 2002; Friedrich, Grambsch, Broughton, Kuiper, & Beilke, 1991). However, relatively little is known about the sexual development of pedophiles. Most of what is known about the onset of pedophilic sexual interests comes from retrospective surveys of sex offenders against children or case studies of self-identified pedophiles (see Appendix 1.3, this volume).

The available evidence, taking into account the likelihood that some respondents deny having pedophilia or conceal an early awareness, suggests that a similar process occurs in pedophilia; one's awareness of sexual interest in prepubescent children emerges early in life and often precedes engaging in sexual behavior involving children or self-identification as a pedophile. Abel et al. (1987) found that an onset of sexual interests in children before the age of 18 was admitted by 50% of extrafamilial offenders against boys, 40% of extrafamilial offenders against girls, and 25% of incest offenders. Similar data were reported by W. L. Marshall, Barbaree, and Eccles (1991) in a study of 129 sex offenders with child victims: 41% of extrafamilial offenders against boys, 35% of extrafamilial offenders against girls, and 10% of incest offenders admitted an onset of deviant sexual fantasies before age 20. Those who responded more atypically in the phallometric laboratory did not differ from the others in age at onset of sexual fantasies, age at first offense, or the temporal precedence of fantasies relative to behavior but did differ by masturbating more frequently, being more likely to engage in multiple paraphilic behaviors, and having more victims. Approximately one quarter admitted the onset of fantasies taking place before their first sexual offense; some of the other offenders may have been concealing an earlier onset of pedophilic sexual interests. As mentioned earlier in this chapter, Dandescu and Wolfe (2003) found that two thirds of their sample of sex offenders against children reported that they had deviant sexual fantasies before committing their first offense. As mentioned in chapter 3, one quarter of Bernard's (1985) sample were aware of their pedophilia before the age of 15, and one third of Li's (1991) sample of 27 pedophiles considered their pedophilia to be innate. Finally, Freund and Kuban (1993b) reported that a sample of 76 adult sex offenders with child victims who admitted having some sexual interest in children recalled that they were first aware as young adolescents of a curiosity to see children in the nude.

Freund and Kuban (1993b) also surveyed 78 male students in their study, and they found that many of the students recalled being curious about seeing

other children in the nude when they were children themselves, just like the group of sex offenders with child victims. However, the students reported that they had lost this curiosity by the time they reached puberty. It is possible that pedophiles and nonpedophiles share the same curiosity as children about seeing other children nude but that pedophiles remain fixed at this stage and do not develop interests in postpubertal individuals as they reach puberty. The possible mechanisms for this shift are unknown. As Quinsey, Rice, Harris, and Reid (1993) noted in their evolutionarily informed discussion of pedophilia, it is not known if the interest of most adult men in adult women is due to the expression of a preference that has been dormant until the activating effects of puberty, the development of inhibition of interest in other categories of people, or a social learning process. Whatever the mechanisms involved, *adrenarche* (the period of increased adrenal gland activity prior to gonadal puberty, resulting in an increase of androgens and subsequent masculinization in young boys) and puberty are likely the critical events in the emergence of sexual interests (Herdt & McClintock, 2000; on the timing of an awareness of foot or shoe fetishism, see Weinberg, Williams, & Calhan, 1995).

FUTURE DIRECTIONS

As this chapter reveals, there are many unanswered questions about the etiology of pedophilia. Nonetheless, encouraging progress has been made in understanding pedophilia's potential causes. In particular, research on the link between childhood sexual abuse and both sexual offending against children and pedophilia highlights some directions for further investigation. There is clearly an association for both adolescent and adult sex offenders against children, but the mechanisms underlying this link are not understood (Lalumière, Seto, & Jespersen, 2006; Seto & Lalumière, 2005). More evidence to support a causal role of childhood sexual abuse is particularly important for efforts to prevent sexual offenses against children.[1] Whether the link is explained by learning, effects on sexual development, or effects on neurodevelopment, if such evidence were available, efforts to prevent childhood sexual abuse now could have both immediate benefits (preventing sexual offenses against the children who participate in primary or secondary prevention programs) and future benefits (preventing future sexual offenses when at-risk children grow up).

[1]Such evidence would have to come from multivariate studies that examine the outcomes of sexually abused children after controlling for other factors that might predispose them to committing sexual offenses against children (e.g., a history of conduct problems before the sexual abuse occurs). An experimental study randomly assigning children to sexual abuse or control conditions would provide the strongest possible inference about the causal role of sexual abuse, but of course such a study would be unethical.

Research on the neurodevelopmental differences between pedophilic individuals and other men is also very promising for understanding atypical sexual development. A finer understanding of the brain structures involved in pedophilia could contribute to the understanding of sexual interests in general. Indeed, as I discuss next, neurodevelopmental research on other sexual interests could shed light on the etiology of pedophilia.

Paraphilic Comorbidity

Paraphilic behaviors tend to co-occur, and thus pedophiles are more likely to engage in other paraphilic behavior than men randomly selected from the general population; for example, some pedophiles have also engaged in exhibitionistic (12% to 13%) or voyeuristic (11% to 36%) behavior (Abel, Becker, Cunningham-Rathner, Mittelman, & Rouleau, 1988; Bradford, Boulet, & Pawlak, 1992; Freund, Seto, & Kuban, 1997; see also Långström & Seto, 2006; W. L. Marshall et al., 1991; Smallbone & Wortley, 2004). A particularly worrisome group of men are those who are both pedophilic and sadistic, because they might be the most likely to physically injure children in their sexual offenses (Chaplin, Rice, & Harris, 1995).

The comorbidity of paraphilic behavior has implications for understanding the etiology of pedophilia because it suggests that factors that increase the likelihood of one paraphilia increase the likelihood of others. For example, men with paraphilias other than pedophilia also might differ from nonparaphilic men in evidence of neurodevelopmental perturbations. The specific timing, location, and nature of these neurodevelopmental perturbations might influence which particular paraphilias develop. If this speculation is correct, then neurodevelopmental research on other paraphilias could also contribute to understanding of the development of pedophilia and male sexual preferences in general.

Research on Homosexuality

In addition to studying other paraphilias, research on the biological correlates of homosexuality can provide us with some direction regarding the study of pedophilia because factors that influence sexual interests with regard to the gender of a person might also influence sexual interests with regard to the age of a person (see Quinsey, 2003). Candidate factors identified in a recent review of the homosexuality literature included hormones, prenatal stress or other developmental perturbations, and genetic influences (see Mustanski, Chivers, & Bailey, 2002).

To illustrate the heuristic value of the homosexuality literature in generating ideas for research on pedophilia, a recent meta-analysis of 20 studies found that homosexual adults had 39% greater odds of being non-right-handed (or left-handed or ambidextrous) than heterosexual adults, which suggests

that the causal mechanisms involved in handedness might affect sexual preferences (Lalumière, Blanchard, & Zucker, 2000). Non-right-handedness is manifested prenatally; associated with different cerebral laterality; and more prevalent in conditions such as Down syndrome (Vlachos & Karapetsas, 1999), epilepsy (Lewin, Kohen, & Mathew, 1993), and learning disabilities such as dyslexia (Eglinton & Annett, 1994). Right-handedness is the norm among humans. Thus, non-right-handedness can be a useful marker of neurodevelopmental perturbations that occur prenatally.

If pedophilia is a neurodevelopmental disorder, as suggested by the research of the CAMH group, then one would expect an elevated rate of non-right-handedness among pedophiles. There is support for this hypothesis in an analysis of archived Kinsey Institute data. These data showed that sex offenders with child victims were more likely to be non-right-handed than nonoffending controls (Bogaert, 2001). More direct evidence comes from Cantor et al. (2004), who found that non-right-handedness was significantly associated with greater sexual arousal to prepubescent children but not to pubescent children or adults and was significantly associated with the number of child victims in the participant's history but not the number of pubescent victims, adult victims, or adult sexual partners (see also Cantor et al., 2005).

Other research by the CAMH group on the fraternal birth order effect and homosexuality could also contribute to the understanding of the development of pedophilia (for reviews of the fraternal birth order effect, see Blanchard, 1997, 2004). Blanchard and others have demonstrated that homosexual men have, on average, more older brothers than heterosexual men but do not differ in their numbers of other siblings (younger brothers, older sisters, or younger sisters). No birth order effect was found among women; homosexual women did not differ from heterosexual women in their numbers of siblings or whether the siblings were older or younger, brother or sister.

One explanation for the fraternal birth order effect is that a maternal immune response to antigenic properties of male fetuses affects the brain and thus affects sexual development. Male tissue is deemed foreign by the mother's female immune system, whereas female fetuses do not elicit this immune response. One antigenic candidate is H-Y antigen, which is expressed in males but not in females (Blanchard & Klassen, 1997). Each older brother increases the odds of homosexuality by approximately 33%, and Cantor, Blanchard, Paterson, and Bogaert (2002) estimated that the fraternal birth order effect explains the sexual orientation of approximately 15% of gay men. A more recent estimate suggests that almost 30% of gay men can attribute their sexual orientation to the fraternal birth order effect (Blanchard & Bogaert, 2004).

It is not yet clear if the fraternal birth order effect can help explain pedophilia. Blanchard et al. (2000) reported a significant relationship between number of older brothers and being sexually interested in boys (vs.

girls) in a sample of sex offenders with child victims, demonstrating that the fraternal birth order effect was not restricted to men who preferred adults (see also Bogaert, Bezeau, Kuban, & Blanchard, 1997). In an earlier study, Lalumière, Harris, Quinsey, and Rice (1998) found a fraternal birth order effect in a mixed group of sex offenders, approximately one half of whom had offended against children. However, Blanchard and Bogaert (1998) did not find a significant fraternal birth order effect among sex offenders with child victims, and Côté, Earls, and Lalumière (2002) did not find a fraternal birth order effect on phallometrically assessed sexual arousal to children in a mixed sample of sex offenders. MacCulloch, Gray, Phillips, Taylor, and MacCulloch (2004) did find a significant association between fraternal birth order and number of sexual convictions in a mixed sample of sex offenders.

Gender and Age Interests

There is an interesting interaction between gender and age interests in research on pedophilia. When assessed phallometrically, pedophiles show less relative differentiation in their sexual arousal to boys versus girls than teleiophiles (individuals who prefer sexually mature persons) do in their sexual arousal to men versus women (Freund & Kuban, 1993a; Freund, Watson, Dickey, & Rienzo, 1991). This may reflect the fact that boys and girls are more similar in appearance than men and women in body size, body shape, and the absence of secondary sexual characteristics such as breasts.

Moreover, pedophiles are more likely to prefer males than are teleiophiles. Blanchard et al. (2000) found that 25% of the sex offenders with child victims preferred boys over girls compared with general population estimates that suggest 2% to 4% of men prefer men over women (Laumann et al., 1994). In other words, same-sex attraction is approximately 10 times as likely among pedophiles as among teleiophiles.[2] To explain this result, Blanchard et al. (2000) proposed a canalization hypothesis such that men with both pedophilia (a variation with regard to age) and sexual attraction to boys (a variation with regard to gender) were somehow more susceptible to perturbations in neurodevelopment. Blanchard et al. (1999) found evidence that a predisposing factor for the development of pedophilia and sexual attraction to boys may be maternal age, because boy-preferring pedophiles had older mothers than pedophiles who preferred girls, pedophiles who were sexually interested in both boys and girls, or nonpedophilic men with adult female victims.

Blanchard et al.'s (1999, 2000) findings and canalization hypothesis fit well with Quinsey and Lalumière's (1995) speculation that male sexual pref-

[2]As Blanchard et al. (2000) noted, the greater prevalence of same-sex attraction among pedophiles does not mean gay teleiophilic men are more likely to sexually offend against boys than heterosexual teleiophilic men are to sexually offend against girls. There is no evidence to suggest that gay and straight men differ in their risk to sexually offend against children.

erences are organized in a modular fashion. Some men show a perturbation in a hypothetical module for gender preferences (homosexuals), whereas others show a perturbation in a hypothetical module for age preferences (pedophiles and gerontophiles). One can imagine that other paraphilias reflect perturbations in other sexual preference modules (e.g., for dominance in the case of sadism). Neurodevelopmental perturbations might affect more than one module, explaining the increased likelihood of sexual interest in boys among pedophiles and the co-occurrence of paraphilic behaviors. In addition, the fact that certain sexual preferences are more likely to co-occur, such as exhibitionism and voyeurism, suggests that sexual preferences are established in an orderly fashion (see Appendix 5.1; Freund et al., 1997; Freund & Seto, 1998). The specific nature, timing, and location of neurodevelopmental perturbations might influence which particular paraphilias will emerge.

Selective Male Afflictions

Etiological theories of pedophilia need to be able to explain why there is such a large sex difference in the prevalence of pedophilia: Men are much more likely than women to seek child pornography or to engage in sexual offenses against children. This sex difference is consistent with the large sex difference in the likelihood of engaging in crime and other antisocial behavior and with the large sex difference found in the prevalence of other paraphilias that have been studied. How are these sex differences accounted for?

Unlike the adaptive explanations proffered for males' greater involvement in crime and other risk taking (see chaps. 1 and 4, this volume), it is highly unlikely that pedophilia has been adaptive for the individual with the condition. The greater prevalence of paraphilias in men probably reflects the greater susceptibility of men to adverse neurodevelopmental outcomes. Men are more likely than women to have pathological conditions such as mental retardation, autism, and learning disabilities to such an extent that Gualtieri and Hicks (1985) described these conditions as *selective male afflictions*. The most plausible explanation is that male development is less canalized than female development because the fetal template is female in the absence of the organizing effects of testosterone. This lower canalization is subsequently expressed in greater variance among males across a wide variety of traits and a greater likelihood of something going awry, resulting in disorders. Etiological theories of pedophilia might gain from examining the larger literature on the etiology of male-biased conditions.

For pedophiles, research has demonstrated that they are distinguished from other men by their sexual abuse history and neurodevelopment. These two factors may be linked because of the effects of traumatic experiences on brain development. Other research using diverse measures of neurodevelopmental perturbations could provide a better understanding of the

nature and timing of these neurodevelopmental perturbations (see Appendix 5.2).

CONCLUDING COMMENTS

There are many gaps in the understanding of pedophilia. By necessity, this chapter is more speculative than chapter 4 on the origins of sexual offending against children. A major puzzle is how to explain pedophilia from an evolutionary perspective. Pedophiles have fewer sexual contacts with potentially fertile sexual partners and, by definition, sexually prefer nonfertile children. How could a condition that seems so maladaptive in terms of Darwinian fitness be maintained in the population? Even a small fitness disadvantage would cause a trait to disappear across generations unless there is a counteracting effect that serves to maintain it at a low frequency. There are several possibilities, none of which has been empirically tested.

One explanation is that pedophilia is the maladaptive extreme in men of an attraction to youthfulness (see Quinsey & Lalumière, 1995). This view suggests that pedophilia is a disorder of male-typical tendencies to attend to cues of youthfulness such as smooth skin, hairlessness, and large eyes. Research on the biological substrates of youthfulness detection (e.g., research on the brain regions selectively activated by human faces, body parts, or the valence of responses to stimuli depicting figures) and response to youthfulness could reveal if this explanation is correct.

A by-product explanation proposes there is a trade-off between the costs of pedophilia (in terms of reproductive fitness) and some unknown benefit to the person with pedophilia or to his kin (recall the definition of inclusive fitness in chap. 1, this volume). Thus, pedophilia could be maintained in the general population, even though it is likely to reduce the reproductive fitness of the pedophile, as long as it is offset by the benefits to kin who share some of the genes underlying pedophilia but who do not have the condition.[3] To illustrate this trade-off, one interpretation of the findings regarding the fraternal birth order effect and the maternal immune response in homosexuality is that the reproductive cost of being homosexual (having fewer offspring, on average) is offset by benefits to the survival or reproduction of the mother because she has a relatively stronger immune response system. If this hypothesis is correct, one would expect mothers of gay men to be less vulnerable to

[3]This is referred to in the genetics literature as an *overdominance* or *heterozygote advantage* explanation. One of the better known examples involves the gene associated with sickle-cell anemia. Someone with two copies of this gene produces abnormal red blood cells and subsequently develops anemia. However, someone with only one copy of this gene is more resistant to malaria and therefore more likely to survive and reproduce than someone who gets the disease. This selection pressure is reflected in the fact that the gene associated with sickle-cell anemia is more prevalent in the malaria-prone areas of Africa.

infections and other diseases related to weaker immune responses. If the fraternal birth order effect can also be detected among pedophiles, it may be that the mothers of pedophiles are similarly less vulnerable to infections and other diseases. This research has not yet been done.

Finally, it may eventually be discovered that pedophilia is linked to pathogen exposure. Ewald (1996, 2002) and others have argued that many major mental disorders are the result of slowly acting pathogens, because any genes associated with susceptibility to the disorder would be selected against over time, given the fitness costs of these disorders. For example, schizophrenia occurs in approximately 1% of the general population (the prevalence of pedophilia in the general population is unknown but is less than 5%, as discussed in chap. 1, this volume) and is associated with dramatically reduced reproduction. Ewald and others have argued that only pathogens, which also evolve and thus enjoin the human species in an ongoing evolutionary arms race, could explain the persistence of these fitness-reducing disorders. There is an emerging body of research supporting this provocative pathogen exposure theory, including studies that link the onset of schizophrenia with the exposure of the schizophrenic individual's mother to *Toxoplasma gondii*, a parasite carried by domestic cats and passed on in their feces. Pathogens could perturb fetal development by impairing the mother's health or could even have direct effects on fetal neurodevelopment. Future research may reveal that the mothers of pedophiles were more likely to have been exposed to certain pathogens during their pregnancies. The pathogen exposure and maternal immune response explanations can be pitted against each other by examining the health of pedophiles' mothers. One would expect to find evidence of greater pathogen exposure during pregnancy, if Ewald's idea is correct, or evidence of fewer infections and related illnesses, if Blanchard and Klassen's (1997) idea is correct.

All of these hypotheses are speculative, but it is clear that a Darwinian perspective can produce novel and testable ideas about the etiology of pedophilia. Another major Darwinian puzzle for the understanding of sexual offending against children is incest (i.e., sexual offenses committed against genetically related children). Given the potential costs to one's inclusive fitness of engaging in behavior that might harm a genetic relative and given the negative effects of inbreeding, why does incest occur? I discuss this puzzle in chapter 6.

APPENDIX 5.1
THE THEORY OF COURTSHIP DISORDER

The late sexologist Kurt Freund proposed that *voyeurism* (a sexual preference for watching an unsuspecting person engage in normally private activities such as undressing, bathing, or having sex), *exhibitionism* (a sexual preference for exposing one's genitals to an unsuspecting person), *frotteurism* (a sexual preference for rubbing one's genitals against a nonconsenting stranger), and *biastophilia* (a preference for sexual coercion, which he referred to as "preferential rape") are distortions of the normal courtship process in men (Freund, 1990). The term *courtship* is drawn from the ethological literature and refers to the sequence of dyadic interactions that precede and initiate sexual intercourse. Freund thought these distortions reflected disturbances in a male mating system that consisted of four phases: (a) a finding phase, consisting of locating and appraising a potential sexual partner; (b) an affiliative phase, consisting of nonverbal and verbal gestures such as looking, smiling, and talking to a potential partner; (c) a tactile phase, in which physical contact is made with the partner; and (d) a copulatory phase, in which sexual intercourse with the partner occurs. (This does not mean women are passive observers or recipients of men's efforts; women are active participants in human courtship; e.g., Givens, 1978; Greer & Buss, 1994; Perper, 1989.) Voyeurism can be viewed as a distortion of the finding phase, exhibitionism as a distortion of the affiliative phase, frotteurism as a distortion of the tactile phase, and biastophilia as a distortion of the copulatory phase. In other words, these four paraphilias can be seen as different manifestations of the same underlying courtship disorder.

If the four paraphilias do reflect a common underlying disturbance, one might expect them to co-occur frequently (Abel et al., 1988; Bradford et al., 1992). Using conditional probabilities that another paraphilic activity would be present given the presence of a particular activity, my colleagues and I found support for the theory of courtship disorder with regard to voyeurism, exhibitionism, and frotteurism (Freund & Seto, 1998; Freund et al., 1997). These paraphilias were more likely to co-occur with each other than they were to co-occur with either sadism or masochism. However, the conditional probabilities of these three paraphilias with rape were smaller than their conditional probabilities with each other. There are a number of other challenges for Freund's theory of courtship disorder. Although it is elegant, the theory does not specify the putative mechanisms of regulatory disturbance, and the theory is difficult to test empirically beyond showing an elevated rate of co-occurrence among these particular paraphilias.

APPENDIX 5.2
STUDYING DEVELOPMENTAL PERTURBATIONS

A consilient theory of pedophilia would be able to account for findings regarding the neurodevelopmental and other biological factors underlying this disorder. Developmental biologists and others who study neurodevelopmental problems have relied on objective measures of developmental perturbations to conduct their research. These measures have the advantage that they do not rely on self-report, and they can be used to estimate the timing of prior developmental perturbations.

Two measures that are particularly interesting for future research on pedophilia are fluctuating asymmetry and minor physical anomalies. For fluctuating asymmetry, morphological traits are generally designed to be bilaterally symmetric so that a feature like index finger length would be the same for both the left and right hands. However, developmental perturbations (due to genetic mutations, transcription errors, environmental toxicity, etc.) can result in bilateral trait asymmetry. This asymmetry is fluctuating because it is randomly distributed; sometimes the left side is larger, and sometimes the right side is larger (in contrast to fixed asymmetries, such as hemispheric lateralization in the human brain or the usual location of human hearts on the left side of the torso). The extent of fluctuating asymmetry across a set of bilateral traits, therefore, reflects the developmental instability experienced by the organism.

Fluctuating asymmetry has been shown to be negatively correlated with physical growth, reproductive success, and longevity in a variety of species (for a review, see Møller & Swaddle, 1997). In humans, men with greater fluctuating asymmetry are rated as less attractive and less sexually successful than men with lower fluctuating asymmetry; importantly, the differences in bilateral symmetry are too small to be perceived by others, so these effects are not explained by a conscious awareness on the part of women that the man is less symmetric.

Minor physical anomalies are small deviations in structure that arise as a result of developmental perturbations. The most commonly studied minor physical anomalies can be observed on a person's head, hands, and feet. Examples include wide-set eyes, low-set ears, and curved fifth fingers (there are 18 anomalies on the Waldrop scale, which has been used in research on neurodevelopmental disorders such as schizophrenia or autism; Waldrop & Halverson, 1971). These minor physical anomalies are particularly interesting because these structures and the brain are differentiated from the same fetal tissue (ectoderm), and therefore, the number of minor physical anomalies is an indicator of developmental perturbations that occurred in the first and early second trimester and could have influenced brain development as well. Most people have a few minor physical anomalies, but individuals with neurodevelopmental conditions like schizophrenia, schizotypy, autism, mental

retardation, and attention-deficit/hyperactivity disorder have more minor physical anomalies, on average, than unaffected controls (e.g., Ismail, Cantor-Graee, & McNeil, 1998; Waldrop & Halverson, 1971; Weinstein, Diforio, Schiffman, Walker, & Bonsall, 1999).

The research reviewed here provides several testable hypotheses about the neurodevelopmental origins of pedophilia. Given the idea that pedophilia is a result of developmental perturbations that affect sexual development, one could predict that pedophiles would score higher than nonpedophiles on measures of fluctuating asymmetry and minor physical anomalies. My colleagues James Cantor and Ray Blanchard are beginning a research project to test this idea with regard to minor physical anomalies.

6

INCEST

Biologically speaking, incest occurs when someone has sex with a genetic relative (see Bixler, 1983). In this chapter, I focus on sexual contacts between a child and an older relative. Incest is a theoretical puzzle because incest offenders, as a group, are not readily explained by the factors described in chapter 4. In that chapter, I argued that sexual offenses against children can be explained by antisociality and pedophilia. However, incest offenders typically score lower on measures of antisociality than do other sex offenders against children (Rice & Harris, 2002; Seto & Barbaree, 1999) and typically show less sexual arousal to stimuli depicting children in the phallometric laboratory (Frenzel & Lang, 1989; Freund, Watson, & Dickey, 1991; Lang, Black, Frenzel, & Checkley, 1988; W. L. Marshall, Barbaree, & Christophe, 1986; Quinsey, Chaplin, & Carrigan, 1979; Rice & Harris, 2002). Other studies have not found a significant difference in sexual responding between incest offenders and other sex offenders against children, but no studies have found that incest offenders show greater sexual arousal to children (Abel, Becker, Murphy, & Flanagan, 1981; Barsetti, Earls, Lalumière, & Bélanger, 1998; Chaplin, Rice, & Harris, 1995; Langevin & Watson, 1991; Malcolm, Andrews, & Quinsey, 1993; Murphy, Haynes, Stalgaitis, & Flanagan, 1986). Taken together, these studies indicate that as a group incest offenders are less likely to be pedophiles than other sex offenders against children.

These group differences in antisociality and pedophilia are reflected in the fact that incest offenders are less likely to reoffend, both sexually or nonsexually, than other sex offenders against children (see Appendix 6.1). Some incest offenders are highly antisocial, and some incest offenders are pedophiles, but these factors are not sufficient to account for the majority of incest offenders, particularly those who offend only against related children. Incest offenders who also offend against unrelated children tend to score higher on measures of antisociality and pedophilia (e.g., Porter et al., 2000; Rice & Harris, 2002; Seto, Lalumière, & Kuban, 1999).

Incest is a Darwinian puzzle as well. It reduces one's inclusive fitness to the extent that it psychologically or physically harms a related child, for example, by causing the child to avoid sexual relationships or by impairing his or her reproductive capacity through physical injury or a sexually transmitted disease. The risks of inbreeding in terms of physical anomalies or greater mortality of offspring are well documented in experimental research on nonhuman animals (for a review, see Bixler, 1992).[1] There is also evidence that inbreeding can result in greater morbidity and mortality in human offspring (Adams & Neel, 1967; Seemanova, 1971; but not Bittles, Mason, Greene, & Appaji Rao, 1991). The evidence for incest avoidance in nonhuman species is reviewed by Silverman and Bevc (2004) and Thornhill (1993).

In this chapter, I begin by reviewing evidence regarding the ubiquity of incest prohibitions across time and across cultures. I then discuss the leading proximate explanation for incest avoidance, originally proposed by Westermarck (1891/1921), and analyze other proximate explanations for why incest still occurs. The main purpose of this chapter is to link theoretically driven research in evolutionary psychology and anthropology, inspired by the challenge of incest to inclusive fitness theory, with applied research on the characteristics of incest offenders and their offenses. I conclude with theoretically derived predictions that can provide directions for future research on incest.

INCEST TABOOS

Although the specifically prohibited relationships vary across time and place, ethnographic and historical evidence indicates incest taboos are ubiquitous, especially with regard to close relationships such as parent and child (Maisch, 1972; Van den Berghe, 1979). The few exceptions that have been found restrict incestuous relationships to special circumstances, such as royal marriages between brothers and sisters in ancient Egypt to maintain a family

[1]This is not true for all species, however. Bixler (1992) noted that these studies found negative effects, even though the research animals were at low risk of predation or disease, did not have to compete for food and water, and lived under controlled conditions.

dynasty (Bixler, 1982). Incest taboos are present in Persian, Egyptian, Greek, and Roman myths, and there are religious prohibitions regarding incestuous relationships (see the discussion that follows). There are also historical records regarding incest (e.g., L. Gordon & O'Keefe, 1984).

In the Old Testament of the Judeo-Christian Bible, Leviticus 18:6 (thought by many Biblical scholars to have been written around 400 or 500 BCE) begins with a general prohibition of sex with relatives and then specifically lists prohibited familial relationships from a heterosexual male perspective: Sexual relationships with mothers, stepmothers, sisters, stepsisters, aunts, cousins, nieces, and female in-laws (except for a wife's sister, if the wife has died) are forbidden; curiously, sex with one's own daughter is not specifically prohibited. The inclusion of nongenetic relationships suggests these prohibitions were intended in part to prevent family conflict and instability. In the Quran, the holy text of Islam, incest is also specifically forbidden:

> Prohibited for you (*in marriage*) are your mothers, your daughters, your sisters, the sisters of your fathers, the sisters of your mothers, the daughters of your brother, the daughters of your sister, your nursing mothers, the girls who nursed from the same woman as you, the mothers of your wives, the daughters of your wives with whom you have consummated the marriage—if the marriage has not been consummated, you may marry the daughter. Also prohibited for you are the women who were married to your genetic sons. Also, you shall not be married to two sisters at the same time—but do not break up existing marriages. GOD is Forgiver, Most Merciful. (Khalifa, 2005, p. 81).

Interpretations of sacred texts in Hinduism (Rigveda) and Buddhism (the third precept of the Pañcasila, which encompasses sexual misconduct) also suggest there were incest prohibitions in these religious traditions.

One of the oldest legal prohibitions regarding incest is contained in the Code of Hammurabi (c. 1780 BCE), which also represents one of the earliest known records of law. The Code of Hammurabi consists of 282 laws proclaimed by the eponymous Babylonian king. These laws were inscribed on stone pillars and placed in public areas for reference; an 8-foot high example inscribed in basalt is currently located in the Louvre Museum in Paris. Two Hammurabi laws specifically refer to incest (The Code of Hammurabi, n.d.): Law 154 states, "If a man be guilty of incest with his daughter, he shall be driven from the place," and Law 157 states, "If any one be guilty of incest with his mother after his father, both shall be burned." Incest prohibitions continue to be represented in current laws, including those of Canada and the United States (see Criminal Code of Canada, 1985; see also American Prosecutors Research Institute, 2003).

Despite these cultural, religious, and legal prohibitions, incest occurs. Of the juvenile victims of sexual offenses who were reported to law enforcement in the United States, 34% were related to the perpetrator (Snyder,

2000). These aggregate crime data do not further distinguish victims according to their specific relationships to the perpetrators. As is true for sexual offenses against children by unrelated offenders, girls were more likely to be victimized than boys, and the large majority of incest offenders were male. Finkelhor, Hotaling, Lewis, and Smith (1990) found that 2% of the 416 women in their retrospective survey sample reported being sexually abused by a father, grandfather, or brother, and 14% reported being sexually abused by an uncle. Only 1% of the sample (i.e., 4 women) reported being sexually abused by a female relative. In the next section, I address explanations for the occurrence of incest.

EARLY PROPINQUITY AND INCEST AVOIDANCE

Westermarck (1891/1921) suggested that individuals raised together as children would not be sexually attracted to each other in later life.[2] He defined incest avoidance as

> a lack of inclination for, and a feeling of aversion associated with the idea of, sexual intercourse between persons who have lived in a long-continued relationship from a period of life when the idea of sexual desire, in its acute forms at least, is naturally out of the question. (p. 196)

This view assumes that kin who grow up together would not be sexually attracted to each other and differs from Freudian (Freud, 1905/2000) or sociological (e.g., Levi-Strauss, 1969) views that assume siblings might become sexually attracted to each other if incest taboos did not exist.

A *propinquity-based* mechanism (i.e., a mechanism based on living closely together) would have been effective in preventing incest in ancestral environments because siblings would almost always have been raised together. Westermarck's (1891/1921) theory might also apply to parent–child incest, because one can presume that parents in ancestral environments were involved in the early care of their children. If Westermarck's theory is correct, then incest would be more likely to occur if something were to interrupt early propinquity. Two related children who were not raised together could become sexually interested in each other, and two unrelated children who were raised together when very young would develop the same sexual indifference toward each other as siblings normally do.

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[2]An alternative view proposed by Freud (1913/1952) is that incest is not universally avoided. Instead, a son or daughter is expected to be sexually interested in the opposite-sex parent, and his or her psychological adjustment depends on how this conflict is resolved (the Oedipal and Electra complexes). In this view, incest would occur if incest taboos did not exist to reinforce social norms. I do not discuss this view further because of the great difficulty in formulating and testing scientific hypotheses from it and the subsequent absence of an empirical literature on the Freudian view of incest.

There is a good evidence to support Westermarck's (1891/1921) theory about incest avoidance. First, there are anthropological studies of child-rearing practices that have served as natural quasi experiments regarding the impact of early rearing on mate choice. Shepher (1983) studied children who grew up together in small groups on Israeli communes (*kibbutzim*). All of the children were within 1 or 2 years of age of each other, and their daily activities included eating, washing, playing, and sleeping together. Although marriages within the communal group were encouraged by their parents, Shepher found that only 14 of 2,769 marriages recorded across 211 kibbutzim involved couples who were raised in the same child-rearing group. Moreover, of the 14 couples who were raised together, 9 couples did not live together during their first 6 years of life, and the remaining 5 couples were together for 2 or fewer years of their first 6 years of life, suggesting there is a critical window (before the age of 6) for propinquity to trigger incest avoidance.

Wolf (1995) studied the major and minor forms of arranged marriage in northern Taiwan. In the major form, the bride lived with the husband's family after the marriage. In the minor form, a *sim pua* (little bride) was adopted into the family at a very young age and would later become a bride for one of the sons. Wolf found that minor arranged marriages had greater rates of extramarital affairs and divorce and lower fertility than major arranged marriages. There were no differences in these outcomes between the major and minor forms if the bride-to-be was adopted after the age of 3, further supporting the idea of a critical period during which a propinquity-based sexual indifference develops (but setting it at an earlier age, before the age of 3 rather than the age of 6).

McCabe (1983) found a similar negative effect on sexual outcomes in arranged marriages between cousins in a southern Lebanese village. In this society, brothers tended to live closely together, and their children were raised like siblings—sharing meals, sleeping, playing, and attending school together. Marriages between first cousins were relatively common in Lebanon at that time. Marriages between cousins who were raised together were significantly more likely to end in divorce and produced significantly fewer children than marriages between cousins who were raised apart or marriages between unrelated individuals.

These anthropological studies were of nonsiblings who were raised together. In a survey of college students, Bevc and Silverman (1993) examined the impact of early separation and therefore a disruption in early propinquity on sexual behavior between siblings in an anonymous survey of college students. Individuals who attempted or had intercourse with a sibling were more likely to have been separated for more than 1 year during their first 6 years of life than individuals who did not attempt to or have sexual intercourse with a sibling. This difference was not observed when comparing individuals who had engaged in nonreproductive sexual behaviors such as kissing, hugging, or

fondling with those who did not engage in these behaviors. This finding was replicated by Bevc and Silverman (2000) in a study of a mixed sample of students and community volunteers. However, they also found, contrary to their predictions, that participants who had sexual contact with a sibling were more likely to have seen their sibling nude and had more physical contact with their sibling as a child. This result suggests that it might be simply propinquity rather than how that time is spent together (e.g., seeing one another nude or having a great deal of physical contact) that activates incest avoidance. It also suggests that incest avoidance is most relevant to sexual intercourse and is perhaps less powerful for nonreproductive activities such as kissing or fondling.

There is additional evidence to support the idea that it is propinquity rather than knowledge of one's genetic relatedness or similarity in appearance (or other cues of relatedness) that is the critical element in the development of incest avoidance. Lieberman, Tooby, and Cosmides (2003) examined judgments of moral wrongfulness as a measure of incest avoidance, arguing that such judgments are less susceptible to socially desirable responding than directly asking questions about sexual contacts or sexual attraction to siblings. They found that judgments of moral wrongfulness for sibling incest were positively related to whether the respondent lived with an opposite-sex sibling as a child. Judgments of wrongfulness were not significantly correlated with cohabitation with a same-sex sibling. In another study by the same research group, the number of years a male respondent lived with a sister before the age of 11 was positively correlated with his ratings of disgust at imagining various sexual acts with a sister (Lieberman, Tooby, & Cosmides, in press). Male respondents who did not live with a sister in their first 10 years of life were less disgusted at the idea of sex with a sister than those who did live with a sister for any amount of time before the age of 11.

Lieberman, Tooby, and Cosmides (2007) suggested there were two important cues for human kin detection: observing a younger sibling being cared for by one's mother (what they called *maternal perinatal association*), and duration of coresidence as children. These authors found that maternal perinatal association was a stronger determinant of self-reported altruistic behavior, personal aversion to the idea of incest, and judgments of moral wrongfulness regarding sibling incest than duration of coresidence for older siblings. In contrast, coresidence duration is the dominant cue for younger siblings, who could not by definition have observed their older sibling's perinatal care, and for older siblings when maternal perinatal association cues are absent.

Finally, with regard to evidence of a Westermarckian effect in father–daughter incest, Parker and Parker (1986) found that fathers or stepfathers who committed incest were less involved in early child-care activities than nonoffending controls. Williams and Finkelhor (1995) replicated this finding in a study of Navy fathers; moreover, the absences of Navy fathers from

home during the early life of their daughters were not entirely voluntary (e.g., as a result of a tour of duty or overseas assignment), thereby countering the alternative explanation that a common factor predisposes men to both commit incest and to be absent from home.

GENETIC RELATEDNESS

Before discussing other explanations for why incest might occur, an important consideration in thinking about incest is the distinction between genetic relatedness and sociolegal relatedness. From a biological perspective, having sexual contact with a sociolegally related child is not incest, though it may be treated as such socially and legally. From inclusive fitness theory, one could predict differences between genetically related and genetically unrelated incest offenders for two reasons: First, inclusive fitness theory suggests there has been selection pressure over time for psychological mechanisms to treat genetic kin preferentially in terms of affection, care, and investment of resources and to avoid activities that might harm them (often referred to as *discriminative solicitude*; see Daly & Wilson, 1998; Hamilton, 1964). In other words, individuals who did not vary their solicitude toward others as a function of their genetic relatedness would be less likely to pass on their genes to the next generation.

Consistent with the notion of discriminative solicitude toward kin, the perceived severity of sexual and nonsexual crime is linearly and positively related to the purported genetic relationship between perpetrator and victim; crimes against closer genetic kin are perceived to be more serious than crimes against more distant kin or unrelated persons (Quinsey, Lalumière, Querée, & McNaughton, 1999). M. Wilson and Daly (1987) reported data showing that genetically related children are much less likely to be physically abused than stepchildren. Looking at official Canadian homicide data, an unambiguous measure of maltreatment that is less vulnerable to reporting biases than cases of physical abuse or neglect, Daly and Wilson (1994) found that stepchildren were 60 times more likely to be killed than genetically related children. Similarly, having a stepfather greatly increases a girl's risk of being sexually abused (Finkelhor et al., 1990; L. Gordon & O'Keefe, 1984).

Most stepfathers do not physically or sexually abuse their stepchildren; in fact, most stepfathers show a great deal of solicitude toward their new relatives, but they do pose a greater risk than do genetic fathers. In humans and many other species, discriminative solicitude is a function of genetic relatedness. This does not require a direct mechanism to identify kin, however; reviewing the evidence in nonhuman primates, Rendall (2004) concluded that familiarity is the leading candidate as a proximate mechanism for kin recognition, consistent with Westermarck's (1891/1921) idea. Also, Lieberman et al. (2003) found that duration of cohabitation predicted judged

wrongfulness even after statistically controlling for presumed degree of genetic relatedness of the sibling (full siblings, half siblings, or stepsiblings); however, degree of relatedness did not predict wrongfulness after controlling for duration of cohabitation.

From inclusive fitness theory, one would predict that different explanations are required to explain incest committed by genetic relatives compared with sexual offenses against children committed by sociolegal relatives (e.g., stepparents, adoptive parents, or stepsiblings). Sociolegal relatives do not have the same early propinquity (because most remarriages do not occur while the child in question is an infant), and they know they are not genetically related to the child. In contrast, genetic relatives usually have early propinquity and believe they are genetically related to the child (though they may be wrong, as discussed later in this chapter). Most studies of incest offenders have not made this distinction. It is possible, for example, that sociolegal relatives are significantly more antisocial and more likely to be pedophilic than genetic relatives. This would suggest that sociolegal offenders can still be accounted for by the theory described in chapter 5 and that the Darwinian puzzle of incest applies only to genetic relatives.

A few studies have distinguished incest offenders according to genetic relatedness and compared them on measures of antisociality. Rice and Harris (2002) compared 52 genetic fathers and 30 sociolegal fathers (stepfathers or adoptive fathers). The sociolegal fathers did not differ from the genetic fathers in their sexual offense behaviors or criminal history, but the sociolegal fathers had higher psychopathy scores. Greenberg, Firestone, Nunes, Bradford, and Curry (2005) compared 84 genetic fathers and 59 stepfathers who had committed incest against a daughter or stepdaughter, respectively. The genetic and sociolegal fathers were not significantly different in their criminal histories or scores on psychopathy. Unlike Rice and Harris, Greenberg et al. excluded men who had also offended against an unrelated child, thereby excluding men who would be expected to be higher in antisociality and to be more likely to be pedophilic. More comparisons of this kind are needed to clarify the role of antisociality in explaining sexual offenses by sociolegally related men.

Other studies have compared the phallometric responses of offenders distinguished according to genetic relatedness. Quinsey et al. (1979) found that men who sexually offended against only their daughters or stepdaughters (these two groups of men were not analyzed separately) showed less sexual arousal to children than men who offended against unrelated children, and men who offended against other female relatives showed a pattern of responses that placed them between those who offended only against daughters or stepdaughters and those who offended against unrelated children. Langevin and Watson (1991) found no difference in the relative sexual arousal to children exhibited by genetic fathers or stepfathers who committed incest.

In a larger sample of incest offenders with female victims, Seto et al. (1999) distinguished between genetic fathers, other family relatives (such as grandfathers, uncles, and brothers), and stepfathers to test the hypothesis that pedophilia can overwhelm incest avoidance. We distinguished between genetic fathers and other family relatives because genetic fathers have a higher average degree of genetic relatedness. Contrary to our prediction, the 70 genetic fathers responded less to children than the 73 other family relatives but did not significantly differ from the 87 stepfathers. Other family relatives and stepfathers did not differ from 254 men who offended against unrelated children.

Seto et al.'s (1999) findings have been replicated and extended by Rice and Harris (2002) and Greenberg et al. (2005); both of these studies found that stepfathers showed more sexual arousal to children than genetic fathers, though genetic fathers did differ from the men in the comparison groups. Blanchard et al. (2006) replicated these studies in a different sample of incest offenders who were assessed in the same laboratory as that used in Seto et al. (1999). Blanchard et al. selected only incest offenders with a single female victim who denied any sexual interest in children under age 12 and claimed that they were primarily sexually attracted to adult women. There was a linear increase from men who had offended only against adults, genetic fathers, and other relatives in sexual arousal to children. There was no significant difference between genetic fathers and stepfathers and no significant difference between other relatives and men who offended against unrelated children. Rice and Harris (2002) also analyzed data from offenders with only a single child victim and found that men who offended against a related child did not significantly differ from men who offended against an unrelated child in their sexual arousal to children.

These results suggest that genetic fathers and sociolegal fathers are not significantly different from each other in antisociality. The evidence for pedophilia is mixed; some studies have found no significant difference between genetic fathers and sociolegal fathers, whereas other studies have shown that sociolegal fathers show relatively greater sexual arousal to children than genetic fathers (Blanchard et al., 2006; Greenberg et al., 2005; Rice & Harris, 2002; Seto et al., 1999). Men who offend against other family relatives (not their daughters or stepdaughters) are more likely to be pedophiles and may be more likely to be antisocial. For this group of genetic relatives, pedophilic sexual interests or antisocial tendencies may indeed overwhelm incest avoidance.

Genetic fathers are usually combined with stepfathers and other family relatives (such as grandfathers, uncles, or cousins) and then compared with offenders against unrelated children in group comparison studies. To the extent that the incest group contained a high proportion of genetic fathers, the possibility that a study would find a significant difference between incest offenders and unrelated sex offenders against children would be increased.

Differences in sample composition could explain, at least in part, the heterogeneity of previous findings.

EXPLANATIONS FOR FATHER–DAUGHTER AND BROTHER–SISTER INCEST

What then can account for incest committed by genetic fathers or brothers? There are several observations that need to be included in a satisfactory explanation of father–daughter or brother–sister incest. First, the perpetrators are usually male and the victims tend to be female. Second, there is evidence that victims of incest are younger, on average, than victims of unrelated perpetrators (Greenberg et al., 2005; Seto et al., 1999; but see Maisch, 1972). Finally, incest offenses have more sexual contacts per victim than offenders against unrelated children, and the duration of their offending is longer.[3] It is likely that there is more than one explanation for incest, depending on factors such as antisociality, pedophilia, early propinquity, the actual genetic relationship between the perpetrator and the child, the age and attractiveness of the child, the age and attractiveness of the father or brother, and family dysfunction. These explanations are discussed in the following sections.

Propinquity

From Westermarck's (1891/1921) theory, one can predict that fathers and stepfathers would be more likely to commit incest with their daughters if they spent a significant amount of time apart during the first 3 to 6 years of the girl's life (e.g., men who are required to travel a great deal for their work, men serving a prison sentence, or families in which the child temporarily lives with another relative or in state care; Parker & Parker, 1986; Williams & Finkelhor, 1995). Similarly, one can predict that stepfathers would be more likely to commit incest if they did not begin cohabitating with the girl until after she was 6 years of age. Because the genetic fathers are often not pedophilic, one would expect the girls to be more likely to have entered puberty before the offenses occur (Langevin, Handy, Hook, Day, & Russon, 1985; Maisch, 1972). For example, Maisch (1972) reviewed data on 70 cases of incest and found that the age of onset of the sexual contact was highly correlated with the youth's age of onset of puberty.

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[3]This observation is not consistent with a conditioning explanation of pedophilia, because one would expect incest offenders to have much greater sexual arousal to children given the higher number of sexual contacts they have had with children compared with offenders against unrelated children. W. L. Marshall et al. (1986) have suggested that the conditioning would be specific to the related child, so stimuli depicting other children would not be sexually arousing to an incest offender. This does not explain, however, why men who offend against a particular unrelated child are able to generalize to other children.

Opportunistic Offending

The most parsimonious explanation for father–daughter and brother–sister incest is that it is a function of sexual opportunity. In Seto et al. (1999), we suggested that some men who prefer sexually mature females will have sexual contacts with their daughters or stepdaughters because they do not have satisfactory access to their preferred group of sexual partners. Reasons for this might include dissatisfaction with their current relationship; an inability to attract an adult female partner because of low status, lack of resources, or physical unattractiveness; or a particularly high sex drive. Men adjust their sexual behavior as a function of their access to potential adult partners (e.g., Landolt, Lalumière, & Quinsey, 1995). Although they are not preferred by most heterosexual men, both prepubescent and pubescent girls still elicit some sexual arousal (Freund, McKnight, Langevin, & Cibiri, 1972). Men who do not have access to their most preferred partners might seek out other partners who are still sexually attractive to them, following what has been described as a *sexual preference gradient*. In other words, heterosexual men who do not have access to adult women would seek out prepubescent or pubescent girls before they would seek out same-sex partners. Similarly, some heterosexual males without any access to females will engage in same-sex contacts in all-male environments such as boarding schools or prisons.

Consistent with this notion of a heterosexual preference gradient from adult to pubescent to prepubescent females, 11% of the fathers who did not commit incest in the survey by Williams and Finkelhor (1995) acknowledged they had experienced some sexual arousal to their daughters. Given the highly sensitive nature of this question, this estimate of the potential sexual response of fathers and stepfathers to their children is likely to be conservative. Nonpedophilic men are capable of some sexual response to girls, and some men will initiate sexual contact with a girl given enough opportunity and a lack of success in pursuing sexual contact with their peers. By definition, fathers or brothers (genetic or sociolegal) with a daughter or sister, respectively, living in the same residence have much more opportunity than men who do not have a young girl living with them.

The opportunity explanation could be tested by examining the conventional sexual histories of incest offenders. If it is correct that some men commit incest because they lack other sexual opportunities, one could predict that fathers or brothers who commit incest would have a later age of sexual onset and fewer adult sexual partners than other relatives, statistically controlling for pedophilic sexual interests (because pedophiles would also tend to have fewer adult sexual partners) and for antisociality (because antisociality is positively correlated with number of sexual partners and negatively correlated with age of sexual onset). I would also predict that fathers or brothers who commit incest would be lower in social status, resources, and physical attractiveness than other kinds of incest offenders. The opportunity

explanation applies to men who seek sexual opportunities but do not have the status, resources, or physical attractiveness to be successful in attracting adult women.

The opportunity explanation might be particularly relevant for stepfathers and stepbrothers. Belsky, Steinberg, and Draper (1991) and B. J. Ellis (2004) have reviewed evidence that girls brought up in homes characterized by marital conflict or father absence began menarche earlier and were more sexually precocious and active than girls brought up in homes characterized by marital harmony or father presence. Stepfathers or stepbrothers who subsequently join a family after the genetic father leaves typically begin residing with girls who could already be showing signs of sexual maturity and who might be beginning to engage in sexual behavior as well.

Theories that focus on family dysfunction as a cause of incest might also represent opportunistic offending (e.g., Maddock & Larson, 1995). In these theories, incest occurs when the parental relationship has broken down and the mother is sexually and emotionally unavailable. For example, a father may turn to his eldest daughter to fulfill his sexual and emotional needs because his spouse is depressed and uninterested in having sex with him. In essence, his daughter is placed in a spousal role. There are some data consistent with this view. Lang, Langevin, van Santen, Billingsley, and Wright (1990) compared 92 incest offenders (86% were genetic fathers or stepfathers) with 42 nonoffending controls and found that the incest offenders reported less communication with their partner, felt more lonely, and were less satisfied with their partner. The incest offenders and nonoffending controls did not differ in the length of their marriages or their number of prior marriages. Lang et al. did not include a comparison group of nonincest offenders, however, and did not further distinguish between genetic and sociolegal fathers. Research is needed on the spousal and father–daughter relationships in families in which incest occurs.

Family dysfunction may also be a proximate explanation of families in which there are multiple incest offenders and multiple child victims (Faller, 1991). A surprising finding in Faller's study was the involvement of female perpetrators, all of whom offended alongside men. Little is known about female incest offenders (Lawson, 1993; McCartry, 1986).

Paternity Uncertainty

Haig (1999) has suggested that the costs of incest are higher for females than for males because of the sex difference in minimal parental investment (Geary, 2000; Trivers, 1972). A father who has sex with his daughter does not lose other opportunities to engage in reproductive behavior; however, his daughter may lose an opportunity to have a healthy child fathered by a nonrelative. A brother is in a similarly asymmetric position with regard to his sister. Adding complexity to this evolutionary analysis is the issue of pa-

ternity uncertainty. *Paternity uncertainty* refers to the fact that although mothers can be certain that they are genetically related to the children that they bear, fathers cannot, because their putative child may have been the result of the mother having sex with another man (see Appendix 6.2).

Haig's (1999) evolutionary hypotheses regarding incest leads to a number of testable predictions. I discuss each of these predictions in the paragraphs that follow, with the relevant research. First, because of sex differences in minimal investment, the consequences of incest are higher for females than males, so girls should exhibit greater aversion to the possibility of incest, resist it more than boys, and experience more negative reactions following incest. Males should be more likely to commit incest, so fathers, brothers, uncles, and grandfathers should be more likely to commit incest than their female counterparts. Indeed, incest offenders are more likely to be male (on the basis of both self-report and criminal justice data), and women are more likely than men to report negative reactions to childhood sexual abuse, much of which is committed by relatives (Rind, Tromovitch, & Bauserman, 1998; Snyder, 2000). Girls experience more negative reactions if the incest occurs after they reach puberty and are potentially fertile compared with girls who are prepubertal, and girls experience more negative reactions when the incest includes vaginal penetration and insemination. Rind et al. (1998), in their meta-analysis of studies on victims of child sexual abuse, did not find that the occurrence of penetration was a significant moderator of outcome, but there were too few studies to distinguish between female and male respondents. Rice and Harris (2002) found that genetic father incest offenders (36%) were significantly less likely than sex offenders against unrelated children (47%) to vaginally penetrate their victims.

Second, from inclusive fitness theory, the occurrence of incest should be inversely related to the degree of genetic relatedness between the offender and the victim. Thus, men who are not genetically related to a child (stepfathers and other steprelatives) should be more likely to commit incest than men who are closely related (fathers and brothers); other family members who have an intermediate degree of genetic relatedness to a child (e.g., cousins, uncles, or grandfathers) would fall in between these two groups in the commission of incest. As mentioned earlier, stepfathers are relatively much more likely to commit incest than genetic fathers (Finkelhor et al., 1990). I am not aware of studies that further distinguish the likelihood of incest by genetic relatives according to their degree of relatedness to the victim.

Third, paternity uncertainty should be related to the likelihood of incest such that fathers who have more uncertainty about the paternity of their putative daughter are more likely to initiate sexual contact with her (Haig, 1999). Biologically speaking, a putative father with a high degree of paternity uncertainty is more similar to a stepfather than to a genetic father. This prediction could be tested retrospectively. After controlling for pedophilia (e.g., by restricting analyses to offenders with a single female victim, like

Blanchard et al., 2006, or by including only men who clearly show greater sexual arousal to adults than to children in the phallometric laboratory), one could compare offenders who offended against a daughter and nonincest offenders who also have a daughter but offended against an unrelated girl. Some possible points for comparison could be their doubts about the paternity of their daughter, absences from the home around the time of the girl's conception,[4] and other potential cues of paternity uncertainty such as their spouse's history of infidelity (both with him and with previous partners) and the presence of a child fathered by another man in the same residence. K. G. Anderson, Hillard, and Lancaster (2006) found that being unmarried and having an unplanned pregnancy were correlated with lower reports of paternity confidence. Additional cues that might be correlated with paternity uncertainty would be marital dissatisfaction; sexual jealousy; the mother's attractiveness to other men; and the perceived resemblance of the child to the putative father in physical appearance, personality traits, interests, and other psychological characteristics. This prediction regarding the paternity uncertainty of incest offenders and other fathers could also be tested prospectively by collecting information about these proximal cues in a large sample of expectant fathers and then following the sample to see if the occurrence of incest can be predicted.

Finally, paternity uncertainty would be expected to create asymmetries in the costs of incest involving paternally related versus maternally related family members. Beyond the putative father, incest is predicted to be more likely to occur with paternally related children than with maternally related children. To illustrate, a brother would be more likely to commit incest with a paternally related half sister than with a maternally related half sister because he is 100% certain he is related to the latter girl but less than 100% certain he is related to the former girl. Other predictions based on *matrilineal* (through the mother) compared with *patrilineal* (through the father) descent have been supported for attention, caring, and other investment by aunts and uncles (Gaulin, McBurney, & Brakeman-Wartell, 1997) and by grandparents (Euler & Weitzel, 1996).

CONCLUDING COMMENTS

Incest taboos are ubiquitous and appear in both historical and cross-cultural accounts of laws and customs regarding permissible sexual relationships. Westermarck's (1891/1921) proposed propinquity mechanism provides

[4]This factor does not confound a paternity uncertainty explanation with a Westermarckian explanation. Being away around the time of the girl's conception would increase paternity uncertainty but would not contribute to the early propinquity that Westermarck (1891/1921) thought contributed to incest avoidance (which would involve being away after the child was born).

an elegant explanation for incest avoidance and has good empirical support from nonhuman animal research and quasi experiments in humans. Overall, however, etiological understanding of incest involving girls lags behind the knowledge being accumulated regarding the origins of sexual offending against children in general.

There has been a gap between theoretical research in evolutionary psychology and anthropology and the more applied research carried out by researchers concerned about incest offenders and their offenses. This is unfortunate because there are many novel hypotheses that could be tested to provide understanding of not only why incest occurs but why some children may be more vulnerable than others. Some of these hypotheses can be derived from considering inclusive fitness, parental investment, and paternity uncertainty. Such research could have implications for prevention programs, particularly in the identification of at-risk families and children.

On the basis of the literature reviewed in this chapter, I suggest that the following factors can contribute to the understanding of incest:

- degree of genetic relatedness, with incest being less likely to occur between more closely related individuals;
- sex of perpetrator and sex of victim, with perpetrators being much more likely to be male and victims being more likely to be female;
- age of victim, with postpubertal girls being more common than prepubertal children because incest offenders are, for the large majority, not motivated by pedophilia;
- type of sexual behavior, with larger effects obtained for incidents involving vaginal intercourse than nonreproductive sexual activities;
- interest in additional sexual opportunities associated with dissatisfaction in one's current relationship and sex drive;
- the attractiveness of the male relative, judged on the basis of physical and other characteristics such as status and wealth, which would influence his access to unrelated sexual partners; and
- paternity uncertainty influenced by the characteristics and behavior of the father, mother, and incest victim.

There is already clear support for the first two predictions, with sociolegal fathers being at relatively higher risk of committing incest than genetic fathers and incest offenses predominantly being committed by males against female kin, and there is some support for the relevance of type of sexual behavior that occurs.

In chapters 7 and 8, I switch from a focus on a theoretical understanding of sexual offending against children, pedophilia, and incest to more immediate and practical problems having to do with the assessment of risk to

commit sexual offenses against children (chap. 7) and interventions that may reduce the likelihood of such offenses (chap. 8). The theories I have reviewed in this chapter and in chapters 4 and 5 are germane, because putative risk factors could be identified by an understanding of the onset and maintenance of sexual offending against children and because interventions are more likely to be effective when they are consistent with a theoretical understanding of the problem.

APPENDIX 6.1
RISK AND MANAGEMENT OF INCEST OFFENDERS

Because many incest offenders are unlikely to sexually reoffend, treatment intended to reduce their risk of sexual recidivism is often unwarranted. There is little room for improvement—they are already low in risk—and there is the potential to inadvertently make them worse (see chaps. 7 and 8, this volume). However, treatment might be needed to help incest victims and assist in the reunification of the family when this is possible and desired by the family members. Unlike offenders against unrelated children, who will not normally ever have contact with their victims again, some incest offenders will see their victims again. Permanent removal of fathers or stepfathers from the family residence can have a large impact on the rest of the family, thereby increasing the emotional and financial burdens for the nonoffending parent and the children. Moreover, children who disclose sexual abuse by a relative may do so to stop the offending from continuing but may not want to be removed from the family residence (e.g., by child welfare agencies) or break up the family.

As a result, treatment providers may focus on family reunification, a process that typically involves family therapy, therapy and support for the incest victim(s), and monitoring of the offender in terms of potentially risky behaviors and situations (e.g., monitoring consumption of alcohol if the incest offenses often occurred after the offender became intoxicated). Factors addressed in therapy include the offender's acceptance of responsibility, the ability of the nonoffending parent to support the children and monitor the offender, and repairing the family relationships. Reunification is complicated by the fact that incest within nuclear families is associated with marital conflict; physical violence committed by the incest offender against the nonoffending parent; physical abuse or neglect of the children; and in some cases, denial of the nonoffending parent, who either does not believe the child disclosing sexual abuse or blames the child for the subsequent upheaval in the family (Deblinger, Hathaway, Lippmann, & Steer, 1993; Paveza, 1988). Unfortunately, systematic evaluations of reunification efforts in families in which incest has occurred have not been reported. It is not known how many

families attempt reunification or what impact reunification efforts have on the children, family, or offender.

APPENDIX 6.2
THE EXTENT OF PATERNITY UNCERTAINTY

Haig's (1999) evolutionary hypotheses about incest suggest that paternity uncertainty could play an important role in the understanding of incest. If these evolutionary hypotheses are correct, paternity uncertainty must have been sufficiently high in the human ancestral past to have affected Darwinian fitness. This approach to thinking about incest would be moot if heterosexual couples always had been entirely monogamous and fathers were certain about their paternity, just as mothers are always certain about their maternity. The reality is that heterosexual couples are not entirely monogamous, and fathers cannot be certain about their genetic relationship to their putative children. National survey data suggest that 10% to 15% of married women have had sex with someone other than their husband compared with 20% to 25% of married men (Laumann, Gagnon, Michael, & Michaels, 1994; Wiederman, 1997).

What is the extent of false paternity? That is, what proportion of men who believe they are the genetic father of a child are wrong? Estimates of nonpaternity are noisy, depending on the population being sampled and the reasons for the genetic testing. For example, higher rates of nonpaternity would be expected when testing is conducted because of suspicion or a dispute about paternity (e.g., in cases involving custody or child support claims) than in studies of families who are seen for medical genetic screening. On the other hand, many medical geneticists will prescreen for genetic counseling by advising mothers that genetic testing will reveal nonpaternity, thereby biasing the estimates that are obtained; Lisker, Carnevale, Villa, Armendares, and Wertz (1998) found that 88% of medical geneticists they surveyed engaged in prescreening of this kind. Self-selection by mothers who are aware that the genetic testing might reveal this information about nonpaternity could produce underestimates of false paternity.

The literature on genetic evidence of nonpaternity has been recently reviewed by Anderson (2006). He identified 22 nonpaternity rates from studies that analyzed genetic samples collected as part of medical screening or counseling (*Mdn* = 2%) and 30 nonpaternity rates from studies of genetic data collected as part of a paternity dispute of some kind (e.g., custody cases and to prove relatedness for immigration) that had a much higher median rate of 30%. One would expect higher rates of nonpaternity among incest offenders who are higher in antisociality than the general population because they have more unstable marital relationships (see Lalumière, Harris, Quinsey, &

Rice, 2005). Nonpaternity rates of 30% or higher suggest that paternity uncertainty could indeed account for a substantial proportion of putatively genetic incest cases.

Other potential adaptations have also been viewed as related to the ancestral risk of infidelity and nonpaternity. Men who are not sexually jealous are at risk of investing in offspring who are not their genetic kin; such men are less likely to pass on their genes than those who are vigilant about the risk of their mate's infidelity (for a review, see Buss, 1994, 1999). Evolutionary theorists have suggested that the tendency to report that children resemble their fathers more than their mothers may be an attempt to reassure the fathers of their paternity (Christenfeld & Hill, 1995; Daly & Wilson, 1982; Regalski & Gaulin, 1993; but see Brédart & French, 1999). Bressan and Dal Martello (2002) reviewed a series of studies showing that people do little better than chance at matching parent and child; the biggest influence on resemblance ratings was the respondent's belief about the genetic relationship between parent and child. Pagel (1997) suggested that there might be selection for generic-looking babies; such babies would not trigger suspicions about paternity because of an obvious lack of resemblance between a baby and his or her putative father.

Several studies have also found that perceived resemblance to a child significantly influenced men's hypothetical decisions about important matters such as adoption, spending time or money on a child, and paying child support (Platek, Burch, Panyavin, Wasserman, & Gallup, 2002; Platek et al., 2003) but not women's decisions about these matters (Platek et al., 2003). Moreover, another study found that perceived resemblance to a child was significantly and positively related to the self-reported quality of a relationship with that child and inversely related to the severity of injuries experienced by the mother in a sample of physically abusive men (Burch & Gallup, 2000). Burch and Gallup's (2000) results suggest that another possible cue of paternity uncertainty to study in future research on incest offenders is the occurrence of violence against the victim's mother, especially violence that occurs as a result of sexual jealousy or the suspicion of infidelity.

7

RISK ASSESSMENT

An important task for clinicians and other decision makers working with sex offenders against children is to identify those who will sexually offend again in the future (see Appendix 7.1 for a brief discussion of definitions of recidivism, accuracy statistics, and other fundamental concepts in sex offender risk assessment research and practice). In other words, what factors distinguish men who will sexually reoffend from those who do not? Assessors are also often concerned about how quickly new offenses occur and how serious any new offenses are. These are questions of *maintenance*, having to do with the likelihood that someone already known to have committed a sexual offense against a child will commit another sexual offense. It is not the same as the question of *onset*, which has to do with the likelihood that someone will commit a sexual offense against a child in the first place. The variables that help answer the question of maintenance may not help answer the question of onset.

The assessment of risk to reoffend represents multiple, overlapping questions. These questions include (a) determining whether an offender meets legally determined criteria for dangerousness (e.g., dangerous offender hearings in Canada that can result in indeterminate prison sentences and sex offender civil commitment proceedings in the United States that allow for the commitment of sex offenders after they have served their prison sen-

tence); (b) rank ordering offenders according to risk to reoffend to appropriately place offenders in terms of security level, supervision, and treatment; (c) determining when supervision conditions should be adjusted to safely manage offenders in the community; and (d) identifying targets for intervention to reduce the likelihood or imminence of a new offense. Much more is known about the first two questions than the latter two questions.

In this chapter, I review the literature on sex offender risk assessment, including the development of valid and accurate risk measures for the prediction of sex offender recidivism. I then discuss recent research on practical risk assessment issues, including clinical adjustments of risk estimates, combining the results of multiple risk scales, and assessment of risk for the onset of sexual offending among men who are of concern because of their sexual interest in children (child pornography offenders) or noncontact sexual offending (exhibitionists). I conclude with suggestions for future directions in risk assessment research and practice.

SEX OFFENDER RECIDIVISM

Social views and public policies about sex offenders against children appear to be driven by the belief that most will reoffend if given the opportunity. Thus, there are long sentences and powerful control mechanisms in the form of community notification, registration with police, and residency requirements (rules specifying how far sex offenders must live from public areas that may contain high concentrations of potential child victims, such as schools or parks). The reality is that many sex offenders against children do not sexually reoffend. Hanson and Bussière (1998) quantitatively reviewed 61 sex offender follow-up studies, examining the sexual recidivism rates of almost 24,000 sex offenders. They found that the average sexual recidivism rate for a total of 9,603 sex offenders against children was 13% after an average follow-up time of 5 to 6 years. Langan, Schmitt, and Durose (2003) found that 5% of 4,295 sex offenders against children were rearrested for a sexual offense within 3 years after being released from a state prison.

Focusing on studies with longer follow-up periods, Hanson, Steffy, and Gauthier (1993) followed 197 sex offenders against children for an average of 21 years after they were released from custody. During this time, 42% were convicted of a violent and/or sexual offense; 23% offended 10 or more years after their release. Prentky, Knight, and Lee (1997) followed 111 men who had sexually offended against an unrelated child and who were released from a treatment center between 1959 and 1984. Forty (36%) of these men had sexually reoffended after a follow-up period of up to 24 years; some did not reoffend until many years after being released.

These are observed recidivism rates—typically defined in terms of new arrests or new criminal charges or convictions—and underestimate the ac-

tual recidivism rate. The extent of this underestimation is unclear, depending on a complex interplay of the likelihood that a victim will report a crime to police, the likelihood that police will make an arrest, and the likelihood of successful prosecution (see Appendix 7.1). Hanson, Morton, and Harris (2003) have suggested that actual recidivism rates are 10% to 15% higher than observed rates. Even if the difference were double this, however, these results indicate that some sex offenders against children will not reoffend. The challenge for clinicians and policymakers is to distinguish between those who are likely to reoffend sexually and those who are not.

IDENTIFICATION OF RISK FACTORS

Quantitative reviews of several decades of sex offender follow-up research have confirmed two major dimensions of sex offender risk, which can be described as *antisociality* and *atypical sexual interests* (Doren, 2004c; Hanson & Bussière, 1998; Hanson & Morton-Bourgon, 2004; Quinsey, Harris, Rice, & Cormier, 1998; Quinsey, Lalumière, Rice, & Harris, 1995; Seto & Lalumière, 2000). As discussed in chapter 4, indicators of antisociality include prior offense history, early conduct problems, juvenile delinquency, antisocial personality features, association with delinquent peers, antisocial attitudes and beliefs, and substance abuse. The same kinds of antisociality variables have been consistently found to predict reoffending among mixed groups of offenders (Gendreau, Little, & Goggin, 1996) and among other specific groups of offenders, including sex offenders with adult victims, female offenders, juvenile offenders, and mentally disordered offenders (Bonta, Law, & Hanson, 1998; Lalumière, Harris, Quinsey, & Rice, 2005; Lipsey & Derzon, 1998). Indicators of atypical sexual interests include prior sexual offense history, phallometrically assessed sexual arousal to children or to sexual coercion, and sexual victim characteristics (see chap. 2, this volume). Other examples of antisociality and atypical sexual interest variables are provided in Table 7.1.

Among identified sex offenders, both antisociality and atypical sexual interests predict sexual recidivism, and antisociality also predicts nonsexual recidivism (Hanson & Bussière, 1998; Hanson & Morton-Bourgon, 2004, 2005). In other words, sex offenders who are high on antisociality are more likely to commit another criminal offense of some kind, whether sexual or nonsexual, and those who are high on atypical sexual interest measures are more likely to commit a sexually motivated offense. Many of the diagnostic indicators of pedophilia discussed in chapter 2 predict sexual recidivism; pedophilic indicators associated with risk include phallometrically assessed sexual arousal to children, having a boy victim, and having unrelated victims. In fact, these atypical sexual interest variables are among the strongest predictors of sexual recidivism studied so far (Hanson & Bussière, 1998;

TABLE 7.1
Indicators of Major Dimensions of Risk for Sexual Recidivism, Arranged by Magnitude of Association Within Each Dimension, for Sex Offenders

Variable	Mean effect size (*d*)	*N*	No. of studies
Antisociality			
Any prior criminal history	.32	14,800	31
Childhood behavior problems	.30	1,996	8
Psychopathy Checklist—Revised score	.29	2,783	13
Childhood criminality	.24	2,849	16
Attitudes tolerant of sexual crime	.22	1,617	9
Antisocial personality disorder	.21	3,267	12
Atypical sexual interests			
Sexual preoccupations	.39	1,119	6
Phallometrically assessed arousal to children	.32	1,278	10
Any noncontact sexual offenses	.31	10,238	22
Any deviant sexual preferences	.24	2,180	13

Note. Data from Hanson and Morton-Bourgon (2004, pp. 29–31).

Hanson & Morton-Bourgon, 2004). Adolescent and adult sex offenders who are high on both risk dimensions—antisociality and atypical sexual interests—are the most likely to reoffend sexually (Gretton, McBride, Hare, O'Shaughnessy, & Kumka, 2001; Rice & Harris, 1997; Seto, Harris, Rice, & Barbaree, 2004). Thus, offenders who are both pedophilic and psychopathic are of the greatest concern with regard to new sexual offenses.

The existence of two major dimensions of risk—antisociality and atypical sexual interests—among sex offenders against children has practical and theoretical implications. It is clear from reviewing this research that risk assessment measures need to include both antisociality and atypical sexual interest variables (see Seto & Lalumière, 2000). Moreover, as discussed in chapter 4, theories to explain sexual offending need to incorporate both antisociality and atypical sexual interests. Finally, as I discuss in chapter 8, treatments that have been demonstrated to be effective for offenders in general are likely to be valuable templates for designing effective treatments for sex offenders. At the same time, pedophilic sex offenders may also require specific treatment targeting their atypical sexual interests.

DEVELOPING RISK ASSESSMENT MEASURES

How should information about risk factors be combined to make risk-related decisions such as sentencing, treatment allocation, and conditions of supervision? There are different approaches for combining risk-related information. Unstructured judgment involves the subjective appraisal and weighting of putative risk factors, followed by a statement about risk. This is a com-

mon approach in traditional clinical assessments in which a person is interviewed, file information is reviewed, and then an opinion about prognosis (risk to reoffend, in the case of offenders) is made. Structured judgment involves using a guide, such as a checklist, to focus one's attention on specific putative risk factors. I refer to putative risk factors in discussing unstructured and structured judgments because the factors might not be empirically related to the outcome of interest or might even be negatively related so that prediction is impaired.

Empirically guided assessment involves the use of a set of risk factors that are empirically related to the outcome of interest. The combination or weighting of these empirically identified risk factors remains subjective. Finally, actuarial assessment involves the use of a set of empirically identified risk factors that are objectively scored and weighted and provide probabilistic estimates of risk based on the established empirical relationships between the individual items and the outcome of interest. Only items that independently contribute to the prediction of the outcome of interest, in combination with the other items in the set, are retained. Probabilistic estimates indicate the proportion of people with the same score (or within a range of scores) who would be expected to reoffend within a specified period of opportunity. Actuarial assessments of risk are well established in such disparate areas of practice as determining insurance premiums and predicting survival times for progressive stages of cancers. In a similar vein, the Screening Scale for Pedophilic Interests described in chapter 2 is an actuarial measure for determining the likelihood that a sex offender with child victims will show a sexual preference for children over adults when assessed phallometrically.

ACTUARIAL RISK ASSESSMENT

Unstructured or structured judgments were the typical approaches to offender risk assessment before the emergence of empirically guided and actuarial assessment scales beginning in the early 1990s. Unfortunately, the low predictive accuracies that were typically obtained using unstructured or structured clinical judgments led to much pessimism about the ability of professionals to predict future violence, including future sexual offenses (see Monahan, 1981). The myriad challenges for unstructured clinical judgment were identified decades earlier by Meehl (1954). These include attending to irrelevant risk factors because of cognitive biases such as the *representativeness heuristic* (the extent to which a factor seems to fit the prototype of a persistent sex offender)[1] or the *availability heuristic* (the extent to which a factor is salient when the judgment is made), assigning suboptimal weights

[1]Other cognitive heuristics, useful in everyday life, were discussed by Gigerenzer, Todd, and the ABC Group (1999).

to a set of empirically identified risk factors, and failing to take statistical covariation between risk factors into account. As an example of the first challenge, many practitioners have considered acceptance of personal responsibility an important risk factor that needs to be targeted in sex offender treatment, even though denial of responsibility is empirically unrelated to sexual recidivism (Hanson & Morton-Bourgon, 2004). As an example of the third challenge, both number of prior offenses and number of prior admissions to corrections are significantly related to recidivism and highly correlated with each other, but only number of prior offenses uniquely contributes to the prediction of recidivism when both variables are considered in multivariate statistical analyses (Quinsey, Harris, et al., 1998).

Actuarial risk scales have become the dominant sex offender risk assessment approach in the past 15 years. There is a large body of research demonstrating that actuarial assessments are better, on average, than unstructured clinical judgment across a wide range of assessment questions (Ægisdóttir, Spengler, & White, 2006; Grove et al., 2000). Although there has been opposition to the promulgation of actuarial risk scales in sex offender risk assessment (e.g., Litwack, 2001), these scales appear to have been generally accepted by practitioners. An information package produced for members of the Association for the Treatment of Sexual Abusers, a large international organization of sex offender service providers and other professionals working in the field of sexual abuse prevention and intervention, advocated the use of actuarial risk scales when assessing adult male sex offenders (Hanson, 2000). Actuarial risk scales were recommended in a recent book on sex offender risk assessment (Doren, 2002), and an August 2004 survey of evaluators found that actuarial risk scales were used in almost all of the 17 states that have civil commitment laws (D. M. Doren, personal communication, October 6, 2004). Most important, studies examining the predictive performance of actuarial risk scales have shown they produce significantly higher accuracies than empirically guided or unstructured clinical judgments (for a review, see Hanson et al., 2003). The greater predictive accuracy provided by actuarial risk scales can translate into the prevention of many sexual offenses against children and more efficient use of limited treatment and supervision resources when decisions are made about hundreds of thousands of sex offenders.[2]

Actuarial Risk Scales

Examples of actuarial risk scales used in sex offender risk assessments include the Violence Risk Appraisal Guide (VRAG; G. T. Harris, Rice, & Quinsey, 1993), Sex Offender Risk Appraisal Guide (SORAG; Quinsey,

[2]The U.S. Department of Justice, Office of Justice Programs, Bureau of Justice Statistics (2006) estimated there were approximately 234,000 sex offenders in correctional custody or supervision in 1994.

Harris, et al., 1998), Rapid Risk Assessment of Sexual Offense Recidivism (RRASOR; Hanson, 1997), and Static-99 (Hanson & Thornton, 2000). All of these scales have demonstrated good predictive validity and have been cross-validated in new samples of sex offenders by independent investigators (e.g., Barbaree, Seto, Langton, & Peacock, 2001; Langton, Barbaree, Seto, Peacock, & Harkins, 2007; Sjöstedt & Långström, 2001).

These actuarial risk scales contain many similar items because they were all empirically derived, and their developers drew from the same sex offender recidivism literature for items (for meta-analytic reviews of this literature, see Hanson & Bussière, 1998; Hanson & Morton-Bourgon, 2004). In fact, the SORAG is a modification of the VRAG, and the Static-99 includes all four RRASOR items. All of these scales have good predictive accuracy for sex offenders with child victims (Bartosh, Garby, Lewis, & Gray, 2003; G. T. Harris, Rice, et al., 2003). Because of their prominence in current sex offender risk assessment, the VRAG, SORAG, RRASOR, and Static-99 are described in more detail in the sections that follow. Further details, including how to obtain copies of these scales, are provided in Resource B.

Violence Risk Appraisal Guide

The VRAG was developed for use with men known to have committed a violent offense, whether sexual or nonsexual in nature, and was designed to predict *violent recidivism* (defined as a new nonsexually violent offense such as an assault or a new sexual offense involving physical contact with a victim). It contains 12 items: did not live with both biological parents until age 16, elementary school maladjustment, history of alcohol problems, never married or common-law, extent of nonviolent offense history, failed on prior conditional release, young age at time of index offense, less index victim injury, did not have a female index victim, met *Diagnostic and Statistical Manual of Mental Disorders* (3rd ed.; *DSM–III;* American Psychiatric Association, 1980) criteria for any personality disorder, did not meet *DSM–III* criteria for schizophrenia, and Psychopathy Checklist—Revised (PCL–R; Hare, 1991, 2003) score (G. T. Harris et al., 1993; Quinsey, Harris, et al., 1998). The item weights are based on the empirical relationship between the predictor and violent recidivism in the development sample; each point represents a difference of 5% from the base rate of violent recidivism in the development sample (31% after an average follow-up time of 7 years). For example, sex of the index offense victim is scored as –1 if the victim was female and +1 if the victim was male; this means that 26% of the offenders with a female index offense victim committed a new violent offense during the follow-up period, and 36% of the offenders with a male index offense victim did so, all other things being equal. Total VRAG scores can range from –26 to +38. Individuals can be assigned to one of nine risk categories based on their scores.

Because of the importance of psychopathy in explaining criminal behavior (see Appendix 4.2, this volume), the PCL–R is an important part of

the VRAG, with the single biggest influence on the overall score. Offenders' PCL–R scores are based on a review of file information and a semistructured interview when available. Offenders are assigned ratings of 0 (*absent*), 1 (*some indication*), or 2 (*present*) on each of the 20 PCL–R items, tapping characteristics such as impulsivity, irresponsibility, and callousness. The 20 items are summed to produce a total score out of 40.

Sex Offender Risk Appraisal Guide

The SORAG is a modification of the VRAG, with 10 items in common, and was created using a similar methodology. This scale was developed for men known to have committed a sexual offense involving physical contact with a victim and was designed to predict violent recidivism. The SORAG has 14 items: did not live with both biological parents until age 16, elementary school maladjustment, history of alcohol problems, never married or common-law, extent of nonviolent offense history, extent of violent offense history, previous sexual offense history, sex and age of index victim, failure on prior conditional release, young age at index offense, met *DSM–III* criteria for any personality disorder, did not meet *DSM–III* criteria for schizophrenia, phallometrically measured deviant sexual interests, and PCL–R score (Quinsey, Harris, et al., 1998). As with the VRAG, the PCL–R score is the most influential item on the SORAG. Total SORAG scores can range from –27 to +51. Individuals can be assigned to one of nine risk categories based on their scores.

The VRAG and SORAG were designed to predict violent recidivism, an outcome that includes both nonsexually violent and sexual offenses involving physical contact with a victim (sex-related offenses such as possession of child pornography, indecent exposure, or prostitution involving an adult would be excluded under this definition). Analysis of criminal justice and clinical records suggests that many apparently nonsexually violent offenses on police rap sheets are in fact sexually motivated (e.g., a charge or conviction for attempted murder might be judged to be a sexual offense after reviewing all of the available information; Rice, Harris, Lang, & Cormier, 2006). Rice et al. (2006) have therefore argued that violent recidivism is the most relevant outcome in studies of sex offender risk.

Rapid Risk Assessment for Sexual Offense Recidivism

The RRASOR was developed for men who had been convicted of at least one sexual offense and was designed to specifically predict sexual recidivism. Because of the way in which sexual recidivism is defined, some sex-related reoffenses that resulted in charges or convictions for "nonsexual" crimes (e.g., an attempted sexual offense against a child with insufficient evidence to guarantee a conviction under the relevant statute might result in a guilty plea for assault) would not be counted. The RRASOR has four items: number of prior charges or convictions for sexual offenses; age on release from

prison or anticipated opportunity to reoffend in the community; any male victims; and any unrelated victims (Hanson, 1997). The item weights reflect the magnitude of each item's independent relationship with sexual recidivism. Total scores can range from 0 to 6.

Static-99

The Static-99 was developed for men who are known to have committed at least one sexual offense and was designed to predict either violent recidivism or specifically sexual recidivism. It has 10 items, 4 of which are the same as the RRASOR items listed previously (Hanson & Thornton, 2000). The additional items are number of prior sentencing dates, had any convictions for noncontact sexual offenses, index offense of nonsexually violent nature, prior nonsexually violent offense, any stranger victims, and ever lived common-law for 2 or more years. Total scores range from 0 to 12. Individuals are assigned to one of seven risk categories based on their score (individuals with scores of 6 or more are combined into one group because of the small frequencies of offenders with such scores in the development sample).

Other Risk Scales

A number of other risk scales have been reported in the literature. There are too many to list all of them here, but better known examples include the Minnesota Sex Offender Screening Tool—Revised, Risk for Sexual Violence Protocol, and Sexual Violence Risk—20. These risk assessment measures are not reviewed here because an extensive review of sex offender risk assessment measures has been provided by Doren (2002) and by Langton (2003). There are some studies supporting the predictive validity of these scales, including Langton's, but they do not have the same level of support as the actuarial risk scales listed previously. No actuarial risk scales have yet been developed and validated for violent or sexual recidivism among adolescent sex offenders or for female sex offenders, though some progress has been made in developing risk measures for adolescent sex offenders (Epperson, Ralston, Fowers, DeWitt, & Gore, 2005; Parks & Bard, 2006).

Which Actuarial Risk Scale Is Best?

Hanson et al. (2003) reported that the Static-99 has the largest number of published cross-validation studies and has produced the highest average *area under the curve* (AUC; an index of predictive accuracy that is now commonly reported in sex offender risk assessment research; see Appendix 7.1) in predicting sexual recidivism. The average Static-99 AUC was significantly higher than the average AUC obtained for the VRAG in predicting sexual recidivism but did not significantly differ from the average AUCs obtained by the SORAG or RRASOR. At the same time, Hanson and Morton-Bourgon (2004) reported that the VRAG and SORAG produced a larger average ef-

fect size across their cross-validation studies than obtained for the RRASOR or Static-99 in predicting violent recidivism. These results were obtained from a quantitative review of all available studies. It is interesting to note that studies that have directly compared actuarial risk scales have not found consistent differences in their performances in predicting violent or sexual recidivism (Barbaree et al., 2001; Dempster, 1999; Langton et al., 2007; Nunes, Firestone, Bradford, Greenberg, & Broom, 2002; Sjöstedt & Långström, 2001). An exception is a study by G. T. Harris et al. (2003) that found the VRAG and SORAG were significantly better at predicting violent recidivism than the Static-99 or RRASOR.

The most plausible explanation for the lack of consistent differences in predictive accuracy among these scales is that they have similar item content and data collection methods. Thus, it is not surprising that Kroner, Mills, and Reddon (2005) found that four new scales created using a quasi-random subset of items from four established measures associated with risk to reoffend in mixed groups of offenders (PCL–R, Level of Service Inventory—Revised, VRAG, and the General Statistical Information on Recidivism) did not differ in their predictive performances from the four original scales. The four quasi-randomly generated scales and the original four measures were all significantly and positively correlated with each other. If the similar items and method explanation is correct, then only the addition of new items pertaining to content that is not captured by existing items or collected using different methods (e.g., biometric measurements, biochemical assays, and direct observations of behavior) could add to the predictive accuracies that are currently obtained.

Static and Dynamic Risk

Actuarial risk scales exclusively or almost exclusively consist of static risk factors, defined here as historical factors that cannot change (e.g., prior criminal history and history of alcohol abuse) or highly stable factors that are very unlikely to change, if they can be modified at all (e.g., pedophilia and psychopathy). *Dynamic risk factors* are defined here as changeable (e.g., antisocial attitudes and beliefs about sex with children) or temporally fluctuating (e.g., level of alcohol intoxication) factors that could, in principle, be targets of intervention.

Some practitioners and researchers have argued that sex offender risk measures need to incorporate dynamic risk factors to avoid the potential dilemma of assigning risk scores to an offender that do not change because the scores are based on static factors. Once someone is denied parole because of his or her actuarially estimated risk on a scale such as the SORAG or Static-99, nothing that individual can subsequently do—participate in treatment, obtain a firm commitment of legal employment on release, or improve family support—can change the risk score and therefore change the risk-

based decision. This is both a dilemma for the offender (who may be less motivated to participate in treatment or other services because of the inability to change his or her risk score) and the clinician (who wants to increase offender motivation and participation in services through the incentive of increasing the likelihood of release on parole or an easing of supervision conditions). This dilemma has been identified by some evaluators as a justification for the clinical adjustment of actuarial estimates of risk, defined as the adjustment of actuarial risk scores or the probabilistic estimates on the basis of additional information such as completion of prescribed treatment.

Whether dynamic risk factors should be incorporated into decision making and what factors actually qualify for this designation are empirical questions and cannot be justified on the basis of the offender's or clinician's dilemma alone. Another potential solution that does not compromise the predictive accuracy of actuarially estimated risk is to require more extensive preparations for release based on actuarially estimated risk, so higher risk offenders must do much more to be eligible for parole than low-risk offenders. In this arrangement, a higher risk offender might have to complete treatment, obtain employment, develop stronger family support, and meet a number of other goals to be released, whereas a lower risk offender might only have to obtain stable housing and employment for release. Regardless of the extent of preparations, more caution is warranted in the management of the high-risk offender.

Perhaps part of the difficulty in conceptualizing how to integrate information about static risk factors and dynamic risk factors is that they actually address two different questions. Assessments based on static risk factors are better suited for answering the question of who is more likely to reoffend during a certain period of opportunity. Individuals with a history of alcohol abuse, for example, are more likely to reoffend than individuals without such a history. In contrast, assessments based on dynamic risk factors may be better suited for answering the question of when someone at a particular level of static risk to reoffend is more likely to do so during that period of opportunity. Thus, individuals may be more likely to reoffend when they are intoxicated than when they are sober, all other things being equal.

The likelihood that an offender will reoffend is not uniformly distributed over time. There are times when an offense is more likely and other times when it is less likely. Dynamic risk factors indicate periods of higher likelihood, that is, imminence. To illustrate this idea with a thought experiment, most sex offenders sleep some of the time; those who are awake have more opportunities to offend than those who are asleep, and so being awake can be thought of as a dynamic risk factor (though it has been suggested that some men may sexually offend while asleep!; Shapiro, Trajanovic, & Fedoroff, 2003). Statistical interactions between static and dynamic risk factors are possible such that someone with both a history of alcohol abuse and who is currently intoxicated is at greater imminent risk to reoffend than someone

who is intoxicated but does not have an alcohol abuse history. At the same time, intoxication may increase the imminence of an offense among nonpsychopathic offenders but not among psychopathic offenders (see Rice & Harris, 1995).

Some promising candidates for dynamic risk factors have been identified. Such research is difficult to conduct, which may explain why knowledge about dynamic risk factors greatly lags behind knowledge about static risk factors. It is not sufficient to demonstrate that a changeable or temporally fluctuating factor, assessed at one point in time, is related to whether a new offense subsequently occurs. Because the variable is assessed at only one point in time, it becomes a static risk factor when considered at a later date. Whether someone is currently intoxicated is potentially a dynamic risk factor; whether someone consumed alcohol last week is potentially a static risk factor. To be considered a true dynamic risk factor, it is necessary to demonstrate that change on the factor is related to the timing of any offense that occurs, over and above the prediction provided by static risk factors. To illustrate this last point, association with antisocial friends might be a potential dynamic risk factor because it can be measured more than once and it can be targeted through interventions to decrease contact with antisocial friends and increase contact with prosocial friends. However, having antisocial friends may actually be a proxy for antisociality such that highly antisocial offenders tend to have many antisocial peers. Even demonstrating that change in peer groups is related to recidivism is not sufficient to demonstrate that this variable is a dynamic risk factor because it may be the case that highly antisocial offenders do not change their peer groups, whereas less antisocial offenders do. Having antisocial friends would be a dynamic risk factor only if it could be demonstrated that changing peer associations is associated with the likelihood that a new offense will occur, over and above the prediction provided by knowing whether someone had antisocial friends at the baseline assessment and knowing how they score on a measure of antisociality such as the PCL–R.

Dynamic risk assessment research with mentally disordered offenders suggests that noncompliance with staff instructions, noncompliance with treatment, and mood problems are related to the timing of new offenses (Quinsey, Coleman, Jones, & Altrows, 1997). Similar dynamic risk assessment research on sex offenders in the community suggests that compliance with supervision; ability to regulate sexual thoughts, fantasies, and urges; attitudes tolerant of sexual offending; and associating with antisocial peers distinguished sex offenders who reoffended from those who did not, even after the recidivists and nonrecidivists were matched on a set of static risk factors (Hanson & Harris, 2000).

One limitation of the studies by Hanson and Harris (2000) and Quinsey et al. (1997) was that data from recidivists and nonrecidivists were examined retrospectively; recidivists and nonrecidivists were identified and then com-

pared on variables coded from files that were not designed for the study. These studies did not follow a sample of offenders prospectively to determine if changes on the putative dynamic risk factors were temporally linked to a new offense. More recent prospective studies suggest they do, such that increases in certain dynamic risk factors could be detected in the month prior to a new offense occurring (see A. Harris & Hanson, 2002; Quinsey, Jones, Book, & Barr, 2006). For example, new offenses tended to be preceded by an increase in scores on measures of noncompliance with treatment and supervision in the previous month.

CLINICAL ADJUSTMENTS OF ACTUARIALLY ESTIMATED RISK

A controversial question in sex offender risk assessment is whether clinical adjustments of actuarially estimated risk to reoffend are ever warranted. There are two competing positions: One suggests that clinical adjustments are sometimes justified because actuarial risk scales, no matter how wide-ranging in their content, do not include all possible risk and protective factors (Doren, 2002; Hanson, 2000). Proponents of this position also note that actuarial risk scales do not accommodate unusual circumstances, for example, if a pedophilic sex offender has a stroke and is cognitively and physically disabled as a result. It is argued that the clinician should adjust the actuarial estimate of risk in such cases, because the unusual circumstances override the actuarially estimated risk to reoffend. As mentioned earlier, some have also argued that actuarial estimates should be adjusted on the basis of information about dynamic risk factors.

The competing position refers to the substantial literature on the challenges facing unstructured judgment in formulating opinions about risk, all of which would also apply to the unstructured adjustment of actuarial estimates (see Meehl, 1954). Moreover, potential adjustment factors may already have been considered in the development of actuarial risk scales and not included because they were unrelated to the likelihood of recidivism or they did not add to the predictive accuracy provided by the items that were already selected. Clinicians who are familiar with an actuarial risk scale but not all the details of the research that contributed to its development may unknowingly consider factors that have already been examined and dropped in multivariate analyses. If a new risk factor was identified and did add to the predictive accuracy already obtained by the existing items, it could be incorporated as a new item in a revised version of the actuarial risk scale. In other words, the adjustment of actuarial risk scale results could itself be an actuarial procedure. Nonetheless, the practice of unstructured clinical adjustment of actuarial risk scales is common.

There is some evidence that additional information can add to the predictive validity of actuarial risk scales. Whether adjusting actuarial risk scores

increases predictive accuracy, however, has not yet been empirically demonstrated, except for time offense free while living in the community. The developers of the VRAG initially identified factors that they thought could be considered in the adjustment of actuarial risk scores (Webster, Harris, Rice, Cormier, & Quinsey, 1994) but later advised against adjustments given the lack of empirical support for such a position (Quinsey, Harris, et al., 1998). The types of information that have shown incremental validity in some studies are listed in the sections that follow.

Treatment Behavior

Doren (2002) identified eight studies that examined the incremental validity of treatment-related behavior when added to actuarial risk scale scores; six of these eight studies examined the impact of participating in treatment. For example, McGrath, Cumming, Livingston, and Hoke (2003) found that whether an offender completed treatment added to the prediction of sexual recidivism obtained by the RRASOR or Static-99. Research on the relationship between treatment behavior and sex offender recidivism is discussed further in Appendix 8.1.

Offender Age

Another incremental factor that has been discussed is offender age. Barbaree, Blanchard, and Langton (2003) reported that offender age at release was a significant predictor of sexual recidivism in a sample of 468 sex offenders (293 of whom had offended against at least one child). Moreover, offender age at release added to the predictive accuracy obtained with the RRASOR, even though age at release was already represented as an item in that scale. Barbaree et al. (2003) suggested this finding might reflect an age-related decrease in risk for offending mediated by an age-related decrease in sexual arousability and sex drive (for a review, see Doren, 2006).

Barbaree et al. (2003) addressed the alternative explanation that their cross-sectional data might reflect cohort differences in risk (e.g., highly antisocial offenders engaging in more physically risky activities and therefore dying at a younger age, resulting in a lower risk group of older offenders) rather than an effect of aging by noting that the four age groups they created did not show a systematic difference in RRASOR scores. They did not report, however, whether the offender age at release significantly added to the predictive performances of actuarial risk scales with a broader range of scores such as the SORAG or Static-99 or whether the age groups differed on these other risk scales. They also did not report how offender age at release performed when compared with offender age at the time of the index offense or offender age at the time of the first offense. The latter question is relevant because offender age at the time of the first offense, offender age at the time

of the index offense, and offender age at release are all positively correlated with each other, and age at release might actually be acting as a proxy for the historical, static risk factor of offender age at the time of the first offense or offender age at the time of the index offense (G. T. Harris & Rice, 2006). If the proxy explanation is correct, then offender age at release does not reflect an age-related decrease in risk of offending.

Time Offense Free

In the revised coding rules for the Static-99, A. Harris, Phenix, Hanson, and Thornton (2003) presented a new empirically based option to adjust the probabilistic estimates on the basis of the amount of time that an offender had spent without any new major offenses (i.e., no new nonsexually violent or sexual offenses; minor offenses were not counted) while living in the community. A. Harris, Phenix, et al. suggested that the reduction could be up to one half of the probabilistic estimate if the offender had been free of major offenses for 5 to 10 years in the community. G. T. Harris and Rice (2006) also examined the impact of violent-offense-free time at risk in a study of the VRAG. They found that violent-offense-free time at risk was related to the likelihood of new violent offenses and that this information could be used to adjust actuarially estimated risk as long as an offender was not in the highest three risk categories. However, it is important to note that they recommended that this adjustment itself be actuarial. Specifically, G. T. Harris and Rice reported that the probability of violent recidivism (for individuals outside the highest three risk categories on the VRAG) decreased by 1% per year. Thus, an offender could be moved to the next lower VRAG risk category after 10 years of being violent offense free and again to the next lower VRAG category after an additional 15 years of being violent offense free.

IMPACT OF CLINICAL ADJUSTMENTS

Though clinical adjustments appear to be common practice, few studies have specifically examined the impact of clinical adjustments on estimates of risk. In an unpublished study, Peacock and Barbaree (2000) found that adjustments to RRASOR scores based on treatment-related behavior (e.g., level of participation in treatment) did not improve predictive accuracy. Barbaree et al. (2001) examined the ability of treatment-related information to add to the predictive performance of an empirically guided clinical assessment measure, the Multifactorial Assessment of Sex Offender Risk for Recidivism (MASORR). Pretreatment MASORR scores did not significantly predict recidivism, and posttreatment MASORR scores produced an even lower AUC, indicating the addition of treatment-related information actually had a negative impact on predictive accuracy. Nicholaichuk and

Yates (2002) found that phallometrically assessed atypical sexual arousal did not add to the predictive accuracy provided by the RRASOR in a sample of adult sex offenders, even though both the phallometric measure and the RRASOR were positively correlated with recidivism. Krauss (2004) examined the impact of judges' adjustments to sentencing guidelines. The adjusted sentences had a significantly weaker relationship with recidivism than the unadjusted sentencing guidelines (although neither the unadjusted nor adjusted sentences were significantly related to recidivism). Finally, Hilton and Simmons (2001) examined clinician recommendations to a mental health tribunal required to make decisions about transfer to a lower level of security or release to the community. The clinicians had access to VRAG scores but could also take other information into account in making their recommendations. The clinician recommendations were not significantly correlated with VRAG scores but were still highly related to tribunal decisions (even though VRAG score was significantly predictive of violent recidivism, and clinician recommendation was not). This result suggests that clinical adjustments attenuated the potential contribution of VRAG scores to tribunal decisions. Taken together, these findings suggest that adjusting actuarial estimates of risk either has no impact or even a negative impact on predictive accuracy; the onus is clearly on those who support clinical adjustment to demonstrate empirically that such a practice is justified.

COMBINING ACTUARIAL RISK SCALES

In addition to making adjustments of actuarial estimates of risk to reoffend, another common clinical practice is to score and combine the results of multiple actuarial risk scales. Doren (2002) has suggested that multiple risk scales can be combined to increase predictive accuracy to the extent that the scales differentially assess antisociality and atypical sexual interests. Many actuarial risk scale items load onto one of these two dimensions along with a third factor that seems to capture predominantly demographic differences between sex offenders against children and sex offenders against adults (Barbaree, Langton, & Peacock, 2006b; Roberts, Doren, & Thornton, 2002; Seto, 2005).

Combining multiple risk scales seems intuitively reasonable. It is a psychometric principle that adding relevant items increases the internal reliability of a scale, at least up to a certain point (Anastasi & Urbana, 1996). Moreover, there is evidence that risk ratings for violence in the near future have a stronger relationship with that particular outcome when the raters agree (McNiel, Lam, & Binder, 2000). On the other hand, subjectively combining the results of multiple actuarial scales may recapitulate the problems associated with the traditional clinical approach of subjectively combining empirically identified risk factors (Grove et al., 2000; Kahneman, 2003).

To address this question, I examined the impact of combining actuarial risk scales using a variety of logical and statistical methods in a sample of 215 sex offenders (Seto, 2005). I focused on three intuitively appealing rules for combining actuarial risk scales, two of them similar to medical rules that are used to combine the results of diagnostic tests (Gross, 1999; Politser, 1982). The first rule is "believe the negative," which is to diagnose the disorder only if all the diagnostic tests are positive; in the current context, all risk scales must exceed a given threshold to designate an offender as someone who is dangerous (i.e., as someone who is expected to reoffend). The second rule is "believe the positive," which is to diagnose the disorder if any one of the diagnostic tests is positive; in the current context, consider an offender to be dangerous if any of the scales exceed a given threshold. The third rule is "average": that is, to average the results of the different risk scales after they are transformed to the same metric such that a relatively high score on one scale would be offset by a relatively low score on another scale.

These three rules represent combinations that are encountered in sex offender risk assessment. For example, Doren (2002) described a version of the believe-the-positive rule for combining risk scales that load differently onto the dimensions of antisociality and atypical sexual interests (see also Doren, 2004c; Roberts et al., 2002). I also used multiple logistic regression and principal components analysis to see if actuarial scales, or components of those scales, could be combined using statistical optimization methods to yield greater predictive accuracy.

These different analyses revealed that combining scales did not provide a statistically significant or consistent advantage over the single actuarial risk scale producing the highest AUC for prediction of violent or specifically sexual recidivism. This was the case whether the scale scores were combined using the believe-the-negative, average, or believe-the-positive rules, combined on the basis of relative rank (percentile score) in the sample or expected recidivism rates or combined using statistical optimization methods. Although it is possible that an idiosyncratic rule for combining actuarial risk scale results could perform better than a single scale, the results of the optimization analyses suggest this is highly unlikely. I concluded that the practice of combining and interpreting the results of multiple actuarial risk scales when assessing the risk of sex offenders is inefficient, at best, because each additional risk scale takes time and effort to complete.[3]

Barbaree et al. (2006b) recently showed that four different actuarial risk scales—VRAG, SORAG, RRASOR, and Static-99—identify different

[3]Combining test results may not be better for certain other assessment questions as well. For example, Doyle, Biederman, Seidman, Weber, and Faraone (2000) found that of the seven neuropsychological tests they examined, the Freedom from Distractibility index of the Wechsler Intelligence Scales for Children provided the highest diagnostic accuracy for identifying children with attention-deficit/hyperactivity disorder and that adding information provided by the other tests did not significantly improve diagnostic accuracy.

groups of sex offenders as higher in risk in the same sample. In other words, offenders identified as relatively high risk (on the basis of their percentile score) on one actuarial risk scale did not receive the same rank on another scale. The difference in percentile rank was inversely related to the correlation between scale scores, so scales that were highly correlated with each other produced smaller discrepancies. Barbaree et al. suggested this finding justifies scoring and interpreting multiple actuarial risk scales to avoid confusion when different evaluators can arrive at different statements about an offender's risk if they use different actuarial risk scales. Barbaree et al. (2006b) proposed that evaluators score multiple actuarial risk scales—although this does not improve predictive accuracy—and then reconcile any discordant findings by describing how the different scales load onto the risk dimensions of antisociality and atypical sexual interests (Barbaree et al., 2006b; Roberts et al., 2002; Seto, 2005).

Barbaree et al.'s (2006b) proposed solution appears to open the door again for subjective judgment in the reconciliation of discordant scores. A less confusing option would be to select the best available scale for the risk assessment purpose and to explain why this scale was selected. Evaluators might still disagree about which scale is best for a particular assessment, but the criteria by which this could be judged would be objective. Criteria for the selection of an actuarial risk scale would include the sex offender population (the scales mentioned in this chapter were developed for men and may not be generalizable to adolescent sex offenders or female sex offenders), outcome of interest (specifically sexual recidivism or the broader, but more complete, outcome of violent recidivism), the degree of predictive accuracy it has obtained, the number of independent replications that have been conducted, correspondence between expected and observed recidivism rates in cross-validation studies, and ease of use in the local context (the RRASOR can be easily scored from a summary of sexual offense history, whereas the SORAG requires phallometric testing and the scoring of the PCL–R).

A SPECIAL RISK SCALE FOR SEX OFFENDERS AGAINST CHILDREN?

The actuarial risk scales described earlier were developed in mixed samples of sex offenders. It is possible, in principle, for a specially developed risk scale to provide even better performance specifically for sex offenders against children. Any such scale would have a heavy representation of variables reflecting antisociality—psychopathy, criminal history, early conduct problems, and so forth—given the importance of such variables in predicting recidivism in myriad groups of offenders, including mixed groups of offenders, mixed groups of sex offenders, female offenders, juvenile delinquents, and mentally disordered offenders (Bonta et al., 1998; Coulson, Ilacqua, Nutbrown, Giulekas, & Cudjoe, 1996; Lipsey & Derzon, 1998; L. Simourd &

Andrews, 1994). This is especially true if the scale is intended to predict violent recidivism. At the same time, some offender- or offense-specific variables might make a small but significant contribution, especially if the scale is intended to predict sexually motivated offenses. These variables would include indicators of pedophilia, including phallometrically assessed sexual arousal to children, having boy victims, having multiple child victims, having very young victims, and having unrelated child victims. It is possible, in principle, to specifically develop an actuarial risk scale for pedophilic sex offenders. Because the offenders would be homogeneous with regard to pedophilia, however, I would expect antisociality variables to have much greater weight in any such scales. Similarly, developing a specific risk scale for psychopathic sex offenders would result in atypical sexual interest variables having much greater weight.

In practice, demonstrations of the robustness of the VRAG in different populations of offenders suggest that good predictive performance can be obtained with existing actuarial risk scales (Quinsey, Harris, Rice, & Cormier, 2006). Thus, the VRAG is still significantly predictive of recidivism among incest offenders, spousal assaulters, and nonforensic psychiatric patients, and the Static-99 and SORAG have comparable predictive accuracy among groups of sex offenders distinguished according to victim age or relationship to the victim (Bartosh et al., 2003; G. T. Harris, Rice, et al., 2003). Given the predictive ceiling that might be achieved with excellent scoring reliability and no missing information, special scales for sex offenders with child victims may not be capable of yielding significantly greater accuracy.

RISK AMONG MEN WHO HAVE NOT YET COMMITTED A SEXUAL OFFENSE AGAINST A CHILD

The research that has been reviewed so far in this chapter has focused on the risk of future offenses among men who have already committed a sexual offense. In other words, the actuarial risk scales that have been developed predict recidivism. Much less is known about the factors that predict whether someone who has not had any known sexual contacts with a child will commit a sexual offense in the future. How can clinicians or researchers identify men who are at risk of committing sexual offenses against a child for the first time? Rabinowitz, Firestone, Bradford, and Greenberg (2002) followed a sample of 221 men who had been criminally charged and who met diagnostic criteria for exhibitionism. None of these offenders were known to have committed a contact sexual offense at the time they were assessed. Nonetheless, among this group of exhibitionistic offenders, phallometrically assessed sexual arousal to children distinguished those who subsequently committed contact sexual offenses from those who committed noncontact sexual offenses again during the average follow-up of almost 7 years. During the follow-up period, 14 men committed a contact sexual offense and 27 com-

mitted another noncontact sexual offense. Other data also suggest that some exhibitionists go on to commit sexual offenses against children (Gebhard, Gagnon, Pomeroy, & Christenson, 1965; Rooth, 1973). This crossover in offending is not unusual; other studies have found that substantial proportions of exhibitionists have sexually offended against children, and some men who sexually offend against adults also have child victims (e.g., Abel, Becker, Cunningham-Rathner, Mittelman, & Rouleau, 1988; Sugarman, Dumughn, Saad, Hinder, & Bluglass, 1994; Weinrott & Saylor, 1991). Little else is known about what distinguishes exhibitionists or offenders with adult victims who go on to sexually offend against a child from those who do not.

Focusing on another population of men who could be at risk for sexually offending against children, my colleague and I (Seto & Eke, 2005) recently completed the first follow-up study of child pornography offenders, a group of men who are likely to be pedophiles as discussed in chapter 3 (Seto, Cantor, & Blanchard, 2006). We found that prior criminal history predicted future offenses in a sample of 201 child pornography offenders, with 23% of the 112 men with a prior criminal history and 9% of the 89 men without such a history committing another offense of any kind during the follow-up period (Seto & Eke, 2005). If one takes into account both prior and current offenses, child pornography offenders with no other forms of criminal involvement were the least likely to commit any future offenses. Those who had a history of contact sexual offenses were the most likely to commit a contact sexual offense in the future (9% of the 76 men who had a contact sexual offense history sexually offended during the follow-up period).

The studies reviewed so far in this section are of men who have already come into contact with the criminal justice system. What about risk to have sexual contact with a child among individuals with no prior criminal history? As discussed in chapter 4, childhood sexual abuse may be a risk factor for the onset of sexual offending, but it is not a necessary or sufficient factor. Salter et al. (2003) followed 224 sexually abused boys for 7 to 19 years and found that 26 of them (12%) subsequently committed a sexual offense, most involving a child. These sexual offenses occurred soon after the sexual abuse; the average age of the sexually abused boys was 11, and the average age at the time of a sexual offense was 14. Of the 26 boys, 19 committed only a single sexual offense during the follow-up period. Sexually offending was associated with a history of physical neglect, lack of supervision, and sexual abuse by a female perpetrator. The sexually abused boys who committed sexual offenses were also more likely to commit nonsexual offenses.

Widom (1995) followed a sample of 908 children who had been physically abused, sexually abused, and/or neglected and compared their criminal outcomes with those of a matched group of children who had not been abused or neglected. The 153 children who had been sexually abused had almost 5 times the odds of being arrested for a sexual crime, which could include sexual contact with a child but could also include indecent exposure (*exhibitionism*),

peeping (*voyeurism*), or prostitution. In comparison, children who had been physically abused had 4 times the odds of being arrested for a sexual crime. Only 0.7% of the sexually abused children were arrested for rape or sodomy, which was not a significantly higher proportion than the 667 children in the comparison group (0.4%).

Hanson, Scott, and Steffy (1995) found that 2% of their group of 137 nonsex offenders committed a sexual offense during the follow-up period of 15 or more years. Langan et al. (2003) found that 1.3% of 262,420 nonsex offenders released from the same prisons were arrested for a sexual offense during the 3-year follow-up period. P. Marshall (1997) analyzed data from the United Kingdom and found that 1 in 90 men born in 1953 had a conviction by the age of 40 for a sexual offense involving contact with a victim (including attempts to have sexual contact with a victim but excluding convictions for noncontact sexual offenses such as indecent exposure or pornography). The majority of these sexual offenses involved a minor.

Surveys of students have indicated that some men in the community are sexually interested in children; these men might have sexual contacts with children if other factors or certain conditions are present (Briere & Runtz, 1989; Smiljanich & Briere, 1996). This is a difficult question to investigate because of access to potential participants for the necessary follow-up research. I would predict that those who are most at risk in the general population are antisocial and pedophilic. At the same time, some men who are antisocial but nonpedophilic will also commit sexual offenses involving children, as will some men who are pedophilic but not particularly antisocial. The victims of their offenses may differ, however. I would expect antisocial, nonpedophilic individuals to target older girls who show some signs of sexual maturity, whereas pedophilic, relatively less antisocial individuals would be more likely to target boys or younger girls.

The puzzle of incest offenders, who tend to be less antisocial and less likely to be pedophilic than men who offend against unrelated child victims, was discussed in chapter 6. Males who are sociolegally rather than genetically related to a child are at greater risk to commit incest, as are males who did not consistently live with a female child (daughter or sister) during the first few years of her life. Speculatively, fathers who suspect the paternity of a child, are unattractive to potential female partners, and are dissatisfied with their current marital or common-law relationship would also be at greater risk. Further research on at-risk men in the general population could lead to the development of actuarial risk scales for the onset of sexual offending against children.

CONCLUDING COMMENTS

Sex offender risk assessment has advanced greatly in the past 15 years with the development and promulgation of actuarial risk scales to predict

recidivism. Cross-validation studies support the reliability and predictive validity of these scales, and two recent studies have suggested that the probabilistic estimates that are provided by these actuarial scales are robust (Doren, 2004b; G. T. Harris, Rice, et al., 2003; but see Mossman, 2006). The use of actuarial risk scales is rapidly becoming a standard practice, especially in high-stakes assessments such as dangerous offender hearings in Canada and sex offender civil commitment proceedings in the United States. It is possible that the actuarial revolution in risk assessment will continue to spread, first to other sex offender populations (with the development and validation of actuarial risk scales for adolescent sex offenders and female sex offenders), then to other areas of forensic clinical practice (special groups such as fire setters and children with sexual behavior problems), and eventually to nonforensic areas of clinical practice (e.g., assessing the probability of relapse after an individual's first major episode of depression).

Common clinical practices such as the adjustment of actuarial estimates of risk and the subjective combination of results from multiple risk scales are not supported by empirical research. More work needs to be done to explore these practices and to determine when, if ever, they are justified. More research is also needed on the development of dynamic risk assessment measures and risk measures for at-risk individuals who have not committed sexual offenses against children (e.g., noncontact sex offenders such as exhibitionists and child pornography offenders with no history of sexual contacts with children). Areas for further refinement of sex offender risk assessment include revision of actuarial scale items, determining the most effective ways to communicate information about risk (e.g., Hilton, Harris, Rawson, & Beach, 2005), and determining how to best organize risk-related decisions, such as transfer to lower security or release to the community, to avoid the discounting of valid predictions about recidivism (Hilton & Simmons, 2001). Sex offender risk assessments, however accurate they can be, will have little impact on public safety and offender outcomes if decisions about sentencing, supervision, and intervention are not directly linked to actuarial risk estimates.

What is likely to be the next major advance in sex offender risk assessment? G. T. Harris and Rice (2003) have suggested that actuarial risk scales scored with complete information and high reliability may have already reached a predictive ceiling. On the other hand, it is possible that risk assessment can become more accurate by incorporating variables reflecting new content and using new methods. In particular, emerging research on the etiology of pedophilia may facilitate future developments of risk assessment measures (e.g., the inclusion of neuropsychological or neurological measures).

Once higher risk individuals have been identified, what can be done to reduce the likelihood that children will be sexually abused? I discuss interventions in chapter 8.

APPENDIX 7.1
FUNDAMENTAL CONCEPTS IN SEX OFFENDER RISK ASSESSMENT RESEARCH

OPERATIONALIZING RECIDIVISM

Most risk assessment studies have defined recidivism as new arrests, charges, or convictions for a criminal offense and use official records to collect information about these outcomes. As discussed by Quinsey et al. (2006) and others, official records are an underestimate of the incidence of crime. Many victims do not report sexual crimes; some offenders are not apprehended; and some guilty individuals are not successfully prosecuted. Approximately one third (30%) of sexual assaults committed against minors are reported to police (Finkelhor & Ormrod, 1999; Snyder, 2000), and data from three states with relatively complete data collection suggest that less than one quarter (22%) of reports made to child welfare agencies are also known to the police (Finkelhor & Ormrod, 2001).

These sources of "noise" may obscure the identification of risk factors for recidivism to the extent that they are related to the risk factors. For example, a psychopath who has no ties to others, is highly mobile, and is deceitful may be more likely to escape detection for a new offense than someone who has many family members and relatives and has lived in the same community for many years. Psychopaths are at higher risk for recidivism than nonpsychopaths, all other things being equal. It is assumed that recidivists are more likely to be detected to the extent that they commit more serious offenses or commit offenses at a greater frequency. Although many of these offenses do not appear in official records, the logic is that the men who are the most likely to reoffend will eventually be detected (i.e., the probability of being successfully detected and convicted for a particular crime might be only 10%, but someone who commits many such crimes is highly likely to be detected and convicted for one of these crimes). Snyder (2000) found that the likelihood that a child or adolescent victim report of a sexual offense would result in an arrest was positively associated with the number of victims involved, number of offenders involved, older victims (only 19% of alleged offenses involving children under the age of 6 resulted in an arrest compared with 33% of children ages 6 to 11 or 32% of minors older than 11), involvement of a girl victim, a known offender, and offenses occurring in a residence and was negatively associated with victim injury; these correlates are listed in order of importance. It is not clear whether these correlates would increase (number of victims) or decrease (younger victim age and boy victims) the proportion of arrested sex offenders who are pedophilic.

Researchers have differed in the recidivism outcome they have focused on in their follow-up studies. Some have focused on sexual recidivism, usu-

ally defined as a sexually motivated crime involving physical contact with a victim (e.g., criminal charges of child molestation, rape, or sexual assault). In my research, I have specifically examined this type of recidivism but have also focused on *violent recidivism*, defined as a new nonsexually violent offense or a new sexual offense involving physical contact with a victim. Sexual recidivism is a subset of violent recidivism in this operationalization. I and many of my colleagues have studied both recidivism outcomes because both are relevant to public safety. Moreover, some apparently nonsexually violent offenses identified in criminal records are actually sexually motivated (e.g., attempted sexual assaults that result in convictions for assault or forcible confinement and sexually motivated murders that are recorded only as homicides in official records; Rice, Harris, Lang, & Cormier, 2004). Specifically, sexual recidivism is a conservative criterion; all of the reoffenses are deemed to be sexually motivated, but some sexually motivated offenses will be missed by focusing on this criterion alone. I still discuss sexual recidivism because of the legal mandate of sex offender civil commitment laws in the United States. The distinction between violent recidivism, which includes all sexual offenses as well as nonsexually violent offenses, and sexual recidivism, which includes only sexual offenses but misses some sexually motivated crimes, should be kept in mind in reading this chapter and the rest of the book.

SHORT-TERM VERSUS LONG-TERM RISK

Some writers have suggested that the predictors of long-term risk to reoffend may differ from those that predict recidivism in the near future (e.g., Doren, 2002; Litwack, 2001). G. T. Harris, Rice, and Cormier (2002) examined this question and found that Violence Risk Appraisal Guide (VRAG; G. T. Harris, Rice, & Quinsey, 1993) scores were still significantly predictive of violent recidivism among forensic patients in the short term, such as 6 months or 1 year. Also, cross-validation studies have typically followed sex offenders for shorter time periods than those obtained by the original scale developers, yet the studies still find that the actuarial risk scales are significantly predictive of recidivism (e.g., Barbaree et al., 2001).

SPEED AND SEVERITY OF RECIDIVISM

In addition to whether a sex offender with child victims is likely to reoffend during a specified time period, some assessors may be interested in how quickly any new offenses will occur and how severe any new offenses will be. Quinsey et al. (2006) reported that VRAG scores were negatively correlated ($r = -.34$) with latency to new offenses in a sample of 343 sex

offenders. In other words, sex offenders with higher VRAG scores were more likely to violently reoffend than those with lower VRAG scores, and among those who reoffended, sex offenders with higher VRAG scores were quicker to reoffend than those with lower VRAG scores.

Quinsey et al. (2006) reported that both VRAG and SORAG scores are positively correlated ($r = .35$) with the severity of any new offenses among sex offenders. In other words, sex offenders with higher scores are more likely to reoffend, and those who do reoffend cause more victim injury than those with lower scores. Similar analyses have not been reported for the Rapid Risk Assessment of Sexual Offense Recidivism (Hanson, 1997) or the Static-99 (Hanson & Thornton, 2000).

TIME AT RISK

Knowing the base rate of recidivism is not enough when comparing the results of different follow-up studies. Longer follow-up periods are associated with higher base rates of recidivism. Thus, one study may report a sexual recidivism rate of 7%, and another study may report a sexual recidivism rate of 47%, but this is not very informative until one also knows that the first study followed sex offenders for 2 years and the second study followed them for 25 years. Given the relatively low rate of sexual reoffending observed after 4 to 5 years of follow-up (an average of 13% in the meta-analyses by Hanson & Bussière, 1998, and Hanson & Morton-Bourgon, 2004), relatively long follow-up periods are required to detect statistically significant associations between putative risk factors and recidivism and to detect statistically significant differences between groups, such as offenders who have participated in treatment and those who have not (see Barbaree, 1997). G. T. Harris and Rice (2003) have demonstrated that clearer prediction results are obtained when the offenders in a sample are followed for the same fixed follow-up time.

PREDICTIVE ACCURACY STATISTICS

Receiver operating characteristic (ROC) analysis is often used to examine the predictive accuracy of binary decisions such as "release" versus "do not release" (Swets, 1988). The primary statistic of interest is the area under the ROC curve, which is bounded by 0 and 1. An area under the curve (AUC) value of .5 indicates prediction at the chance level, and an AUC value of 1 indicates perfect prediction in the expected direction. In the prediction of recidivism, the AUC can be interpreted as the probability that a randomly selected recidivist will have a higher score on a risk variable than a randomly selected nonrecidivist.

The AUC is an attractive measure of predictive accuracy because it is less sensitive to base rate of recidivism and selection ratio (the proportion of offenders who are predicted to reoffend) than a correlation coefficient, percentage of offenders correctly classified, or the values for sensitivity and specificity at a particular cut score. These properties have led to a call for its use as a standard measure of diagnostic and predictive accuracy (Rice & Harris, 1995; Swets, Dawes, & Monahan, 2000).

The AUC has been criticized as a global index of accuracy because it is possible to get a high AUC value despite ordinary performance at particular cut scores, for example, at a high specificity for recommending civil commitment of a sex offender in the United States or at a high sensitivity when considering whether a sex offender should be released on parole. Each jurisdiction's population of offenders has a particular base rate of recidivism, and thus each jurisdiction is expected to have its own optimal cutoff score. The optimal cutoff score will also vary according to the relative costs of false positive errors (incorrectly identifying a nonrecidivist as someone who is likely to reoffend) versus false negative errors (incorrectly identifying a recidivist as someone who is unlikely to reoffend).

Fortunately, the AUC permits the comparison of different measures developed on samples with different base rates of recidivism, and practitioners or researchers can determine for themselves the optimum cut scores for their particular purpose by examining each ROC curve. Rice and Harris (1995) have discussed how to determine cutoff scores for different base rates and situations in which the relative costs of false positive or false negative errors are not equal. A more detailed discussion of how to measure predictive accuracy is provided in Quinsey et al. (2006, chap. 3).

8

INTERVENTION

In this chapter, I first summarize meta-analytic reviews regarding the impact of different psychological treatment approaches for sex offenders against children and then review the literature on the effects of medications and surgical castration. I also discuss interventions other than treatment—legal responses involving sentencing or supervision on probation or parole and primary and secondary child sexual abuse prevention programs—and conclude with an overview of important scientific and practical issues to consider in the development and evaluation of interventions. When possible, I distinguish among research examining the impact of treatment on sex offenders against children, pedophilic sex offenders, or pedophilic individuals.

SEX OFFENDER TREATMENT OUTCOME

Given the importance of the question regarding the effectiveness of treatment on sex offender recidivism, it is perhaps not surprising that multiple meta-analyses have been reported.[1] I begin with a recent meta-analysis

[1]It might be surprising to some readers that so many meta-analyses have been conducted to evaluate the same treatment outcome literature, especially one with only a few outcome studies that permit strong inferences to be made.

of 43 English language studies of psychological treatments (N = 9,454 sex offenders), which reported that treated sex offenders had lower sexual recidivism rates than sex offenders in comparison conditions, 17% versus 12% (Hanson et al., 2002). The three studies that examined sexual recidivism using randomized assignment, the strongest inference study design, showed no effect of treatment, whereas the 17 studies that used what was described as *incidental assignment* designs indicated a positive effect of treatment. Hanson et al. (2002) considered a study to have used incidental assignment if the reasons for group assignment did not appear to be related to offender risk to reoffend; for example, no treatment spots were available at the time, or the offender's sentence did not correspond to when the treatment program was offered. The actual reasons for not receiving treatment included offenders being released before implementation of a treatment program, offenders being matched on risk factors from archived records, offenders receiving earlier versions of a treatment program, and offenders receiving no treatment or treatments judged to be of lower quality for administrative reasons such as program unavailability or insufficient time left in their sentences. Hanson et al. (2002) considered these designs to be informative in the absence of more randomized clinical trials evaluating sex offender treatment. The results of this meta-analysis have been cited as evidence that sex offender treatment is effective in reducing recidivism.

The meta-analysis by Hanson et al. (2002) has been criticized, however, by Rice and Harris (2003) in terms of study design quality ratings and other decisions. Rice and Harris pointed out that all but 3 of the 12 studies identified as incidental assignment studies of contemporary treatments included men who would have refused or dropped out of treatment—if treatment had been offered to them—in the comparison group but excluded men who refused or dropped out of treatment from the treatment group. Given that men who refuse treatment or drop out once treatment begins are more likely to reoffend (Hanson & Morton-Bourgon, 2004), this decision creates a selection bias, independent of any possible treatment effect, that increases the likelihood of finding fewer reoffenses among the treatment group. Rice and Harris also identified methodological issues about the 3 remaining incidental design studies. At the same time, Rice and Harris pointed out that 2 studies rated as lower in methodological quality in fact could have been informative because the treatment and comparison participants were matched on a number of risk factors (Rice, Quinsey, & Harris, 1991; Quinsey, Khanna, & Malcolm, 1998). Neither of these two studies found a beneficial effect of treatment.

As another example of disagreement about study coding, Hanson et al. (2002) reported that cognitive–behavioral interventions produced larger effects than other forms of treatment. Treatments were deemed to be contemporary if the treatment was being offered at the time of the meta-analysis or if it was a cognitive–behavioral treatment that had been available since 1980.

Rice and Harris (2003) observed that one of the studies that was not identified as being contemporary reported data on cognitive–behavioral treatment delivered between 1974 and 1983, with the majority of offenders treated after 1980 (Perkins, 1987); this study found a large negative effect of treatment.

Rice and Harris (2003) reanalyzed data from six evaluation studies that they considered provided meaningful information about treatment outcome from the Hanson et al. (2002) meta-analysis (Borduin & Schaeffer, 2001; Lindsay & Smith, 1998; Marques, 1999; Quinsey, Khanna, & Malcolm, 1998; Rice et al., 1991; Romero & Williams, 1983). These six studies comprised the four randomized clinical trials and two studies using matched comparison groups. All but one study evaluated programs for adult sex offenders. Rice and Harris's (2003) reanalysis suggested a trend toward treatment having a deleterious effect on sexual recidivism, with treated sex offenders having a nonsignificantly higher reoffense rate than sex offenders in the comparison conditions.

Robertson, Beech, and Freemantle (2005) found an additional seven studies that they added to the meta-analysis reported by Hanson et al. (2002) and then examined the relationship between study design and the magnitude of any difference between sex offenders in treatment and comparison conditions. There was a significant effect of study design, with no significant group difference found for studies using random assignment, a significant difference for studies using incidental assignment, and a large difference for studies that compared offenders who completed treatment with those who began treatment but then dropped out.

The debate about the interpretation of the Hanson et al. (2002) meta-analysis results and disagreements about what constitutes acceptable study quality highlight the importance of using strong methodological designs that most if not all reviewers can agree are informative about treatment outcome. With a focus on randomized clinical trials, which provide the strongest possible inference about the effect of treatment, a recent Cochrane Collaboration review identified nine sex offender outcome studies, seven of which evaluated the impact of psychosocial interventions on proximal targets, that is, treatment targets other than recidivism (Kenworthy, Adams, Bilby, Brooks-Gordon, & Fenton, 2004). The other two studies (Marques, Day, Nelson, & West, 1994; Romero & Williams, 1983) evaluated the impact of treatment on recidivism and were included in the Hanson et al. (2002) meta-analysis. Most of these studies followed mixed groups of adult male sex offenders. Only a few studies reported specifically on pedophilic sex offenders (e.g., Hucker, Langevin, & Bain, 1988), but 52% of the combined sample examined by Kenworthy et al. (2004) had sexually offended against children. For example, Anderson-Varney (1992) randomly assigned 60 sex offenders against children to cognitive–behavioral therapy or no-treatment conditions; the outcome measures were sexual attitudes, knowledge, self-reported behavior, so-

cial avoidance, and empathy. Overall, Kenworthy et al. concluded that there was no evidence of a significant impact of treatment on the identified proximal targets.

Lösel and Schmucker (2005) have completed the largest quantitative review of sex offender treatment to date. Their review differed from the meta-analysis reported by Hanson et al. (2002) by including evaluations of medical treatments, accepting a broader definition of outcome for three comparisons, and including studies published in a non-English language. Lösel and Schmucker calculated 80 comparisons from 44 published and 25 unpublished studies: 35 comparisons of cognitive–behavioral programs, 7 comparisons of behavioral interventions, 18 comparisons of nonbehavioral interventions (insight oriented, therapeutic community, and other psychosocial treatments), 6 comparisons of drug treatments, and 8 comparisons of surgical castration. Of the comparisons, 6 used randomized clinical trials and an additional 6 used matching or statistical controls to make the treatment and comparison groups equivalent. These two sets of comparisons found no group difference in recidivism. Examining other moderators, Lösel and Schmucker reported that larger effect sizes were obtained for medical treatments versus psychosocial treatments, treatments implemented before 1970 versus those implemented later, treatments specifically designed for sex offenders versus those that were not, evaluations reported by investigators affiliated with the treatment program versus those reported by independent investigators, rapists and exhibitionists versus sex offenders against children, smaller samples versus larger samples, and studies that used both official records and self-report versus official records only.

Taken together, these quantitative reviews do not provide strong support for the efficacy of current psychosocial treatments. Innovative, theoretically informed interventions need to be developed and evaluated. Clinicians and researchers need a careful reconsideration of how well treatment models reflect what is known about sex offender risk factors and the origins of sexual offending against children, followed by rigorous evaluations of treatment programs based on these models. To assist in this theoretical and clinical development, a more detailed review of different types of interventions is given in the sections that follow.

PSYCHOLOGICAL INTERVENTIONS

In the following sections, I briefly summarize the rationale for different approaches that have been used in the treatment of sex offenders, reviewing some of the key evidence for each. Additional treatment resources are provided in Resource C.

Cognitive–Behavioral Treatments

Cognitive–behavioral treatments target attitudes, beliefs, and behaviors that are believed to increase the likelihood of sexual offenses against children. Thus, cognitive–behavioral treatments can vary widely, depending on which factors the therapists believe are most important. As discussed in chapter 4, many such factors have been proposed in the clinical and research literatures, including positive views about sex with children, empathy deficits, disinhibition, and social skills deficits. A typical cognitive–behavioral treatment program might use cognitive restructuring techniques to change views about sex with children and skills-based training to increase empathic statements, self-control of behavior, and social competence.

The most popular cognitive–behavioral treatment format for adult sex offenders adapts a relapse prevention approach from the addictions field (McGrath, Cumming, & Burchard, 2003). A relapse prevention approach is also recommended in the standards and guidelines of a large international organization of clinicians and researchers working in the area of sex offender treatment (Association for the Treatment of Sexual Abusers, Professional Issues Committee, 2005). Marlatt and Gordon (1985) outlined a strategy for assisting individuals who have completed treatment to prevent the recurrence of drug taking. This relapse prevention strategy involves (a) identifying situations in which the individual is at high risk for relapse; (b) identifying lapses, that is, behaviors that do not constitute full-fledged relapses but do constitute approximations to drug taking and that may be precursors to relapses (e.g., spending time in bars as a precursor to drinking alcohol); (c) developing strategies for avoiding high-risk situations; and (d) developing coping strategies that are used in high-risk situations that cannot be avoided and in responding to lapses that occur. In the context of sexual offenses against children, lapses might include behavior such as masturbating to sexual fantasies about children, and high-risk situations might include spending time alone with a child or spending time in places where many children are likely to be present. Janice Marques (personal communication, March 23, 2006) has pointed out, however, that there is wide variation in the format and content of programs that describe themselves as using a relapse prevention approach (see McGrath, Cumming, & Burchard, 2003). Probably the only common theme is that cognitive–behavioral techniques are used to increase the offender's ability to detect and respond to potentially risky situations.

Hanson et al. (2002) identified 13 studies that could be described as cognitive–behavioral in their approach and 2 that were systemic (targeting both the individual offender and others around him) in their approach (multisystemic therapy and family therapy, which involve both adolescents and their parents or caregivers). On average, these studies showed a significant difference in recidivism between sex offenders in the treatment condi-

tions and sex offenders in the comparison conditions (though this does not mean cognitive–behavioral therapy can reduce sex offender recidivism for the reasons provided by Rice & Harris, 2003).

An excellent example of the cognitive–behavioral and relapse prevention approaches is the Sex Offender Treatment Evaluation Project (SOTEP), which was funded by an act of the California State Legislature (Marques, Nelson, Alarcon, & Day, 2000). The SOTEP treatment program was carefully designed and was comprehensive and impressive in its scope and intensity. SOTEP's distinctive features included random assignment of adult volunteers to treatment and no-treatment conditions after they were matched for age, criminal history, and type of offender; implementation of an intensive, 2-year cognitive–behavioral treatment program based on relapse prevention principles; a 1-year aftercare program in the community; and a program evaluation that included both proximal (within-treatment) and ultimate outcomes. The proximal treatment goals were to increase personal responsibility for sexual offending, decrease cognitive distortions and other justifications, decrease atypical sexual arousal (as assessed in the phallometric laboratory), understand relapse prevention concepts and techniques, improve ability to identify high-risk situations, and improve skills in avoiding and coping with high-risk situations. The ultimate treatment goal was to reduce the rate of new offenses.

The SOTEP program has the distinction of being the first, and so far only, randomized trial of cognitive–behavioral treatment applying relapse prevention principles to adult sex offenders. Treatment participants met three times a week for 90-minute group therapy sessions as well as individual therapy sessions. Treatment participants also attended groups focusing on sex education, human sexuality, relaxation training, stress and anger management, and social skills. Other treatment components were offered on a prescriptive basis. For example, 69% of the treatment sample were deemed to have significant alcohol or drug abuse histories and were therefore required to complete a relapse prevention group focusing on substance abuse. Offenders with atypical sexual arousal patterns (e.g., pedophilia) were offered behavioral treatment (see next section, Behavioral Treatments) targeting their arousal to inappropriate targets or activities. Group services were detailed in manuals to standardize the format and content of sessions.

Treated sex offenders lived in Atascadero State Hospital, whereas the two control groups remained in prison. Although some treatment services were available in prison (e.g., anger management and substance abuse), no organized sex offender treatment was available in these correctional facilities during the time the SOTEP trial ran. Approximately one third of all eligible sex offenders volunteered to participate (see Marques, Wiederanders, Day, Nelson, & van Ommeren, 2005, for the specific inclusion and exclusion criteria). Nearly three quarters of eligible sex offenders victimized children; those who victimized children were more likely to volunteer for treatment, and

those who victimized only boys were more likely to volunteer than those who victimized any girls. This suggests that there was a high proportion of pedophiles among the volunteers, and therefore the SOTEP results have direct bearing on the impact of treatment on pedophilic sex offenders.

A total of 259 volunteers were randomly assigned to the treatment condition. Of these, 55 withdrew their consent after having learned of their selection but before their transfer to the hospital. Of the 204 men who were admitted to the treatment program, 37 did not complete the program, either because they voluntarily withdrew (27) or because they presented severe management problems in the hospital (10). Of these 37 men, 14 left the program before completing 1 year of treatment. A total of 225 other volunteers were randomly assigned to the no-treatment condition, and 220 were selected as a comparison group from the sex offenders who did not volunteer for SOTEP. Many of the nonvolunteers reported that they did not want treatment, but some refused because they had good job assignments, were already located near family, or did not want to become state hospital patients. The three groups were matched according to offender age (over or under age 40), offense history (prior felony conviction or not), and sex offender type (adult victim, boy victim, girl victim, or both boy and girl victims).

The final wave of data collection was completed in 2001, with an average follow-up period of 8 years from release, ranging from 5 to 14 years. Recidivism data were obtained from the Federal Bureau of Investigation, California Department of Justice (rap sheets listing criminal charges and convictions), and California Department of Corrections (regarding parole violations and returns to prison). The final SOTEP report found no significant differences in the recidivism of treated sex offenders, volunteer controls (offenders who volunteered but were randomly assigned to the control condition), and nonvolunteer controls who had refused treatment (Marques et al., 2005). There was a nonsignificant trend for those who victimized children to be more likely to reoffend after treatment (21.9% for treated offenders and 17.2% for volunteer controls) compared with an opposite trend for rapists (20.4% for treated offenders and 29.4% for volunteer controls). The 14 men who dropped out early from treatment were more likely to reoffend than men who withdrew from the program before beginning treatment, those who completed at least 1 year of treatment, and those offenders in the volunteer and nonvolunteer control groups.

There were no significant differences between the three main groups (treated, volunteer controls, and nonvolunteer controls) even after excluding the early dropouts from treatment, which could be considered a generous test of the hypothesis that treatment reduces recidivism because some of the volunteer controls would likely have become early dropouts. This was also true after controlling for an inadvertent nonequivalence between the groups on a set of static risk factors (in addition to age, offense history, and sex offender type): prior sexual offenses, convictions for noncontact sexual of-

fenses, any unrelated victims, any stranger victims, any male victims, offender age, and never having been married.

Of great relevance to theories of sexual offending (reviewed in chap. 5, this volume), the SOTEP program did have a significant impact on its stated goals. Treatment participants showed a significant decrease on self-report measures of minimization of responsibility and phallometric measures of atypical sexual arousal. The researchers also obtained posttreatment clinician ratings of relapse prevention skills. Both pre- and posttreatment measures of sexual arousal to male children were significantly related to sexual recidivism, but the self-report measures and the clinician ratings were unrelated to new sexual offenses. This suggests that the treatment program did have the desired impact but that most of the treatment targets were unrelated to recidivism. This is consistent with meta-analytic results suggesting that acceptance of responsibility, expressions of victim empathy, and so forth are not significant predictors of recidivism among sex offenders (Hanson & Bussière, 1998; Hanson & Morton-Bourgon, 2004). Taken together, these results suggest that most of the SOTEP treatment targets are not necessary elements of an effective sex offender treatment program (see Kirsch & Becker, 2006).

Marques et al. (2005) discussed reasons why the SOTEP program did not have a significant impact on recidivism and suggested several ways in which they would change the study and program design in a future evaluation. These changes included recruiting more high-risk offenders, conducting pretreatment assessments on all sex offenders, and regularly monitoring treatment progress to ensure that treatment participants were learning the concepts and skills being taught. A methodological confound of the SOTEP trial is that treated sex offenders were held in a secure hospital, whereas the volunteer and nonvolunteer control groups were held in prison; there may have been differences between these settings that influenced offender recidivism (e.g., the controls held in prison would associate with other potentially more antisocial inmates). It may be tempting for some to discount or dismiss the SOTEP findings as a result of this confound. Despite these caveats, however, it should be realized that a well-designed and implemented treatment program that was state of the art at the time (and is similar to the treatment programs most commonly offered today) did not find any significant effect on the ultimate outcome of recidivism.

The SOTEP finding has major implications for sex offender treatment providers, researchers, and policymakers, as suggested by Marques et al.'s (2005) conclusion that "it may be difficult to obtain funding and to conduct randomized clinical trials but we strongly believe that more of these are needed to move this field forward" (p. 103). Kenworthy et al. (2004) went even further, stating, "The ethics of providing this still-experimental treatment to a vulnerable and potentially dangerous group of people outside of a well-designed evaluative study are debatable" (p. 1). In contrast, treatment advo-

cates such as W. L. Marshall (2006a) have suggested that randomized clinical trials have limitations in terms of their external validity and generalizability to operating programs and have focused instead on the more positive results of weaker study designs. The scientific and ethical rationales for conducting more randomized clinical trials to evaluate sex offender treatment are discussed later in this chapter.

Behavioral Treatments

Recent reviews of the history of behavioral treatment for pedophilia are provided in Laws and Marshall (2003) and W. L. Marshall and Laws (2003). Unlike cognitive–behavioral treatments intended to reduce recidivism among sex offenders against children, discussed in the previous section, the following behavioral treatments directly target sexual arousal to children.

Aversive conditioning techniques were used as early as the 1950s for paraphilias such as fetishism and transvestic fetishism (e.g., Marks & Gelder, 1967; M. Raymond, 1956). Prior to the declassification of homosexuality as a mental disorder and decriminalization of homosexual behavior in Western societies, the early behavioral treatment literature also focused on sexual arousal to same-sex persons.

In the behavioral treatment of pedophilia, aversion techniques are used to suppress sexual arousal to children, and masturbatory reconditioning techniques are used to increase sexual arousal to adults. In aversion procedures, unpleasant stimuli such as mild electric shock or ammonia are paired with repeated presentations of sexual stimuli depicting children. In a variation called *covert sensitization*, the aversive stimulus is imagined, for example, being discovered by family members or friends while engaging in sexual behavior involving children.

Satiation is a behavioral technique for decreasing sexual arousal to children that does not depend on the use of aversive cues. In this procedure, the treatment participant masturbates to ejaculation while verbalizing aloud variations of his pedophilic fantasies. After ejaculating, and throughout the refractory period, he is told to continue masturbating to the same fantasies over several long sessions. Masturbatory reconditioning involves associating sexual arousal with adults. Techniques include *thematic shift*, in which the participant masturbates to a pedophilic sexual fantasy until the point of orgasm, then switches to a sexual fantasy about an adult.

The efficacy of behavioral approaches for changing sexual arousal patterns has been reviewed by Barbaree, Bogaert, and Seto (1995) and Barbaree and Seto (1997). The research suggests that behavioral techniques can have an effect on sexual arousal patterns, but it is unclear how long these changes are maintained and whether they result in actual changes in interests as op-

posed to greater voluntary control over pedophilic sexual arousal (e.g., Lalumière & Earls, 1992).

Nonbehavioral Treatments

Nonbehavioral treatments include humanistic, psychodynamic, and other insight-oriented therapies. Freud (1905/2000) did not discuss pedophilia except to speculate that an exclusive preference for (prepubescent) children was rare; instead, he suggested that most sexual contacts with children were a result of personal inadequacy or lack of access to adult sexual partners. Psychodynamically influenced ideas about sexual offenses against children refer to identification with the perpetrator and traumatic reenactment by individuals who were themselves sexually abused as children. Socarides (1991) suggested that boy-preferring pedophilia was a means of resolving deep psychological conflicts, and Groth (1979) proposed that "the offender's adult crimes may be in part a repetition and acting out of a sexual offense he was subjected to as a child, a maladaptive effort to solve an unresolved early sexual trauma" (p. 15). Groth and Birnbaum (1978) distinguished between regressed and fixated offenders against children, comparable to the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text revision; American Psychiatric Association, 2000) distinction between nonexclusive and exclusive pedophilia.

In general, nonbehavioral treatments tend to be less structured than cognitive–behavioral or behavioral treatments. They often focus on insight into the reasons for sexual offending, acceptance of responsibility for the crimes, and expressions of remorse and victim empathy. Only a few evaluations of nonbehavioral therapies have been reported. Of the five studies that evaluated the impact of treatments categorized as psychotherapy (i.e., not behavioral or cognitive–behavioral treatment) in the Hanson et al. (2002) analysis, four showed a nonsignificant trend toward greater sexual recidivism in the treatment group.

The best-controlled study in the nonbehavioral treatment category was reported by Romero and Williams (1983), who compared offenders (a mixed group of predominantly rapists and offenders with child victims) who were randomly assigned to intensive probation supervision or psychodynamically oriented group therapy in addition to intensive supervision. Those assigned to psychotherapy plus intensive supervision tended to have higher rates of rearrest for sexual offenses than those assigned to intensive supervision alone. This tendency was statistically significant when the analysis was restricted to those who completed more than 40 weeks of treatment. This finding can be compared with similar negative findings for samples of general offenders who participate in humanistic, psychodynamic, and other insight-oriented treatments (for a review, see Andrews et al., 1990); together, these results suggest that nonbehavioral approaches are contraindicated for the treatment of (pedophilic) sex offenders.

MEDICAL INTERVENTIONS

Medical interventions are similar to behavioral treatments in focusing on reducing sexual arousal to children and presumably thereby reducing sexual behavior directed toward children. Medical interventions attempt to do this by targeting the hormones or neurotransmitters underlying sexual drive, arousal, and behavior (what I refer to subsequently as *sexual response*). There is less empirical research on medical interventions than on psychological treatments, but I devote proportionally more space in this chapter to reviewing this literature because the psychological treatments have already been extensively reviewed (e.g., Hanson et al., 2002; Lösel & Schmucker, 2005). The medical literature also highlights important methodological and practical issues in sex offender treatment evaluation research, including treatment refusal, dropout, and noncompliance, and the equivalence of treatment and comparison groups.

Drug Treatments

The common aim of drug therapies in the treatment of pedophilia is to reduce sexual response to children. Much of the initial interest was on antiandrogens to suppress sexual response, but clinicians and researchers have more recently focused on serotonergic agents. Outcome research on the use of these drugs in the treatment of pedophilia and other paraphilic behavior is summarized in the sections that follow.

Antiandrogens

It is a logical hypothesis that antiandrogens would have an impact on pedophilic sexual response because testosterone plays a critical role in male mammalian sexuality (J. M. Davidson, Smith, & Damassa, 1977). The earliest clinical studies, conducted in Germany, were reported by Laschet and Laschet (1971), who treated more than 100 paraphilic men; most were pedophiles or exhibitionists. Today, the most commonly prescribed agents are cyproterone acetate (CPA) or medroxyprogesterone acetate (MPA), both of which interfere with the action of testosterone. Specifically, CPA blocks intracellular testosterone uptake and thus reduces plasma testosterone, and MPA reduces gonadotropin secretion and catalyzes testosterone. Anecdotal accounts by reviewers of this literature suggest that CPA is more likely to be used in Canada and Europe and less likely to be used in the United States because it is not approved for use by the Federal Drug Administration in the United States. The use of MPA has been approved in the United States, but not for the treatment of paraphilias. The use of both CPA and MPA in the treatment of pedophilia and other paraphilias is *off-label*, meaning it is not specifically approved by regulatory bodies for this purpose. Side effects of antiandrogens include headaches, dizziness, nausea, *gyneco-*

mastia (development of abnormally large breasts in males), depression, and osteoporosis.

The efficacy of antiandrogens in reducing the frequency or intensity of sexual drive and arousal has some support, but there have not been many large, well-controlled evaluation studies. Gijs and Gooren (1996) reviewed the literature evaluating the effects of CPA and MPA, focusing on methodologically strong studies (e.g., use of double-blind procedure, placebo condition, and random assignment). Gijs and Gooren identified four controlled studies of CPA and six such studies of MPA. All four studies of CPA reported that treated men had a significant reduction in sexual response, whereas only one of the six MPA studies showed an effect. Hucker et al. (1988) reported one of the randomized clinical trials evaluating MPA treatment. These investigators started with 100 men referred for assessment and treatment after being accused of sexually offending against a child. Of those referred, 52 men either denied the allegations or did not complete the assessment; 48 men completed the assessment; and 18 of this subsample agreed to participate in the drug trial. The accused were not pressured to participate in the drug trial, and alternative treatments were available for those who did not want to take the medication, in keeping with the authors' ethical guidelines. As a demonstration of the problem of attrition and noncompliance in drug therapies for sex offenders, only 11 men completed a 12-week trial; 5 received MPA and 6 received a placebo. One man was excluded from the study for medical reasons after a parathyroid tumor was found; he was taking a placebo. Another man was excluded because hormone testing indicated that he was not taking the medication. In addition, 5 other men dropped out of the study, 3 from the MPA group and 2 from the placebo group. Dropouts significantly differed from those who completed the treatment or placebo phase in reporting more frequent sexual fantasies about children. (The authors recognized this might represent a selection effect that would influence their results.) Men in both the MPA and placebo conditions reported a decrease in sexual fantasies, but men who received the placebo still reported more fantasies at the end of the trial (M = 28 per month vs. 12 per month for the MPA group). It is notable that MPA did have the desired effect on sex hormones, with a large drop in testosterone among those who completed the follow-up and no change among those who completed the placebo condition. Hucker et al. (1988) did not report on recidivism as an outcome.

Focusing on two additional studies of pedophiles, Cooper, Sandu, Losztyn, and Cernovsky (1992) approached 28 pedophiles to participate in a drug trial and had 18 refusals. Moreover, they reported data on only 7 pedophiles from their double-blind study because an additional 3 men dropped out during the initial placebo phase. Cooper et al. tested both MPA and CPA over 28 weeks. Both drugs appeared to reduce sexual thoughts, fantasies, and behavior (frequency of masturbation and frequency of erections on awakening), and there also appeared to be an effect on penile responding,

assessed phallometrically. Bradford and Pawlak (1993) treated 20 male pedophiles with alternating phases of CPA and placebo. They reported data from 17 of these men assessed phallometrically and hormonally at baseline and again 2 to 3 months later. One pedophile was dropped from the study for noncompliance, and the other 2 showed no phallometric response to child stimuli. There was a significant effect of CPA on sexual arousal to children but not sexual arousal to adults.

Serotonergic Agents

Serotonin is involved in the regulation of human sexual behavior, and antidepressant medications that have a serotonergic effect are known to reduce sexual desire and delay ejaculation in men (for a review, see Meston & Gorzalka, 1992). Some clinical investigators have gone further and suggested, with little evidence, that SSRIs such as fluoxetine or buspirone can specifically affect sexual arousal to children without affecting sexual arousal to adults (Fedoroff, 1993; Greenberg & Bradford, 1997; Kafka, 1991). For example, Bradford (2000) reported unpublished data from an open trial of sertraline on 20 pedophiles that suggested there was a decrease in pedophilic sexual response without any decrease in sexual intercourse with adult female partners or sexual arousal to adults.

The enthusiasm for serotonergic agents in the treatment of pedophilia appears to be based on uncontrolled case studies and open trials (see Gijs & Gooren, 1996). Serotonergic agents have been evaluated in only one experimental study comparing desipramine and chloripramine in a double-blind crossover trial that was preceded by a single-blind placebo condition (Kruesi, Fine, Valladares, Phillips, & Rapoport, 1992). Kruesi et al. (1992) reported a significant reduction of self-reported paraphilic behavior (predominantly exhibitionism, transvestic fetishism, obscene telephone calling, and fetishism) with either drug, but their result is difficult to interpret because only 8 of 15 paraphilic men completed the trial; 4 patients were dropped because they responded to the placebo, and 3 did not complete the drug trial. Including the patients who responded to the placebo would have attenuated, and perhaps eliminated, the apparent positive effect of the drugs on self-reported paraphilic behavior.

Greenberg, Bradford, Curry, and O'Rourke (1996) reported on a retrospective analysis of 58 paraphilic men (74% were pedophiles) treated with SSRIs. They excluded men who had previously been treated and followed the sample for 3 months. Greenberg et al. reported that the men reported a significant decrease in paraphilic fantasies over the 3-month follow-up, with no differences between those taking fluoxetine, sertraline, or fluvoxamine. As in the previous study, the results of this study are difficult to interpret because 17 men were dropped from the study: 9 because they discontinued the medication (4 against medical advice, 3 because of side effects, and 2 because they felt better); 1 because he changed his prescription; and 3 be-

cause they were treated with CPA, presumably because the SSRI was not considered to be helpful in reducing their paraphilic fantasies. Therefore, one would expect a more positive result for those who remained in the study. Ignoring this selection effect, Greenberg et al. concluded that drug compliance was excellent because few men missed doses between clinic visits (which should be expected, because they had already terminated patients who stopped taking the drug). Analyses that retained dropouts in an intent-to-treat comparison—a recommended method of dealing with treatment attrition effects in outcome studies—were not reported. Approximately one quarter of the sample was noncompliant with their medication.

Fedoroff (1995) suggested that a potential advantage of SSRIs over antiandrogens is that pedophiles may be more willing to take serotonergic agents. Of the 59 men who acknowledged active paraphilic symptoms in his sample of 100 male patients, 7 opted for psychotherapy alone, 41 chose an SSRI in addition to psychotherapy, and only 1 patient chose an antiandrogen. Fedoroff suggested the patients preferred SSRIs because there were fewer side effects and because there was less stigma associated with having the prescriptions filled.

Central Hormonal Agents

Gonadotropin releasing hormone (GnRH) agonists such as leuprolide acetate (Lupron) inhibit the production of testosterone by overriding pituitary regulation. Research on the effects of GnRH agonists on paraphilias has been reviewed by Briken, Hill, and Berner (2003). These authors identified 13 articles, representing a total of 118 men treated for different paraphilias in open, uncontrolled studies. Forty-three of these men were diagnosed with pedophilia; the sexual preferences of another 59 men from two mixed samples of sex offenders were not reported, but the sample descriptions indicate many had sexually offended against children.

The largest sample of pedophiles in a trial of GnRH agonists was reported by Rösler and Witztum (1998). This was an open, uncontrolled study of triptorelin pamoate with 30 paraphilic men; 25 of them were diagnosed with pedophilia. In this study, 24 men completed treatment for at least 12 months; among the others, 2 men emigrated, 3 had intolerable side effects and withdrew, and 1 withdrew because he wanted to father a child. Men who completed treatment reported fewer paraphilic sexual fantasies, a lower frequency of masturbation, and fewer incidents of "abnormal sexual behavior" (not further defined), from a mean of five incidents per month to zero during treatment. No sexual offenses against children (or acts of exhibitionism, voyeurism, or frotteurism) were reported by the participants, their relatives, or their probation officers during the course of treatment.

Briken et al. (2003) noted that most of the studies they reviewed relied on self-report data. An exception was a crossover design study by Cooper and Cernowsky (1994), who treated a pedophile who offended against girls and

found that leuprolide acetate suppressed both self-reported and phallometrically assessed sexual arousal better than cyproterone acetate or a placebo. Leuprolide acetate reduced the patient's plasma testosterone to almost zero. Briken et al. concluded there was preliminary support for the use of GnRH agonists and described an algorithm for considering antiandrogen or GnRH agonist treatment in the treatment of paraphilias. Bradford (2000) and Maletzky and Field (2003) have also described treatment algorithms; they did not present the empirical evidence supporting the decision trees they recommend. The long-term consequences of antiandrogen or GnRH agonists are unknown.

Other Medications

There have been some case reports of treatment with agents other than SSRIs or antiandrogens. For example, Varela and Black (2002) described the case of a middle-aged pedophile who reported a decrease in his sexual thoughts and behavior over the course of 1 month after being treated with carbamazepine and clonazepam.

Surgical Castration

Surgical castration has the same rationale as the use of antiandrogens to reduce sexual response but it is a permanent treatment. Removal of the testes almost completely eliminates endogenous production of androgens (the adrenal glands produce a small amount) and thus can lead to the same sex-drive-reducing effects as antiandrogens. Although it is rarely performed now, surgical castration was performed on hundreds of convicted sex offenders in the Netherlands and in Germany (Wille & Beier, 1989). It continues to be performed occasionally in Germany, the Czech Republic, and Switzerland. Surgical castration is an option for some sex offenders in the United States, with the passage of legislation in nine states since 1996 requiring chemical (antiandrogen) or surgical castration for sex offenders who want to be paroled and released into the community. Physical castration is permitted as an alternative to antiandrogens in four states, and it is the only option available in Texas. Five states permit castration only for offenders against victims under 13 or 14 years of age (C. L. Scott & Holmberg, 2003).

Wille and Beier (1989) reviewed castration cases seen from 1970 to 1980 and concluded that castration was effective because only 3% of the 99 men in the castrated group (70% were pedophiles) reoffended within an average of 11 years of follow-up compared with 46% of a comparison group of 35 men who applied for castration during the same period but did not have the surgery (the comparison group was originally 53 men: 17 men were rejected by the authorizing committee, an additional 30 men canceled their application before a committee decision was made, and 6 men canceled after receiving committee approval). Three quarters of the castrated men reported

a substantial decrease in sexual interest, libido, erection, and ejaculation within 6 months of the surgery; 15% continued to have orgasms but required more intense stimulation for ejaculation to occur; and 10% remained sexually active at only a slightly diminished level. Finally, Wille and Beier reviewed 10 previous studies of castrated sex offenders that had reported sexual recidivism rates between 0% and 11% between 1959 and 1980. The nonsexual recidivism rate of the castrated sex offenders was also lower than the nonsexual recidivism rate of the comparison group, at 25% versus 43%, respectively.

Wille and Beier's (1989) review seems to support castration as having a strong effect on recidivism. However, because there was no random assignment, there were likely important differences in risk between those who were sufficiently motivated to be castrated and those who were not willing to undergo the surgery (see later section, The Importance of Random Assignment). Moreover, a higher percentage of those in the comparison group were unavailable for follow-up, either because they could not be found by the investigators or because they refused to be interviewed once contacted.

Since the Wille and Beier (1989) review, H. Hansen and Lykke-Olsen (1997) compared a group of 21 castrated violent sex offenders and 24 violent sex offenders who refused the surgical procedure between 1935 and 1970. By 1988, 2 of the 21 castrated sex offenders had committed a new sexual offense (both after a long offense-free period and only after they had received testosterone from a general practitioner), whereas 10 of the 24 men who refused castration had sexually reoffended, even though they had a shorter time at risk than the castrated sex offenders, who were released on probation between 6 to 18 months after the operation.

SOCIAL INTERVENTIONS

One of the possible explanations for the lack of efficacy of psychological interventions is the assumption that pedophilia can be managed when the individual is not motivated to change his or her sexual behavior. The typical treatment model assumes the individual is motivated to refrain from sexual fantasies, thoughts, urges, and behavior involving children and is therefore willing to monitor his or her sexual response and avoid risky situations such as being alone with a child (Laws, Hudson, & Ward, 2000). However, some pedophilic men are not motivated to refrain from future sexual offenses; instead, they are motivated to avoid being detected for their crimes. Such men may be more likely to view their sexual contacts with children as part of ongoing romantic relationships rather than sexual abuse. They may also be more likely to view children as benefiting from the experience and to see societal reactions as the cause of any negative effects that the child experiences rather than the sexual contact itself. Hudson, Ward, and McCormack

(1999) and others have also noted a distinction between offenders who actively seek sexual contacts with children and those who report they were motivated to avoid sexual contacts with children but nonetheless committed sexual offenses when they were depressed, stressed, or otherwise less able to restrain their behavior. Hudson et al. described this distinction as being between approach and avoidance pathways to sexual offending.

External controls become more important for pedophilic sex offenders who do not want to refrain from sexual offending. These external controls can include sentencing, supervision of sex offenders living in the community, and sex offender registration with police. The intensity of such external controls might vary according to the risk posed by sex offenders, with long sentences or even indefinite incapacitation for the highest risk offenders and less expensive or intrusive interventions for lower risk offenders.

Sentencing and Supervision

Correctional research has shown that criminal sanctions do not reduce recidivism. Criminal sanctions include regular sentencing, restitution programs, police cautioning, and probation. In fact, there is some evidence to suggest that criminal sanctions increase the likelihood of new offenses (Andrews et al., 1990; Lipsey, 1998). Another problem with criminal sanctions, as noted in Appendix 7.1, is that the detection rate for a particular sexual offense may be low because many victims do not report the crime to police, and some guilty individuals are not successfully prosecuted.[2] Thus, two of the key elements of effective punishment of behavior (speed and certainty) are not met by criminal sanctions.

Sentencing can still reduce the incidence of sexual offenses against children, even with a negative effect on offender recidivism, by incapacitating those who are most likely to commit such offenses and most likely to reoffend against multiple victims. Because of the high costs of imprisonment (an offender in federal custody in Canada costs the government approximately $50,000 to $60,000 per year; the comparable figure in the United States is $20,000 to $25,000), long sentences are best reserved for those who are high in risk. I discussed the reliable and valid methods by which risk to reoffend can be assessed among sex offenders in chapter 7.

Spelman (2000) suggested that approximately one quarter of the crime reduction observed in the 1990s in the United States could be attributed to increasing incarceration since the 1980s, thereby removing offenders who would otherwise reoffend in the community. Other analyses suggest that a similar reduction in crime has been observed in countries that do not have

[2]Though criminal sanctions do not reduce recidivism, they can serve other purposes, including stopping ongoing sexual offending (e.g., when an incest victim discloses the crime and the adult relative is arrested and removed from the residence) and influencing the perceived justice for victims, their families, and society.

the same high incarceration rates and that have not increased spending on policing and corrections to the same extent as the United States (see Lalumière, Harris, Quinsey, & Rice, 2005). Of course, this does not preclude the possibility that increased incarceration can lead to reduced crime in one country and other causes lead to reduced crime in other countries.

Another criminal sanction involves supervision in the community under probation or parole conditions. Regular supervision may not have an effect on recidivism because of high case loads and the resulting low frequency of contacts and reliance on self-report and office appointments, which may not be adequate to detect changes in dynamic risk factors. Intensive supervision differs from typical probation or parole supervision in having more unannounced home visits, more frequent contacts, urinalysis, home confinement, electronic monitoring, and regular polygraph testing (see Gendreau, Cullen, & Bonta, 1994). Intensive supervision combined with treatment has been described as a containment or multiagency model in which sex offenders are monitored by a team of probation and parole officers, treatment providers, and polygraph examiners (English, 1998; J. Scott, Grange, & Robson, 2006). This model proposes that multiple agencies can be involved with an individual (or his family) and that coordination of these agencies increases the likelihood that their different resources will be used efficiently. Containment in the community, even with the recommended small caseloads for probation and parole officers and treatment providers, as well as regular polygraph examinations can cost less than incarceration. The unanswered question is whether the containment approach has a beneficial impact on recidivism or costs less than incarceration without a concomitant increase in recidivism.

Another supervision strategy, known as *circles of support and accountability*, involves surrounding the offender with supportive volunteers who monitor his behavior and assist him in adjusting to life in the community on the completion of his prison sentence (R. J. Wilson, Huculak, & McWhinnie, 2002; R. J. Wilson, Picheca, & Prinzo, 2005). This model was developed for men who had served their entire prison sentences in Canada and were therefore released without any parole supervision or other legal constraint. In the circles of support and accountability model, four to six members of the support group visit the offender daily, assist him in living tasks such as obtaining housing and employment, and mediate if necessary with police, media, and concerned citizens. These volunteers are given training on the patterns of sexual offending (e.g., potentially high-risk situations) and the relevant law and are able to consult with professionals such as police officers, psychologists, and other members of an advisory board. R. J. Wilson et al. (2005) followed 60 sex offenders involved in circles of support and accountability and compared them with 60 sex offenders who were released at the end of their prison sentences without circles of support and accountability; the two

groups of offenders were matched on risk, length of time in the community, and prior involvement in sex offender treatment. After the average follow-up time of 4.5 years, 5% of the offenders involved in circles of support and accountability had sexually reoffended compared with 17% of the comparison offenders. In addition, 15% of the offenders in circles of support and accountability committed a new violent offense, including a sexual offense, compared with 35% of the comparison offenders. Other pilot projects have now been started throughout Canada, several states in the United States, and the United Kingdom.

Community Notification and Registration

Sex offenders against children have been subjected to extraordinary legal measures compared with other offenders, including men who have violently but nonsexually assaulted children. These include community notification of citizens when sex offenders move into an area (Megan's Law) and the federally mandated requirements of registration with authorities on release from institutional custody (Jacob Wetterling Act). Although both community notification and sex offender registration have been implemented across the United States with varying degrees of compliance, neither policy has been evaluated except for one Washington State study that used a pre–post design to compare 90 adult sex offenders who were subject to the highest level of community notification and a matched group of 90 adult sex offenders who were released within 44 months prior to the implementation of the community notification law (Schram & Milloy, 1995). These investigators reported that community notification resulted in a quicker arrest once an individual had reoffended, but it had no impact on recidivism rates, with 19% of those who were subject to notification reoffending compared with 22% of those who were not. Almost two thirds of the new offenses occurred in the jurisdiction where notification took place, suggesting that notification did not necessarily cause offenders to go elsewhere if they were seeking opportunities to reoffend.

The policies of community notification and sex offender registration seem to be popular with the public despite the increase in fear or anxiety that appears to result from community notification and the absence of evidence on these policies' impact on recidivism (Beck & Travis, 2004; Phillips, 1998). There may be negative effects on sex offenders of community notification and residency requirements, including harassment, loss of employment or residence, and property damage (J. Levenson & Cotter, 2005; Phillips, 1998). This may cause some sex offenders to avoid registration. Although concerns have been expressed about vigilante actions by angry citizens, few offenders have reported being physically assaulted as a result of their identity being disclosed (Matson & Lieb, 1996; Zevitz & Farkas, 2000).

Incapacitation

Dangerous offender legislation in Canada and sex offender civil commitment legislation in the United States permit the indeterminate incapacitation of high-risk individuals. Approximately one half of the designated dangerous offenders in Canada have been convicted of sexual offenses against children (Bonta, Harris, Zinger, & Carriere, 1996; Trevethan, Crutcher, & Moore, 2002). Approximately one half (49%) of civilly committed sex offenders had a diagnosis of pedophilia according to a recent survey of states with such laws (Fitch, 2003). Pedophilic sex offenders may be more likely to be recommended for civil commitment than nonpedophilic sex offenders (J. Levenson, 2004b).

These special legal options are much more expensive than regular incarceration. Fitch (2003) reported on a 2002 survey of states with civil commitment statutes and found that direct costs were approximately $100,000 per patient, more than 3 times the average cost of imprisonment alone (for a more recent and somewhat lower estimate of the costs associated with sex offender civil commitment, see Lieb & Gookin, 2005). Approximately 10% of sex offenders who underwent involuntary civil commitment have been released since the laws came into effect (Lieb & Gookin, 2005). Because of the high personal and public costs associated with indefinite incapacitation, accurate risk assessment is important to determine who should be subject to these measures (if such measures are to be used).

Prevention

Most of the interventions discussed in the previous sections take place after a sexual offense against a child has already occurred. In the next sections, I discuss prevention efforts intended to prevent sexual offenses against children.

Primary Prevention

Other than treatment or legal interventions, attempts can be made to reduce the incidence of child sexual abuse by investing in primary and secondary prevention programs (see Wortley & Smallbone, 2006). *Primary prevention* refers to programs that are provided to all children, such as education campaigns about sexual abuse and strategies to avoid sexual abusers or disclose sexual abuse if it occurs; these kinds of primary prevention programs are typically school based. Other primary prevention programs focus on parent education and training (e.g., Wurtele, Currier, Gillispie, & Franklin, 1991).

A meta-analytic review concluded that school-based programs increase knowledge about sexual abuse and protection strategies, both on posttest and on follow-up (Rispens, Aleman, & Goudena, 1997). Moreover, one study

suggested that participation in school-based programs is associated with a lower occurrence of sexual abuse later in life. Gibson and Leitenberg (2000) surveyed a sample of college-age women and found that those who had participated in school-based sexual abuse prevention programs were less likely to have been sexually abused later in life than those who had not. Although participants and nonparticipants were not randomly assigned to conditions, programs were implemented on a schoolwide basis, and there is no a priori reason to believe that children at some schools differed substantially in risk from children at other schools or that administrative decisions to introduce prevention programs were associated with knowledge of the risk to children at particular schools.[3]

Secondary Prevention

Secondary prevention programs focus on at-risk individuals, which could include persons who are likely to develop pedophilia, pedophiles who have not yet had sexual contact with children, and children who are vulnerable to having sexual contact with an adult because of their living circumstances or personal characteristics. One example is the education campaigns conducted by Stop It Now!, an American nonprofit organization that uses social marketing strategies to reach individuals who are at risk of committing sexual offenses against children to convince them to seek treatment and to encourage nonoffending adults to intervene if they suspect child sexual abuse may be occurring or might occur. Figures 8.1 and 8.2 show the advertisements used in two of their recent campaigns conducted in Minnesota and Virginia, respectively.

Another innovative example of secondary prevention is the Berlin Prevention Project, which attempts to recruit pedophilic men, approximately one half of whom have committed undetected sexual offenses against children, to participate in treatment designed to help them refrain from engaging in sexual behavior involving children (see Figures 8.3 and 8.4). The Berlin Prevention Project provides a 1-year cognitive–behavioral program and sex-drive-reducing medication for some treatment clients. Among the men who reported having sexually offended against a child, a little over one half had contacts with five or more children. The Berlin Prevention Project addresses two gaps in the current responses to sexual offending against children. First, it tries to reach men who have committed sexual offenses but

[3]This school-based comparison can be contrasted with the incidental assignment studies reviewed by Hanson et al. (2002) because the individual offender could influence treatment recommendations and the availability of treatment and because of the problem of treatment refusal or dropout being related to risk to reoffend. Nonetheless, a study that randomly assigned schools to receive the prevention program or to a control condition would permit a stronger inference about the effectiveness of these interventions.

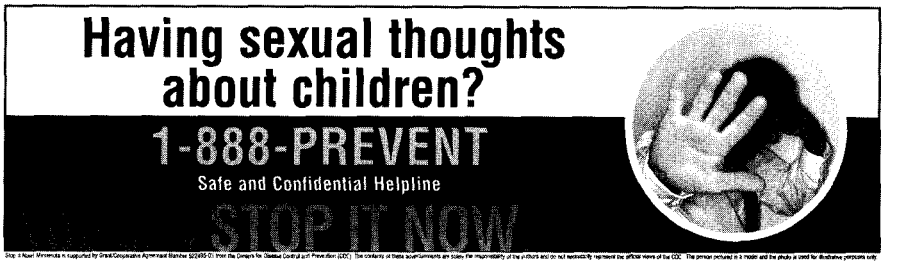


Figure 8.1. Image from the Stop It Now! Minnesota campaign.

have not been investigated by police or child welfare agencies, which may not be possible under current legislation in countries like Canada and the United States because of their mandatory reporting requirements. Men who are facing legal proceedings as a result of sexual offending are excluded from the program. Second, like Stop It Now!, the Berlin Prevention Project tries to reach pedophilic men who are motivated to avoid committing sexual offenses against children. Some of these men would likely be able to do this on their own, given that they have been successful so far without formal assistance, but others might fail at a future date. The Berlin Prevention Project has run several groups and is currently collecting self-reported outcome data.

Evaluations of these primary and secondary prevention efforts are needed. Both primary and secondary prevention programs might benefit from research on the tactics used by men to initiate sexual contact with children, and secondary prevention programs could also benefit from research on the factors that make some children more vulnerable than others.

Conte, Wolf, and Smith (1989) interviewed 20 adult men who reported that they were able to identify vulnerable children and to target these vulnerabilities in committing their sexual offenses. Vulnerabilities that the men identified included children who were particularly friendly and approachable; were living in a single-parent home; had been previously victimized; or were needy, unhappy, or depressed. The majority of offenders indicated that they formed relationships with these vulnerable children before initiating sexual contacts. Budin and Johnson (1989) interviewed 72 adult male sex offenders about prevention topics they thought could be effective. Of the 33 who responded to a question about the type of child they preferred, one half indicated they sought their own children or sought "passive, quiet, troubled, lonely children" from single-parent homes. In order of endorsement, these offenders indicated that prevention programs could be effective if they taught children how to disclose being sexually abused, say no to adults, learn about unacceptable touching of their genitals by others, avoid strangers, and run away if approached. Lang and Frenzel (1988) studied offenders against girls under the age of 14 and found that incest offenders and offenders against unrelated children used similar strategies overall but differed in the frequency of certain strategies; for example, incest offenders were more likely than offenders



Figure 8.2. Image from the Stop It Now! Virginia campaign.

with unrelated child victims to commit their sexual offenses in the context of playing games or cuddling or by sneaking into the child's bedroom.

The Modus Operandi Questionnaire was developed to assess offenders' tactics for gaining sexual access to children (Kaufman et al., 1998; Kaufman, Hilliker, & Daleiden, 1996; Kaufman, Hilliker, & Lathrop, 1994; Kaufman, Hilliker, Lathrop, Daleiden, & Rudy, 1996). Kaufman et al. (1998) compared 114 adolescent sex offenders and 114 adult sex offenders, evenly divided into those who offended against related children and those who offended against unrelated children. Overall, sex offenders were more likely to use nonviolent tactics (provide alcohol or drugs, give gifts, and engage in physical play that led to sexual touching) than threat or force. Adolescent sex offenders were more likely than adult sex offenders to use pornography in their offenses or to use threat or force. Offenders against related children were more likely to use pornography or give gifts than offenders against unrelated children, whereas offenders against unrelated children were more likely to provide alcohol or drugs to the child before or during the sexual contacts.

Situational Prevention

The rationale of situational crime prevention is that potential offenders are influenced by the perceived benefits and risks of crime. Cornish and Clark (2003) have identified techniques for crime prevention that influence these perceptions by increasing the effort involved, increasing the potential risks, reducing the potential rewards, reducing situational provocations or triggers, and removing justifications or excuses. For example, school-based sexual abuse prevention programs can increase the effort involved and increase the potential risks of sexual offending by teaching children what constitutes acceptable and unacceptable touching and how to disclose their discomfort to trusted adults. As another example, shifting public attitudes so



Figure 8.3. Image from the Berlin Prevention Project's media campaign. Text translates as "Do you love children more than you/they like? There is help! Free of charge and confidential. Charité Institute of Sexology and Sexual Medicine."

that adults who are suspicious that a sexual offense might have occurred are more willing to talk to the children they are concerned about could increase disclosure and early intervention.

SUMMARY

The effectiveness of psychological treatments to reduce sex offender recidivism has not been convincingly demonstrated. There is support for the efficacy of behavioral conditioning techniques in decreasing pedophilic sexual arousal, but the long-term maintenance of such changes is unknown. It is possible that offenders can learn to control their sexual arousal, but the underlying sexual preference for prepubescent children (and motivation to engage in sexual behavior with children) may remain unchanged. Nonbehavioral treatments may actually be iatrogenic, increasing rather than decreasing the likelihood of new sexual offenses, and are therefore contraindicated in the treatment of pedophilia and sexual offending against children.

Most psychological treatments focus on self-management skills that will not be used by offenders who do not wish to refrain from further sexual contacts with children. External controls and prevention efforts are likely to be



Figure. 8.4. The Berlin Prevention Project's advertisement on a public pillar. "Do you love children more than you/they like? There is help! Free of charge and confidential. Charité Institute of Sexology and Sexual Medicine."

important components of a comprehensive response to the problem of child sexual abuse. Consistently using accurate risk assessments in decisions about sentencing and parole can reduce sexual recidivism because incapacitation prevents high-risk individuals from having access to children. Adequate supervision for those who are released to the community, as in the circles of support and accountability model, may also have a positive impact on recidivism, but further evaluations are needed. Finally, the existing evaluations of school-based prevention programs are encouraging, but as in other intervention areas reviewed in this book, more and better outcome studies are needed.

Despite the intuitive appeal of pharmacological or surgical interventions to reduce sexual drive and thus the likelihood of sexual contacts with children by pedophilic sex offenders, the empirical support for the idea that such interventions can reduce sexual recidivism is not strong. Compliance is a major problem in antiandrogen treatment, with high refusal rates and high noncompliance rates, and studies have not been consistent in how this problem is handled in their statistical analyses. Some men who undergo surgical castration retain the ability to have erections and engage in intercourse, and many sexual offenses do not involve the penis; the majority of sexual offenses involve fondling, masturbation, or oral sex. Sex drive reduction (through either antiandrogen treatment or surgical castration) might not affect men who are romantically (not just sexually) attracted to children, feel affectionate toward them, and fulfill their intimacy needs by engaging in ongoing relationships with children. Moreover, although the surgical procedure is irreversible, one can obtain testosterone and reverse the physiological effects of castration. Finally, there is the danger of an inadvertent negative effect of pharmacological or surgical interventions because the belief that an offender's sex drive has been reduced and therefore his risk to sexually reoffend has decreased may induce false confidence that other measures, such as longer sentences for high-risk offenders, investments in innovative supervision programs such as circles of support and accountability, or investment in sexual abuse prevention programs, can be eased. Similarly, the belief that sex offender treatment is effective could lead to the unintended consequence of increasing sexual offenses against children because higher risk offenders may be released from prison sooner after participating in treatment, even though such treatment actually has no impact on their subsequent behavior.

FUTURE DIRECTIONS

I discuss future directions for sex offender practices and research in the following sections.

General Offender Research

Future developments in sex offender treatment could benefit greatly by drawing from the more established literature on correctional interventions (Andrews et al., 1990; Farrington & Welsh, 2005). Some psychological treatments are effective in reducing recidivism among offenders in general. Some treatment advocates have argued that sex offenders require specialized treatment (Association for the Treatment of Sexual Abusers, Professional Issues Committee, 2005; W. L. Marshall, 2006a). However, of the four randomized clinical trials reviewed by Hanson et al. (2002), the two that showed positive effects for treatment evaluated programs that were designed for all kinds of offenders. Borduin, Henggeler, Blaske, and Stein (1990) produced a large positive effect size in a small sample of adolescent sex offenders, whereas Robinson (1995) produced a positive effect size for adult sex offenders who participated in a general offender program (but only reported data for general recidivism). Borduin and Schaeffer (2001) replicated the Borduin et al. (1990) study by showing that multisystemic therapy—a treatment approach for serious juvenile offenders that focuses on criminogenic risks, targeting problem solving and other skills rather than knowledge or abstract principles; involves multiple systems; and carefully attends to program fidelity—had a large impact on sexual recidivism in a different sample of 48 juvenile sex offenders, even though it was not designed specifically for this group. In contrast, the one randomized clinical trial of a specialized sex offender treatment (the SOTEP evaluation of a relapse prevention program) found no significant effect of treatment. These findings suggest that psychological treatments that target general dynamic risk factors associated with criminal behavior could have a positive impact on both sexual and general reoffending. These general dynamic risk factors—often referred to in the criminological and correctional literatures as *criminogenic needs*—include antisocial attitudes and beliefs, associations with antisocial peers, and substance abuse (for reviews, see Andrews & Bonta, 2006; Lalumière et al., 2005; Quinsey, Skilling, Lalumière, & Craig, 2004). Given the important role of such factors in sexual offending against children, as discussed in chapter 4, it is probable that the foundation of any effective sex offender treatment program will be the techniques and skills that have been demonstrated to be effective in general offender outcome research.

Risk, Need, and Responsivity Principles

Correctional research has demonstrated that offender treatments are more effective to the extent that their intensity is matched to risk, that they target criminogenic needs, and that they are matched to the individual's learning style and capacity (Andrews & Bonta, 2006). As reviewed in chap-

ter 7, sex offender risk assessment has advanced greatly in the past decade, and a number of empirically and independently validated actuarial risk scales have been developed (Hanson, Morton, & Harris, 2003; Seto, 2005). Using these risk scales could greatly increase the accuracy and efficiency of decisions about treatment intensity and type.

The *risk principle* suggests that the intensity of intervention should be matched to the offender's risk for recidivism (Andrews & Bonta, 2006). The most intensive services should be directed at higher risk offenders, whereas lower risk offenders should be assigned to minimal levels of service. Treatment of low-risk offenders is not cost-effective (given the limits on resources such as staff time, money, and space) because these offenders are already unlikely to reoffend. There is little room for improvement, and there is the possibility of inadvertent negative effects, for example, when low-risk offenders are exposed to the antisocial attitudes and beliefs of high-risk offenders in group therapy or other contacts (see Dishion, McCord, & Poulin, 1999). In the context of sex offender treatment, this could mean combining incest offenders with sex offenders against unrelated children or combining sex offenders against children with sex offenders against adults. Following the logic of the risk principle, some sex offenders do not require treatment because they are already at low risk for recidivism. Significant impacts will be achieved only by focusing on higher risk offenders. The typical practice, however, is to prescribe treatment for all sex offenders (Mailloux et al., 2003), even for those who are very low in risk to reoffend, and some treatment advocates have suggested that it would be unethical to refuse treatment to any sex offenders who are willing to take it (W. L. Marshall, 2006a).

There is some evidence that the risk principle is influencing sex offender practices. Sex offender treatment standards were established in Canadian federal corrections in 2000, and these standards prescribe different amounts of treatment according to offender risk level. High-intensity programs provide between 360 and 540 hours of treatment; moderate-intensity programs provide between 160 and 200 hours of treatment; and low-intensity programs provide between 24 and 60 hours of treatment (see W. L. Marshall & Yates, 2005). Similar sex offender treatment standards have been established in the United Kingdom. At the same time, W. L. Marshall and Yates pointed out that correctional practices allow for the adjustment of treatment plans such that sex offenders who score in the middle range of an actuarial risk scale might still be placed in a high-intensity program because they show pedophilic sexual arousal or have high scores on measures of psychopathy. No examples are given of sex offenders being placed in lower intensity programs than indicated by their actuarially estimated risk. Even with implementation of these standards, it is likely that some sex offenders are being overprescribed treatment relative to their risk to reoffend, as Mailloux et al. (2003) have argued.

The *needs principle* suggests that interventions are more likely to have a significant impact when they target changeable factors associated with recidivism, such as antisocial attitudes, beliefs, and values; substance abuse; and self-regulation skills, in contrast to noncriminogenic needs, such as poor self-esteem, anxiety or mood problems, and subjective distress (Hanson & Bussière, 1998; Hanson & Morton-Bourgon, 2004).

Finally, the *responsivity principle* recognizes that treatments are more likely to be effective when tailored to the individual's learning style and capacity. This often includes the use of behavioral and social learning techniques that involve modeling prosocial behavior, graduated rehearsal of problem solving and other skills, role-playing, and reinforcement. More is known about risk factors and treatment needs than the factors that influence offender responsivity. The sex offender field might benefit by drawing from the general therapy literature on responsivity and the influence of therapist characteristics such as warmth, a nonconfrontational style, encouragement and rewards for treatment progress, and directiveness in therapeutic interactions on therapeutic alliance and treatment impact (see Kirsch & Becker, 2006; W. L. Marshall et al., 2005).

Efficacy Versus Effectiveness

An important conceptual distinction needs to be made between efficacy and effectiveness, addressing the questions "Can treatment work?" and "Does treatment work?" respectively (for further discussion of this distinction, see Rice & Harris, 2003). The first stage involves rigorous research designs, with random assignment of participants to treatment and control conditions, the use of placebo conditions, multiple outcome measures, multiple exclusion criteria leading to homogeneous groups, manualized therapy, and attention to program implementation and fidelity. Once it is established that treatment can have a positive impact (efficacy), smaller studies evaluate the ability of treatment to have an effect in typical practice, outside the research setting and in the hands of staff dealing with high caseloads, resource limitations, variable training, and so forth (effectiveness). Rice and Harris (2003) have pointed out that the sex offender treatment field has focused on the second question before the first question has been adequately addressed.

In addition to the impact of intervention on recidivism, one can also evaluate the cost-effectiveness of intervention programs by estimating the financial costs of providing the intervention relative to the alternatives and then factoring in the financial costs of new offenses that occur (e.g., Aos, Lieb, Mayfield, Miller, & Pennucci, 2004; Aos, Phipps, Barnoski, & Lieb, 2001).[4] Some interventions may indeed reduce recidivism but at a cost that

[4]A cost-effectiveness analysis cannot readily account for the psychological costs incurred by child victims and their families or by the offenders and their families except to estimate the associated costs

far exceeds the costs of alternative options. To use an extreme hypothetical example, sex offenders living in the community could be accompanied by an around-the-clock surveillance team. With eight staff (three shifts of two members each with an additional two staff in case of illness, holidays, and other absences) at a cost of $40,000 (comparable to the median salary of probation officers in the United States) per staff person, an offender would be extremely unlikely to reoffend against a child, but he would require millions of dollars in direct personnel costs over his lifetime. Applying this extremely high level of monitoring for every sex offender released from correctional custody would quickly exhaust the financial resources of the criminal justice system. Langan, Schmitt, and Durose (2003) estimated that approximately 6,400 sex offenders against children were released from state prisons in 1994; these offenders would require $2 billion a year under this surveillance team system.

On the other hand, programs that achieve only a modest reduction in recidivism, or even no reduction, can still be cost-effective, especially if they can be inexpensively and widely delivered. The results of the reviews completed by staff at the Washington State Institute of Public Policy indicate that for both adolescent and adult general offenders, treatments that focus on criminogenic needs are cost-effective, whereas intensive probation or parole programs are not (Aos et al., 2001, 2004).

Intervention Evaluation Principles

The following sections discuss a number of scientific and practical issues that are important for evaluating existing interventions and planning future interventions. Many of these issues have already been identified in the literature review presented in this chapter.

The Importance of Random Assignment

Despite potential problems such as sample representativeness, inadvertent group nonequivalence in risk for recidivism, or other factors that might moderate treatment outcome and generalizability to typical practice, only randomized clinical trials allow strong inferences about sex offender treatment outcome. These studies are difficult to conduct, but they have greatly contributed to the knowledge of what constitutes effective intervention to reduce crime (see Berk, 2005; Farrington & Welsh, 2005). Westen, Novotny, and Thompson-Brenner (2004) reviewed the methodological and conceptual issues involved in conducting and interpreting randomized clinical trials (see also the critical responses by Crits-Christoph, Wilson, & Hollon, 2005; Weisz, Weersing, & Henggeler, 2005). Westen et al. (2004) made valuable

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of time away from school or work, counseling, and use of social services. An analysis of this kind might also take into account civil litigation awards for suffering.

suggestions for future randomized clinical trials, including a focus on intervention strategies rather than manualized packages, a focus on clinical problems rather than categorical diagnoses, recruitment of realistically heterogeneous clinical samples, careful documentation of exclusion criteria, and careful assessment of process variables.

In addition to the scientific rationale for encouraging and conducting randomized clinical trials to evaluate sex offender treatment, I believe there is a powerful ethical rationale as well. A core principle in the Hippocratic oath and many other professional codes of conduct is to "do no harm." It has been suggested by some treatment advocates that it would be unethical to withhold treatment from sex offenders who are willing to participate because of the risk posed by offenders who might otherwise reoffend, the costs to potential victims, and the fact that offenders cannot be offered treatment or another alternative after a clinical trial has been completed (e.g., W. L. Marshall, 2006a; W. L. Marshall & Anderson, 2000).[5] W. L. Marshall (2006a) also identified the practical difficulties of conducting randomized clinical trials, including institutional hurdles and resistance to the idea that some sex offenders will not receive treatment. This position does not recognize the possibility that some treatments may in fact have harmful effects, unintentionally increasing recidivism and thereby harming victims, offenders, and their families.

A recent medical example is germane. Millions of people are treated every year for head injuries, yet many die or are permanently disabled as a result of their injuries. Anti-inflammatory corticosteroids have been used for the past 30 years to treat brain damage that could result in death or disability under the plausible assumption that postinjury inflammation was the cause of brain damage. However, a 1997 review of small randomized clinical trials suggested there was no difference between treatment and control conditions in risk of death. A large international randomized clinical trial of more than 20,000 head-injured patients was begun to examine the impact of intravenous corticosteroids on death and disability following head injury (CRASH Trial Collaborators, 2004). This trial was discontinued at the halfway point after data monitors determined that the drug therapy increased the relative risk of death in the first 2 weeks after the injury. In other words, a credible, well-meaning intervention had unintentionally increased patient deaths over the past 30 years, over and above the toll exacted by the original head injuries. Moreover, the acceptance of corticosteroid treatment as a standard intervention during this time may have dissuaded clinicians and researchers from exploring other treatments that may have been successful in reducing death and disability following head injuries. Other examples of inadvert-

[5]I note in this context that correctional researchers have been willing to randomly assign offenders to treatment and no-treatment control conditions, even chronic and violent offenders who physically abuse their children or other adults.

ently harmful medical interventions can readily be found (e.g., the overall deleterious impact of hormonal replacement therapy on postmenopausal women). In the field of medicine, in which lives can be at stake, there is a consensus that the potential for harm ethically justifies the withholding of an unproven treatment in randomized clinical trials, including randomized clinical trials for childhood cancers such as leukemia. Is the possibility that withholding treatment from a sex offender may result in a child being sexually victimized morally equivalent to the possibility that the same child will die as a result of cancer because an experimental treatment is withheld? Sexual offenses against children are a serious and terrible problem, but I believe that the death of a child is a worse outcome.

For those who think that only medical treatments can cause harm, there are also examples of psychosocial treatments that have had unintended consequences. For example, Dishion et al. (1999) reported on the negative effect of the Cambridge Somerville Youth Program, a long-term program involving counseling, community services, and group activities, on the outcomes of juvenile delinquents followed for several decades. Boys who participated in the program were significantly more likely than matched control boys to have a negative outcome, defined as death prior to age 35, conviction for a serious crime, or diagnosis with an alcohol abuse disorder or major psychiatric disorder such as schizophrenia or bipolar disorder. Moreover, there was a dose–response relationship so that boys who participated in the program for a longer duration were more likely to have a negative outcome. In an analysis of a different program for adolescents, teenagers who were randomly assigned to a peer group therapy condition had higher teacher reports of conduct problems than teenagers who were assigned to comparison conditions. Brooner, Kidorf, King, and Stoller (1998) randomly assigned 40 opioid-abusing individuals, all diagnosed with antisocial personality disorder, to usual treatment or an intensive behavior management program. Individuals in the intensive behavior management condition were more likely to continue using drugs.

One can imagine a number of ways in which contemporary sex offender treatments might be inadvertently harmful. Combining different types of sex offenders would expose sex offenders against children to the typically more antisocial attitudes, beliefs, and behavior of sex offenders against adults in group sessions (recall the opposite trends for sex offenders against children and sex offenders against adults in the SOTEP evaluation). The use of offender disclosures in acceptance of responsibility and relapse prevention exercises, which involve offenders recounting details of their sexual offenses, may expose less experienced and less sophisticated offenders to new sexual content and to new methods for gaining access to victims. The use of victim empathy exercises may fuel sadistic fantasies among the subgroup of sex offenders for whom victim suffering and distress are arousing rather than upsetting. It is not known whether any of these hypothetical effects occur because the evaluations to find out do not exist.

If one looks to the next developments in sex offender treatment, the SOTEP results suggest that relapse prevention has no effect on recidivism, but this approach is a popular format for sex offender treatment and is likely to be provided by many clinicians for some time to come in the absence of credible alternatives. This situation creates an opportunity for evaluating innovative, theoretically consistent interventions using a strong inference design in which offenders are randomly assigned to treatment as usual (relapse prevention) and experimental treatments that are informed by correctional research on effective treatments for offenders. This could address the ethical and practical obstacles that treatment advocates have cited in their reluctance to conduct randomized clinical trials. I believe the credibility of treatment for sex offenders against children depends on the evolution of evidence-based practices in this manner.

Without the cumulative gains in knowledge that are possible through methodologically rigorous evaluations of theoretically consistent and carefully designed and implemented evaluations, clinicians working with sex offenders against children face the prospect of shifting from fad to fad as new treatment approaches are introduced and popularized. A similar point has been made about child abuse prevention programs involving home visits (Chaffin, 2004). The relapse prevention approach to sex offender treatment was introduced in the 1980s and quickly became the dominant model of sex offender treatment programs (McGrath, Cumming, & Burchard, 2003). Now that Marques et al. (2005) have reported that the SOTEP relapse prevention program did not significantly reduce recidivism among sex offenders, some clinicians and researchers are already promoting other treatment approaches before evaluations of their impact on recidivism have been conducted (e.g., the "good lives" approach and the self-regulation approach; Ward & Marshall, 2004; Ward & Stewart, 2003; Ward, Yates, & Long, 2006). Without careful evaluations at this early stage, sex offender treatment providers may readily adopt these new approaches and unwittingly provide an ineffective or harmful treatment. As Laws and Ward (2006) noted in their presentation of the self-regulation approach, "Unfortunately, the uncritical acceptance of the Marlatt and Gordon (1985) and Laws (1989) [two highly influential books on the relapse prevention approach] works resulted in the widespread implementation of a largely unproven treatment approach" (pp. 241–242). The same can be said of the self-regulation and good lives approaches. Some practitioners are adopting these approaches even though they have not yet been evaluated for their impact on recidivism.

Of course, such evaluations are difficult and take a long time to complete (see Farrington & Welsh, 2005). The SOTEP program was initially funded in 1985, and the final report was only published in 2005. In the interim, there was preliminary evidence that SOTEP was having the desired effects (Marques et al., 1994; Miner, Marques, Day, & Nelson, 1990). Though the final results were discouraging for advocates of sex offender treatment, I

believe SOTEP was a success because the sex offender field learned some valuable lessons from its evaluation.

While awaiting long-term results, experimental sex offender treatments should incorporate components identified in proximal outcome research as having a significant impact on dynamic risk factors or pedophilic sexual response (see Appendix 8.1). For example, does the focus on acceptance of responsibility, victim empathy, and cognitive distortions have an impact on antisocial tendencies or pedophilic sexual fantasies, urges, and arousal? Demonstrating an impact on these proximal outcomes does not necessarily mean that the treatment is effective in reducing recidivism, but it is a necessary step in developing a theoretically informed treatment model. The next necessary step is to show that changes on proximal treatment targets are related to recidivism. Failing to demonstrate significant changes on proximal treatment targets or failing to demonstrate that changes in proximal treatment targets are associated with sexual recidivism would rule out these factors (see Seto, 2003).

This kind of proximal outcome research could advance knowledge of both the causes of sexual offending and the likely components of effective sex offender treatment. For example, finding that social skills deficits and treatment performance in social skills training—level of participation, compliance with training requirements, and actual change in social skills—predict sex offender recidivism would suggest that social skills deficits are one of the causes of sexual reoffending and would suggest that social skills training should be part of sex offender treatment. Of course, demonstrating such a relationship is a necessary but not sufficient condition. Failing to find this relationship, on the other hand, would indicate that social skills deficits are not causally related to sexual reoffending and would indicate that other targets should be the focus of treatment.[6]

A distinction between etiological and maintenance factors could be valuable in pursuing this research. Factors that are associated with the likelihood of initially committing a sexual offense (onset) might not be predictive of recidivism (maintenance), and vice versa. For example, it has been found that sex offenders are more likely to have been sexually abused than nonsex offenders in both adolescent and adult samples (Lalumière, Seto, & Jespersen, 2006; Seto & Lalumière, 2007). However, a history of sexual abuse is not predictive of recidivism among sex offenders (Hanson & Morton-Bourgon, 2004). This suggests that sexual abuse could be an etiological but not a maintenance factor in sexual offending. Some sex offender treatment programs attempt to address sexual abuse history, but this is less likely to have an impact than focusing on maintenance factors such as antisocial attitudes and

[6]This assumes a simple causal relationship between the treatment target and recidivism. It is possible that some targets have indirect effects or have other complex causal relationships with recidivism. Structural modeling of data on treatment targets and recidivism could shed light on these relationships.

beliefs, substance abuse, and self-regulation problems (Hanson & Harris, 2000). In contrast, programs that attempt to prevent child sexual abuse might reduce the onset of sexual offending as the children grow up.

Treatment Attrition

There is consistent evidence that offenders who drop out or refuse treatment are more likely to reoffend than those who complete treatment (Hanson et al., 2002; Lösel & Schmucker, 2005; Marques et al., 2005). In the Hanson et al. (2002) meta-analysis, the difference in recidivism between treatment dropouts and treatment completers was larger than the difference found between offenders in the treatment and comparison conditions. Treatment completion is associated with individual characteristics such as motivation, ability and willingness to comply, the ability to focus on long-term goals and planning, impulsivity, hostility, and other antisocial tendencies that are associated with risk to reoffend (e.g., Craissati & Beech, 2001; Hunter & Figueredo, 1999; Moore, Bergman, & Knox, 1999). Evaluation studies that do not take attrition into account (e.g., by excluding treatment dropouts in their group comparisons or by comparing treatment completers with individuals who drop out or refuse treatment) will bias their results toward making treatment appear to be effective. Thus, a hypothetical sex offender treatment program that required English-speaking sex offenders to learn to speak Mandarin, play a musical instrument, and master calculus could show a positive treatment effect if it compared treatment completers with dropouts or refusers, not because speaking a new language, playing a musical instrument, or learning calculus helps prevent sexual offending but because the treatment completion group is likely to be more motivated, compliant, intelligent, and capable of learning new skills than those who refused or dropped out. To illustrate, the sex offenders who dropped out of a randomized clinical trial examining the impact of antiandrogens on sexual response reported more frequent sexual fantasies about children (Hucker et al., 1988). Excluding these offenders would make the treated group look like it had improved when there might in fact have been no difference between the treated and comparison groups. Authors in the treatment evaluation literature recognize the need to take treatment attrition into account. To do so, Chambliss and Hollon (1998), among others, have recommended comparing intent-to-treat groups with control groups instead of only comparing individuals who complete treatment with those who do not receive treatment.

The SOTEP program dealt with the problem of treatment attrition in several ways. The authors did not terminate treatment participants who did not make progress or were disruptive in minor ways. Only those who created major management problems (e.g., committed assaults, interfered with the treatment of other offenders, or committed serious contraband violations) were terminated from treatment. Those who voluntarily withdrew from treatment were given 24 hours to reconsider their decision. A decision was made

early during the SOTEP project to include those who were in treatment for at least 1 year (about one half of the 2-year program) in the treatment group for the follow-up analyses. Finally, to deal with the problem of eligible participants who changed their minds before admission to the program, a change in protocol was made after the 4th year of the project so that prospective treatment participants were not matched to controls until the treatment participant was transferred to the hospital.

Program Fidelity

Another general principle in the intervention literature is the importance of high program fidelity in dissemination, implementation, and service delivery (see Stirman, Crits-Christoph, & DeRubeis, 2004). In other words, the treatment that is delivered should correspond to the treatment that is intended in terms of format, intensity, strategies, and targets. This principle is highlighted in results of randomized clinical trials evaluating the efficacy and effectiveness of multisystemic therapy for juvenile delinquents in which high fidelity to the treatment model and techniques is associated with better outcomes (see Curtis, Ronan, & Borduin, 2004; Henggeler, Schoenwald, Borduin, Rowland, & Cunningham, 1998). In contrast, low program fidelity can dilute the treatment program to the point that it no longer has a significant effect on the desired outcomes (e.g., Henggeler, Melton, Brondino, Scherer, & Hanley, 1997; see also Moncher & Prinz, 1991). Lower treatment fidelity may explain the typical decline in effect sizes obtained in replication studies and in knowledge transfer studies because the original evaluations were often completed in academic or research institutes following strict protocols, manualization, and extensive staff training. However, real-world implementations often have to deal with administrative, staff, and client pressures to deviate from the treatment protocol. The level of staff training will vary as new staff join the team, and experienced staff may show "drift" in their application of the protocol (e.g., by bringing in other techniques or drawing from their previous treatment experience) or leave the team to be replaced by less experienced and knowledgeable staff. One plausible interpretation of Lösel and Schmucker's (2005) finding that evaluations reported by authors affiliated with the treatment program produced larger effect sizes than evaluations reported by nonaffiliated authors is that the former group were able to maintain program fidelity by their involvement. (An alternative and also plausible explanation is that nonaffiliated authors were more willing to report smaller effect sizes than affiliated authors.)

FINAL COMMENTS

In this chapter, I have identified many questions about the effective treatment and management of pedophiles and sex offenders against children. These questions include the relevance of typical treatment targets, such as

acceptance of responsibility and expressions of remorse and victim empathy; whether changes in pedophilic sexual arousal as a result of behavioral conditioning or antiandrogen treatment translate to long-term changes in sexual behavior involving children; and the relative importance of general versus specific treatments for pedophilic sexual offending. Methodologically rigorous evaluations are needed to answer these important questions, and theoretically informed treatment models that draw from general offender intervention research and specific research on pedophilia are needed if researchers are to develop empirically supported treatments to reduce the incidence or severity of child sexual abuse.

Until the results of such research are available, how should clinicians proceed? I believe a conservative approach is needed, guided by the scientific knowledge that is available. On the basis of the research reviewed in this book, some recommendations are summarized in Exhibits 8.1 and 8.2. Intervention for sex offenders should be preceded by an actuarial risk assessment to prioritize cases according to risk to reoffend and to guide subsequent decisions. For sex offenders against children, the options range from minimal intervention for the lowest risk individuals to long-term incapacitation for the highest risk individuals. The range of options for pedophilic individuals who are not involved with the criminal justice system is much narrower and depends on their cooperation in the absence of external contingencies. The client and persons close to him (spouse, family members, and close friends) should be educated about pedophilia and the potential risk to children. This kind of clear and open communication is likely to be challenging given the strong negative reactions that pedophiles face (Jenkins, 1998), but the support and monitoring that can be provided by these persons could help in preventing future sexual offenses against children (recall the circles of support and accountability model). The clinician should also monitor potentially worrisome behaviors such as access to child pornography, unsupervised contacts with children, and alcohol or drug consumption that leads to disinhibition of behavior. Clinicians and other professionals should rely on sources of information other than self-report whenever possible.

There is some support for behavioral treatments targeting pedophilic sexual arousal. Because the long-term effects are unknown, ongoing follow-up and booster sessions may be necessary. This is not a sufficient treatment on its own, but learning to control their sexual arousal may help individuals who are motivated to refrain from offending. There is only some empirical support for the use of drug therapies, but treatment using antiandrogens is still recommended for higher risk individuals who are not suitable for incapacitation (because they have not committed sexual offenses or they are not eligible for prison sentences under the applicable laws when crimes do occur). There are two reasons for this recommendation. First, for individuals who believe they need assistance to control their pedophilic sexual responses, administration of these agents can activate a placebo expectancy response

EXHIBIT 8.1
Recommendations for Treatment of Pedophilic Sex Offenders

1. Risk assessment using a well-supported actuarial measure for the purpose of triaging individuals in terms of placement, security, and intensity of any treatment and supervision.
2. Education of the client, his spouse or partner, family members, and close friends regarding risky situations and potential precursors for sexual offenses against children (e.g., the offender being alone with a child or consuming alcohol).
3. Behavioral treatments targeting pedophilic sexual arousal, when applicable, with booster sessions as needed on an ongoing basis.
4. Monitoring of access to child pornography, unsupervised contacts with children, and alcohol or drug use.
5. Antiandrogen treatments targeting sexual drive for higher risk individuals who are not suitable for incapacitation. Though the evidence for such treatments is not strong, compliance with the regimen is a positive treatment-related indicator and could be used to adjust the intensity of other interventions.
6. Cognitive–behavioral and behavioral treatments targeting dynamic risk factors for general criminal behavior such as antisocial attitudes and beliefs, association with antisocial peers, and substance abuse.
7. Incapacitation of high-risk pedophilic sex offenders, especially those who have committed many sexual offenses against children or who have committed particularly violent sexual offenses.

that may in fact contribute to their ability to do so. Second, administration of these agents can be viewed as a strict behavioral test of the individual's motivation and commitment to avoid sexually offending against children because noncompliance with medication appears to be associated with a worse prognosis. (A similar logic applies for the provisional recommendation regarding the use of behavior therapy while awaiting more follow-up results.) There is also the possibility that these agents will reduce sex drive and that this reduction in sex drive will lead to a reduction in likelihood to offend sexually against children. Finally, for pedophilic sex offenders who are at higher risk of antisocial behavior and thus for acting on their sexual interest in children, cognitive–behavioral and behavioral treatments drawn from the correctional literature could have a significant impact on general risk factors such as antisocial attitudes and beliefs (including permissive attitudes about sex with children), association with antisocial peers (including other pedophiles who endorse and reinforce permissive attitudes about sex with children), and substance abuse (which can lead to disinhibition of behavior). It is unlikely such treatments will be helpful to self-referred pedophilic individuals, who would tend to be low in antisociality because those who are more antisocial are unlikely to come forward for help.

APPENDIX 8.1
INTERPRETING SEX OFFENDER TREATMENT PERFORMANCE

In addition to methodologically rigorous treatment evaluations, researchers can draw from studies that have examined the relationship between sex offender treatment performance and outcome. If sex offender treatment has an effect, one would expect good treatment performance to be related to better treatment outcome. In other words, one would expect sex offenders who learn more and do better in a treatment program to be less likely to reoffend, if the knowledge and skills they learn are relevant to recidivism, than those who learn less or perform poorly.

A number of studies have examined the relationship between aspects of treatment performance and outcomes among sex offenders participating in programs espousing cognitive–behavioral or relapse prevention principles. Almost all of these studies have examined treatment performance as a static risk factor. Four studies found no relationship, one found a positive relationship, and three found a negative relationship. Jenkins-Hall (1994) assessed acceptance of responsibility, attendance, and level of participation in therapy sessions to predict mastery of program content in a sample of sex offenders. These aspects of treatment performance predicted proficiency with the principles and concepts of rational–emotive therapy but did not predict proficiency with the principles and concepts of relapse prevention. Quinsey, Khanna, and Malcolm (1998) reported on a follow-up study of sex offenders treated at the Regional Treatment Centre, a prison-based program in Canada, and found that a clinician rating of treatment gain was unrelated to sexual recidivism among 193 treated sex offenders, even though treated sex offenders showed significant improvements on within-treatment measures.

In terms of a positive relationship, SOTEP participants who obtained lower posttreatment scores on phallometrically measured sexual arousal and

EXHIBIT 8.2
Recommendations for Treatment of Pedophiles

1. Education of the client, his spouse or partner, family members, and close friends regarding risky situations and potential precursors for sexual offenses against children (e.g., the offender being alone with a child or consuming alcohol).
2. Behavioral treatments targeting pedophilic sexual arousal, when applicable, with booster sessions as needed on an ongoing basis.
3. Monitoring of access to child pornography, unsupervised contacts with children, and alcohol or drug use.
4. Antiandrogen treatments targeting sexual drive for some individuals. Though the evidence for such treatments is not strong, compliance with the regimen is a positive treatment-related indicator and could be used to adjust the intensity of other interventions.
5. For those who score higher on measures of antisociality, cognitive–behavioral and behavioral treatments targeting dynamic risk factors for general criminal behavior such as antisocial attitudes and beliefs, association with antisocial peers, and substance abuse.

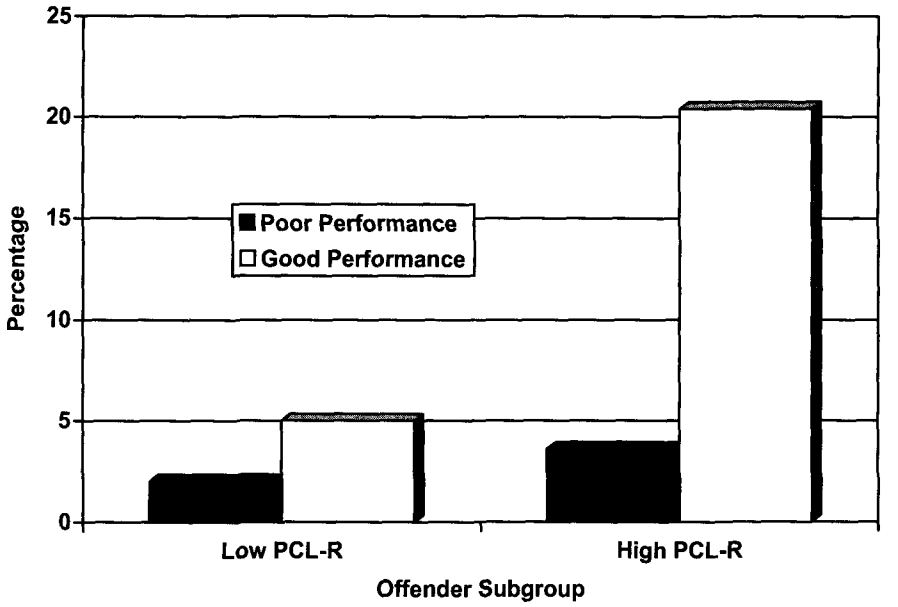


Figure 8A.1. Rates of violent recidivism among treated sex offenders after an average follow-up period of 32 months. These offenders were followed to November 1996, using federal agency recidivism data (Seto & Barbaree, 1999). Offenders were divided into groups according to median splits on PCL–R and treatment performance scores. PCL–R = Psychopathy Checklist—Revised. From *Managing Sex Offenders in the Community: Contexts, Challenges, and Responses* (p. 133), A. Matravers (Ed.), 2003. London: Willan. Copyright 2003 by Willan. Reprinted with permission of the author.

attitudes and beliefs about sexual offending and positive ratings of their relapse prevention assignments were less likely to reoffend than those who did not obtain encouraging posttreatment scores, even after statistically controlling for actuarially estimated risk to reoffend (Marques et al., 2005). These results were consistent with those previously reported for a smaller sample of child sexual abusers who participated in SOTEP (Marques et al., 1994).

In terms of a negative relationship, Sadoff, Roether, and Peters (1971) found that sex offenders who reported that group psychotherapy was helpful when asked at the end of treatment were more, rather than less, likely to be rearrested than sex offenders who complained about their involvement in group therapy. Seto and Barbaree (1999) found that contrary to their prediction, good treatment performance was not associated with lower rates of recidivism during the average follow-up period of 32 months. In fact, good treatment performance was associated with higher rates of recidivism. This was especially true among individuals scoring higher in psychopathy.[7] Men

[7]My coauthor, Howard Barbaree, has subsequently disagreed with this interpretation of the findings, noting that the group differences in recidivism are smaller when more comprehensive outcome data are used and the interaction of psychopathy and treatment behavior is not statistically significant

who scored higher on psychopathy on the Psychopathy Checklist—Revised (PCL–R; Hare, 1991, 2003) and who performed well in treatment were almost 4 times as likely to commit a new violent offense, defined as a new nonsexually violent or new violent sexual offense, during the follow-up (see Figure 8A.1). This was an intriguing finding because other studies have found that psychopathic offenders appear to be negatively affected by treatment, whereas nonpsychopathic offenders benefit (Hare, Clark, Grann, & Thornton, 2000; Rice, Harris, & Cormier, 1992).

The Seto and Barbaree (1999) measure of treatment performance included items tapping nonspecific aspects such as the offender's attendance, level of participation in therapy, and interactions with others during group sessions as well as items tapping specific aspects of skills and knowledge acquisition, including quality of homework assignments in victim empathy exercises, understanding of offense cycle, and development of a relapse prevention plan. The measure also included therapist ratings of motivation for treatment and overall behavior change. Except for the two therapist ratings, the items on our measure were coded by research assistants on the basis of clinical notes kept by the therapists and the original written homework assignments completed by the offenders, so the results we observed cannot be explained by successful deception of therapists by psychopathic sex offenders.

Looman, Abracen, Serin, and Marquis (2005) recently reported similar results in a different sample of convicted sex offenders treated at a correctional psychiatric center (Regional Treatment Centre) using a PCL–R cutoff score of 25 for identifying psychopaths. They also found that men who performed well in treatment in terms of ratings of change in victim empathy, understanding of offense cycle, quality of relapse prevention plan, and global performance and who scored higher in psychopathy were more likely than other offenders in the sample to reoffend seriously during the follow-up period of 4 to 5 years.

Barbaree and I have since extended the follow-up of the sex offender sample studied by Seto and Barbaree (1999), almost doubling the average time at risk in the community from 32 to 62 months, to determine if the relationship between treatment performance and recidivism held up over time and to determine if the effect was still apparent after almost all of the offenders were no longer under any form of parole supervision (Barbaree, 2005; Seto, 2003). In the latest follow-up, treatment performance was not related to either general or violent recidivism (see Figure 8A.2). As in Seto and Barbaree (1999), sex offenders who scored higher in psychopathy were approximately twice as likely to reoffend violently as sex offenders who scored

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(Barbaree, 2005). Statistical interactions are notoriously difficult to detect (McClelland & Judd, 1993), and the apparent differences between groups distinguished by psychopathy and treatment behavior are striking, even in Barbaree's (2005, Figure 3, Panel B) reanalysis. Barbaree and I do not disagree that the subsequent follow-up revealed that treatment behavior was unrelated to violent recidivism (Barbaree, 2005; Seto, 2003).

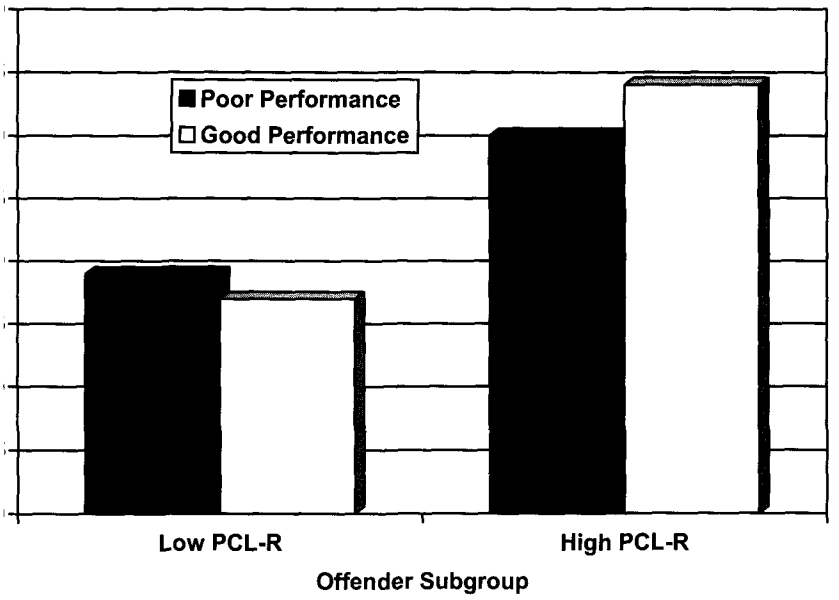


Figure 8A.2. Rates of violent recidivism among treated sex offenders after an average follow-up period of 62 months. These offenders were followed to April 2000, using national recidivism data. Offenders were divided into groups according to median splits on PCL–R and treatment performance scores. PCL–R = Psychopathy Checklist—Revised. From *Managing Sex Offenders in the Community: Contexts, Challenges, and Responses* (p. 132), A. Matravers (Ed.), 2003. London: Willan. Copyright 2003 by Willan. Reprinted with permission of the author.

lower in psychopathy. Another follow-up study of a larger sample of sex offenders assessed at the same clinic also found that psychopathy, but not treatment performance, was significantly related to violent recidivism (Langton, Barbaree, Seto, Harkins, & Peacock, 2002). These results suggest that many of the treatment targets of relapse prevention programs are not necessary components of effective treatment.

AFTERWORD

This book is an attempt to present a consilient overview of current scientific knowledge about pedophilia and sexual offending against children. I have drawn from research in many disciplines to discuss the historical and cross-cultural manifestations of adult sexual contacts with children (chap. 1), the etiology of pedophilia and the origins of sexual offending against children (chaps. 4 and 5), assessment of pedophilic sexual interests and of risk to offend in the future (chaps. 2 and 7), and intervention (chap. 8). My goal in adopting this integrative and multidisciplinary approach was to summarize the progress and identify future directions for research on assessment, etiology, and intervention. In particular, there are many interesting and important questions to be explored regarding the puzzles of pedophilia and incest (chaps. 3 and 6). I also believe that quicker and more consistent progress will be made in the understanding, assessment, and treatment of pedophilia and sexual offending against children if researchers can draw from areas other than the sex offender field rather than relying on research conducted only within that field.

Researchers have made significant advances in the assessment of pedophilia and the assessment of risk posed by sex offenders against children, and some encouraging progress has been made on important etiological questions about pedophilia and sexual offending against children. With regard to pedophilia, a convincing scientific theory of this sexual preference for prepubescent children must account for the fact that the large majority of pedophiles are men; that the majority prefer boys; that pedophiles are more likely to have been sexually abused as children themselves; and that they differ from nonpedophilic men in terms of their intelligence, history of early childhood head injuries, non-right-handedness, and white matter volume. The existing evidence suggests that pedophilia is a neurodevelopmental disorder that selectively affects males, altering their sexual preferences with regard to age.

It is possible that researchers will eventually discover that pedophilia is etiologically heterogeneous, so different explanations will be required for different kinds of pedophiles and possibly for male and female pedophiles. As mentioned in chapter 5, there is accumulating evidence that homosexuality is etiologically heterogeneous such that the fraternal birth order effect accounts for up to 30% of cases of male homosexuality (Blanchard & Bogaert, 2004), and genetic factors may explain other cases (Hamer, Hu, Magnusson, Hu, & Pattattuci, 1993). Neuroscientific and genetic research are particularly exciting avenues for future work on etiological research on pedophilia.

Pedophilia is logically and empirically related to the likelihood that someone will commit a sexual offense involving a child. However, the relationship is not perfect: Some pedophiles have not acted on their sexual interests in this way, and many individuals who commit sexual offenses are not pedophiles. Antisociality (general antisocial tendencies) can distinguish those who do act from those who do not. Because of this commonality with other groups of offenders, the understanding of sexual offending against children can benefit greatly from the knowledge that has been gained in the developmental study of antisocial and criminal behavior.

Much work remains to be done. More studies of nonclinical and nonforensic samples of pedophiles are needed to disentangle pedophilia from clinical distress or criminal status. Anonymity and confidentiality are important considerations because of the social consequences that might face individuals who admit to having pedophilia (e.g., a school teacher who identifies himself as a pedophile, though he has no known history of sexual contacts with children and no allegations of such contacts have been made) and the legal consequences that might face individuals who admit to previously undetected sexual contact with a child. To estimate the general prevalence of pedophilia, large epidemiological surveys with the appropriate questions about target, persistence, and intensity are required. As demonstrated in this book, much of what is known about pedophilia is drawn from research on sex offenders against children. New knowledge about pedophilia may be gleaned by studying other groups, including users of child prostitutes and child pornography offenders. Finally, understanding the development of pedophilia will require longitudinal studies, especially those using genetically informative designs. Important variables for further study include maternal immunity, fetal neurodevelopment, head injury, intelligence, childhood sexual abuse, and conventional sexual experiences.

More research is needed to develop and evaluate interventions that could be effective in reducing sexual offending against children. Interventions may be more likely to be successful to the extent that they are consistent with the theoretical understanding of pedophilia and sexual offending against children. Thus, treatments that effectively address criminogenic needs such as antisocial attitudes and beliefs (e.g., offense-supportive views regarding sex with children), associations with antisocial peers, and substance use

could reduce sexual offending, because such treatments have demonstrated effectiveness in reducing reoffending in general. If neurodevelopmental perturbations are a causal pathway to pedophilia, as suggested by the work completed by the Centre for Addiction and Mental Health research group, then treatments that can target the affected brain structures or functions or that target the factors that result in these neurodevelopmental perturbations could reduce the incidence of pedophilia.

I conclude with a comment about the people I have been discussing in this book. Sex offenders against children are among the most reviled people in contemporary society (see Jenkins, 1998). Because pedophilia and sexual offending against children are inextricably linked in public perceptions, pedophiles are feared, hated, ostracized, and sometimes attacked. Yet pedophiles and sex offenders against children live among us as family members, friends, neighbors, or coworkers. Society understandably condemns sexual offenses against children and the potential harm they might cause, and persons who commit sexual offenses against children should be held accountable for their crimes. However, we can still have compassion for pedophiles who resist acting on their sexual interests in prepubescent children and for sex offenders against children who are sincerely motivated to refrain from offending again. Ostracizing pedophiles or sex offenders against children may mean ostracizing family members, friends, neighbors, and coworkers. Hatred and ostracism will not make the problem of sexual offending against children go away. An unintended and potentially counterproductive consequence of such reactions is that few pedophiles voluntarily identify themselves and seek professional help to refrain from committing sexual offenses against children, even with proactive efforts such as Stop It Now! and the Berlin Prevention Project. Thus, it is mostly those who have acted on their sexual interest in children who come to the attention of clinicians, to the detriment of children who might not otherwise have been sexually victimized. If society is truly concerned about preventing child sexual abuse, then pedophiles and sex offenders against children deserve careful and balanced consideration, academically, clinically, politically, and publicly. I hope this book can make a scientific contribution to these important discussions.

RESOURCE A: ADDITIONAL INFORMATION ABOUT ASSESSMENT METHODS

This resource provides additional information about assessment methods, including sources of questionnaires and the scoring guidelines for the Screening Scale of Pedophilic Interests (SSPI). I have no financial interest in any of these measures or in any of the commercial organizations mentioned here; the SSPI is publicly available and free to use.

TYPICAL INTERVIEW QUESTIONS

The following questions are given as examples of questions that can help elucidate a person's sexual thoughts, fantasies, urges, arousal, and behavior regarding prepubescent children. These questions would normally be included in an interview that covers other aspects of the person's history, including current living circumstances, relationships, and reasons for the referral. Possible follow-up questions are also provided, but the set of questions provided here is not exhaustive. Training in interviewing techniques is required. The wording of questions should be changed to match the age and education level of the interviewee. Questions can be repeated at different times during an interview or set of interviews as a check of response consistency.

An open, nonjudgmental manner and clear, direct questions are more likely to produce honest responses. Sexuality is an uncomfortable topic for many people, and as a result, questions about sex can produce brief or misleading responses because of embarrassment or shame. Because of mandatory reporting requirements regarding child sexual abuse and the fact that many assessments occur under the auspices of the criminal justice system, it is important that the client be thoroughly informed of legal or professional reporting obligations, other limits to confidentiality, and how the information will be used. Depending on the circumstances, I will advise clients not to provide specific details about previously unreported sexual contacts they have had with children because doing so would trigger mandatory reporting requirements, and I believe the information that I can otherwise obtain is clinically important.

1. How old were you when you began going through puberty (voice change, facial hair, growth spurt, etc.)?
2. How old were you when you first started having sexual thoughts or feelings? What did you think about? What was your reaction to these thoughts or feelings?

3. Have you ever masturbated? How old were you the first time you masturbated? What were you thinking about at the time? What do you typically think about when masturbating? How frequently do you masturbate? What is the most times you have ever masturbated in a week? How old were you at that time?
4. Have you ever had sexual contact (any genital contact) with someone of the opposite sex? How old were you? How old was she [for male respondents]? How did you know her?
5. Have you ever had sexual contact (any genital contact) with someone of the same sex? How old were you? How old was he [for male respondents]? How did you know him?
6. How many female sexual partners have you had? What proportion would you consider to be casual or short term (e.g., one night stands or short flings)? What is the longest sexual relationship you've had with a woman? What is the shortest?
7. How many male sexual partners have you had? What proportion would you consider to be casual or short term (e.g., 1-night stands or short flings)? What is the longest sexual relationship you've had with a man? What is the shortest?
8. Did you ever cheat on a steady sexual partner (i.e., had sex with someone else without the partner's knowledge or permission)? How many times? Have you ever been involved in multiple sexual relationships at the same time?
9. Are you currently involved in a sexual relationship? Tell me about the person. How long have you been in this relationship? What do you find attractive about your partner?
10. Do you have any children? (Distinguish between genetic and sociolegal children.)
11. Have you ever had sexual contact with a girl who was below the age of 14 [or the legal age of consent in the local jurisdiction]? How old were you at the time? How old was she? What kind of sexual behaviors took place?
12. Have you ever had sexual contact with a boy who was below the age of 14 [or the legal age of consent in the local jurisdiction]? How old were you at the time? How old was he? What kind of sexual behaviors took place?
13. How often do you sexually fantasize in a typical day? What do you fantasize about? Do you masturbate when you fantasize? What proportion of the times you masturbate involve fantasies?
14. Do you ever have sexual fantasies about prepubescent girls? Teenage girls who are under the legal age but sexually maturing? How long have you been having these fantasies? How

often do you have these fantasies? What are the arousing or attractive features of the girls in these fantasies?

15. Do you ever have sexual fantasies about prepubescent boys? Teenage boys who are under the legal age but sexually maturing? How long have you been having these fantasies? How often do you have these fantasies? What are the arousing or attractive features of the boys in these fantasies?
16. Do you ever have sexual fantasies about uncommon or unusual activities (e.g., bondage, spanking, masochism, exhibitionism, or voyeurism)? How often do you have these fantasies? Have you ever engaged in these activities? How old were you the first time? How often?
17. Do you ever have sexual fantasies about unusual kinds of persons or objects (e.g., amputees or fetishism)? Have you ever engaged in sexual behaviors involving these persons or objects? How old were you the first time? How often?
18. Have you ever hired a prostitute? Gone to a strip club, massage parlor, or used a telephone sex line? What about cybersex (sex chat with someone you meet online)?
19. Have you ever tried to stop having fantasies about children, kinky activities, or other uncommon content? What did you try to do? Were you successful? For how long?
20. How frequently do you want to masturbate? How frequently do you actually masturbate? How satisfied are you with this level of sexual activity?
21. How frequently do you want to have sex with another person? How frequently do you actually have sex with another person? How satisfied are you with this level of sexual activity?
22. Do you ever use pornography (sexually explicit pictures, videos, or text)? How often? Since what age? What kinds of pornography? How do you access pornography? How much do you spend on pornography in a typical month? Have you ever used child pornography?

QUESTIONNAIRES

The Clarke Sex History Questionnaire for Males—Revised is commercially available from Multi-Health Systems (Langevin & Paitich, 2001; see http://www.mhs.com). It is designed for use with adult men and requires approximately 60 to 90 minutes to complete. It contains 23 scales, including 2 validity scales, with items pertaining to a variety of different aspects of a person's sexual history, including paraphilic fantasy and behavior, sexual abuse

TABLE A.1
Some Potentially Useful Self-Report Measures in the Assessment of Pedophilic Individuals

Measure	Source
Cognitions about sex with children or rape	
Abel and Becker Cognition Scale	Abel, Gore, Holland, Camp, Becker, and Rathner (1989)
Adolescent Cognitions Scale	Hunter, Becker, Kaplan, and Goodwin (1991)
Bumby MOLEST Scale	Bumby (1996)
Antisocial attitudes and beliefs	
Criminal Sentiments Scale	D. J. Simourd (1997)
Pride in Delinquency Scale	D. J. Simourd (1997)
Measure of Criminal Attitudes and Associates	Mills and Kroner (1999)
Antisocial personality	
Hare Psychopathy Checklists	Forth, Kosson, and Hare (2003); Hare (2003); Hart, Cox, and Hare (1995)
Childhood and Adolescent Psychopathy Scale	Lalumière, Chalmers, Quinsey, and Seto (1996)
Levenson Psychopathy Scale	M. R. Levenson, Kiehl, and Fitzpatrick (1995)
Sexual interests	
Adolescent Sexual Interest Card Sort	Hunter, Becker, Kaplan, and Goodwin (1991)
Clarke Sex History Questionnaire —Revised	Langevin and Paitich (2001)
Multiphasic Sex Inventory	Nichols and Molinder (1984)
Sexual Fantasy Questionnaire	Daleiden, Kaufman, Hilliker, and O'Neil (1998)

history, sexual dysfunctions, and exposure to pornography. Other self-report measures that could be useful in the assessment of pedophiles or sex offenders against children are reported in Table A.1.

SEXUAL OFFENSE CHARACTERISTICS

The SSPI was originally developed using a sample of over 1,000 men who had been convicted of at least one sexual offense involving children (Seto & Lalumière, 2001). Its criterion-related validity has since been replicated in two separate samples of adult sex offenders, and it has been shown to be significantly associated with recidivism in those two samples (Seto, Harris, Rice, & Barbaree, 2004). There were 40 adolescent sex offenders against children in the Seto and Lalumière (2001) sample; this group was combined with two other samples of adolescent sex offenders in Seto, Murphy, Page, and Ennis (2003). I am not aware of any data, unpublished or published, on the validity of the SSPI for female sex offenders.

TABLE A.2
Screening Scale for Pedophilic Interests (SSPI)

SSPI item	Scoring
Any boy victim	No, girl victims only = 0 Yes = 2
More than one child victim	No, single victim only = 0 Yes = 1
Offender has a victim aged 11 or younger	No, victim was 12 or 13 = 0 Yes = 1
Offender has had unrelated victims	No, related victims only = 0 Yes = 1

The SSPI items are scored as present or absent on the basis of information about child victims. File information on sexual offense history from sources such as police synopses or probation or parole reports are preferred over the offender's self-report, unless the offender reports sexual offenses that were not officially recorded. The items are shown in Table A.2. The age of consent in Canada at the time the SSPI was developed was 14, so all child victims were under the age of 14; sexual offenses against older minors would result in different criminal charges. *Unrelated victims* are defined as children who were not the offender's son or daughter, stepson or stepdaughter, or a member of his extended family (referring to nieces or nephews, grandchildren, or cousins).

PHALLOMETRY

Guidelines and additional information about phallometric testing have been presented in a variety of documents (e.g., Association for the Treatment of Sexual Abusers [ATSA], 1993; Langevin, 1989; Murphy & Barbaree, 1988; Roys & Roys, 2001). Additional information is available in Appendix A of the 2005 version of the ATSA practice standards and guidelines (ATSA, Professional Issues Committee, 2005), and from Lalumière and Harris (1998). Phallometric equipment and training can be obtained through commercial enterprises such as Behavioral Technology Inc. (http://www.btimonarch.com) and Limestone Technologies (http://www.limestonetech.com).

Because readers of this book may not be familiar with the details of phallometric testing, I describe in detail the phallometric procedure used at the Kurt Freund Laboratory at the Centre for Addiction and Mental Health, Toronto, Ontario, Canada, the same laboratory where much of my own research, and the research of my colleagues Howard Barbaree, Ray Blanchard, James Cantor, and Kurt Freund was conducted. The phallometric testing conducted by the Kurt Freund Laboratory has good sensitivity and specificity and has been subjected to peer review. The following description of the ap-

paratus and procedure is taken from Blanchard, Klassen, Dickey, Kuban, and Blak (2001, pp. 120–121).

> A photograph and schematic drawing of the volumetric apparatus are given in Freund, Sedlacek, and Knob (1965). The major components include a glass cylinder that fits over the penis and an inflatable cuff that surrounds the base of the penis and isolates the air inside the cylinder from the outside atmosphere. A rubber tube attached to the cylinder leads to a pressure transducer, which converts air-pressure changes into voltage-output changes. Increases in penile volume compress the air inside the cylinder and thus produce an output signal from the transducer. The apparatus is calibrated so that known quantities of volume displacement in the cylinder (e.g., 2 cc) correspond to known changes in transducer voltage output. The apparatus is very sensitive and can reliably detect changes in penile blood volume much less than 1 cc.
>
> The examinee puts the glass cylinder over his penis, according to instructions from the test administrator. He then sits in a reclining chair, which faces three adjacent projection screens, and puts on a set of headphones. After the setup is complete, the examinee's lower body is covered with a sheet to minimize his embarrassment or discomfort. During the test, the examinee's face is monitored by a low-light video camera to detect stimulus avoidance strategies such as closing the eyes or averting them from the test stimuli. . . .
>
> The stimuli are audiotaped narratives presented through the headphones and accompanied by slides shown on the projection screens. There are seven categories of narratives, which describe sexual interactions with prepubescent girls, pubescent girls, adult women, prepubescent boys, pubescent boys, and adult men, and also solitary, nonsexual activities (neutral stimuli). All narratives are written in the second person and present tense and are approximately 100 words long. The following sample narrative, which describes sexual interaction with a prepubescent girl, is typical in tone and style:
>
> > You are babysitting a five-year-old girl for the evening. She is taking a bath before she gets ready for bed. Through the open bedroom door, she calls you to come in and scrub her back. You strip off your clothes and get into the bathtub with her. Your naked bodies slide against each other in the hot, soapy water. You take a washcloth and gently begin to rub the smooth, dimpled mound between her legs. She asks for the washcloth and you let her soap up your penis and testicles.
>
> The narratives describing heterosexual interactions are recorded with a woman's voice, and those describing homosexual interactions are recorded with a man's voice. Neutral stimuli are recorded with both [either voice].
>
> Each test trial consists of one narrative, accompanied by photographic slides on the three adjacent screens, which simultaneously show the front view, rear view, and genital region of a nude model who corresponds in

> age and gender to the topic of the narrative. Each trial includes three such models, each presented for 18 s. Therefore, the total duration of a trial is 54 s, during which the examinee views a total of nine slides, three at a time. Neutral narratives are similarly accompanied by slides of landscapes.
>
> The full test consists of four blocks of seven trials, with each block including one trial of each type in fixed pseudorandom order. Although the length of the trials is fixed, the interval between trials varies, because penile blood volume must return to its baseline (flaccid) value before a new trial is started. The time required to complete a test is usually about 1 hr.

This detailed excerpt from Blanchard et al. (2001) is included here because deviations from validated phallometric assessment procedures may decrease test reliability or validity. Phallometric assessments are not necessarily interchangeable, and users should be aware of the current research on optimal methods and stimulus set characteristics.

VIEWING TIME

Different viewing time measures are commercially available. The Abel Assessment for Sexual Interest (Abel Screening, Inc., 2006) is a computerized measure that consists of an objective task involving looking at slides and a questionnaire on sexual interests and behavior, including allegations, arrests, and convictions for sexual offenses. A viewing time measure is also commercially available as the Affinity computer program (Pacific Psychological Assessment Corporation, 2006; see http://www.pacific-psych.com) or as part of the Preftest Suite computer program (Limestone Technologies, 2006; see http://www.limestonetech.com).

RESOURCE B: RISK ASSESSMENT

In this resource, I identify actuarial risk scale developers and explain how risk scales can be obtained. I have no financial interest in any of these measures. Many of the scales can be obtained online; Web sites frequently change, however, so it is best to contact the scale developers for current information. Unless otherwise noted, all of the links provided in this resource were verified on November 9, 2006. Sex offender risk assessment is a fast-moving field, and new studies, scale revisions, and clarifications regularly appear. Users of these risk scales should make sure that they have the up-to-date versions of the scales and scoring rules.

Readers interested in using the scales should refer to the original sources for scoring instructions. Scale items are included here to illustrate the item content and to demonstrate the relative weights associated with items. Risk assessment training is available from the scale developers or through professional workshops; workshop providers can be identified by contacting the Association for the Treatment of Sexual Abusers (http://www.atsa.com).

Useful resources are available to those who would like to learn more about the complexities of sex offender risk assessment. These include a bibliography compiled by Dennis Doren on September 2004 and available from the Association for the Treatment of Sexual Abusers Web site (see Doren, 2004a); Doren's (2002) book on sex offender evaluation; and chapter 7 from Quinsey, Harris, Rice, and Cormier's (2006) book, *Violent Offenders: Appraising and Managing Risk.*

Many of the key sex offender risk assessment studies have been completed by Canadian researchers. The risk assessment work of the prolific Penetanguishene research group (Grant Harris, Zoe Hilton, Vern Quinsey, Marnie Rice, Catherine Cormier, Carol Lang, and Terry Chaplin) is summarized on their Web site (see Mental Health Centre Penetanguishene Research Department, n.d.), and the contributions made by Karl Hanson and his colleagues are available from the Web site of Public Safety Canada, a government ministry involved in criminal justice (http://www.publicsafety.gc.ca/res/cor/rep/cprmindex-en.asp).

The items, scoring guidelines, and sample reports for the Violence Risk Appraisal Guide (VRAG) and Sex Offender Risk Appraisal Guide (SORAG) are presented in the appendixes of Quinsey et al. (2006). Though the VRAG and SORAG can be used without any fees, both scales require the scoring of the Psychopathy Checklist—Revised (PCL–R: Hare, 2003), which is commercially available through Pearson Assessments (http://www.pearsonassessments.com/tests/hare.htm) or Multi-Health Systems (http://www.mhs.com).

The Rapid Risk Assessment of Sexual Offense Recidivism (RRASOR) and Static-99 scoring manuals are available online. For information on the RRASOR, see Hanson (1997), and for the Static-99, see A. Harris, Phenix, Hanson, and Thornton (2003). A revised version of the scale, the Static-2002, is available for research purposes but is not yet recommended by the developers for clinical use (Hanson & Thornton, 2003).

I focused on the VRAG, SORAG, RRASOR, and Static-99 in my review of actuarial risk scales because they have consistently shown good predictive validities in peer-reviewed studies conducted by investigators other than the original scale developers, they are widely used in sex offender risk assessments in Canada and the United States, and they are free and relatively easy to use (though care must be taken to follow the scoring instructions and to clarify any unusual or complicated scoring situations). All of these scales can be scored by a trained rater and do not require an advanced mental health or criminal justice degree. The PCL–R has certain user requirements, however. Other sex offender risk scales are available, and two of these are mentioned here for interested readers. For information on the Minnesota Sex Offender Screening Tool—Revised, see Epperson, Kaul, et al. (2005), and for the Sexual Violence Risk—20, which is commercially available through Psychological Assessment Resources, Inc., see Boer, Hart, Kropp, and Webster (1997).

Hanson, Morton, and Harris (2003) conducted a quantitative review of the sex offender literature on actuarial risk scale validity and found that the RRASOR (17) had the most number of replications, followed by the Static-99 (15), SORAG (5), and VRAG (5). The Static-99 had the highest average predictive accuracy for sexual recidivism (average area under the curve [AUC] = .76), followed by the SORAG (average AUC = .68), RRASOR (average AUC = .66), and VRAG (average AUC = .64). The confidence intervals around these average AUCs indicate there were no significant differences across the four scales in terms of their predictive validity for sexual recidivism.

RESOURCE C: SEX OFFENDER TREATMENT RESOURCES

Readers who are interested in the current state of sex offender treatment can obtain information from a variety of sources. Readers are reminded, however, that the results are at best equivocal regarding the effectiveness of typical sex offender treatment programs. The Safer Society Press (http://www.safersociety.org) regularly conducts a survey of sex offender treatment providers that provides a snapshot of the number of programs in residential (prison, residential treatment center, and inpatient unit) and community settings, the number of programs serving adolescent or adult sex offenders, assessment measures, treatment approach, and treatment components (e.g., whether phallometric testing is conducted). The Safer Society Press also produces a range of treatment-related workbooks and manuals and a referral directory of service providers.

The Association for the Treatment of Sexual Abusers (ATSA) is the largest international association of professionals involved in the prevention of sexual abuse, including sex offender treatment providers, probation and parole officers, law enforcement agents, and victim advocates (http://www.atsa.com). The association has produced standards and guidelines that members agree to follow in their practices and also provides a referral directory for service providers. The majority of its members are from the United States, followed by Canada and the United Kingdom. Another international organization is the International Association for the Treatment of Sexual Offenders (IATSO), which has also produced a document regarding sex offender standards of care (IATSO, 2000). Compared with the ATSA, a higher proportion of the IATSO's membership is from outside North America.

A great deal of the research on assessment and treatment of sex offenders has been conducted in Canada with the support of national agencies such as the Correctional Service of Canada (CSC) and the ministry of Public Safety Canada (PSC). (Why this is so would be an interesting subject for a sociological or historical dissertation.) In 1996, the CSC produced a set of national standards for correctional sex offender treatment programs based on research, consultation with experts, and the input of various stakeholders (see CSC, 1996). General standards for correctional programs are also available (see CSC, 2003). Similar national standards have been established in the United Kingdom through cross-collaboration. Research reports and briefs are available from the CSC (http://www.csc-scc.gc.ca) and PSC (http://www.publicsafety.ca) Web sites.

In the United States, the Center for Sex Offender Management (http://www.csom.org) was established in 1997 by the Department of Justice as a

clearinghouse for information, training, and technical assistance. Another national agency that provides information about reporting child sexual abuse, prevention efforts, and available resources is the National Center for Missing and Exploited Children (http://www.missingkids.com). Additional information on prevention efforts is available through Stop It Now! (http://www.stopitnow.com).

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