BARRY M. WAGNER

Suicidal Behavior

in

Children & Adolescents

Current Perspectives in Psychology

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Barry M. Wagner

To Julia

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Series Foreword

Current Perspectives in Psychology presents the latest discoveries and developments across the spectrum of the psychological and behavioral sciences. The series explores such important topics as learning, intelligence, trauma, stress, brain development and behavior, anxiety, interpersonal relationships, education, child-rearing, divorce and marital discord, and child, adolescent, and adult development. Each book focuses on critical advances in research, theory, methods, and applications and is designed to be accessible and informative to nonspecialists and specialists alike.

This book focuses on suicidal behavior among children and adolescents. Dr. Barry Wagner provides a remarkably clear and integrative evaluation of the subject, and key topics are thoroughly covered, including a description of the problem, current theories to explain the problem, research on precursors, risk factors, and possible causes, and treatment and prevention techniques. Suicidal behavior among children and adolescents connects with many other lines of research that are fascinating and important in their own right. Examples include stress in peer and family relations, the availability of guns in the home, substance use and abuse among children and adolescents, contagion (the increase in suicide attempts and completions that occurs after a suicide is portrayed in the news), the effect of the media on specific behaviors leading to suicide (e.g., depictions of drug overdose), and medication of children and its side effects. Wagner makes these connections to suicide very clear and in the process shows that suicidal behavior is about the lives of individuals in multiple contexts. New material regarding the assessment of suicidal behavior among children, the obstacles to identifying suicide attempts, and the current methods of treatment make this a book that is without peer in scholarship and comprehensiveness. In light of Dr. Wagner's scientific and clinical contributions on the topic and the impact his work has on improving the lives of children, his book is an important addition to the Current Perspectives in Psychology series.

Alan E. Kazdin
Series Editor

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Acknowledgments

I am deeply grateful to my friends and family for their loving support and encouragement throughout the writing of this book. Special thanks to Suzanne for helping to guide me to the finish line. Among the professional colleagues who over the past 20+ years have provided me with stalwart support, guidance, and unique opportunities are Bruce Compas, David Reiss, David Jobes, Bonnie Klimes-Dougan, Jane Pearson, Nick Ialongo, Pat Cohen, Shep Kellam, Edith Nottelmann, Cliff Notarius, and Marc Sebrechts; my heartfelt thanks to each of them.

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1
Introduction

How can we understand the death of an adolescent by suicide? News of such an event stuns us all. Even if we never knew the teen, we shake our heads in sadness, horror, and confusion over the tragedy. When the loss is more personal—when it is our child, our brother or sister, our classmate, or our patient—we are shocked, groundless, and devastated. How could this happen? We search for answers, even when reality seemingly defies comprehension.

It is not just death by suicide that upsets and perplexes us. How do we explain why 1 million high school students in the United States attempt suicide each year or why twice that number formulate plans to take their own lives? What brings them to that point? They are so young, and the promise of a long future awaits them. Perhaps their romance crumbles into heartache, or cruel peers tease them one time too many, or their father's sharp words reopen old wounds. Perhaps all three of those occur in the span of a single day. But, as painful as those

events may be, are they really worth dying over? Given that so many adolescents seem to believe that the answer to that question is "yes," should we worry that all of our teenagers are susceptible to suicidal behavior if something bad happens?

This book is written for all those who ask the difficult questions and seek a greater understanding of these troubling behaviors. The invitation is to join in an exploration of the worlds of suicidal youngsters. The book offers no simple answers, because there are none. The circumstances that can trigger suicidal behavior—the romantic breakup, the argument with a parent—hardly explain it, as they emerge at the tail end of complex sets of processes that we seek to describe and predict. Our work is challenging both because the influences are many and because they may differ quite substantially from one child to the next. As appealing as it might be to develop a "one-size-fits-all" model of the causes of suicidal behavior, it could never adequately account for the variety of youngsters who reach the precipice of suicidal behavior. To take but one example, researchers find that family relationship problems like communication impasses, poor family problem solving, lack of emotional warmth, and so forth are significantly more common in groups of suicidal youngsters than in various control groups. Does that mean that we should feature family problems in our causal models? The answer is, yes, of course—for some. A closer look reveals a sizable proportion of adolescents for whom family relationship issues are essentially unrelated to suicidal behavior. The same holds true for other important factors such as maltreatment and mood disorders. Our models will need to accommodate some degree of complexity by allowing for several different developmental pathways to suicidal behavior. Yet, that does not mean that suicidal children and adolescents share nothing in common. In fact, certain prominent features of the suicidal crisis itself seem to be fairly universal, and, as we shall see, those common features provide important clues about how we can develop clinical and preventive interventions that are helpful across a wide spectrum of suicidal youths.

Organization of the Book

The first several chapters of the book are devoted to identifying and describing the main contributing factors and providing a framework

for understanding their interdependence and change across development. As a prelude to all that follows, chapter 2 considers the scope of the problem of suicide, suicide attempts, and suicidal ideation and reviews variation in the prevalence rates across demographic and cultural groups in the United States, as well as internationally. Chapter 3 examines the existing theoretical models of suicide and nonfatal suicidal behaviors. Much of that chapter is devoted to providing a developmental context to our work, which has too often been lacking in both the empirical research and theoretical frameworks for youth suicide. Developmental theory provides some useful guideposts for constructing models of suicidal processes. It stresses the importance of considering mutual influences between person and environment (e.g., the adolescent and parent); the necessity of considering the interdependencies of functioning in a variety of domains, such as the biological, the cognitive, and the emotional; the usefulness of conceptualizing and mapping trajectories of development; and the significance of weighing vulnerabilities in early childhood that contribute to, but do not necessarily predetermine, how well a child will master subsequent developmental tasks. A developmental focus on the transitions from childhood to adolescence may also help us to understand why symptoms of suicide frequently emerge for the first time during adolescence. There are notable transitions across every domain: pubertal maturation; brain development; the school setting; cognitive maturation; the demands of peer and romantic relationships; the nature and complexity of perceptions of oneself; and family relationships, particularly as the adolescent demands increased autonomy. Research has taught us that the sheer confluence of so many changes presents a challenge that can be readily managed by some adolescents and families but may be highly taxing for others, especially those who enter adolescence with preexisting vulnerabilities.

In chapter 4, the roles of various social relationships are considered in depth, including family, peer, and romantic relationships. How is it that for so many suicidal adolescents, social relationships have become less a source of emotional nourishment than of rejection, abandonment, and mistrust? Indeed, the suicidal crisis is often marked by a sense of fundamental disconnection from others. Family influences have been the most well studied of the social arenas and

thus occupy the largest section of the chapter, including a review of family relational factors and evidence for genetic transmission of both psychopathology and a predisposition to suicidal behavior. The chapter includes a brief look at our understanding of two special topics of relevance to suicidal behavior: bullying and the prevalence of suicidal behavior among gay, lesbian, and bisexual adolescents.

Chapter 5 explores how suicidal youngsters regulate their emotions and cope with challenging problems. This is a critical area of inquiry, because suicide and nonfatal suicidal behaviors can themselves be viewed as coping responses that are enacted when one is convinced that all other possible solutions are fruitless. The question examined in the chapter is, how do adolescents get to that point? Are there any unique aspects of their perceptions of and responses to stressful challenges? The review reveals that habitual cognitive, emotional, and behavioral patterns that many suicidal adolescents employ to manage their distress may in fact actually fuel it.

The great majority of suicidal children and adolescents suffer from one or another form of psychopathology, and in chapter 6 I examine the contributions of particular diagnoses of psychopathology to completed and attempted suicide. In light of its omnipresence among suicidal youth, psychopathology is often considered to be the sine qua non of its risk factors. Yet, its presence in and of itself does not explain *why* or *how* young people become suicidal. It clearly is not a sufficient cause, because the large majority of youngsters with psychopathology never exhibit suicidal behavior. The challenge of understanding its specific role in the process is complicated by the fact that almost every possible type of psychopathology increases the risk for becoming suicidal: mood and anxiety disorders, personality disorders, conduct and antisocial disorders, psychotic disorders, substance abuse disorders, eating disorders, and comorbid combinations of these. Are there commonalities among these various disorders that might explain the role of psychopathology, or do we need to posit different processes for each disorder? Both of those are probably partially correct. For some adolescents, a biologically based psychopathology is the primary source of severe emotional pain, which appears to be one of the necessary ingredients of the suicidal crises among all suicidal children and adolescents. For other adolescents, psychopathology arises secondary to

other underlying causal factors, and represents a solidifying of repeated emotional, cognitive, behavioral, and physiological responses to those factors. Thus, for those who are the victims of physical maltreatment, anxiety and depression may be a product of the repetitive reactions to the trauma, including the physiological activation that accompanies the stress response; emotions of fear, sadness, guilt, and shame; depressogenic cognitions such as negative self-evaluations; feelings of helplessness; and so forth. Other psychopathology may represent a manifestation of different repetitive patterns of emotion regulation, including substance abuse or eating disorders enacted in order to soothe emotional pain and decrease physiological activation, dissociative symptoms that down-regulate negative emotions by cutting off awareness of them, and aggressive behaviors that reflect the "fight" aspect of a fight-or-flight response to stress. Thus, psychopathology is not only a primary source of emotional pain for suicidal children and adolescents but also a manifestation of their attempts to control and eliminate emotional pain or its stressful source.

Assessment and treatment of suicidal behavior are the topics of chapter 7. I provide an outline of a clinical interview for making a determination of suicide risk, as well as a review of the major structured interview and self-report instruments for assessing suicidal ideation, behavior, intention, and lethality. Following that is a review of the surprisingly small literature on clinical trials of psychosocial treatments for suicidal youth, as well as a discussion of a few promising psychosocial treatments that have been developed for adults but have yet to be adequately tested with younger populations. There is a great and urgent need for more research aimed at further developing and evaluating effective psychosocial treatments. Also discussed in depth in this chapter is the current controversy over the use of antidepressant medications with children and adolescents, which has major implications for treatment of suicidal behavior.

Prevention of suicidal behavior is the theme of the final chapter. After a brief overview of the history of suicide prevention, I present a model of the suicidal crisis that serves as a framework for organizing a review of the existing body of work on prevention in young people and for considering critical directions for future prevention efforts. Positioned in the final chapter of the book, the model integrates a

number of the important theoretical, research, and clinical themes and findings presented in the preceding chapters. Although the model may be distinct with regard to precisely which elements of the literature are selected and how they are arranged, in developing it—and, indeed, throughout the course of writing this book—I was supported and guided by the work of the many theorists, researchers, and practitioners who have preceded me. I offer this book in gratitude for their efforts and in the hopes that it may contribute to our greater understanding and prevention of suicidal behavior.

2

Nature and Scope
of the Problem

How widespread is suicidal behavior in children and adolescents? Are boys more likely to engage in it than girls? Is it more common among the poor than among the wealthy? Are the rates higher in the United States than in other parts of the world? These are the sorts of questions typically tackled by epidemiologists, scientists who study the frequency and distribution of human disorders and who investigate whether those distributions vary depending upon particular characteristics of populations. In this chapter, I present the most up-to-date information available on the incidence of completed and attempted suicide, as well as on suicidal ideation, in children and adolescents. Beyond those numbers, the chapter is structured around a number of inquiries about the distributions of suicidal behaviors according to different demographic factors (e.g., sex, culture), as well as the methods used in completed and attempted suicide.

Of course, it is not possible to present an accurate count of the frequencies of suicidal behaviors unless we are first clear about the nature of the specific phenomena themselves. For example, we cannot tally the incidence of "suicide attempts" unless we all agree on precisely what they are. Agreement on suicide-related terminology and definitions is not to be found at present, particularly for nonfatal suicidal behaviors. This is a problem, because lack of agreement on the fundamental terminology can lead to inaccurate reporting of suicide or suicide attempts, and public health priorities are based in large part on the known magnitude of various health problems. The chapter begins, therefore, with a discussion of the relevant definitions and key terms for fatal and nonfatal suicidal behaviors, as well as for suicidal thoughts, and the associated controversies regarding terminology.

Definitions of Suicidal Behaviors

Suicide

Suicide (sometimes referred to as "completed suicide") can be defined as "death arising from an act inflicted upon oneself with the intent to kill oneself" (Rosenberg et al., 1988). Although that definition might seem quite straightforward, its implementation requires that two judgments be made: (a) that the death was self-inflicted and not caused by someone or something else; and (b) that the deceased person *intended* his or her actions to result in death. It is that second judgment that poses the greatest difficulties for researchers, coroners, and medical examiners.

Consider, for example, an adolescent who died after driving off the road and slamming into a tree. Is it justifiable to presume that the adolescent wished to die? As I discuss in more detail in chapter 3 (on developmental issues), risk-taking behavior, including risky driving, is relatively common during adolescence, fueled in part by biological factors and in part by a sense of relative invulnerability. Certain people of any age thrive on risky and daring experiences (Zuckerman, 1979), deriving thrills where others might find only fear and intense overload of their physiological stress systems. Most risk-takers find relatively constructive outlets through which to express their love of

thrills, such as bungee jumping and skydiving, firefighting, or becoming a Hollywood stunt actor. Others are drawn to less constructive outlets, including indiscriminate sexual activity, heavy alcohol or drug use, delinquent behavior, and so forth. Although the latter arguably have poorer judgment than the former, they are not necessarily more suicidal. Since it is clearly not possible to ask deceased persons what they had in mind at the time of their deaths, the intent to die must be inferred from the circumstances, the method used, past behaviors, or reports of survivors. If the adolescent had a history of depression and was using alcohol or drugs or risk-taking as a sort of antidepressant, for example, one might tend to suspect the presence of suicidal motives. Naturally, a history of previous suicidal behavior also strengthens the argument for a determination of suicide as the manner of death.

Unless the evidence is very clear and persuasive, many coroners and medical examiners err on the side of certifying the causes of deaths as due to accidents or as "undetermined." They often are reluctant to certify death by suicide because of the possible ramifications for loved ones, including the social stigma, shame, and guilt that such a conclusion may elicit. Indeed, estimates hold that the number of certified suicide deaths probably underestimates the true numbers by anywhere from 10 to 50 percent (Jobes, Berman, and Josselson, 1986, 1987).

Nonfatal Suicidal Behaviors

O'Carroll and colleagues (1996) made an important effort to clarify the nomenclature for nonfatal suicidal behaviors and developed a set of terms that has since been used by several prominent researchers (Goldston, 2000; Rudd and Joiner, 1998). They defined a *suicide attempt* as a "potentially self-injurious behavior with a nonfatal outcome, for which there is evidence (either implicit or explicit) that the person intended at some (nonzero) level to kill him/herself. A suicide attempt may or may not result in injuries" (p. 247). They distinguished suicide attempts from *instrumental suicide-related behavior (ISRB),* which they defined as "potentially self-injurious behavior for where there is evidence (either implicit or explicit) that (a) the person did not intend to kill him/herself, and (b) the person wished to use the appearance of intending to kill him/herself in order to attain some

other end (e.g., to seek help, to punish others, to receive attention" (p. 247). The key distinction, then, is that in suicide attempts there is at least some minimal level of intent to die, but in ISRBs the intention is not to die but to achieve some other goal. Consider the case of an adolescent who, after a heated dispute with her mother, gathers some pills from the medicine cabinet and returns to the living room, where she swallows them in plain view of other family members. The goal of that behavior is unlikely to be death but is rather to achieve some other communication that the adolescent feels unable to convey more directly: emotional pain, frustration, or an angry retaliation for a perceived wrongdoing.

Parasuicide (Kreitman, 1977) is a widely used term in Europe, where it is often favored over "suicide attempt." Parasuicide typically refers to the full range of nonfatal suicidal behaviors, regardless of the level of suicidal intent or the extent of medical injury. However, in the United States, parasuicide frequently conveys a more restricted range of self-injurious behaviors with low suicidal intent, similar in many respects to the ISRB category proposed by O'Carroll and colleagues (1996).

Self-mutilation is another related class of self-destructive behaviors, considered by some to fall within the parasuicide domain but probably best conceptualized as a distinct phenomenon. In self-mutilation, there is self-destructive behavior performed on one's own body. In rare instances among psychotic patients, self-mutilation can be very severe (e.g., cutting off of a limb), and a stereotypic form of repetitive self-injury is associated with mental retardation and autistic disorders. However, the majority of cases in the general population are of low lethality and result in only superficial injuries (Favazza and Conterio, 1989). Similar to an ISRB, there is no suicidal intent in most instances, but, unlike an ISRB, the act is not intended to give the appearance to others of true suicidal intent. Even so, observers may interpret a self-mutilative act as carrying suicidal intent, and at times there is some ambiguity—perhaps intentional on the part of the young person—regarding whether or not the self-destructive action was an expression of a wish to die.

Self-mutilation is not uncommon among adolescents, with a prevalence of roughly 1.5 to 2.0 percent of the general adolescent

population, and it occurs considerably more often in girls than in boys (Favazza, 1998). The most common forms are cutting or carving on one's arms, wrists, or legs with a sharp object (a razor blade, scissors, piece of glass), picking at wounds, or burning oneself (e.g., with a cigarette). Self-mutilation tends to be repetitive and seems to be a means of emotion regulation. Young persons often report feeling temporary relief from a variety of unpleasant experiences, including tension, loneliness, distress, anxiety, and anger. It can take on an addictive quality, so that it becomes difficult for an adolescent to resist the urge to self-mutilate. Often, adolescents do not feel any pain in connection with the self-mutilation. When they do feel pain, it may be reassuring. For example, when those with borderline personality disorder enter a state of depersonalization in which their experience feels strangely unreal and they themselves feel numb, the pain may serve to "return them to their senses." A thorough review and understanding of self-mutilation is beyond the scope of this book, and the interested reader may wish to consult books by Favazza (1996) and by Walsh and Rosen (1988).

Definitional challenges. It is important to note that research studies on suicide attempts have used a variety of definitions over the years. The result is that in one paper we may be presented with risk factors for adolescents whose suicidal behaviors were so superficial that they would have been excluded from other studies of attempters. In some cases, researchers provide no definition or criteria whatsoever for suicide attempts. That state of affairs is slowly improving, and in recent years most researchers have presented at least some definition of what constitutes a suicide attempt.

Even with a clear definition, making reliable and valid judgments about whether a particular self-destructive act constitutes a suicide attempt is a difficult task. This was demonstrated by Wagner, Wong, and Jobes (2002), who presented 22 expert suicidologists and 59 nonexpert mental health practitioners with 10 brief descriptions of actual cases of adolescent self-harm behaviors. The severity of the suicidal behaviors varied widely across the cases, from superficial to very serious. All participants were asked to judge whether or not the behaviors were suicide attempts and to make a 5-point rating of their level of confidence in each of their judgments. One-half of the nonexpert

clinicians were provided with O'Carroll et al.'s (1996) definition of "suicide attempt" to use when making their decisions, and all other participants were told to use their own conception or definition of a suicide attempt. The authors found that, not surprisingly, the nonexpert practitioners who used their own definitions could not agree very well on whether the cases were suicide attempts; the *kappa* (an index of statistical agreement, ranging from 0 to 1, that corrects for the likelihood that judges will agree by mere chance) = .38, indicating only fair agreement. What *was* surprising was that the level of agreement was no better among the general practitioners who received the definition (*kappa* = .36). These were not "green" clinicians; two-thirds were Ph.D. psychologists, and the group as a whole averaged more than 15 years of experience in the field. Even more surprising was the fact that the experts' suicide attempt judgments were roughly equivalent to those of the nonexperts, *kappa* = .34. Yet, all three groups felt quite confident about their judgments, with average confidence ratings just under 4 on the 5-point scale.

What makes it so difficult to decide whether a certain suicidal behavior constitutes a suicide attempt that even experts who have dedicated their careers to studying suicide cannot agree with one another? The answer seems to revolve around two key components of self-destructive behavior that must be weighed in making the determinations: suicidal intent and the medical lethality of the attempt. Wagner and colleagues (2002) had previously assessed both the suicidal intent and the medical lethality of the 10 cases in the study using standard measures. Not surprisingly, when both intent and lethality are low (e.g., a youngster who cuts his wrist superficially in a moment of pent-up frustration and denies a wish to die), very few professionals judge the case to be a suicide attempt. Similarly, when both intent and lethality are high (e.g., a girl who makes a suicide pact with a friend and, in complete privacy, washes down a mix of 60 pills with a stiff rum and Coke), professionals unanimously agree that the behavior is a suicide attempt. Most cases, however, are less clear-cut.

Consider the example cited by Wagner and colleagues (2002) of a teenage boy who ran to a secluded storage shed after his father had hit him in a drunken rage. He made a noose and placed it around his neck, but the shed was in disarray and he could not find a solid beam

to which he could fasten the rope. After a little while, he gave up. He told no one until he revealed the incident to his therapist later that evening and at that point could not agree to a "no-suicide" contract, an agreement to refrain from attempting suicide in the near future. Was that a suicide attempt? Many of the general clinicians felt it was indeed an attempt, because he wanted to die (i.e., there was intent) and he chose a potentially lethal method. Most of the experts found this to be a difficult case to judge. In their written comments, several experts stated that it was not a suicide attempt because no physical harm was actually done (i.e., zero lethality) and because the adolescent stopped trying at some point, which suggested that, instead of being thwarted by the circumstances, he may have been ambivalent enough to change his mind. More than 50 percent of the experts, however, did rate it as a suicide attempt. In fact, one expert with five decades of experience stated, "Easy call, intent and method. Failed suicide."

This example illustrates how reasonable professionals can disagree. In many instances, it is difficult to judge the presence or absence of genuine suicide intent. The fact that using the definition of "suicide attempt" did not result in increased rater reliability is probably not an indictment of the definition. With or without the definition, one still must make the difficult, key determination of whether a youngster wanted to die, to at least some small degree. Should one trust the self-reports of the youngster? Or are the "objective" indicators such as the medical lethality or the circumstances a better indicator of intent to die? Some raters lean more heavily on one or the other. There probably is no correct answer. Sometimes self-reports are not to be trusted, because youngsters may not be sure what they had in mind during the attempt and because they can intentionally mislead an examiner for a particular purpose (e.g., to avoid hospitalization in the aftermath of an attempt). At other times, the self-report may be the best indicator. For example, adolescents are often ill informed about the dangers and lethality of substances, which limits how much a rater can infer from the medical lethality. Adolescents may believe they will die after ingesting 6 aspirin or 10 Prozac, or they may inadvertently cause their own death or serious physical damage by underestimating the potentially toxic outcome of certain preparations, such as Tylenol (Harris and Myers, 1997). Sometimes it can be tricky to infer suicidal

intent from the circumstances. For example, what may appear to be a fortuitous rescue of a suicide attempter—if a girlfriend happened to telephone and detected slurred speech after a boy's overdose—might in actuality represent a calculated risk by the adolescent, who may have expected the call or could have refused to answer the phone or refused to talk. As Wagner and colleagues noted, some aspects of judging suicidal behavior are inherently "fuzzy." However, that does not excuse professionals from being clear about their definitions or from developing and clearly describing the best possible criteria for operationalizing their terms.

The example of the young man in the shed is useful for illustrating one additional point. As I mentioned, the fact that no physical harm was done led a few experts to decide that the behavior was not a suicide attempt. One expert compared it to holding a gun to one's head, then not pulling the trigger. Should the lack of medical lethality preclude coding the behavior as a suicide attempt? No injury is necessary to satisfy the suicide attempt definition of O'Carroll and colleagues (1996), as long as there is the potential for injury. However, judging injury potential can be another tricky component of rating suicide attempts. In the case of an overdose or ingestion of a toxic substance, the potential for injury can be judged by considering the toxicity of various quantities of the substance. Berman, Shepherd, and Silverman (2003), in a recent revision of the *Lethality of Attempt Rating Scale (LARS)* (Smith, Conroy, and Ehler, 1984), published an updated table that provides the medical lethality of ingesting overdoses of many different medications as well as other commonly available poisons. However, there is no comparable table for judging the range of lethality levels for suicide attempts by other methods, such as hanging, jumping, or firearms. Is there such a thing as a moderately lethal suicide attempt with a firearm or a moderately lethal hanging attempt? Is holding a gun to one's head without firing less lethal than ingesting 15 aspirin? Although the earlier version of the LARS provided some descriptive examples of behaviors that fit some of the lethality rating points for a variety of methods of attempt, it would be very helpful to have a systematic set of descriptions for each of the most common methods (e.g., hanging, jumping, cutting, firearms) across the full range of possible lethality ratings.

In part because of the difficulties in judging the presence or absence of suicidal intent, a revision of O'Carroll et al.'s (1996) nomenclature was recently published (Silverman, Berman, Sanddal, O'Carroll, and Joiner, 2007a, 2007b). The broad spectrum of *Suicide-Related Behaviors* was divided into three areas: A behavior performed in the absence of suicidal intent is called *Self-Harm;* if it is unclear whether there was suicidal intent, the act is labeled an *Undetermined Suicide-Related Behavior;* and if suicidal intent was indeed present to some degree, the behavior is called a *Suicide Attempt.* Each of these three categories is further subdivided with regard to the presence or absence of injury or death. Thus, there are Type I (without injuries) and Type II (with injuries) Self-Harm, Undetermined Suicide-Related Behaviors, and Suicide Attempts. Self-inflicted acts resulting in fatalities are termed *Suicide* if there was suicidal intent, *Self-Inflicted Unintentional Death* if there was no suicidal intent, and *Self-Inflicted Death with Undetermined Intent* if it is not possible to judge the presence or absence of intent. The authors state that they avoided introducing subcategories of lethality of the behaviors because of the lack of a standardized definition and measure. Under this new system, Instrumental Suicide-Related Behaviors (ISRBs)—a term some apparently found unwieldy—is replaced with the terms Self-Harm I (with no injury), Self-Harm II (with injury), and Self-Inflicted Unintentional Death; however, these new categories can apparently include not only behaviors in which the intention is to give the false appearance of a wish to die (as in ISRBs) but also self-mutilation and accidental self-harm. New terminology was also introduced for suicide-related ideations and suicide-related communications, which are described in the following paragraphs. In general, the major shift in the revised nomenclature is the introduction of categories for thoughts and behaviors in which suicidal intent is "fuzzy" or undetermined.

The term *suicidal ideation* has been defined by O'Carroll and associates (1996) as "any self-reported thoughts of engaging in suicide related behavior." Although that definition may indeed be a useful one, suicidal ideation has in practice been defined more broadly. Questions such as "Did you think more than usual about death or dying?," "Have you wished you were dead?," and "Did you think your family would be better off without you?" are included on many

suicidal ideation measures. Such questions have been considered to assess "passive" suicidal ideation, in contrast to more "active" suicidal ideation items like "Have you thought about suicide or killing yourself?" and "Did you make a plan for how you would kill yourself?" Young persons with passive suicidal ideation are generally considered to be at lower risk of suicidal behavior than those with more active suicidal ideation. The recent revision of the O'Carroll et al. categories (Silverman et al., 2007b) does not provide a new definition of suicidal ideation, but the nomenclature clearly leaves room for a wide range of ideations. Specifically, suicide-related ideations are divided into those with suicidal intent, those without suicidal intent, and those with undetermined suicidal intent; each of those categories is further divided into five types of ideations (casual, transient, persistent, active, and passive).

   Suicide threats and plans. As I mentioned, making a suicide plan is sometimes assessed as part of a suicidal ideation scale or questionnaire. However, it also is frequently considered separately from suicidal ideation, as an indicator of higher risk. Similarly, so-called suicide "threats" are sometimes incorporated within measures of suicidal ideation but at other times are considered and reported separately. Silverman and colleagues (2007b) subsume suicide threats and plans under the heading of *Suicide-Related Communications* made by individuals who may or may not have suicidal intent (or may have undetermined intent) and that result in no injurious outcome. They defined a *Suicide Threat* as "any interpersonal action, verbal or nonverbal, without a direct self-injurious component, that a reasonable person would interpret as communicating or suggesting that suicidal behavior might occur in the near future" (p. 268). The term "suicide threat" can have a pejorative, manipulative connotation to it, as if the young person is trying to scare others and does not really intend to kill him- or herself. However, that is an unfortunate interpretation, because in threatening suicide the youngster may be sounding an alarm about a danger to his or her own safety; thus, as discussed in later sections of the book, a suicide threat can be a critical opportunity for suicide prevention. Silverman and associates defined a *Suicide Plan* as "a proposed method of carrying out a design that will lead to a potentially self-injurious outcome; a systematic formulation of a program of action

that has the potential for resulting in self-injury" (p. 268). A suicide plan thus differs from a threat in that it contains more specific details of a potential course of action; still, suicide plans can vary with regard to how imminent and how feasible they seem to be. Not all suicidal threats and plans are made by individuals with clear suicidal intent, which leads Silverman and colleagues to further categorize them as Type I (without suicidal intent), Type II (with undetermined suicidal intent), or Type III (with suicidal intent).

Epidemiology of Youth Suicidal Behaviors

Rates of Completed Suicide

In 2005, 1,613 U.S. adolescents ages 15–19 took their own lives, a rate of 7.66 per 100,000 adolescents. This included 1,303 males (80.8 percent of total) and 310 females (19.2 percent of total), more than four times as many males as females. An additional 270 youngsters ages 10–14 completed suicide in the United States in 2005 (1.29 per 100,000 ages 10–14), including 202 males (74.8 percent) and 68 females (25.2 percent). That same year, there were two completed suicides by children ages 5–9, both of whom were males.

Figure 1 shows the rates of suicide in the United States for all age groups. It is apparent that the rates of suicides among adolescents are lower than those at any later period of life, with the highest rates occurring among older Americans, particularly older males. Why, then, has so much attention been paid to suicide in the young? Taking a life-span perspective, might our time be better spent investigating the characteristics of youth that afford them protection from the risk of suicide? The greatest reason for increased concern was the rise in the rates of suicide among adolescents from the 1960s through the early 1990s. Figure 2 illustrates the steady rise in the rates for ages 15–19, particularly among males, rates that tapered off in the early to mid-1990s and have dropped since that point. The overall rate for both sexes more than tripled across that time span. Suicide is also the third leading cause of death among adolescents, ranking behind only accidents and homicides, which also contributes to the high level of interest it receives. Since illness tends to be the predominant cause of
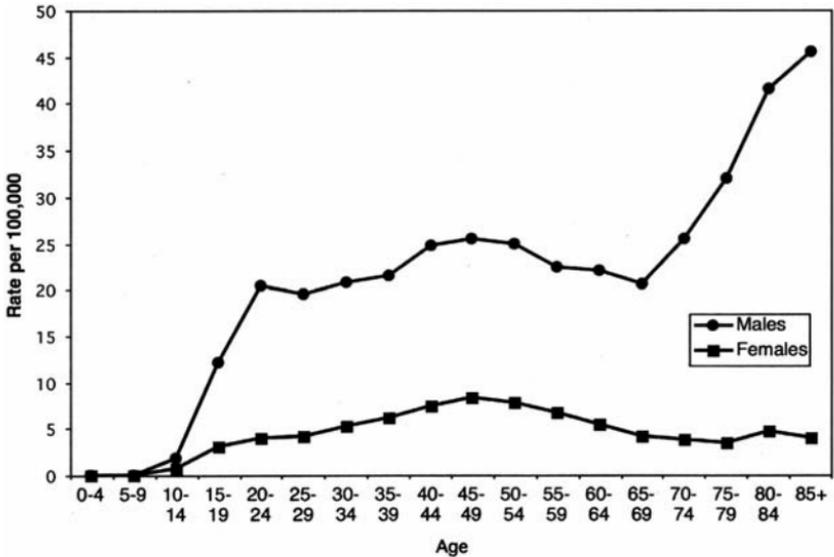
Figure 1. U.S. Suicide Rates by Age and Sex, 2005. Source: National Center for Injury Prevention and Control.

death later in the life-span, the relative ranking of suicide recedes, falling to the 8th leading cause of death for those ages 55–64 and to the 18th leading cause for those age 65 and above.

The small but striking upward spike in rates from 2003 to 2004 (Figure 2) is cause for some concern. For both males and females ages 15–19, the 2004 rate marked a statistically significant departure from the trend in rates across the previous 15 years (Centers for Disease Control and Prevention, 2007), with a 32 percent rise against 2003 levels for females and a 9 percent rise for males. The spike from 2003 to 2004 was even larger among females ages 10–14, rising 76 percent (from 56 girls to 98 girls), primarily a function of a more than doubling in the rates of death by hanging or suffocation (note that the various methods of suicide are discussed in a later section of this chapter). The rates dropped from 2004 to 2005 among 15- to 19-year-old boys (5 percent drop) and girls (14 percent drop) and among 10- to 14-year-old girls (42 percent drop). Among males ages 10–14, the suicide rate rose 10 percent from 2004 to 2005 (reflecting an increase of 17 suicides), largely as a function of a 45 percent increase in the rate of suicides by
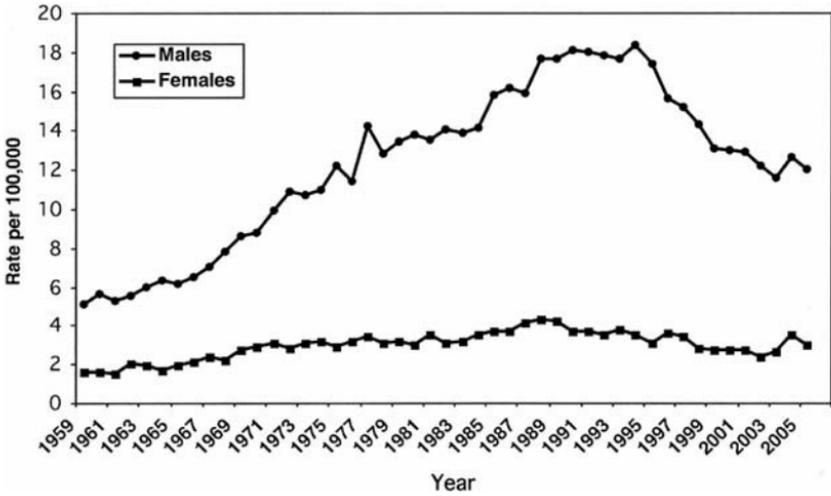
Figure 2. U.S. Suicide Rates by Year, Ages 15–19 . Source: National Center for Injury Prevention and Control.

firearm. Despite the overall drop in rates from 2004 to 2005, the 2005 rates remained significantly higher than expected on the basis of the trend in rates between 1996 and 2003 (Bridge, Greenhouse, Weldon, Campo, and Kelleher, 2008).

The reasons for the recent rise in suicide rates are unclear, and time will tell whether these data are a sign of a more enduring trend. The timing of the spike corresponds to the period immediately following Food and Drug Administration (FDA)–issued warnings on the possible increased risk of suicidal behavior among children and adolescents treated with antidepressants and thus may represent negative fallout of physicians refraining from prescribing antidepressants for youth. However, that possibility remains speculative at this point. The controversy surrounding the possible suicidogenic effects of antidepressants among young people is discussed in detail in chapter 7.

What Accounts for the Changing Rates of Suicide Across the Decades?

There is no widely accepted explanation for the changing youth suicide rates over time. One line of work that held promise was advanced by

Holinger and colleagues (Holinger and Offer, 1982; Holinger, Offer, and Zola, 1988), who presented data showing that changing adolescent suicide rates were proportional to changes in the relative size of the cohort of adolescents in the United States across time. They reasoned that a larger cohort size translates into greater competition for relatively fixed resources. This could reduce the availability of good jobs, as well as slots on sports team rosters, leadership positions of various sorts, and so on. Such competition and relative scarcity of opportunities would result in increased rates of failure experiences among all but the most successful, which in turn would increase the risk of suicidal symptoms among adolescents with preexisting vulnerabilities (e.g., psychopathology, stressful family situations). Stack (1997) analyzed the data from 12 industrialized nations from 1950 through 1980 and showed that youth suicide rates were related to the relative cohort size in all nations except those with centralized economies, where factors such as full employment and a social safety net may mitigate against the stress of economic competition. However, in the United States the cohort size of adolescents ages 15–19 declined across the 1980s and then rose between 1990 and 2000. Meanwhile, as already noted, suicide rates rose across the 1980s until the early 1990s and then declined in the late 1990s. Thus, factors other than cohort size must contribute to the suicide trends across time, at least in the United States.

Even if cohort size is unrelated to suicide, other economic factors do seem to be related and may play some role in the overall rates of suicide in young people. There is evidence that lower income and poverty, as well as lower educational achievement, increase the likelihood of suicidal behaviors (Andrews and Lewinsohn, 1992; D. M. Fergusson, Woodward, and Horwood, 2000; Groholt, Ekeberg, Wichstrom, and Haldorsen, 2000). Similarly, research has shown links between higher unemployment rates and higher suicide rates (Platt, 1984). Thus, it is possible that the greater economic prosperity in the United States in the mid- to late 1990s contributed to reduced rates of suicide, perhaps indirectly through beneficial effects on family stress, depression, and anxiety. Of course, economic factors would not account for the steady increase in suicide rates in young persons for the 40-year period that began in 1956.

Any explanation of the changing rates will have to take into account the gender differences. It is clear in Figure 2 that the rate of change was greater for males than for females. The rate of suicides among males ages 15–19 more than tripled between 1960 and 1994 and doubled for females across that same time span. In 2001, the male-female ratio was roughly 4.8 to 1; in 1960, it was 3.5 to 1.

One approach to exploring the reasons for the higher suicide rate in males is to explore any specific factors that are more prevalent among male suicide victims than among females. However, few factors have consistently emerged from this work. Some research has found higher rates of substance abuse in male suicides (Shaffer et al., 1996). Although other research has found that substance abuse is common among both sexes, there is evidence that males are somewhat more likely than females to be intoxicated at the time of the suicide (Brent, Baugher, Bridge, Chen, and Chiappetta, 1999). Antisocial and conduct disorders are also more common among males than females (Brent et al., 1999; Shaffer et al., 1996). Gould and colleagues (1996) found that interpersonal losses, particularly the dissolution of a romantic relationship, were a more potent factor for boys than for girls, perhaps because girls have a richer network of confidants, whereas boys tended to be dependent on a single relationship for intimacy. Although these studies are useful in describing differences in risk factors for suicide among males and females, they do not explain why females in the general population are less likely to complete suicide, even though they are more frequently depressed than males and, as we shall see, are more likely to attempt suicide.

The findings regarding elevated substance use in males have led to speculation that changing usage patterns may play an important role in changing rates of suicide across time (Shaffer et al., 1996). However, annual data from the "Monitoring the Future" surveys conducted by the National Institute of Drug Abuse with high school seniors from 1975 to 2007 and with 8th- and 10th-grade students since 1991 (Johnston, O'Malley, Bachman, and Schulenberg, 2008) suggest little temporal correspondence between suicide and substance abuse rates over most of the past 25 years. The rates of occasional and heavy usage of marijuana, illicit drugs other than marijuana, and alcohol rose steadily until roughly 1980, as did suicide rates. However,

substance abuse rates declined dramatically from approximately 1980 through 1992, while suicide rates continued to climb. From 1992 through 1997, marijuana usage doubled, and other illicit drug use rose 50 percent, while suicide rates began to decline in 1994. Alcohol usage followed the same pattern of a drop across the 1980s followed by a rise through the middle 1990s, although the changes in the rates were less dramatic than for substance abuse. Since 1997, alcohol and substance abuse rates have declined slightly, as has the suicide rate. There is no evidence of fluctuations in alcohol and substance abuse rates corresponding to the upward bump in suicide rates in 2004.

Methods of suicide and suicide rates. A more compelling explanation for the gender disparity as well as for the overall changes in suicide rates is that over the past 30 years males have increasingly used more lethal methods of suicidal behavior than females, particularly firearms (Boyd and Moscicki, 1986; Brent and Bridge, 2003). Brent and Bridge calculated that, for those 15 to 19 years of age, use of firearms accounts for 62 percent of the overall rise in suicide rates from 1980 to 1997. Among female adolescents, too, the overall trends across the past 30 years have indicated falling rates of deaths by self-poisoning and rising rates for suicide by more lethal methods, that is, firearms and hanging plus other means of suffocation. Some of the details we have learned about firearms-related suicides are presented in Box 2.1.

Figures 3 and 4 show the proportion of suicides among adolescents ages 15–19 attributable to various methods, for males and females, respectively. Firearms accounted for slightly more than one-half of suicides among males, and firearms plus suffocation (including hanging, strangulation with belts or ropes, plastic bags, and so on) were responsible for almost 90 percent of male suicides in that age range. Among females, suffocation was responsible for 53 percent of suicides, with firearms accounting for 26 percent and self-poisoning accounting for 15 percent.

Firearms usage is somewhat less common among younger adolescents. In 2005, suffocation (e.g., hanging, strangulation) accounted for nearly twice as many suicides (61 percent) as firearms (35 percent) among males ages 10–14 and was also the most frequent method among females ages 10–14 (71 percent of suicides). In addition, in recent years the rate of suicides by firearms has decreased among younger adolescents. Whereas firearms accounted for more than 50

Box 2.1

Researchers—particularly David Brent and his colleagues—have provided compelling evidence that restricting access to firearms should be an important part of any effort to reduce the rates of youth suicides. In controlled studies, researchers have shown that the presence of a gun in the home greatly increases the odds that it will be used in a completed suicide. In one study, for example, Brent and others (1993) found that if a gun was in the home, 88 percent of adolescent completed suicides used the gun, whereas only 19 percent of adolescent suicides used a gun obtained outside the home. They also found that adolescents who completed suicide were four to five times more likely to have a gun in their home than adolescents in the general community, even after adjusting for the presence of psychopathology. Handguns pose a higher risk than long guns (although long guns pose a greater risk in rural areas), and loaded or unlocked guns pose a higher risk than locked ones. These findings are important because roughly 34 percent of children in the United States live in homes with at least one firearm, and in fewer than 50 percent of those homes are the firearms inaccessible, that is, stored in a locked place or with a trigger lock, and kept separate from ammunition (Schuster, Franke, Bastian, Sor, and Halfon, 2000). Still, even locked and unloaded guns are used in some adolescent suicides (Shah, Hoffman, Wake, and Marine, 2000).

Availability of firearms poses the greatest risk among the youngest suicide victims. Among adolescent suicide victims under age 16, the proportion of "attributable risk" accounted for by firearm availability is greater than that for psychopathology, suggesting that if firearms were entirely unavailable to younger adolescents, suicide rates would drop more than if psychopathology were somehow eliminated (Brent, Baugher, Bridge, Chen, and Chiappetta, 1999). The reverse is true for older adolescents. For those with psychopathology, the presence of firearms in the home increases the odds of suicide approximately 3-fold. However, for those without psychopathology, the presence of guns in the home, particularly loaded guns, increases the risk of suicide by more than 30-fold (Brent and Bridge, 2003). Thus, the presence of a loaded gun in the home seems to dramatically increase the risk of an impulsive suicide, particularly among those adolescents without other obvious risk factors (i.e., psychopathology) and those under age 16. For these youth, suicidal behavior is unlikely to be the result of long-term planning and more likely to be a hasty solution to an acute crisis. Their suicides are opportunistic; if lethal means are not at hand, they may not engage in suicidal behavior, or they will be more likely to survive their injuries.
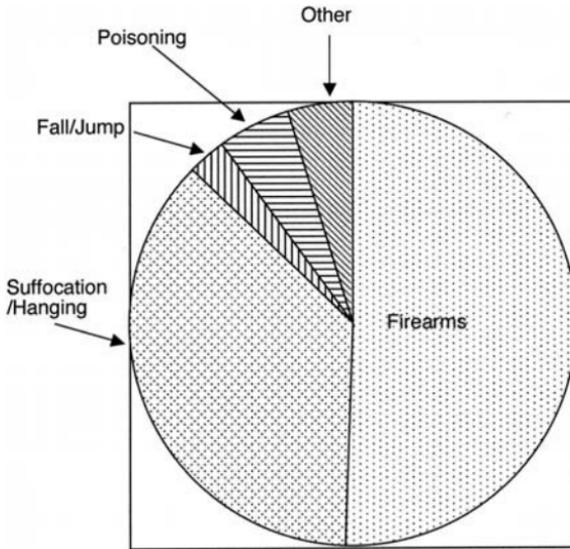
Figure 3. Suicide Rates by Method, 2005, Males Ages 15–19. Note: Other = cutting, drowning, burning, transportation-related, miscellaneous, or not specified. Source: National Center for Injury Prevention and Control.

percent of suicides among young adolescent males and females in 1990, suffocation surpassed firearms as the most frequent method in this age group in 1997. The rate of suffocation deaths increased at an average rate of approximately 5 percent per year across the decade from 1992 to 2001, while the firearms death rate for suicides among those ages 10–14 decreased by almost 9 percent per year across that same time period (Centers for Disease Control and Prevention, 2004). The largest changes began in the mid-1990s. As I already indicated, 2005 marked a departure from this downward trend for males ages 10–14, with the rate of death by firearm increasing more than 45 percent above the 2004 rate. This increase followed declines of 10 percent from 2002 to 2003 and 24 percent from 2003 to 2004. However, even with the recent increase, the rate of suicide by firearm in males ages 10–14 is roughly equivalent to the rates in 2001 and 2002. We await data from future years in order to determine whether or not the recent data mark a turning point.
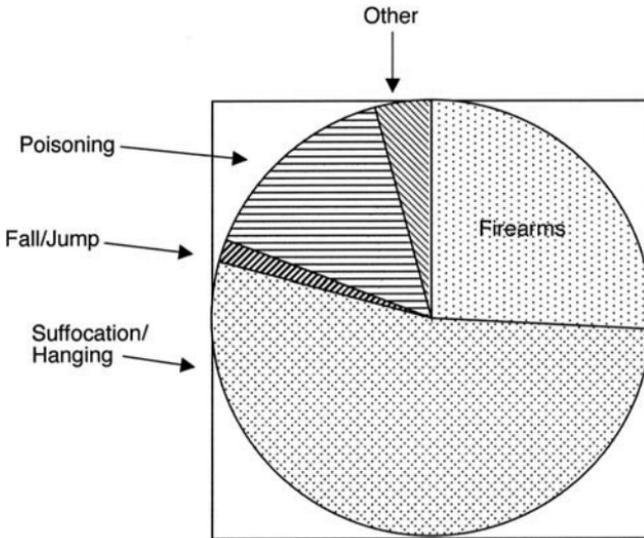
Figure 4. Suicide Rates by Method, 2005, Females Ages 15–19. Note: Other = cutting, drowning, burning, transportation-related, miscellaneous, or not specified. Source: National Center for Injury Prevention and Control.

A downward trend has also occurred among older adolescents ages 15–19 in the United States. Specifically, the rate of firearms suicides decreased on average almost 7 percent per year from 1992 to 2001, with steeper declines for females than males, while the rate of suicide by suffocation increased by 3.7 percent per year during that decade (Centers for Disease Control and Prevention, 2004). These trends have generally continued since 2001. Similar to younger adolescents, the rate of change became marked in the mid-1990s. Although the declining rate of firearms suicides is good news, an international perspective is sobering. In the early 1990s, the rate of suicide by firearms among U.S. children ages 14 and younger was almost 11 times greater than the combined rate in 26 other industrialized nations (Centers for Disease Control and Prevention, 1997a).

The findings suggest that prevention methods aimed at firearms safety may be starting to have a positive impact on youth suicide rates. At the same time, suffocations such as death by hanging may have become a highly lethal substitute method that is readily available to

almost any young person. Still, with the overall suicide rates declining, we might speculate that some adolescents are choosing not to attempt suicide if lethal means are not available or are choosing less lethal means, which result in fewer deaths.

Other factors possibly linked to suicide rates. A range of other factors has been implicated as contributing to changes in the suicide rates, particularly to the rising rates that peaked in the early 1990s. These include increasing acceptability of suicide among young people, exposure to suicide in the media and on the Internet, increased unemployment rates, HIV infections, increases in adolescent stress, maternal employment outside the home, and single-parent families. It also is possible that rates increased because of changes in suicide reporting practices, that is, a greater willingness among medical examiners and coroners to consider suicide as the cause of death. In any event, although factors such as these may contribute to increased risk of suicidal behavior on an individual basis—as is explored in later chapters—it has not been demonstrated that changes in their population levels across time are linked to the increasing suicide rates that peaked in the mid-1990s nor to falling suicide rates in more recent years. Some have attributed the declining rates to increased use of antidepressant medications in youngsters. However, recent concerns about the potential for those medications triggering increased suicidal ideation, along with a very uneven track record of their effectiveness with children and adolescents, have led many to question their continued usage. As was already noted, the issues around antidepressant use with suicidal youths are discussed in detail in chapter 7.

Ethnic Variation in Suicides in the United States

Since the available data on suicide rates provide breakdowns by race, by necessity I focus on racial data (i.e., black, white) rather than ethnic or cultural data, which might ultimately prove more meaningful. Black adolescents have throughout the years had a lower rate of suicides than white adolescents, with the lowest rates for black females. However, across the past 25 years, as the overall youth suicide rates first rose and then fell, the rates swung more sharply for blacks than whites. For adolescents ages 10–19, in 1980 the rate of suicides among

whites was more than 2.5 times greater than that for blacks, but by 1995 the gap had narrowed considerably, and the rate for white adolescents was only roughly 40 percent greater than that for blacks (Centers for Disease Control and Prevention, 1998). The rate increased more strongly for younger (ages 10–14) black adolescents (233 percent) than for older black adolescents ages 15–19 (126 percent). The rates increased for white adolescents of both age groups as well, but at a slower pace: 120 percent increase for ages 10–14 and 19 percent increase for ages 15–19. The racial contrast in increasing rates was sharpest among males; for ages 15–19, the rate for black males increased 146 percent, but the rate among white males rose only 22 percent. Firearms-related suicides accounted for almost all (96 percent) of the increase from 1980 to 1995 in the rates for blacks ages 10–19. As the overall rates of suicides among youth ages 10–19 dropped from 1995 to 2005, the rates declined almost twice as much for blacks (39 percent drop) as for whites (23 percent drop). In 2005, the suicide rate among white adolescents was 77 percent greater than that for blacks.

Suicide is a particularly severe problem among Native American adolescents. In 2005, the rate of suicide among American Indian and Alaskan Native adolescents (i.e., the National Center for Health Statistics category) ages 15–19 was 19.62 per 100,000, whereas the overall rate for U.S. adolescents was 7.67 per 100,000. In the 20-year period from 1986 to 2005, the rates for American Indian and Alaskan Native adolescents were more than twice as high as the overall U.S. rate in 14 of those 20 years. Although the rates have fluctuated somewhat across those years, they have not trended downward in recent years along with the overall adolescent suicide rate. However, it is important to note that there is great variation in rates depending on the particular tribe and reservation.

The reasons why the rates are so high are not yet entirely clear. High rates of alcohol use at the time of suicides—that is, binge drinking—likely play some role (May et al., 2002). Economic hardship may also be an important influence. The census figures from 2000 showed that, within the age range 20–64, American Indian and Alaskan Natives had the highest unemployment rate in the United States, at 7.6 percent; by contrast, the overall U.S. unemployment rate was 3.7 percent. A relatively high proportion (23 percent) of American Indian

and Alaskan Native families fell below the poverty line in 2003, whereas the national average was 12.5 percent of families (DeNavas-Walt, Proctor, and Mills, 2004). In addition, the rate of child maltreatment—a powerful risk factor for suicidal behavior, as I discuss later in the book—was 2.2 percent among American Indian and Alaskan Native youth in 2002, which was almost twice the rate for the general U.S. population (1.2 percent) (Administration on Children Youth and Families, 2004). Certainly, other racial minority groups in the United States also suffer from economic hardship and other attendant stressors, and group level comparisons are not sufficient, given the variation in suicide rates among tribes. Within this population, a higher than expected proportion of young Indian and Native suicides is from tribes undergoing more rapid social and economic change; for example, children of parents whose marriage choices were traditionally disapproved of (such as marrying across tribes or varying social strata) are at higher risk than others (U.S. Congress Office of Technology Assessment, 1990). Also at higher risk are youth from tribes with greater individuality and lower social conformity.

In addition to considering racial groups, it is important to consider the rates of suicides among adolescents of Hispanic origin. Among 15- to 19-year-olds in the United States in 2005, the suicide rates for Hispanic males (9.48 per 100,000) and females (2.38 per 100,000) were higher than those for black non-Hispanics (7.43 and 1.44 per 100,000 for males and females, respectively) but lower than those among white non-Hispanics (13.96 and 3.28 per 100,000 for males and females, respectively). Among adolescents ages 10–14, Hispanic males had lower rates of suicide (1.36 per 100,000) than either black or white non-Hispanic males (1.55 and 2.04 per 100,000 for blacks and whites, respectively). The suicide rate among Hispanic girls ages 10–14 (0.63 per 100,000) was roughly equivalent to that of non-Hispanic white girls (0.6 per 100,000) but was approximately 25 percent lower than the suicide rate among non-Hispanic black girls (0.86 per 100,000). It is important to note, however, that fluctuations and percentage differences in the suicide rates among young females in the United States can be somewhat misleading because of the low base rates; for example, a total of 12 Hispanic females and 14 black non-Hispanic females took their own lives in 2005.

International Variation in Youth Suicide Rates

In order to gain a fuller perspective on the meaning of the suicide rates in the United States, it is important and useful to place them in the context of rates around the globe. For children age 14 and under, the rate of suicide in the United States is relatively high. The Centers for Disease Control and Prevention (CDC) (1997a) reported that in the early to mid-1990s, the U.S. rate for that age group was more than twice as high as the combined rate of 26 industrialized nations; only Northern Ireland had a higher suicide rate than the United States. For older adolescents and young adults, international comparisons show the U.S. rate to be roughly average. Lester (2003) used 1995 data from the World Health Organization (WHO) to compile the rates from 47 countries by age and sex. For males and females ages 15–24, the suicide rate in the United States was somewhat above the median, with approximately two-thirds of countries having comparable or lower rates and one-third having higher rates. Although in the majority of countries the rates of suicide for those ages 15–24 were lower than those for older age groups, there were some exceptions. Young males and females had a considerably higher suicide rate than adults of any age group in New Zealand, and the rates were relatively steady across age groups in Australia, Canada, Ireland, and Costa Rica.

The majority of countries with the highest suicide rates among males 15–24 years old were Eastern European countries transitioning from communist to market economies, including (all rates per 100,000): Russia (53.7), Lithuania (48.6), Kazakhstan (42.7), and Latvia (37.8); however, males in New Zealand (44.1) and Finland (36.6) also had high rates. Female suicides were most frequent in Cuba (17.9), New Zealand (12.3), Singapore (11.6), and Mauritius (11.2), with high rates in Kazakhstan (10.3), Kyrgyzstan (9.9), and Finland (8.4) as well (again, all rates per 100,000). By contrast, the 1995 rates in the United States were 22.5 per 100,000 for males ages 15–24 and 3.7 per 100,000 for females. Also of interest are those countries with the lowest suicide rates for those ages 15–24. For males these included (per 100,000) Azerbaijan (1.4), Armenia (3.2), Greece (4.4), and Portugal (5.8); for females, they included Azerbaijan (0.0), Greece (0.8), Armenia (1.0), and Italy (1.6). The overall suicide rates among those ages 15–24 in

mainland China are not unusually high (6.9 per 100,000), but what is unusual is that Chinese females (8.6 per 100,000) are more likely than males (5.4 per 100,000) to take their own lives. Indeed, the rates for Chinese females are comparable to those of males across most of the life span (a finding that does not hold true in Hong Kong). The suicide rate among those ages 15–24 is highest in rural areas of China (10.4 per 100,000) and lowest in urban areas (3.5 per 100,000). Suicide is the primary cause of death among Chinese ages 15–34 (Beijing Suicide Research and Prevention Center, 2008).

Lester (2003) pointed out that many countries saw sizable increases in the adolescent suicide rate from 1970 to 1990, with a greater rise for males than for females in most of those countries. Among the countries with the greatest increases for males were Norway, Spain, Israel, Greece, New Zealand, Finland, and England and Wales. Although the greatest rises were in the period from 1970 to 1980, some countries saw dramatic rises in male suicides in the 1980–1990 time period; for example, the rates rose 154 percent in Ireland, 95 percent in New Zealand, 87 percent in Northern Ireland, and 83 percent in England and Wales. The rate for females also rose during the 1980s for some countries, including Northern Ireland (213 percent), Israel (175 percent), and Norway (91 percent). During the 1980s the rates fell in other countries: for males there was a 45 percent drop in Japan, a 38 percent drop in Czechoslovakia and Israel, and a 36 percent drop in Hungary; for females, the rates fell 87 percent in Denmark, 65 percent in Costa Rica, and over 40 percent in Switzerland, Japan, Bulgaria, and Scotland. Of course, the important question is, what accounts for the differences across countries in the rate of change? Lester examined a number of possible social predictors for the changing rates in youth suicides from 1980 to 1990. He found that the 1980 suicide rate and maternal employment outside the home predicted a larger increase in suicides for boys but not for girls, a finding that is difficult to explain and thus not particularly satisfying.

Lester (2003) has speculated that suicide rates might increase in countries that are making rapid progress in terms of freedom and opportunity. That argument might at first seem paradoxical, since one might expect that suicide should become less widespread as the societal quality of life advances. Lester hinges his argument on a theory

of causal attributions: As long as societal opportunities are limited, one can blame external constraints for one's unhappiness, but when improving external conditions fail to lead to a greater experience of personal fulfillment, then one can blame only one's own shortcomings, resulting in greater hopelessness and suicidal behaviors. Lester has provided some data supporting that analysis in comparisons of states within the United States and in international comparisons. Further investigation and efforts to replicate these intriguing ideas seem warranted. Updated suicide rates for many nations are available at the WHO Web site, www.who.int/mental_health/prevention/suicide/country_reports/en/index.html.

Variation Within the United States

State-by-state comparisons reveal some rather striking discrepancies in the rates of adolescent suicide. For ages 10–19 for the period 1999–2001, the highest rate by far was in Alaska, with 20.74 deaths per 100,000. Other states among those with the highest rates (ranging from 9 to 12 per 100,000) included Wyoming, South Dakota, Idaho, New Mexico, and Montana. By contrast, states with the lowest rates (from 2 to 3 deaths per 100,000) were New Jersey, California, New York, and Massachusetts. The obvious distinction is that those with the highest rates are large western states and Alaska, each with very low population density. By contrast, the lowest rates are found in states in the Northeast and in California, states with much higher population densities. The average number of persons per square mile (drawn from the 2000 U.S. Census) for the low-suicide states was 640.8, whereas there was an average density of 8.8 persons per square mile in the high-suicide states. One possibility, then, is that population density serves as a protective factor. But why? In all likelihood, low density contributes to social isolation, which can increase the risk of suicide. There are other possibilities as well. Rural states tend to be poorer than urban ones. The median household income (from Census 2000) for the high-suicide states, omitting Alaska, was $35,580, whereas it was $49,131 for those states with the lowest suicide rates. Alaska has a median household income of more than $50,000, but it has other unique factors: the greatest potential isolation, with a

population density of only 1.1 person per square mile, and a particularly large population of Native Americans. The other western states also have relatively high populations of American Indians.

Also important, the states with lower population densities are less able to provide ready access to mental health services. Indeed, perhaps in part because of the lower economic incentives, there are fewer psychiatrists—particularly child and adolescent psychiatrists—in rural areas than in areas with larger populations. For example, Massachusetts, which has one of the lowest suicide rates, has roughly 17.5 child psychiatrists per 100,000 youths; the national average is 7.5.

Attempted Suicide and Suicidal Ideation

Since 1991, the CDC has assessed the prevalence of nonfatal youth suicidal behaviors on a biennial basis as part of its Youth Risk Behavior Surveillance System (YRBSS). The YRBSS involves surveys of U.S. public and private high school students that are conducted so as to be representative of the full population of 9th- through 12th-graders in the United States. A wide range of health-risk, violence-related, and health-promoting behaviors is assessed. The most recent available data are for 2007 (Eaton et al., 2008). The results are available broken down by grade, as well as by racial groups, including whites, blacks, Hispanics, and "Other"; thus, one limitation is that specific findings are not reported for Asians or Alaskan Natives and American Indians.

Attempted suicide. In 2007, 6.9 percent of high school students, including 4.6 percent of males and 9.3 percent of females, reported having attempted suicide at least once during the prior year. Just under 30 percent of the suicide attempts required medical attention. The rates were not equally distributed among the racial groups reported by the CDC. The suicide-attempt rates were higher for blacks (7.7 percent) than for whites (5.6 percent), and higher among Hispanics (10.2 percent) than among either whites or blacks; the same pattern occurred for attempts requiring medical attention, although only the difference between Hispanics and whites was statistically significant. As shown in Figure 5, an examination of the racial groups broken down by gender reveals that females had higher rates than males both overall (9.3 percent of females and 4.6 percent of males attempted suicide) and
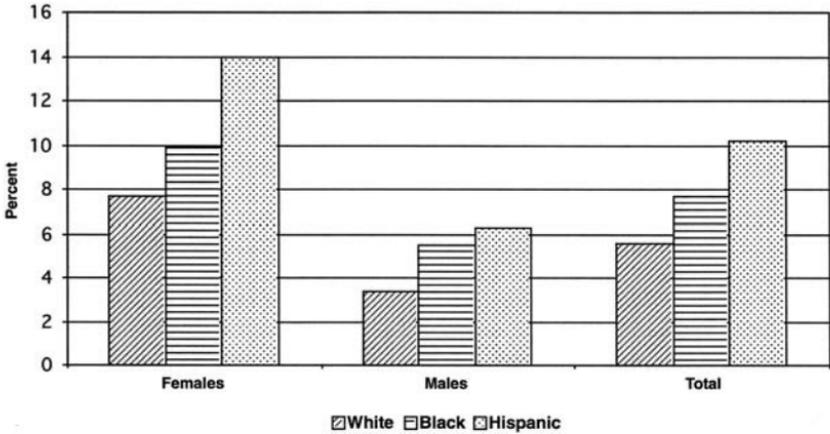
Figure 5. U.S. High School Students Who Attempted Suicide One or More Times in Past Year, 2007. Source: National Center for Chronic Disease Prevention and Health Promotion.

within each of the racial or ethnic groups. Among males, white males had a lower rate (3.4 percent) than black males (5.5 percent) or Hispanic males (6.3 percent). The rate for Hispanic females (14.0 percent) was higher than that for white females (9.9 percent) or black females (7.7 percent). In general, suicide attempts are disturbingly common among high school students.

In addition to the regularly administered surveys, in 1998 the YRBSS was administered to a nationally representative sample of adolescents attending "alternative" high schools, that is, students who were at risk for academic failure or dropout or who had been expelled for illegal activities or behavior problems (Grunbaum et al., 1999). The findings showed that these students are at greater risk for a host of problem behaviors. They were twice as likely as the general population of high school students to have carried a weapon and to have driven a car after having consumed alcohol in the past month, twice as likely to have had their first drink before age 13, and so forth. Not surprisingly, then, the rates of suicide attempts were also higher: 15.7 percent reported an attempt (almost twice the rate of the general high school population), including 20.0 percent of females and 12.1 percent of males. Roughly one-half of those students (7.4 percent) reported having made a suicide attempt that resulted in injury requiring medical attention.

One interesting point in the YRBSS studies is that the rates of suicide attempts decrease each year from 9th grade through 12th grade. In 2007, the rates in 11th and 12th grade (5.8 and 5.4 percent, respectively) were significantly lower than the rates in 9th and 10th grade (7.9 and 8.0 percent, respectively). Could it be that suicide attempts are primarily a problem of the younger to middle adolescent years? Data from two sources suggest that is plausible, that suicidal behavior tends to subside into the young adult years and even beyond.

The YRBSS was administered in 1995 to a nationally representative population of college students age 18 and over (Centers for Disease Control and Prevention, 1997b), and only 1.5 percent of them reported having attempted suicide in the past year, with 0.4 percent of students having made an attempt requiring medical attention. Of course, one must be cautious in comparing the high school and college samples, since roughly one-third of high school students never attend any college, and that one-third is overrepresentative of those who are economically disadvantaged. Still, the rates are considerably lower than those among high school students. Roughly 40 percent of respondents in the college survey were age 25 and older, which is proportionate to the age distribution in the nation's colleges. Comparisons of those ages 18–24 and those 25 and older showed that 1.7 percent of the younger group but only 1.0 percent of the older group had attempted suicide in the prior 12 months. Again, the older college students cannot be considered representative of all young people in the United States over age 25, but in general the college data are suggestive of a trend toward decreasing suicide attempts after the adolescent period.

A second source of information comes from the CDC's National Electronic Injury Surveillance System, which includes a nationally representative sample of 100 hospital emergency departments (EDs) in the United States (Vrostek, Annest, and Ryan, 2004). Many suicide attempters never appear at hospital EDs, so the data are probably an underestimate of the true population of those attempting suicide, but the comparisons across age groups may still be illuminating. Among 15–24-year-olds, there were an estimated 107,360 self-harm injuries treated in the nation's EDs, or 268.5 per 100,000 youths. For the age group 25–34, the rate drops to 184.3 per 100,000 youths, or 45 percent fewer incidents. The rate per 100,000 for 35–44-year-olds was 164.6,

and for those over age 45 the rate falls sharply to 51.4. The lowest rate was found among those ages 14 and younger, at 27.4 per 100,000. In my discussion of developmental issues in chapter 3, I provide some theory and research that offer explanations for this apparent downward trend in suicidal behavior with age.

Suicidal ideation and plans. The 2007 YRBSS findings indicated that 14.5 percent of high school students had "seriously considered suicide" in the past year, including 18.7 percent of females and 10.3 percent of males. As shown in Figure 6, females of each racial group were more likely than males to have seriously considered suicide. The rates of suicidal ideation did not differ greatly between racial or ethnic groups, although Hispanic females had a significantly higher rate than white females, and whites had higher rates than blacks. Although among females the rates of suicidal ideation are significantly lower in 11th grade (16.3 percent) and 12th grade (16.7 percent) than in 10th grade (22.0 percent), the size of the drop is not as large as for suicide attempts and there is no similar decline among males. Among the alternative high school students the rates were again higher than in the general population: 25.0 percent seriously considered suicide, including 31.1 percent of females and 20 percent of males. The rates are lower among college students: 11.4 percent among 18–24-year-olds and 8.3 percent among those age 25 and older.

Among the general high school population, suicide plans were only slightly less common than suicidal ideation, with 13.0 percent of students reporting having made a plan in the past year. Among both females and males, blacks were less likely than others to have made a suicide plan (black females = 13.5 percent; white females = 15.4 percent; Hispanic females = 18.5 percent; black males = 5.5 percent; white males = 9.7 percent; Hispanic males = 10.7 percent). As with attempts and ideation, alternative high school students (20.5 percent) were more likely, and college students (6.7 percent) less likely, to have made suicide plans than students in the general high school population.

It is worth noting that a strikingly large number of high school students report having experienced depressive symptoms in the past year, that is, feeling "so sad or hopeless almost every day for two weeks or more in a row that [they] stopped doing some usual activities" (Eaton et al., 2008). Females were more likely than males to report depressive
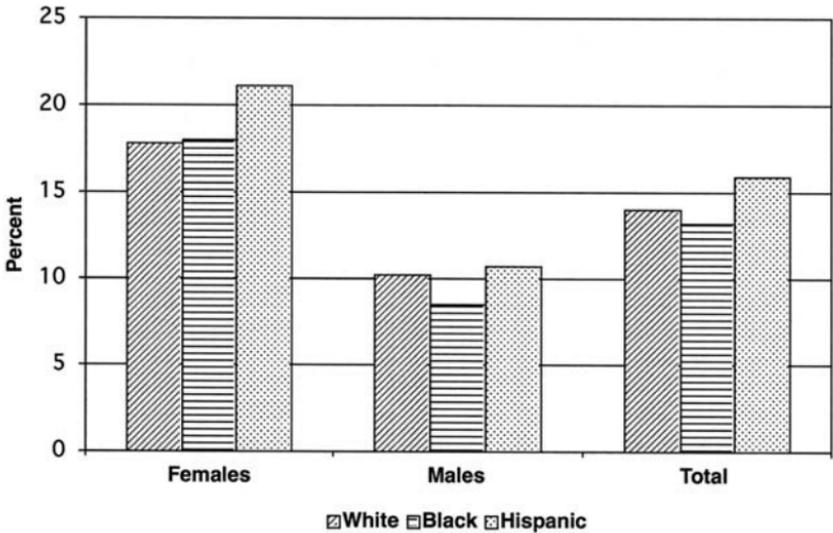
Figure 6. U.S. High School Students Who Seriously Considered Attempting Suicide in Past Year, 2007. Source: National Center for Chronic Disease Prevention and Health Promotion.

symptoms, including 46.7 percent of Hispanic females, 33.4 percent of white females, and 36.9 percent of black females. Still, roughly one in five males reported depressive symptoms, including 26.0 percent of Hispanic males, 19.5 percent of black males, and 18.4 percent of white males. As is highlighted in later sections of the book, depressed adolescents are at increased risk of suicidal behavior, with researchers finding that from 35 percent to 50 percent of adolescents receiving treatment for depression either have made or will make a suicide attempt (American College of Neuropsychopharmacology, 2004).

Hispanic females have the highest rates of suicide attempts, suicidal ideation, and depression of any group. This underlines the importance of paying particular attention to the needs of this group. The reasons why Hispanic girls have such high rates of depression and suicidal symptoms are not clear at this point. The label "Hispanics" encompasses several different ethnic and cultural groups, including Mexican Americans, Puerto Ricans, Cuban Americans, Central Americans, South Americans, and others, and mental health findings can vary from one group to the next. Having said that, we currently

have very few data that clearly differentiate among those subgroups; one exception is the report by Roberts, Chen, and Roberts (1997) that Mexican American middle school students have higher rates of suicidal ideation than students from a variety of Asian American, African American, or Caucasian American backgrounds, and are also more likely to attempt suicide than Caucasians. We do know that adolescent Hispanic females have high rates of other risky behaviors, including pregnancy and substance abuse; however, those rates are high for black females as well (Grunbaum et al., 2004). The rate of school dropout is one factor that distinguishes Hispanics from other groups. In the 2000 Census, 21.1 percent of Hispanics ages 16–19 years had dropped out of school, a rate that was almost twice that among blacks (11.7 percent) and more than triple the rate among non-Hispanic whites (6.9 percent). Furthermore, while the national school dropout rate fell 14 percent from 1990 to 2000, the dropout rate among Hispanics fell only 3 percent over the same time period.

We also know that acculturation and discrimination probably both play a role in the development of their risky behaviors and depressive and suicidal symptoms. The pressures for Hispanic girls to conform to the cultural practices of modern American adolescents can result in schisms within Hispanic families, since adolescents tend to turn away from traditional cultural practices more rapidly than their parents can or want to (Zayas and Pilat, 2008). Some girls are able to move more freely between the Hispanic and the majority cultures, while others who find this more difficult are subject to greater discrimination. Boys are susceptible to similar processes, but Hispanic girls seem to be particularly sensitive to taking their stresses to heart, particularly when it comes to family conflicts, and they tend to express their emotions inwardly, sometimes using alcohol or other substances to soothe the painful intensity (National Coalition of Hispanic Health and Human Service Organizations, 1999).

Trends in suicidal symptoms over time. While the rates of completed suicide have fallen over the past 10 to 15 years, the rates of suicide attempts have not shown similar declines across time. As noted, the CDC began nationwide assessments of suicidal behaviors with the YRBSS beginning in 1991; before that, the only available data were local surveys of high school students. Figure 7 shows that in 1991, 7.3
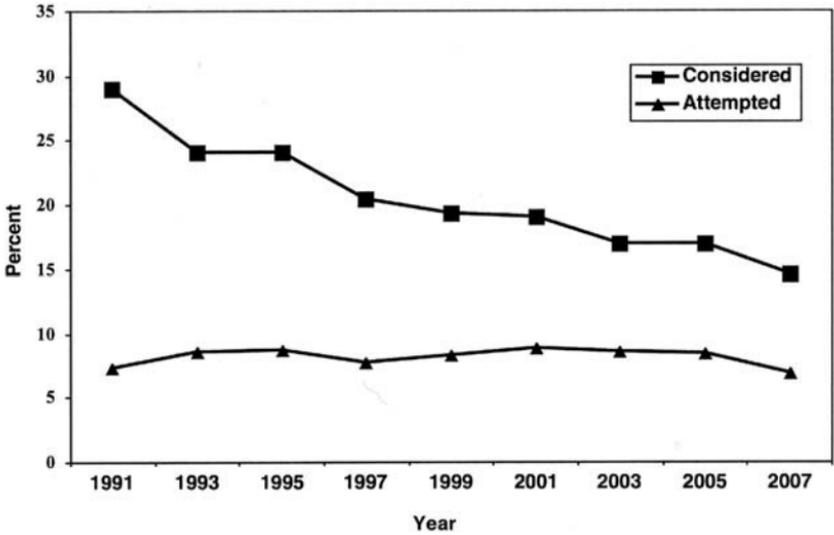
Figure 7. High School Students Who Attempted Suicide and Who Seriously Considered an Attempt, 1991–2007. Source: National Center for Chronic Disease Prevention and Health Promotion.

percent of high school students reported a suicide attempt. Following an increase to 8.6 percent in 1993, with minor fluctuations the rates stayed level in the biennial surveys through 2005 (8.4 percent). The 6.9 percent rate in 2007 is the lowest recorded rate in the history of the YRBSS, and the 2009 data will provide an important indication of whether it represents a real reduction in the suicide attempt rate or another unimportant fluctuation. In contrast, the percentage of high school students reporting serious suicidal ideation has declined steadily over time. Figure 7 shows that, in 1991, 29.0 percent of adolescents reported serious ideation, a rate that has continued to drop through the most recent assessment in 2007. Depressive symptoms (feeling sad or hopeless for two weeks) have been assessed only since 1999 (28.3 percent) and have remained unchanged.

Completed Versus Attempted Suicide: Similarities and Differences

Studying youngsters who die by suicide poses a number of challenges to researchers. The most obvious is that they are not available for

our interviews and observations. Although one can try to circumvent that problem by examining variables that correlate with rates of completed suicide across a population, that research approach is limited, both because it is difficult to know whether any given youngster was actually exposed to or affected by factors that are significantly correlated at the population level and also because the level of information is distal and provides little psychological understanding or depth. Thus, researchers have devised creative methods for gathering richer and more meaningful information. In particular, the "psychological autopsy" method, in which family members, friends, and important others are interviewed in an effort to ascertain the factors that influence a suicide, has contributed immensely to our knowledge base (e.g., Gould, Shaffer, Fisher, and Garfinkel, 1998; Shafii, Carrigan, Whittinghill, and Derrick, 1985). Yet, it too is limited. Information obtained from psychological autopsies may be biased in certain ways that are distinct from influences on any control group used in the research (Brent, 1989; Brent, Perper, Moritz, Allman, Roth, et al., 1993). Grieving friends or family members have the very human need to create meaningful post-hoc explanations for the suicide and may thus be prone to minimize or magnify the importance of certain factors in creating narratives through which they can find some measure of peace. In addition, family members and important others may not be aware of the private thoughts and feelings of those who died by suicide (Hawton et al., 1998).

In contrast, the body of research on those who attempt suicide is much larger and more extensive. We study suicide attempters not primarily as a proxy for completed suicides but because doing so is well justified in its own right. Those who attempt suicide typically suffer great distress, and their behavior often triggers emotional pain in their loved ones. They also are at heightened risk for future death by suicide. Suicide attempters utilize substantial resources at hospital emergency departments, including both time and money; indeed, an estimated 107,000 youth ages 15–24 were treated for self-harm injuries at U.S. hospital emergency departments in 2001 (Vrostek et al., 2004).

Still, given the extensive body of work with those who attempt suicide, it is tempting to extend and generalize the findings to completed suicide. But how valid an enterprise is that? Put differently, how overlapping are the two populations? We know that roughly

one-third of adolescents who complete suicide have made a previous suicide attempt (Brent et al., 1999; Marttunen, Hillevi, Henriksson, and Lonnqvist, 1991; Shaffer et al., 1996). That means that the majority of young people who complete suicide have no history of prior suicide attempts. When viewed prospectively over a 5- to 10-year period, fewer than 10 percent of those who have attempted suicide will go on to take their own lives (Beautrais, 2003b; Goldacre and Hawton, 1985; Motto, 1984; Otto, 1972).

One obvious difference between youth who complete suicide and those who attempt it is that those making nonfatal attempts are predominantly female, whereas those who die by suicide are predominantly male. There is some evidence that the sex differences are largely a function of the methods used, that is, males are more likely to use firearms and, therefore, to die, whereas females are more likely to take an overdose and thus to live (Beautrais, 2003c). Surveillance data gathered from hospital emergency departments are illustrative on this point. The majority of suicide attempts among both male and female youths involve an overdose or other self-poisoning, and firearms account for fewer than 1 percent of attempts (Vrostek et al., 2004). In contrast, roughly one-half of the youths who die from their self-injuries used a firearm, whereas fewer than 10 percent of youth suicides are a result of an overdose or self-poisoning. Surveillance data of adolescents appearing at EDs in Oregon showed that male attempters are more than 12 times as likely as females to use a firearm (Centers for Disease Control and Prevention, 1995) and are also 5 times more likely than females to have attempted suicide by suffocation.

Thus, the correspondence between sex and lethality of methods is apparent across studies. However, the ratio of attempted to completed suicides in Vrostek and colleagues' (2004) ED study was roughly 26:1, which is far larger than the sex-difference ratios for attempted or completed suicide. This suggests that additional factors may be influential. Brent and colleagues (1988), as well as Beautrais (Beautrais, 2001, 2003c), have compared completed suicides with those of suicide attempters. The Beautrais studies were limited to only medically serious suicide attempters (which is a more stringent comparison) and included young adults, whereas the Brent study was limited to adolescents. In both projects, the similarities between the

groups outnumbered the contrasts, with few differences with regard to psychopathology, stressful life events, or prior suicide attempts. As expected, the proportion of males was higher among the suicide victims than among those attempting suicide, even in the sample of medically serious attempters. There were several other factors that distinguished the groups. Suicide victims were apparently more intent on dying than suicide attempters, even after statistically controlling for sex and age. In particular, Brent and associates found that suicide completers were more likely to have been isolated during the suicidal episodes (almost 50 percent were isolated, but roughly 16 percent of attempters were), to take precautions against being discovered by others (over 50 percent of completers, but 13 percent of attempters), to show greater evidence of having planned the episode (59 percent versus 22 percent), and to have communicated suicidal intent ahead of time (26 percent versus 3 percent). Informants believed that 85 percent of the completers but only 25 percent of the suicidal group wished to die as a result of their actions. Those who died by suicide were more likely to have had a diagnosis of bipolar disorder, nonaffective psychotic disorder, or a comorbid affective disorder (depressive or bipolar) in combination with one or more other disorders, whereas suicide attempters were more likely to have had an anxiety disorder.

Summary

Stepping back from the many numbers presented in this chapter, some important points are worth highlighting. The rate of suicide among children and adolescents in the United States is lower than at any point later in the life span and has declined after having peaked in the mid-1990s. Yet, on average, roughly 5 youngsters ages 10–19 die by suicide each day. The numbers of adolescents exhibiting nonfatal suicidal behaviors are much larger. Each year, approximately 1 in 14 U.S. high school students reports having attempted suicide, and roughly 30 percent of those students needed medical attention as a result. Almost 15 percent of high school students report having seriously considered suicide in the past year.

Behind these numbers lies a rich story of variability. Most of the change in the suicide rates across the past 30 years has occurred

among boys, not girls. The rising youth suicide rates across the 1980s and early 1990s are largely a story of increasing use of firearms by boys, including a sharp rise in the rates of firearms suicides by black male adolescents. The reasons for the more recent decline are less clear and may be a function of multiple factors that were discussed, including positive economic influences, safer firearms practices, and increased usage of antidepressants. The rising and falling of rates for male adolescents as a whole have not been reflected in the steadily high rates of suicide among Alaskan Native and American Indian adolescents, who live in communities in which such factors as high substance abuse, unemployment, and sweeping social change hold powerful sway.

Variability also lies behind the group averages for nonfatal suicidal behaviors. Both suicide attempts and suicidal ideation are approximately 80 percent more common among female than male adolescents. The high rates of these problems in Hispanic adolescents are particularly striking: nearly 15 percent of females and more than 6 percent of males report having attempted suicide in the previous year, and more than one in five Hispanic females reports seriously considering suicide. The variability across ethnic, geographic, sex, age, and other factors is illuminating not only in further clarifying the scope of the problems but also as an entrée into our understanding of the factors responsible for the development of suicidal behaviors. In the next chapter, the theoretical frameworks for exploring those factors are investigated in depth.

3

Theoretical and Developmental Considerations

In this chapter, I review the work of scholars, clinicians, and researchers who have generated theories and models to guide our quest for better understanding, treatment, and prevention of suicide and suicidal behavior. Much of this work was developed on the basis of clinical observations of suicidal individuals and is more descriptive than it is explanatory. Importantly, most of the prevailing models have not been developed specifically with regard to children or adolescents and thus either give short shrift to developmental factors or overlook them entirely. For that reason, I devote considerable attention in this chapter to reviewing developmental constructs that are applicable to constructing a developmental model of suicidal behavior.

Theoretical Models

Sociological Models

Probably the best known of all theories of suicide was developed in the late 19th century by Émile Durkheim, who in his book *Suicide: A Study in Sociology* (1951) categorized suicides into four basic types, each of which describes a particular quality of social integration, that is, of relationship of the individual with society. These include *egoistic, altruistic, anomic,* and *fatalistic* suicides.

The *egoistic* suicide is made by an individual who is a loner, a social isolate, not connected with others, lacking an interdependence with the community. Such a suicide in its pure form is relatively unusual among children and younger adolescents, who typically have ties to some sort of family system. However, youngsters who have been cast out of their families or older adolescents who are disconnected from their families, have failed to develop meaningful friendships, or are disengaged from any work or school activities would fit this category. *Altruistic* suicide is in many respects the opposite, in that it involves an individual whose sense of identity is subordinate to the group or community, and the suicide may represent a sacrifice for the good of the larger group. The Japanese Kamikaze pilot epitomizes that sort of behavior, and some have made the case that—viewed from within their own frame of reference—suicide-bombing terrorists also fit this category (Pape, 2005). In the United States, altruistic suicides tend to be rare, an exception being spectacular cult mass suicides inspired by misguided gurus like David Koresh.

An *anomic* suicide is one that occurs in response to a crisis with which a person feels unable to cope and thus uses suicide as a solution. Durkheim introduced the term "anomie" to refer to a societal condition in which preexisting norms no longer control behavior because of rapid societal change. The crisis arises because the person is left alone to deal with change, without the benefit of guidance by social convention. Many social conservatives would argue that the past 30 to 40 years in the United States represent a period of "chronic anomie" owing to rapid social changes that threaten the well-being of families and individuals, including the rise of divorce, working mothers, latchkey children, and so on. They yearn for a return to the days when actions were better

regulated by cultural norms. Patricia Hersch (1998), in her top-selling book *A Tribe Apart,* wrote that today's teenagers are too often guided by norms within their own peer cultures, because parents are so preoccupied with their own stressful lives that they gladly let their children fend for themselves unless or until a crisis jars them into attentiveness. Adolescents may treasure their apparent freedom, but they bear the burden of having to make too many choices and may end up governed by the norms of peer subcultures in which suicidal behavior meets the acceptable standard. Durkheim also discussed an "acute anomie" in which acute stressors, such as a divorce or other relationship failure, trigger a crisis via the sudden disruption of one's usual patterns of relating to important others. Anomie probably characterizes the majority of suicides during adolescence, in that they typically involve crises in romantic, family, or peer relationships. Even many nonrelationship crises, such as a perceived failure at an important task, involve an abrupt shift in relation to teachers, parents, or work superiors.

Finally, *fatalistic* suicides (the least well articulated by Durkheim) perceive that their lives are, or will be, so restricted by a societal situation that there is no point to living. In this case, behavioral possibilities are overregulated by societal restraints. A youngster who hangs himself in prison is generally an example of such a suicide.

Durkheim's model is useful as a descriptive tool and provides an understanding of some of the forces that influence suicides. However, many individuals facing similar circumstances are not at risk for suicide. More recent work with sociological influences has thus incorporated individual difference factors—such as individual vulnerabilities—that help to explain why some individuals facing certain circumstances are more vulnerable than others. For example, in his work on "suicidal careers," Maris (1981) argues that individuals' responses to current social forces can be understood only in light of their biographical histories, including psychological characteristics and individual vulnerabilities.

Psychological Models

Psychological models are those in which the processes leading to suicide are conceptualized as entirely or at least predominantly within

the individual and are not primarily anchored in dyadic, family, or other contextual circumstances. With few exceptions, they were developed on the basis of experience with adult suicides, not children or adolescents.

Psychodynamic models. The earliest psychological conceptualization is typically credited to Freud, who in *Mourning and Melancholia* (1917) referred to the "retroflexed rage" inherent in suicidal behavior, that is, the redirecting toward oneself of an aggressive impulse that was initially focused on a significant other (e.g., parent, lover). Menninger (1938) elaborated on that theme, calling it "murder in the 180th degree." He postulated that all suicides encompass three motivations: a wish to kill, particularly to kill loved ones; a wish to be killed, associated with guilt for having the murderous urges; and a wish to die (i.e., depression and hopelessness arising from such factors as self-hate and habitual restrictions on aggressive impulses). Other psychodynamic theorists have discussed various psychological characteristics and themes found among suicides, including an inability to love and a wish to transcend feelings of separateness by returning to the infant position of being merged with the caregiver (Wade, 1987).

Cognitive models. The most widely known and cited cognitive model of suicidal behaviors was developed by Aaron T. Beck and colleagues, in conjunction with their cognitive theory of adult depression (Beck, Rush, Shaw, and Emery, 1987). In this model, the diathesis for depressive and suicidal symptoms consists of cognitive self-schemas that contain certain negative beliefs, including dysfunctional attitudes and cognitive distortions. An example is an individual who, upon making a single small error at a public-speaking event, becomes convinced that everyone in attendance thinks he is stupid. Persons who characteristically endorse dysfunctional attitudes and negative beliefs are most vulnerable to depression when they encounter stressful events that tap into those beliefs. In the following example, Suzanne's painful loss of an important computer file stimulated a string of negative conclusions about her current, past, and future self. Moments later, she decided to make a serious suicide attempt.

> Suzanne is a 16-year-old high school student. In recent days, she had grown more depressed after her boyfriend of two

months suddenly "dumped her" and a terrible argument with her parents nearly came to blows. Creative writing was her one meaningful outlet, and, when a computer glitch resulted in the deletion of a short story she had labored over, her thinking became acutely suicidal: "This is typical. This only happens to me. I'm a loser, I always have been, I always will be. If I do get good things I lose them, and it's worse than never having them in the first place."

Hopelessness plays a key role in Beck's model, alongside the so-called negative triad of negative thoughts about oneself, others, and the future (Beck, Brown, Berchick, Stewart, and Steer, 1990). Beck and colleagues argue that, like other depressed individuals, suicidal persons misconstrue their situation in negative ways. What distinguishes the suicidal person is the belief that the situation is hopeless, so that the person ultimately views suicidal behavior as the only possible solution. Research has supported the central role of hopelessness as a risk factor for completed suicide among adults (Beck, Steer, Kovacs, and Garrison, 1985; G. K. Brown, Beck, Steer, and Grisham, 2000). There is evidence that adult suicidal behavior is predicted by baseline levels of hopelessness preceding depressive episodes, rather than by increasing levels of hopelessness that accompany depression (Young et al., 1996).

Although there is no question that hopelessness is a correlate of suicidal behaviors in adolescence, its role as the ultimate psychological state that precipitates suicidal behavior is not as well supported in adolescents as in adults (Yang and Clum, 1996). In particular, what remains unclear is whether the elevated hopelessness can be explained by higher levels of depression in the suicidal youths, because hopelessness is not consistently associated with suicidal behaviors once depression is statistically controlled (Boergers, Spirito, and Donaldson, 1998; Marciano and Kazdin, 1994). Greater hopelessness does appear to increase the risk of making more than one suicide attempt (Esposito, Johnson, Wolfsdorf, and Spirito, 2003; Goldston et al., 2001).

In an important update of his cognitive model, Beck (1996) introduced the concept of "modes," defining them as organizational units that integrate cognitive, affective, and motivational schema.

Drawing on Beck, Rudd (2000) provided a detailed account of the "suicidal mode," in which the triggering of negative beliefs and cognitions is accompanied by the activation of particular systems of affective, physiological, and behavioral-motivational responses associated with suicidality.

The cognitive component includes suicidal beliefs related to each aspect of Beck's cognitive triad of self (e.g., perceiving oneself as worthless, ineffective, unlovable, and so on), others (e.g., perceiving others as critical, rejecting, and the like), and future (hopelessness, believing oneself unable to tolerate any more pain, and so forth). The beliefs are tied to certain "rules," unspoken guiding assumptions, such as "I need to be perfect in order to be lovable" or "I must always please others or they will reject me." Rudd refers to "compensatory strategies" that develop in order to fulfill the rules. Thus, one may develop a perfectionistic coping style or may become a "people pleaser" who habitually makes sure others get what they want while ignoring one's own needs. The affective component of the suicidal mode encompasses a variety of mixed dysphoric emotions that might arise depending on the particular beliefs endorsed by an individual: shame, guilt, sadness, anger, and so forth. The behavioral system connotes a predisposition toward engaging in suicide-related behaviors, including planning, rehearsals, and suicide attempts. Rudd distinguishes between the true suicidal mode and a "facilitative mode" in which self-destructive behaviors are performed in the absence of genuine suicidal intent, perhaps motivated by the possibility for interpersonal gain. Finally, the physiological system involves patterns of physiological activation that characterize the suicidal mode. For example, if the mode is activated by a perceived threat, the physiological system would likely engage the fight-or-flight system, which includes certain response patterns of autonomic nervous system, motor, and sensory activation. Rudd points out that the suicidal mode is necessarily time limited—the physiological activation cannot be sustained indefinitely, although the duration of the suicidal mode is longer for some (particularly multiple attempters) than for others.

A different cognitive formulation posits that suicidal behaviors represent an effort to escape from painful self-awareness. Baumeister (1990) argued that the suicidal state is a form of *cognitive deconstruction,*

a present-focused state in which highly risky behavior is possible because the individual is temporarily unaware of the meaning, implications, or possible consequences of that behavior. In fact, the thrill of risky behavior is an intoxicating escape from ordinary awareness, with its painful meanings. The concept of the deconstructed state bears some resemblance to dissociative states, which, as Orbach (1994) has pointed out, protect the self by partitioning off painful memories but may also facilitate self-destructive behaviors by rendering one detached and indifferent to body sensations, including pain.

James Rogers (2003) introduced what he terms an "existential-constructivist" model of suicide. He holds that humans necessarily develop mental constructions of self, others, relationships, and the world in general to provide meaning and connection in an otherwise meaningless and isolating world. These constructions are thought to guide individuals' expectations of their own and others' behaviors and their sense of justice and fairness. Rogers believes that when core constructions are strongly challenged by powerful stresses, if the meaning-making structures cannot be retained or appropriately altered, then suicide may result. This model has not been well tested empirically, nor has it been applied specifically to adolescents.

Mark Williams (2001) developed an important cognitive model of the development of suicidal behaviors. He argued that, although suicidal behaviors have sometimes been interpreted as an interpersonal plea, a "cry for help," they are more correctly understood as a cry of pain, stemming from a sense of "entrapment." Williams believes that suicidal behavior is motivated not by a wish to die but rather by a wish to escape the trap. Williams further argues that the trap frequently springs from one's own mental images, thoughts, and memories, which may become reactivated in the form of cognitions and emotions that absorb one's attention before the individual barely becomes conscious of them.

An interesting feature of his work is a focus on episodic versus general (categoric) memories. Pollock and Williams (2001) have shown that, like persons with depression and posttraumatic stress, adult suicide attempters have difficulty responding to requests to recall memories of a specific episode, instead being more likely to respond with generalities (e.g., "My mother was always kind to me").

Williams and colleagues suggested that the use of general memories—which seems to be a stable, stylistic characteristic—serves an emotion regulatory function, because they are potentially less painful than specific memories. While this can serve an adaptive function in the face of extremely painful circumstances, the negative consequences tend to outweigh the positive with regard to longer-term implications for effective problem solving. It is difficult to effectively manage interpersonal problems without specific recall, and those who are overgeneral with regard to negative events also tend to have fewer specific positive memories and are more vague and hopeless about their futures (J. M. G. Williams, Teasdale, Segal, and Soulsby, 2000). In combination, these characteristics can contribute to depression and suicidal behavior.

Williams's work has been conducted with adults. However, Chinmayee Barve's (2003) dissertation work, conducted with my research team, suggests that this model may be applicable to adolescents as well. Barve used an interview in which adolescents were asked to recall the details of the episode involving their recent, serious suicide attempts. Her data analysis yielded a factor that included the use of general abstractions, avoiding recall of specific memories, and making minimal (brief) responses. That factor was associated with lower anxiety at the time of the suicide attempt but narrowly missed statistical significance as a predictor of reattempts across a two-year follow-up, after controlling for other indices in the interview. These findings seem quite consistent with Williams et al.'s (2000) idea that overgenerality can be functional in the presence of painful circumstances but may then interfere with effective adaptation over the longer term as it becomes part of a habitual process of avoidance of emotionally charged problems. In the view of Williams and his colleagues, the solution lies in training individuals to become more aware and focused yet deliberately disengaged from their stream of mental processes, through a technique called "mindfulness meditation." I discuss that approach more fully in the chapter on treatment.

Another prominent cognitive model was created by Marsha Linehan, in her work with persons with borderline personality disorder (Linehan, 1993). Her therapeutic approach, *Dialectical Behavior Therapy (DBT),* is so named because at its core is the dialectic

between acceptance and change. Linehan acknowledges her debts to both behavior therapy and Zen Buddhism, two foundations of her approach. Suicidal persons are viewed as lacking sufficient skills in two main areas: the ability to accept their experiences fully and completely and the "skillful means" to regulate impulsive and self-destructive emotions and to be effective in interpersonal interactions. Examples of skill deficits include difficulty tolerating emotional distress and excessive passivity. Linehan teaches a variety of techniques for dealing with distress, including guided imagery, relaxation, meditation, prayer, and so forth. The idea is that if suicidal persons can accept and experience their distress rather than react impulsively to it, they will learn that the distress is fluid and changing and that they no longer need to be defined by it. The skill of complete or "radical" acceptance of one's experience, without negative judgment, is taught as the key alternative to habitual efforts to resist or avoid unpleasant experiences.

Social-learning models. Theories have been advanced whereby suicidal behavior can be learned or promoted through direct or indirect exposure to people who model such behavior. One line of reasoning stems from work on the suicide "cluster," which the Centers for Disease Control and Prevention defines as a group of suicides or suicide attempts that occur closer together in time and space than would normally be expected (O'Carroll, Mercy, and Steward, 1988). Although the existence of such clusters has been anecdotally recognized for many years, careful research documenting the presence of clusters with reliable statistical methods has appeared only in the past 15 years. Importantly, clusters are primarily a phenomenon among teenagers and young adults through age 24, occurring only rarely beyond that age; however, they account for but a small fraction of adolescent suicides, perhaps between 1 percent and 2 percent (Gould, Jamieson, and Romer, 2003). Although clusters are defined by the temporal contiguity of the suicidal behaviors, determining the existence of a cluster is made easier when the suicides share common features, such as the method used.

Some clusters occur within a particular community. For example, in 1987, four teens (two male, two female) from a suburban New Jersey community took their lives by sitting in their car, which they parked inside a locked multicar garage with the engine running. Six days

later, two other teenagers from that same community were found unconscious in precisely the same garage after having attempted suicide by the same method.

Other clusters are composed of imitative suicides that follow a suicide that is well publicized in the media (e.g., the deaths of Marilyn Monroe and Freddie Prinze) and are not necessarily localized geographically. Such imitative behavior has been dubbed the "Werther effect" in recognition of Goethe's 1774 novel *The Sorrows of Young Werther,* the publication of which was thought to precipitate a rise in suicides in Europe. The Werther effect has now been well documented in relation to newspaper articles and television news reports, both in Western countries as well as Japan. Fortunately, there was no such rise after the 1994 death of the musician Kurt Cobain, perhaps because of a concerted public health effort to avert imitative suicides (Jobes, Berman, O'Carroll, Eastgard, and Knickmeyer, 1996). Even fictional dramatizations, such as the airing of a TV show depicting suicidal behavior, have resulted in increased suicidal behavior among adolescents. For example, Hawton and colleagues (1999) documented a 17 percent rise in overdoses at emergency rooms in England in the week following the airing of a TV drama depicting an overdose, with roughly one-fifth of the patients reporting that the show had influenced not only their decision to overdose but even their choice of drug. The magnitude of the Werther effect is associated with the level and prominence of the media coverage, as well as its duration.

Through what processes does suicide contagion operate? There is no widespread agreement or solid evidence on that question. Certainly, imitation seems to play a role, particularly in the many cases in which later suicidal behaviors within a cluster incorporate methods and are performed under circumstances similar to those of the initial event. Research with imitation or modeling of various behaviors suggests that modeling of suicidal behavior should be more likely with a higher status model or when the model shares more characteristics with the adolescent, and both of those characteristics seem to hold true in documented instances.

Typically, the various individuals within a suicide cluster all have psychosocial or biological vulnerabilities that put them at increased risk for suicidal behavior, suggesting that the contagion process may

operate by lowering the threshold for engaging in suicidal behavior among individuals who are already at some degree of heightened risk but might otherwise not have engaged in the behavior. The question then becomes, what factors might serve to lower the threshold? One factor may be exposure to shared stressful circumstances. For example, in the New Jersey example mentioned previously, the initial four individuals were all affected by the suicide of an adolescent male some months earlier, with one member of the cluster having witnessed the suicide. In addition, the threshold may be lowered if an initial suicide serves to change the perceived viability of suicide as a solution to one's problems. In other words, the fact that suicide was viewed as an acceptable choice by the deceased person makes it more likely to be viewed as acceptable to the adolescent, particularly if the adolescent identifies strongly with the suicide victim or, in the case of a star, views the person as a sort of role model. In fact, adolescents may be particularly susceptible to the contagion effect because of the importance of being affiliated with a group or style that provides an identity, a factor that is discussed later in this chapter. Why should an adolescent who is suffering from emotional problems believe there is hope for the future or cling to her reasons for living if the role model decided the opposite? An additional contributing factor is that, if the suicide of another individual—whether a famous person or not—elicited sympathetic attention, the adolescent may believe that his own death will produce a similar result and may even fantasize that such attention can be observed or enjoyed after death. That is one reason why it is so important that the mass media not romanticize the deaths of famous individuals such as Kurt Cobain.

Psychological and interpersonal models feature both internal psychological processes and interpersonal dynamics in describing and explaining suicidal behavior. David Jobes and colleagues (Jobes, Jacoby, Cimbolic, and Hustead, 1997), drawing on observations and work with university counseling center students, made a theoretical distinction between two classes of suicidal individuals. Their model holds that those with an "intrapsychic" orientation are focused on their psychological distress, are less drawn to seek treatment than others, tend be disproportionately male, and may be at higher risk for completed suicide than attempted suicide. In contrast, the "interpsychic"

orientation tends to include females, who are more oriented toward the relational aspects of their problems, more likely to seek treatment, and at higher risk for attempted than completed suicide. Research on this model has thus far shown that, although intrapsychic students are indeed less likely to seek treatment, they may be more responsive to treatment than those with an interpersonal orientation.

Thomas Joiner (2006) recently developed an intriguing, comprehensive "Interpersonal-Psychological" theory of attempted and completed suicide. Joiner holds that there are three necessary elements in every serious suicide attempt or completed suicide. The first of these is an *acquired ability* to enact lethal self-injury. Joiner reasons that, because committing suicide can be terrifying and painful, it requires a certain level of competence and courage, as well as habituation to pain. He argues that these characteristics are acquired through practice or repeated exposure. For example, experience with previous suicide attempts is associated with a greater risk for completed suicide, and Joiner reasons that the initial suicidal behavior—if sufficiently serious—fosters habituation to pain and increases the likelihood of further suicidal behavior. Joiner includes in the "acquired ability" category a range of other characteristics that have been associated with suicidal behavior, including alteration of the body through tattoos and multiple surgeries; assaultive, violent, and aggressive behavior; witnessing of violence; observation of pain and injury (e.g., among physicians); prostitution; and the sort of numbness to pain that is common among those with borderline personality.

Joiner's second element is a sense of being *burdensome* to important others. This category is broader than the name implies, because he discusses in this context not only perceptions of being burdensome but perceived ineffectiveness and negative views of oneself as well. Feelings of being burdensome have been a prominent part of several family models of suicidal behavior, as I discuss in chapter 4. His third element is a lack of a sense of *belonging or connection* with a valued relationship or a group. Feeling isolated and disconnected appears to be an important component of the suicidal mind state.

The model was not developed specifically with regard to young people, and there may be some limitations in its application to youth. In particular, the area that raises the greatest number of questions is

the fascinating "acquired ability" criterion. It appears to be a linchpin of the theory, because problems in the other two areas (burdensome/competence and belonging) are so common among adolescents and adults with a variety of mental health problems, but only those few with the "acquired ability" should be capable of taking their own lives. It is a broad category, including any history of either engaging in or witnessing aggressive, impulsive, or self-destructive behavior. One can question whether it might be overly inclusive; a large percentage of adolescents likely meet the criteria for this category. Focusing more specifically on a history of self-destructive behavior, data from psychological autopsy studies, such as David Brent's work (Brent et al., 1988, 1993), show that no more than one-fourth of adolescent completed suicides have made a previous suicide attempt. If Joiner is correct, then, most adolescent suicide victims must have utilized alternative methods to habituate to pain and self-destructive behavior. Yet, there is reason to question whether that is true.

Some suicidal adolescents are aggressive and impulsive. Some engage repeatedly in nonsuicidal risk-taking behaviors. Some have been exposed to repeated painful experiences such as maltreatment or violent conflict in the home. Does their history of such behaviors make them sufficiently fearless that they can boldly face taking their life by their own hand? Perhaps in some cases. Yet, a sizable minority of completed suicides have a history of serious anxiety problems, neuroticism, and obsessive traits (Beautrais, 2003a), characteristics that do not suggest fearlessness in the face of their own mortality. Some suicides, and many serious suicide attempts, are made by drug overdose, a method that may be chosen precisely because it is not painful or obviously injurious.

Rather than squarely facing the prospect of death—which does indeed take courage—many suicidal adolescents do not evaluate the consequences of their self-destructive actions (Beautrais, 2003a). For them, the common thread tying together the various experiences Joiner discusses with suicidal behavior is not their practice effects per se but rather their function as an escape from painful emotional experience. Youngsters who have not been trained or otherwise learned that they can tolerate emotional pain in its full richness—whether it is anxiety, sadness, anger, shame, or any other emotion—may

become well practiced in various methods of tuning out. Thus, for example, adolescents showing early signs of borderline personality disorder may feel little pain not because they have a lengthy history of self-inflicted pain but because of their disconnection from the experiences of their bodies.

Because Joiner's (2006) model requires the presence of three elements, a test of its validity would involve finding exceptions, that is, youngsters who die by suicide or make highly serious attempts without meeting all three criteria. Whether or not many exceptions exist has yet to be investigated for this new theory.

Psychosocial Models

The psychosocial approach is exemplified by the work of Edwin Shneidman (1996), who developed a model that is both thoughtful and practical in its potential for translation into efficient assessment. Shneidman's model conceptualizes the etiological factors for suicide as a cube. Each face of the cube represents an important contributing factor: pain, press, and perturbation. Briefly, pain refers to the individual's subjective experience of emotional suffering. Shneidman coined the term "psychache" to describe an intense emotional pain that he believes is suffered by all who commit suicide. Drawing on the well-known work of the psychologist Henry Murray, Shneidman incorporated in the model a concept of "press" that involves external influences of any type, which can range from positive forces to overwhelmingly negative pressure. Finally, "perturbation" refers to the person's level of emotional agitation, as well as cognitive constriction (narrowing of the scope of one's thoughts), which contribute to a propensity for impulsive and potentially lethal behaviors. Each of these three factors is rated along simple 5-point scales. The corner cube that represents a rating of 5 on all three scales—that is, maximum possible ratings of pain, press, and perturbation—was named the "suicidal cubelet" by Shneidman, who held that suicide occurs only when there is a synergistic interaction among all three factors.

Herbert Hendin (1987) recognized the importance of incorporating a range of social and psychological factors in developing a model of youth suicidal behavior, including societal, cultural, social

class, family stress, and psychodynamic factors that embody personal meaning. In his writing, he advocated the careful study of individual cases as a method for taking these various factors into account in a comprehensive way.

Biological Models

Techniques for examining biological factors as determinants of suicidal behavior have grown increasingly sophisticated in recent years. Some models of the development of suicidal behavior rely entirely on biological processes as explanatory factors. Other models, discussed in the section on biopsychosocial models, include biological processes as one of several determinants. Those that focus entirely on biology include (a) studies of behavioral genetics models, that is, those that test whether suicidal behavior is genetically transmitted by looking at aggregation or familial concordance on phenotypic traits (i.e., observable manifestations of the genotype); (b) studies that examine possible genetic influences at the molecular levels, including work related to a deficiency of the neurotransmitter serotonin. Given their connection with family factors, these areas are reviewed in chapter 4.

Family Models

The models that prominently feature family factors are reviewed in detail in chapter 4. I also have reviewed these models in depth in two papers (Wagner, 1997; Wagner, Silverman, and Martin, 2003). Briefly, family models have centered primarily on the following areas: (a) models that implicate poor family communication and problem solving, including avoidant and hostile communication, at either the family-wide level or the parent-child dyadic level; (b) scapegoating of the suicidal child, in which the child is made to feel the burden of responsibility for all of the family problems; (c) attachment-related issues, including separations from or losses of parents, insecure attachment relationships, and models in which the suicidal behavior is presumed to serve an attachment function by eliciting attentiveness from an attachment figure; (d) psychopathology in the family, which—as already noted—may imply genetic transmission of suicidal behavior

or suicidogenic factors or may serve to promote disturbed parent-child interactions. There is some evidence to support each of these models, reviewed in chapter 4.

Biopsychosocial Models

George Engel's (1977, 1980) observation that factors at the biological, psychological, and social levels are dynamically interrelated gave rise to the biopsychosocial approach, which has loomed large in the fields of psychology and psychiatry over the past 20 years. Several variants of this approach have been applied to suicidology. Susan Blumenthal (1988) developed an "overlap" model in which five domains of biopsychosocial risk are conceptualized as circles, and those individuals at the intersection of all five are at highest risk. The five domains include (a) psychiatric disorders (e.g., affective disorders, alcohol and substance abuse, schizophrenia); (b) personality traits and disorders; (c) psychosocial and environmental factors such as recent major stresses and losses, exposure to suicide, and medical illness; (d) genetic predisposition toward suicide; and (e) other biological factors such as decreased serotonin. Blumenthal reasoned that those multiple domains may interact to lower the threshold for suicidal behavior, particularly if lethal means are available, but that protective factors (coping skills, hopefulness, social supports) can counteract the negative impact of risk factors. Blumenthal's model is a broad one that effectively encompasses a wide variety of risk factors and can be a useful framework for developing predictive models or screening tools for high-risk status. It is probably less useful as an approach to understanding or explaining suicidal behavior, because it provides little depth with regard to the proximal cognitive and emotional characteristics of the suicidal state that underlies the wish to take one's life at a specific point in time.

Maris (1981) developed a concept of the "suicidal career" that also embodies a biopsychosocial perspective. Maris holds that suicide can be understood only in light of knowledge of a person's life history, and within the context of relevant social, psychological, and genetic or biological elements. Too often, Maris believes, suicides are analyzed by professionals through a short-term lens, ignoring life-span features

that are important in terms of not only explanatory power but predictive power as well.

Summary: Theoretical Models

Models of suicidal behavior have spanned the range from the purely psychological to those incorporating biological, social, and psychological features. While many of them are intriguing, most have not been well tested with research. The cognitive models are the most well examined, although not predominantly with young samples, and some aspects of the family and biological models have been carefully examined as well (see chapter 4). Most important, these models have not started with a developmental perspective that can help to explain how and why suicidal behavior emerges and evolves. In particular, why is there such a rise in suicidal behavior during adolescence, both fatal and nonfatal? In the following sections, I present elements of developmental theory and research that may be useful in constructing models to address those questions.

Developmental Contributions

Developmental Principles

A definition of development is a good starting point for our discussion. As described by Cicchetti and colleagues (Cicchetti and Toth, 1995), child and adolescent development can be understood as a series of reorganizations at increasingly higher levels of complexity and differentiation. Such reorganization takes place within and across several domains, including behavioral, socioemotional, biological, cognitive, linguistic, and representational.

The developmental approach to problem behaviors—the so-called developmental psychopathology perspective—is interested in individual differences among young people, with a recognition that strengths and weaknesses manifest at earlier levels of development contribute to whether an individual will successfully manage the subsequent tasks of development (Cicchetti and Toth, 1998). This holds not only within specific domains such as biological and cognitive but also

across domains, because the systems become increasingly integrated as the individual matures. That is, emotional systems affect cognitive systems, biological systems affect both cognitive and emotional systems, and so forth. Thus a developmental perspective is inherently an integrative one. Unlike Blumenthal's biopsychosocial model, though, it is a dynamic approach, in which the mutual influences of multiple risk and protective domains shift and evolve across time.

Social contexts. The developmental approach also points to the importance of considering the social contexts in which development takes place, including family, peer, school, and other contexts. For example, growing up with a depressed parent increases the risk of a child developing depression-prone cognitions (Zahn-Waxler and Kochanska, 1990). However, it is possible that those cognitions may fluctuate with context, so that they may be most intense when interacting with parents in the home but may be less influential when the adolescent is with peers. Moreover, positive experiences with peers may promote healthier cognitions, which could serve as a partial protective buffer against the negative parental influences.

Multifinality and equifinality. Two properties of complex developmental systems may be of particular importance to understanding suicidal behavior in youth: multifinality and equifinality (Cicchetti and Rogosch, 1996). Multifinality means that a given risk condition can lead to a diversity of outcomes through its influence on various interconnected processes across development. For example, a disturbance in attachment relationships in early childhood may increase the likelihood of a variety of different conditions in later childhood and adolescence, including depression, suicidal behaviors, anxiety, and aggression. Predicting which negative outcome, if any, may result for a given child will likely require taking into account multiple relevant factors, including biological vulnerabilities, the quality of later parenting, the presence of ongoing stresses, school and neighborhood factors, and so forth. Equifinality holds that a particular outcome, such as a suicide attempt, is probably a common endpoint for youth traversing any of various developmental pathways.

These two principles suggest that researchers are not likely to uncover any one risk pathway that explains suicidal outcomes. In other words, researchers touting a model that emphasizes a single set

of risk factors that is universally applicable to all suicidal youth are likely to be disappointed. It is more probable that there are multiple risk pathways that researchers should strive to identify, along with factors that may protect youth from entering those pathways or that deflect youth who have entered those paths onto more benign developmental trajectories. In addition, the principle of equifinality teaches that suicidal symptoms may be the common end product of different processes for different youngsters, whether they be family focused (a loss of hope of parental acceptance), emotion focused (a dissociative "walling off" to escape the emotional pain of biological vulnerabilities), a function of a difficult temperament style (a lack of cognitive control over impulsive self-destruction), or some other process.

Developmental transitions and trajectories. It is well known that adolescence is a period of rapid reorganizations in all developmental domains, including biological, emotional, cognitive, etc. (R. M. Lerner et al., 1996). Understanding the influence of the developmental course during the transition from childhood to adolescence requires knowledge of normative developmental shifts in these various domains. In a sense, it is only in light of how development proceeds successfully that we can understand deviation from the norms. Normative increases in cognitive sophistication during early and mid-adolescence, for example, may have important implications for mental health, as I describe in the next section. To take another example, pubertal development for the typical girl begins two years earlier than for the typical boy. The transition to adolescence is often most challenging for those girls whose pubertal development begins earlier than others', as they must contend with a host of changes many girls find troubling (becoming larger and heavier, menstruating, drawing the sexual advances of older boys) at a very young age and ahead of their peers (Dubas and Petersen, 1993). In contrast, among boys, those whose physical development occurs later than that of their peers face the greatest challenges (Graber, Lewinsohn, Seeley, and Brooks-Gunn, 1997), since the seemingly endless period of waiting for desirable changes such as growing taller and more muscular is often marked by embarrassment, rejection, and lack of popularity (being intimidated by larger boys, being chosen last for sports teams, lack of interest among cute girls).

However, while managing the simultaneous transitions of early adolescence poses a challenge to the majority of adolescents, most will not develop psychopathology. Some youth are considerably more vulnerable than others because of their developmental histories. A science aimed at understanding why only certain youth become suicidal will require assessing and describing trajectories of adjustment across development, with particular emphases on major developmental tasks (e.g., normative milestones in cognitive development), normative transitions (such as onset of puberty), and nonnormative transitions (i.e., the readjustment required in the face of significant stresses).

Cognitive and Social Developmental Influences

Piaget's (1972) cognitive developmental stage model remains the most highly influential framework for understanding adolescent cognitive development. Adolescence heralds the onset of *formal operations;* that is, many (but not all) adolescents begin to perform abstract, complex mental operations and use systematic approaches to reasoning.

Of greatest interest to the present discussion are two linked aspects of formal reasoning: metacognition (Flavell, 1979), sometimes described as "thinking about thinking," and hypothetical-deductive reasoning. In early adolescence, many youths begin to be fascinated with the analysis of their own thoughts, and in so doing they become aware of contradictions in their self-conceptions, which some may find disturbing (Harter, 1999). They project hypothetical scenarios into the future, they re-analyze the past, they compare their real selves (and others' selves) to ideal selves. Although these are remarkable cognitive advances, they also entail potential liabilities for some at-risk youth (Damon and Hart, 1982).

Certain depressive cognitions about the self, the other, and the future are now fully possible for the first time. When youth can project negative emotional states (feelings of rejection or loss, for example) and negative scenarios into the future, they are able to envision an endlessly dark future with no possibility of hope or escape. Perceptions and feelings of being less competent, less attractive, less lovable, and less honest than one's ideal can become a preoccupation in early to mid-adolescence, as adolescents are absorbed in what is often

described as an egocentric focus on their mental processes (Elkind, 1967). Young adolescents encountering these self-states for the first time have not yet had the experiences that provide the capacity and skills for coping effectively with them. Thus, they may resort to relatively simple, ineffective coping tactics to soothe themselves or block the emotions, such as avoidance, denial, or risk-taking behaviors, including self-destructive ones (Baumeister, 1990).

With these cognitive developmental considerations in mind, I pose two questions of potential relevance to our understanding of why suicidal behavior becomes so prevalent during adolescence. First, what concerns are most important to adolescents? Second, what contributes to a sense of isolation and disconnection during adolescence?

What is most important to adolescents? Most adolescents in the United States are absorbed by their experiences and performance in the world of peers, in their close interpersonal relationships—particularly their initial forays into romantic relationships—and in their achievement at school-related activities. Developmental changes in the demands in each of these areas are intense, beginning in earnest by early adolescence or even in late childhood. At least at first, most adolescents are quite dependent upon external direction, external standards, and external validation in each of these areas, not yet having had the time or experience to develop more mature levels of self-knowledge, self-confidence, or self-acceptance of their strengths and limitations. Those who bring to adolescence preexisting vulnerabilities that are the residue of childhood setbacks, particularly around such issues as their lovability in close attachment relationships and their competence in important domains such as academic achievement, are the most likely to be dependent upon external sources of acceptance and validation to derive a positive sense of self-worth.

The challenges of the adolescent peer world center around proving that one is "good enough" to be accepted. What matters most in this world? It is important to dress the right way, to associate with the right peers, to have the right boyfriend or girlfriend. Girls must be pretty, thin, and kind; boys must be muscular, funny, and athletic. Being an acceptable girl in certain peer groups might entail the willingness to experiment with alcohol, drugs, and sexual behavior, even

if the girl would prefer not to do so. Being an acceptable boy might mean having to prove one is sufficiently fearless and masculine to engage in risky behavior of all sorts. There is a strong pull to prioritize what seems most desired by the others. Adolescents engage in a slow, and sometimes difficult, journey toward self-discovery via their efforts to "make it" in the world of peers. They typically are not yet able to focus inward to access what is most meaningful or important in their lives. Since their reference points are external, negative feedback from peers can readily translate into painful feelings of rejection and unworthiness.

Adolescents' early experiences with romantic relationships are often the source of both elation and heartache. Adolescents seek love and acceptance in romantic relationships, as do people of all ages. Yet, they are often confused about what they want in a partner and what their partner wants from them. Compounding that confusion are the often unspoken motivations in early romantic relationships, particularly the use of the partner to gain status in the peer world. Also, adolescents are inexperienced in identifying their own needs and do not yet know how to fulfill those needs while successfully meeting the needs of their partners.

All of the most painful relationship patterns known to romantic couples can surface in adolescent relationships and—unrecognized by their naive victims—play themselves out in their full power. How does one balance the need for autonomy and independence against the need for love and belonging, particularly when those competing needs differ for the boy and the girl? How does one handle jealousies regarding other boys or girls, whose unwelcome intrusions may be real or imagined? How does one overcome fears about revealing vulnerable feelings and thoughts, especially when the partner may not know how to be supportive regarding such powerful feelings? How does one successfully manage conflicts that arise in a relationship that lacks any long-term commitment? How can one know for sure that one really wants to be with this partner rather than another? If one cannot trust one's own feelings, how can one trust one's heart to a partner? Adolescents can be particularly cruel and inconsiderate in the ways they treat their romantic partners—cheating on them, rejecting them harshly and precipitously in order to avoid the pain of

their own rejection, stringing them along coldly to avoid the pain of breaking up, and so on.

All of these issues are particularly challenging for two young people who do not yet feel secure in their own self-worth. Those who are most insecure often suffer the most pain, because they are highly dependent on validation from their partner. Adolescent relationships are often fleeting, coming and going on the whims of two individuals in the early stages of self-discovery. The pain of unfulfilled needs and the agony of rejection are as real for adolescents as they are for more mature individuals. The pain can be magnified by the isolation born of an adolescent's egocentric perspective (the belief that "no one else can really know and understand how I feel").

Academic pressures are paramount in the minds of many adolescents. Some are caught in the performance trap of believing that their self-worth is completely tied to their academic achievement. They "know" that the failure to keep up academically means their grades will suffer, which means they will not be accepted by a top college, which means their future will be bleak. Adolescents at all levels of academic achievement may fear that they will fail to meet their parents' standards, causing parental disappointment and loss of respect and love for the teen. Some adolescents, particularly those with a long history of academic struggles, have reached a point of disengaging from the quest for academic achievement. Any existing anxieties or concerns about disappointing parents are layered with a protective cover of "I don't care." Such youth may gravitate toward a peer group of alienated youngsters who feel cut off from the traditional pathways to success. This can be particularly frustrating for parents who fret that their child no longer even tries to perform up to potential. The adolescent and parent may feel misunderstood and uncared for by one another.

The disconnections of adolescence. Certain aspects of the adolescent experience contribute to a generalized risk for feeling disconnected in this period, which in turn may play a key role in explaining the heightened vulnerability to suicidal feelings among adolescents in general. Such vulnerability may be particularly strong if the disconnection is experienced as severe or intense following an acute stress or crisis in the peer, romantic, or achievement area.

What renders adolescents susceptible to the experience of disconnection? First, as noted, adolescent egocentrism—a feature of adolescent cognitive development—can promote a sense of disconnection. In early to mid-adolescence, youth are prone to believing that their experiences are unique. They may perceive that most or all of their peers are on a common wavelength that is distinct from their own. At some moments, that may take the form of feeling superior to their peers, for example being scornful of their petty game playing or their superficiality. At other moments, they may feel inferior to others, and defective. Either way, the experience is one of feeling apart from others. When adolescents experience emotional pain, they may be inclined toward a variety of isolating cognitive distortions, such as believing that no one else has experienced the pain that they experience, that no one else can understand. Not appreciating the ways in which their emotional pain is a universal experience, shared by all humans at one time or another, they are inclined to believe that they are uniquely afflicted, and flawed. Thus, instead of accepting the painful emotions as a normal part of the human experience, they may become absorbed in efforts to figure out how to fix the defect that gives rise to it. Engrossed by their own mental analyses of their situation and problems, they may convince themselves that they have considered all possible ways of perceiving or solving their problems. If they do not see a solution, they know that no one else will provide one and may project that nothing will change in the future. What is the point of going on living if misery is a permanent state?

A second factor contributing to the adolescent proclivity toward experiencing disconnection is the characteristic striving for increased autonomy from parents. Optimally, greater autonomy can be achieved while maintaining a positive and close relationship with parents. This is most likely for parents who understand that increased bids for autonomy are part of a normal developmental process and who thus gradually permit their adolescents to make more choices when that is appropriate and safe, while validating them for having their own ideas even when they disagree. However, in some families, increased bids for independence and autonomy are quashed or punished by parents. This may happen for a few reasons. Parents may perceive the strivings for autonomy as a threat to their authority, or they may become very

anxious about permitting increased freedoms for their teens, fearing the youngsters will get into trouble, endanger themselves, or get hurt. Some parental fears are expectable and realistic, but, if parents are overly restrictive, then adolescents will begin to believe that their parents do not trust them or care about them. Some parents are particularly challenged when normal development results in adolescents becoming more critical or standoffish with them. It is appropriate for parents to set reasonable limits around their adolescents' disrespectful behavior, just as parents set limits around tantrum behavior of a 2-year-old. However, if parents feel overly hurt or take it too personally when their adolescent is critical of them, they may withdraw from the adolescent or retaliate angrily, yelling at or insulting the teen. Such parental responses surface on an occasional basis in many families as the adolescent emotionally individuates from parents, but if the adolescent or parent-child dyad has preexisting vulnerabilities and if a negative pattern becomes persistent and entrenched, the adolescent may come to feel unloved by or disconnected from the parents.

Most of the situations that precipitate suicidal behaviors are crises involving the experience of disconnection from others in domains of importance to the adolescent. These include various interpersonal losses, especially a romantic breakup, significant relationship conflicts with parents and friends, and social isolation (Overholser, 2003). Other crises that can trigger suicidal behavior—disciplinary crises such as suspension from school, or academic crises—may not appear to be interpersonal on the surface but often have an underlying interpersonal component, such as disapproval by or disappointment of parents, teachers, or peers. The adolescent is left alone to struggle with painful emotions, which may feel like more than she can tolerate.

Developing Conceptions of the Self and Suicidal Behavior

There have been a few applications of developmental theories of the self to the study of youth suicidal behavior. Susan Harter and colleagues have explored the role of self-representations in the development of depression and suicidal behavior (Harter, Marold, and Whitesell, 1992). They reasoned that self-perceptions of competence in peer-relevant domains of functioning considered highly important by

many adolescents—specifically, physical appearance, peer likeability, and athletic competence—would be linked to peer support as well as depression-related symptoms, whereas self-perceptions of competence in certain parent-related domains of importance during adolescence—specifically, academic competence and behavioral conduct—would be linked to parents' support and to depressive symptoms. Depressive symptoms, in turn, were thought to be associated with greater suicidal ideation. Thus, they described a "mediational" model in which depression largely explains pathways from competence and support to suicidal ideation. Harter and colleagues demonstrated empirically that this model fit well for both middle school students and high school students (Harter and Marold, 1994; Harter et al., 1992).

Some developmental models of particular domains of functioning (e.g., moral development, development of perspective-taking skills) posit a series of stages that must be mastered in sequence in order for healthy social and emotional development to unfold. Gil Noam and Sophie Borst (1994) applied one such stage model, Loevinger's model of ego development, to the study of suicidal youth. They focused on two stages in particular: (a) the "preconformist" stage, when youth have a concrete, egocentric perspective and tend to respond impulsively and use others as means to achieving their goals; and (b) the "conformist" stage, the following stage, at which persons are able to perceive themselves through the eyes of another and tend to use those perceptions to guide their behaviors so as to garner acceptance by others. Studying a clinical sample of adolescents, they found that, whereas age was unrelated to suicide attempts, nearly twice as many adolescents at the conformist level of ego development as at the preconformist stage attempted suicide. Among the suicide attempters, preconformists showed more externalizing symptoms, and conformists were more likely to have affective disorders. Taken together, these findings are another example of how advancing development during adolescence can entail an increased risk of suicidal symptoms, at least temporarily. The preconformist, less able to take the perspective of others, is more likely to blame them for life's difficulties. The conformist, more capable of performing in-depth self-evaluations, is thereby more inclined to self-blame and to the resultant depressive and suicidal cognitions.

Michael Chandler and his associates (Chandler, Lalonde, Sokol, and Hallett, 2003) have examined the role of identity development in relation to suicidal behavior. Identity development is a psychosocial process and, as Erik Erikson (1968) described, is one that emerges as salient for the first time during adolescence. Chandler and colleagues' approach places great emphasis on the cognitive component, particularly adolescents' conceptual approach to maintaining their sense of personal persistence (i.e., "sameness") in the face of the many changes of adolescence. In their model, adolescents face several transitional points during which their previous solutions for preserving a sense of self-persistence no longer seem adequate but at which no new solutions have yet been adopted. Chandler et al. describe this transition zone as a sort of doldrums, a point at which adolescents feel uncentered, without any personal investment in the future. They argue that if a significant negative event occurs at this point—being grounded by parents, being deserted by a friend, failing a test—then there is a heightened risk of suicidal behavior.

Chandler and colleagues (2003) have found some support for their model. With a sample of adolescents who were hospitalized on a psychiatric inpatient unit, they found that only 17 percent of those who had made serious suicide attempts were able to describe their personal continuity in a meaningful way, that is, explain why their past, present, and future selves were one and the same person. In contrast, 91 percent of nonsuicidal clinical controls provided meaningful grounds for viewing themselves as continuous persons across time and into the future.

Chandler and associates took their work further, examining not just personal identity but continuity in cultural identity. Investigating Native communities in Canada (First Nations communities), they found that those communities making the greatest efforts to preserve cultural continuity—such as efforts to maintain self-governance, maintain responsibility for education and health care, and construct a site for cultural activities—had the lowest youth suicide rates.

Developmental Changes in Concepts of Death

Two aspects of a developmentally "mature" conception of death are of particular relevance to our discussion, namely, the inevitability of death,

and the irreversibility of death. Maria Nagy's (1959) findings on children's conceptions of death, based on interviews she conducted some 50 years ago, are still considered largely valid today. Nagy described how young children, particularly those under age 5, do not appreciate the finality and irreversibility of death. Many of them view death as a sort of departure, as if the dead person has gone away somewhere but in many respects remains alive. Some may view death as a temporary state from which one awakens after a period of time, like sleeping. Thus, they may ask questions about when the deceased person will be returning home. They also do not recognize the inevitability of death, that is, that all people, including themselves, will eventually die.

During the period from ages 6 to 9, children come to recognize that death is irreversible, and by ages 10 or 11 they also begin to recognize the inevitability of death, the fact that we all will die at some point. Factors such as exposure to death and having a life-threatening or chronic illness can hasten children's development of mature death concepts (Kastenbaum, 1992). As adolescents continue to mature and have greater direct and indirect exposure to death experiences, including attending funerals, experiencing the deaths of friends or relatives, and participating in discussions about death, their conceptions become more complex (e.g., incorporating conceptions of an afterlife), as well as more personal (Noppe and Noppe, 1997).

Even though adolescents reaching formal operations are capable of conceptualizing death as universal and inevitable, the egocentric quality of early-adolescent thinking can mitigate against such conceptions, yielding instead a sense of immortality, that is, the belief that death is something that happens to others, not oneself (Elkind, 1967). Some suicides are probably the result of high-risk acts performed by teenagers who are very upset by recent events or circumstances but who may not believe that their risk taking will actually result in death. Some writers have asserted that adolescents may embrace high-risk situations as a sort of challenge to death, flirting with risk as if to show that death cannot triumph over them (A. K. Gordon, 1986). That adolescents generally tend to be more present-focused than adults, that is, more concerned with the present or short-term future than with the longer-term consequences of their actions (Kastenbaum, 1992), may contribute to their risk-taking, death-defying attitudes.

Interestingly, Carlson, Asarnow, and Orbach (1994) found differences in conceptions of the finality of death in suicidal and nonsuicidal children ages 8–10. Specifically, almost one-half of suicidal youth in that age range believed they could come back to life after they died, whereas only 30 percent of nonsuicidal children thought so. Indeed, older children who usually no longer believe in reversibility may "regress" in the midst of a suicidal crisis, temporarily believing that they will come back from death (Orbach and Glaubman, 1979; Pfeffer, 1986). Among adolescents, those who more frequently think about death tend to have even more limited visions of their long-term futures than the typical adolescent, perhaps because envisioning a longer-term future entails the anxiety-provoking task of contemplating their own mortality.

Carlson and colleagues (1994) also investigated children's understanding of the reasons for suicide. They found that younger children, those ages 8–10, could not understand why someone might want to commit suicide, whereas those age 11 and older cited possible emotional reasons, including sadness, depression, misery, and self-hatred. Among adolescents with suicidal ideation, those who had attempted suicide were more likely than nonattempters to cite possible external motivations, such as the occurrence of a negative event, whereas the nonattempters were more likely to cite negative internal emotional states.

Thus, it seems likely that many children and early adolescents who engage in suicidal behavior have less than fully mature conceptualizations about suicide. Cognitively, they may be capable of understanding that death is irreversible and permanent, but in the midst of their suicidal crisis they may believe that they will be able to observe the consequences or experience the relief that follows their actions (e.g., one 14-year-old female, explaining her recent overdose, remarked: "I figured life would be better if I was dead"). For others, the urgency of their pain may lead them to impulsively engage in dangerous actions without giving a second thought to the possibility of death.

Much remains to be learned about the developmental origins of suicidal ideation. We still know little about how suicidal youth first learn about suicide. What are the sources of their knowledge? What are the processes by which they first come to consider it as a possibility

for themselves? Further, how might beliefs in an afterlife affect the likelihood of suicide? The unanswered questions that remain to be probed by developmental investigators are many.

Neuroscience Contributions to Understanding Cognitive Development

Recent research on the underlying brain mechanisms of self-regulation may inform work with suicidal youth. Much of this work has been spurred by technological breakthroughs in imaging techniques that allow researchers for the first time to test questions regarding the location of brain activity related to certain functions, such as emotion processing and problem solving. This research is most relevant if one considers suicidal behaviors alongside a multiplicity of risk behaviors that are elevated in the general population of postpubertal youth, including homicides, accidents, injuries, drug and alcohol abuse, and unprotected or indiscriminate sex (Grunbaum et al., 2002). A common link between these various risk behaviors is that they may all stem at least in part from insufficient cognitive self-regulation of both behavior and emotion. Regulating behavior involves the use of rules as a guide in choosing and sustaining actions, as well as the ability to hold in mind goals and to anticipate future consequences (Barkley, 1997). Behavior regulation also necessarily involves regulation of strong emotion so that powerful, emotion-laden impulses and drives do not exert undue influences on behavior.

It has long been known that the cognitive processes associated with goal-directed behavior continue to develop throughout adolescence (e.g., Keating and Bobbitt, 1978). These include such processes as working memory (i.e., the ability to hold information "on line" while performing mental operations with it), planning, response inhibition (i.e., restraining oneself from making an unhelpful response that would otherwise be prepotent), and regulation of attention (i.e., directing attention toward or away from stimuli as needed). Whereas the timing of increases in risk-taking behaviors and emotional intensity is linked to the timing of puberty, advances in cognitive control over emotion and behavior coincide with increasing age and experience. Thus there is a gap in early to mid-adolescence during which

adolescents are prone to experiencing biologically driven, affect-laden motivations before they have the cognitive wherewithal to cope with them and so are prone to making poor, risky choices (Steinberg et al., 2006). That adolescents are capable of making adult-level decisions has been shown in laboratory studies. The problem is that adolescents frequently are not yet capable of making reasoned decisions in the sorts of emotionally charged situations that they encounter with peers on an everyday basis. Over time, most adolescents gain the requisite experience to allow for cognitive control over emotional and behavioral impulses, but the lag between pubertal development and that period of increased regulatory control is the one that is fraught with the greatest potential for problem behaviors.

The various cognitive functions relevant to self-regulation, such as inhibiting impulses, planning and organizing, and allocating and directing attention, are typically conceptualized by temperament researchers as "effortful control" processes (Derryberry and Rothbart, 1988) and by neuropsychologists as "executive functions" (Posner and Rothbart, 2000). A growing body of work by neuroscientists has provided evidence that particular areas of the prefrontal cortex (PFC) are critical to these cognitive functions (Casey, Giedd, and Thomas, 2000). Thus, any effort to understand adolescents' successes and difficulties in self-regulation must necessarily give serious consideration to the course of development of the PFC.

Davidson and colleagues (Davidson, Jackson, and Kalin, 2000) have provided considerable evidence that the PFC plays a key role in the processing of emotion. Work from Davidson's lab has shown that asymmetries in electrical activation in the PFC are associated with characteristic patterns of temperament differences. Approach behaviors, certain types of positive affect, and quicker recovery from startle are associated with greater left PFC activity, and withdrawal, negative affect, and slower recovery from stress are associated with greater right PFC activation. While it has long been known that lesions in the PFC are associated with poorer planning and organizational abilities, Davidson and associates have shown that lesions in the ventromedial PFC are associated with difficulty anticipating future positive or negative consequences. Davidson has interpreted these findings as implying that the PFC is associated with an affective

working memory, that is, an ability to hold in mind positive and negative emotions even when the provoking stimuli are not present. Such processes would be critical in sustaining goal-directed behavior in the absence of immediate incentives.

Whereas it once was thought that brain development was functionally completed very early in development, research has now shown that this is not the case and that plasticity can occur across the life span. Indeed, there is a growing body of evidence that the brain structures necessary for effective cognitive control over behavior and emotion undergo considerable maturation and development during adolescence and into young adulthood. Specifically, research with nonhuman primates, pediatric neuroimaging studies, and human postmortem studies have all provided evidence that the PFC is one of the last brain regions to mature (Casey et al., 2000), with development and integration with other brain structures continuing well into adolescence and beyond. Baird and associates (1999) showed that, when processing emotions, adolescents show greater brain activity in the amygdala and lower activity levels in the PFC than do adults. The implication is that adolescents may be more likely to have "gut" responses to emotion and that the ability to use the higher order PFC functions to inhibit prepotent responses to strong emotions continues to mature into adulthood. Luna and colleagues (Luna et al., 2001) used neuroimaging techniques to study changes in brain activity associated with voluntary control over context-inappropriate behavior in children, adolescents, and young adults. Among adolescents, the PFC was more active during tasks requiring voluntary behavioral control than in younger children, but integrated coordination between the PFC and other brain areas was most fully demonstrated by the young adults. These findings on increasing integration and coordination seem to represent the brain-system's equivalent of recent conceptions of cognitive development in adolescence, in which cognitive performance gains are thought to arise from newly emerging integrations of preexisting cognitive skills that increasingly come under voluntary control across time and experience (Keating, 2003).

Additional neuroscience findings point toward adolescence as a key developmental period for making gains in cognitive self-regulatory skills. There is an increase in frontal gray matter in preadolescence,

followed by plateaus during early and middle adolescence (Giedd et al., 1999). This increase is analogous to the overproduction of gray matter that occurs during fetal development and suggests that at the threshold of adolescence there may be a high potential for formation of new synaptic connections and neural pathways. During later adolescence and young adulthood, the level of cortical gray matter gradually decreases in a process often referred to as "pruning," or selective elimination of synapses that are not utilized (Giedd et al., 1999). Overall, since this appears to be the last point in development when there is an overproduction of gray matter, the findings suggest that adolescence may be a final critical period for developing brain wiring pathways that will remain stable into adulthood, a sort of ultimate "use it or lose it" opportunity to shape the wiring of functions involving the PFC. Presumably, if the adolescent is nurtured in an environment that promotes positive development of PFC functions, then the brain will acquire effective self-regulatory patterns that are long enduring. However, this hypothesis is speculative on several levels, including whether the increased gray matter does indeed represent a jump in the production of synapses and whether environmental influences can shape synaptogenesis in humans, as is apparently the case in rats (Bourgeois, Jastreboff, and Rakic, 1989).

Thus, the cognitive developmental and neuroscience findings reviewed in this section make it clear that the adolescent brain is still an immature one, particularly in terms of the capacity for effortful, cognitive self-regulation of emotion and behavior. Coupled with the major challenges posed by the biological and social transitions of early adolescence, this may go a long way toward explaining why early to mid-adolescence is associated with a jump in the rates of risky behaviors, including suicidal behaviors. The neuroscience findings are only suggestive, however, in terms of the implications for suicidal behaviors.

Conclusions

What causes suicide and suicidal behavior? Theorists provide answers that span from the wide-angle lens of those studying societal forces to the close-up zoom of those dissecting our DNA. There is empirical evidence providing at least partial support for most of these

approaches, including sociological, psychological, psychosocial, family, biological, and biopsychosocial models. Although there are some commonalities among the models—for example, many of them view suicidal behavior as a way of solving or managing a situation that is viewed as otherwise intractable—there also is great diversity.

One key issue from the vantage point of child and adolescent suicidology is that most of the models have ignored developmental constructs and themes. Existing work that has incorporated developmental foundations has focused almost exclusively on developmental aspects of the self. That work has taught us that three constructs—perceived competence, ego development, and continuity of one's personal narrative—may each be worthy of consideration in developmental models of suicidal symptoms. However, each of those constructs springs from a different theoretical tradition, making it difficult to contemplate a model integrating all three. Elements of attachment theory and the parent-child dyad may also prove useful and are explored further in the next chapter.

The biopsychosocial framework probably offers the most fertile ground for generating a developmental theory of suicidal behavior. Building on the work reviewed in this chapter, an adequate developmental model would take the following features into account: (a) It would be a dynamic model allowing for mutual influences across time between multiple domains of development (e.g., cognitive, interpersonal, neurodevelopmental) and multiple contexts of particular relevance to adolescence (e.g., family, peer, romantic, academic); (b) it would take seriously the constructs of multifinality and equifinality, allowing for multiple pathways to suicidal behavior; (c) it would investigate the development of suicidal symptoms in light of key transitions of adolescence, including academic transitions (school changes), normative cognitive developmental transitions (onset of formal operations), normative biological transformations, including the onset of puberty, and nonnormative transitions, including stressful interpersonal losses (e.g., deaths, parental divorce); (d) it would take into account developmental changes in conceptions of death, including the question of whether suicidal adolescents are susceptible to temporary setbacks in the level of sophistication of their death conceptualization.

In the coming chapters, I review a large number of empirical findings that are pertinent to many of the theoretical models of suicide reviewed in this chapter. Informed by those findings, in the last chapter of the book (on prevention), I offer an integrative theoretical model of the suicidal crisis in young people. However, I do not propose a comprehensive developmental theory that accounts for the various developmental trajectories to suicidal behavior, instead leaving that work to others in the future.

4

Social Relationships

Transitions in Social Relationships: Sources of Risk and Protection

This chapter discusses two important social domains of adolescence: the family context and the peer context. In chapter 3, I described how important both of these domains are in terms of normative and positive growth and development. In this chapter, I explore the theoretical and empirical work supporting their association with the development of suicidal behavior.

Family Influences on Suicidal Behavior

Louisa's mother became furious after receiving a telephone call from school informing her that Louisa had been skipping classes and failing to turn in important assignments. She confronted Louisa about her dishonesty and

irresponsibility that evening. As Louisa, who had been depressed for several months, made excuses and seemed not to care, her mother's anger swelled into rage. Over- whelmed by all of the problems in her life—her husband's absence on an overseas military assignment, financial wor- ries, stress on her job—the mother lost control. She began smashing bowls and plates against the kitchen floor and walls, glass flying everywhere, as Louisa and her younger brother watched in horror. She screamed that Louisa was going to cause the family to fall apart and that she no longer cared if any of them lived or died. Louisa raced upstairs to the bathroom, locked the door, and began ingesting any pill she could find, including acetaminophen, antihista- mines, and other cold tablets.

It is all but self-evident that families play a role in the develop- ment of suicidal behavior. The family is arguably the most impor- tant socializing agent in a child's life. Theoretical accounts of suicidal adolescents as well as suicidal adults have been persuasive in delin- eating the role of negative family interactions, such as scapegoating, squelching the expression of negative emotions, restricting a young person's bids for autonomy, and participating in generally negative, unsupportive parent-child relationships. In addition, stresses in the home have been thought to play a role, including losses due to death or to marital separations. But, how strong is the evidence for these factors? Is it really the case that so-called dysfunctional families influ- ence the young person to become suicidal? Is it possible that most of these negative family factors are primarily the parents' responses to the suicidal behavior or other psychopathology shown by the youth, so that the family behaviors are not primarily a cause but instead are an effect of the youth's problems? Even if that is so, of course, the family reactions may exacerbate the situation if they provide a hostile or disengaged atmosphere.

Besides the purely environmental influences of the family, there also has been a keen interest in recent years in possible genetic influences on suicidal behavior. Genetic influences can play a role both through their expression in the phenotype of the child and also

through interactions of the environmental influences of the parent with the genetic characteristics of the child, an area that has not yet been carefully explored.

In this section of the chapter, I present each of the major theoretical arguments for the role of the family, along with the empirical research that has tested each of the theories. I also provide some discussion of the strengths and limitations of the research on the role of the family. Readers interested in additional details and more extensive methodological critiques of this work may wish to consult two previous papers (Wagner, 1997; B. M. Wagner et al., 2003).

Family communication and problem solving. Clinical observers of families of suicidal youth have described patterns of secretiveness and of avoiding direct verbal expression of honest emotions, both positive and negative (Orbach, 1986; Pfeffer, 1986; Richman, 1986). Instead, the families rely upon indirect, nonverbal looks or gestures and tend to walk out on arguments, ignore one another, and remain somehow impervious to suicidal intent expressed by one another. In essence, the adolescent learns that large segments of his or her emotional experience cannot be verbally communicated because they are perceived as too threatening to the emotional stability of specific others or of the family as a whole. Even though high levels of hostility may be evident, they are not directly acknowledged (Pfeffer, 1981). Not surprisingly—given that effective communication is a prerequisite for flexible problem solving (Wynne, 1984)—the families have been described as ineffective at grappling with everyday problems and conflicts. This arrangement can be tolerable for extended periods of time, even though the family lives with the chronic stress of unresolved problems, which may escalate into crises when members face especially stressful challenges, either normative or nonnormative. Since it is impossible to directly express painful emotion or to feel effective at influencing one another's behaviors, the suicidal behavior has sometimes been conceptualized as a substitute way of communicating pain or neediness or of sending a message that the status quo is no longer tolerable.

In research studies, family-wide characteristics such as family cohesion, family conflict, and levels of family disorganization have not been shown to differ in families of youth who completed suicide

and in other families. But when researchers have focused specifically on the parent-teen dyad instead of the family as a whole, they have found evidence of greater conflict as well as less frequent and less satisfying parent-teen communication in families of completed suicides (Brent, Perper, et al., 1994; Brent, Perper, Mortiz, et al., 1993; Gould, Fisher, Parides, Flory, and Shaffer, 1996). Episodes of conflict with parents have been cited as the precipitant of roughly 20 percent of adolescent completed suicides, that is, as the triggering event that immediately preceded the suicide (Brent et al., 1988).

Family cohesiveness, supportiveness, and flexibility in adapting to change are all predictive of future suicide attempts or suicidal ideation from 6 to 12 months later (King et al., 1995; Lewinsohn, Rohde, and Seeley, 1994; McKeown et al., 1998), and those same aspects of family life are more often found in samples of youth who have developed suicidal symptoms than in families of youth with other types of psychopathology (e.g., Perkins and Hartless, 2002). In addition to this work on the entire family system, researchers have found that negative aspects of the parent-child relationship are associated with a higher risk for suicidal behavior. Fergusson and Lynskey (1995) found that lower maternal responsiveness (e.g., lower emotional sensitivity, availability, acceptance of the child) from as early as age 3 is predictive of suicide attempts in adolescence. Many other researchers have found that negative qualities of the parent-child relationship (e.g., lower warmth, higher harsh criticism) are more often found in families of suicidal youths than in control groups. Conflict episodes with parents are also a frequent precipitant of adolescent suicide attempts, preceding as many as 50 percent of them (Brent et al., 1988).

Throughout the body of work on family and parental characteristics, there is evidence that some of the effects of family functioning on suicidal symptoms are probably a function of child psychopathology. That is, control groups of youth with the same emotional or behavioral problems as suicidal youths often also have family problems similar to those of the suicidal youngsters. Put differently, many of the family risk factors for suicidal behaviors are not unique to families of suicidal youth but instead are shared by families of youth with other disorders. This does not diminish the importance of the family factors, but it does raise questions about the role of psychopathology. Although it is quite

plausible that a negative parent-child relationship increases the odds of a psychiatric disorder (which in turn gives rise to suicidal symptoms), the opposite may be true—that a psychiatric disorder makes it more difficult for the parents and/or the child to maintain a good relationship with one another. It also is possible that another factor altogether (such as parental psychopathology or chronic family stresses) is responsible for both the relationship difficulties and the psychiatric disorder. If it were possible to randomly assign youth to different families, we could design an experiment that would provide the ultimate answers to the questions of causal sequencing. Obviously, such a design is not possible, and the only way to answer these questions is to design a series of studies in which plausible alternative possibilities are ruled out. That kind of work has not been attempted.

Most of the empirical findings regarding families of youth with suicidal ideation or who have attempted suicide are based on self-report measures, typically relying only on the adolescents' accounts but in a few cases utilizing parents' perceptions as well. The perspectives of the adolescent are obviously important, but the fact is that most of our knowledge of the families of suicidal youths is based on a lens of limited scope. In order to expand those perspectives, my graduate students and I have conducted studies that have used alternative ways of assessing beyond those that depend solely on the ability of the adolescent to accurately and fully describe the family process.

In one such study (Aiken, Zimmerman, and Wagner, 2008), we observed 71 adolescents, who were hospitalized following a recent suicide attempt, discussing a problematic issue with their mothers ($n = 66$) and fathers ($n = 39$). We compared their discussions with those of families of 29 adolescents who were matched on diagnosis, sex, race, age, and hospital site and who had no history of any self-destructive behavior. Problem issues were selected after preliminary discussions of research assistants with each participant so that the selected topics would be meaningful and relevant to all family members. The instructions were for each parent-adolescent dyad to strive to make forward progress during a 12-minute conversation, which was videotaped. The videotapes were later transcribed and were coded by a trained team of raters for the frequencies of each of several communication dimensions adapted from the work of Notarius and colleagues (1990). Each

"turn," or uninterrupted block of speech, was coded for the presence of emotional validation (EMV; i.e., statements that conveyed support or concern for the other person, including understanding, expressions of support, interest in the other's feelings, and so forth) and emotional invalidation (EMI; statements that were undermining of the other family member, such as criticisms, induction of guilt in the other, sarcasm, and efforts to control the other's expression). The full interactions were also coded globally for (a) high-intensity EMI, that is, whether each person was clearly and repeatedly rejecting, disparaging, or contemptuous of the other person (in other words, "mean"), (b) how constructive each person was in working toward a mutually satisfying outcome, and (c) the degree of forward progress made by each dyad. On self-report scales, each participant provided ratings of (a) relational efficacy, that is, how frequently the dyad successfully resolved conflicts across a variety of possible problem areas, and (b) how likely the dyad was to make forward progress during the brief session (on a 5-point scale).

The results suggest that the self-report findings for negative family interactions are not merely a matter of biased perceptions. The adolescent suicide attempters exhibited a significantly greater proportion of EMI interactions with their mothers than did the closely matched control group, and they showed the same tendency with their fathers, although the finding narrowly missed statistical significance. The adolescents who had attempted suicide were also significantly more likely to be "mean" with their mothers (i.e., rejecting, contemptuous) than were nonattempters. Parents of the attempters, however, behaved no differently from the parents of the nonattempters.

Importantly, certain aspects of the observed family interactions were predictive of adolescent suicidal symptoms across a 2-year follow-up period. Adolescents who were more unconstructive with their fathers were significantly more likely to reattempt suicide at some point during the follow-up. Adolescent interactions were also predictive of whether the adolescent reported suicidal ideation at certain follow-up points. Specifically, greater adolescent EMI with both mothers and fathers was predictive of increasing suicidal ideation at 6-month or 1-year follow-ups (i.e., after statistically controlling for previous suicidal ideation). Greater adolescent EMV and more

constructive interactions with fathers were also predictive of lower suicidal ideation scores 6 or 12 months later. In addition, adolescents who were observed to make more progress with their mothers were less likely to report suicidal ideation at the 12-month follow-up.

So what do these findings mean? First, they imply that there is something relatively unusual going on in the families of the suicidal young people. The patterns of family interaction in the theories— avoidance, hostility, scapegoating—are ones that have been described in families of adolescents with other forms of psychopathology, such as eating disorders (Attie and Brooks-Gunn, 1995). Thus, we were initially somewhat skeptical about whether we would really find any distinct patterns in the suicidal families. Yet, those who had attempted suicide were more negative and "mean" with their mothers and tended to be more negative with their fathers than were even other hospitalized adolescents. So, it appears that suicidal adolescents do not hold back on expressing negativity in their interactions with parents, especially mothers. At the same time, they avoid directly confronting the problems in a constructive manner.

The fact that parents of suicide attempters did not differ from parents of other hospitalized adolescents might suggest at first blush that the negative interactions in families of suicidal adolescents are mostly a function of the adolescent, not the parent. However, on closer inspection, that does not appear to be the case. Roughly 35 percent to 40 percent of mothers' and fathers' speaking "turns" contained EMI, regardless of whether the child had or had not attempted suicide. That is equivalent to or greater than (depending on the specific dyad, i.e., mother-son, father-daughter) the proportion of adolescents' speaking turns that contained EMI, indicating that parents behaved negatively just as frequently as their offspring (although there were very few "mean," i.e., high-intensity, parents). Unfortunately, since we do not have information on these youngsters that predates the suicide attempt, we cannot know whether the group differences emerge because controls tend to shut down their negative emotional expression in the aftermath of the hospitalization or because group differences do in fact predate the hospitalization (i.e., attempters may be characteristically less likely to restrain their negative emotional expression than controls).

Most likely, neither parent nor child was primarily responsible for the negative interactions, but rather there is reciprocity in emotional processes between the two. On the basis of research with the general cross-section of children and adolescents, it seems that the old adage of "what goes around comes around" holds true for the emotional life of families. Grazyna Kochanksa (1997) has shown with young children that parents who express more positive emotion tend to have children who respond to them more positively. Working with adolescents, Conger and Ge (1999) found evidence of mutual reciprocity of supportive interactions with parents; that is, positive parental behavior toward the adolescent increased the likelihood that the adolescent would later respond similarly to the parent, and vice versa. Kim and colleagues (Kim, Conger, Lorenz, and Elder, 2001) also showed evidence of mutual reciprocity in negative affect expression between parents and adolescents. That is, a parent or child who was the target of relatively high levels of negative affect in the early adolescent years tended to express increasing levels of negative affect to the other person with the passage of time.

Interestingly, although the overall frequency and intensity of parent-child conflict tends to increase from puberty forward, Kim and his associates showed that the intensifying process was time limited, with adolescents' and parents' negative affect expression reaching an apparent ceiling and then tapering off slightly by later in adolescence. That timing is curiously parallel to the timing of drops in rates of suicide attempts for adolescents. That would not necessarily imply that family processes affect the likelihood of suicidal behavior. Instead, increasing competence at managing negative emotion, as a result of both increased experience and biological maturation of the emotion-processing systems, might reduce both the level of conflict with family members and the likelihood of suicidal coping strategies. It also is the case that parents tend to grant more autonomy to their adolescent offspring as the adolescents get older, which can reduce the frequency of conflict episodes.

The second important point to consider is the implication of the predictions of suicidal symptoms at follow-up. On the one hand, the findings showing that negative, unconstructive interactions predict future suicidal symptoms are not big news, since many researchers have

shown that negative family interactions are associated with various types of psychological problems in offspring. It is important, though, to consider the findings within their particular context, adjusting in the aftermath of a serious suicide attempt. What challenges are faced by adolescents in trying to forge constructive communication with their parents? This can be a very trying time for adolescents who have attempted suicide. Some feel shaken by their own behavior and uncertain of their abilities to cope with life's demands. They may be anxious about facing the questioning and concern of family members or friends. They may tend to withdraw into isolation as a way of avoiding anxiety. Some may respond angrily to what they perceive as excessive pressure to talk about their feelings, insisting they would be just fine if everyone would simply leave them alone; such anger can also be a way of reducing anxiety. Others use the crisis as a chance to begin to learn more about themselves and participate fully in psychotherapy.

The transition is challenging not just for the adolescents but for the parents as well. Parents must manage a great deal of strong, sometimes conflicting emotion, as my research team found when asking parents to describe their initial reactions to their adolescents' suicide attempts (Wagner, Aiken, Mullaley, and Tobin, 2000). In that study, suicide attempts elicited caring and sad emotions from the vast majority of mothers and fathers. While 70 percent of mothers reported feeling anxious and worried, as one might expect given the threat to physical health and safety, fully 50 percent of mothers reported feeling anger or hostility toward the adolescent. Fathers also felt angry in equivalent numbers, as roughly 50 percent of their narrative descriptions of their reactions contained expressions of hostility (although fewer of them admitted to having felt hostile when directly asked by the researchers). In many instances, the anger is related to attachment issues, as described in a later section of this chapter; that is, it stems from a sense of protectiveness or a sense of having been punished by the adolescent. Such anger is common (although less so in the aftermath of the most medically dangerous attempts), and parents therefore should not feel ashamed or self-critical if they do feel anger. Indeed, acknowledging the presence of any anger to oneself or supportive others may be a first step to dealing constructively with it, whereas unacknowledged parental anger may be unconstructively

expressed either covertly or overtly with the adolescent. A few parents feel contempt for their child's suicidal behavior, viewing it as immature and foolish or as morally reprehensible; expressed contempt can be particularly destructive to relational health (Gottman, 1999).

The results showing that family interactions predict suicidal symptoms indicate that the best scenario is one in which the adolescents can talk productively and constructively with their parents in the days and weeks following the attempt. The question, then, is what makes that most likely to occur? It is possible that those adolescents who are otherwise adjusting well might be the most likely to interact constructively with parents, while those who are suffering from more psychopathology may be the least constructive. However, that idea is at best only a partial explanation. We did find that adolescents with more disruptive behavior symptoms—for example, oppositional, impulsive, or delinquent behaviors—were most likely to be "mean" toward mothers and least likely to make progress with fathers. But, adolescents' depression was unrelated to their interactional behaviors, and various anxiety syndromes were related only to negativity toward fathers, not mothers. Whether or not adolescents can speak constructively with their parents is also likely to be a function of factors that the parents bring to the situation. Parents must cope effectively with their own emotional reactions and experiences in order to respond effectively to their children's emotional needs. This can be a tall order when parents are grappling with the various emotional issues raised by the suicidal behavior, particularly if the child is angry or upset with the parent. The situations that are most emotionally challenging to parents are often the very ones in which the adolescent most needs the parent to be supportive and responsive.

Scapegoating is one particular pattern of negative family interaction thought to occur with some frequency in suicidal families. It involves family members co-constructing a point of view in which one person—in this case the suicidal child—bears the burden of responsibility for the family's problems. In one sense, there is a perverse effectiveness in this, since all family members except the targeted one thereby free themselves from any responsibility for problems and thus from responsibility for change. The message, whether voiced directly or communicated in subtle, implicit ways, is that if one person could

somehow be fixed, all would be well in the family. Family members may even convey a subtle wish to be rid of the child or to have the child somehow disappear for the benefit of one or more others in the family (Richman, 1986; Sabbath, 1969). A variation on this theme occurs when the targeted person is perceived as a threat to another person in the family and must therefore fail in order to ensure the success of another.

If the target of the blame implicitly accepts the scapegoated perspective, then that person becomes emotionally isolated from the others, left alone and without love to carry the weight of the family's problems. How can anyone—let alone a young, inexperienced person—appropriately handle such a situation? Youngsters may begin to reason that, since everything wrong with the family is their fault, then the family would be better off without them. Maybe they really are unlovable and defective. Such reasoning increases the odds of behaviors aimed at disappearing, such as running away from home or making a suicide attempt. Physical maltreatment can also be thought of as a severe rejection, and children may start to believe that they must be deserving of rejection if they are treated so poorly, a state of mind that might result in self-destructive behaviors (Pfeffer, 1986).

Researchers have not yet specifically addressed the question of whether child or adolescent completed suicides are scapegoated, that is, viewed as the source of the family's troubles or singled out for negative treatment. There is some evidence that adolescent suicide completers are more likely than community controls to have been physically or emotionally abused, although no more likely than adolescents with other psychiatric problems (Brent, Perper, et al., 1994; Shafii, Carrigan, Whittinghill, and Derrick, 1985); however, Gould and colleagues (1996) found no such difference.

As is typical in this field, a good deal more work has been done with those who have attempted suicide and with those with suicidal ideation. Researchers using prospective designs (in which youth are tracked over time) and research in which abuse has been documented by social service agencies have shown consistently that physical and sexual abuse increase the odds of later suicide attempts (J. Brown, Cohen, Johnson, and Smailes, 1999; Deykin, Alpert, and McNamarra, 1985; Fergusson, Woodward, and Horwood, 2000), even after

controlling for potential mediating factors including attachment to parents and peers, loneliness, stressful events, and behavioral and emotional problems (Salzinger, Rosario, Feldman, and Ng-Mak, 2007). Investigations of suicidal ideation have resulted in a less consistent picture. Some studies have found evidence that maltreatment increases the odds of suicidal ideation, although others have not, and in many instances the ideation may be secondary to other forms of psychopathology (Fergusson et al., 2000; Salzinger et al., 2007; A. B. Silverman, Reinherz, and Giaconia, 1996). In an investigation of a carefully defined population of African American inner-city youth, I, along with colleagues at Johns Hopkins University, found a greater likelihood of both suicide attempts and suicidal ideation among those whose caregivers used more verbal or physical aggression, even after taking into account the youths' current depression, their reported attachment to caregivers, and whether they had a history of any sexual assault (Koenig, Ialongo, Wagner, Poduska, and Kellam, 2002).

A few researchers of youth suicide attempters and those with suicidal ideation have used methods designed to more specifically assess questions of scapegoating and expendability. Two studies that had some methodological weaknesses nonetheless provided suggestive support for the idea that many suicidal youngsters perceive themselves as unwanted by parents and may in fact have been unwanted children (Rosenthal and Rosenthal, 1984; Woznica and Shapiro, 1990). Observing the behaviors of 6 families of female suicide attempters, Williams and Lyons (1976) reported that the attempters' statements were more likely than those of siblings or parents to be followed directly by others' negative responses, such as disagreement or disapproval.

My students and I have investigated whether adolescent suicide attempters are perceived or treated more poorly by parents than their siblings, as well as whether the adolescents themselves perceive so-called negative differential treatment by their parents. In her dissertation work, Mary Alice Silverman (2004) found evidence for differential parental treatment within families of suicidal youths. The adolescent suicide attempters felt that both mothers and fathers were more affectionate with their siblings than with them and that mothers and fathers were more controlling with them than with their siblings. The gaps the adolescents perceived with regard to parents' favoritism

were significantly greater than those found in normative samples of adolescents. Importantly, adolescents' perceptions do not tell the whole story. On rating scales, both mothers and fathers indicated that they felt closer to the siblings than to the suicide attempters, and they also reported more conflict with suicide attempters than with the siblings. An analysis of parents' open-ended, narrative descriptions of their adolescent's personality and of their relationship with the child yielded similar findings— parents described the siblings in more positive terms and used more negative terms in describing the suicide attempters.

Of course, these findings do not necessarily indicate that parental negative differential treatment or adolescents' perceptions of being treated more negatively than a sibling lead to suicidal behavior. Instead, troubled behavior on the part of the child may influence parents to exercise more control over their behavior, may lead to greater conflict, may result in parents feeling less close to the child, and so forth. Even if that is the case, adolescents' perceptions of differential treatment appear to have some implications for their adjustment in the aftermath of a suicide attempt. Specifically, adolescents who perceived that their fathers had less affection for them than for a sibling were more likely to re-attempt suicide across a 2-year span following a serious attempt. Again, we see evidence of the important role that fathers seem to play vis-à-vis adolescent suicidal behavior. The same did not hold true for perceptions of mothers or for parents' reports of their feelings/behaviors toward the adolescent.

Attachment theory. There are several aspects of John Bowlby's (1980) attachment theory that are relevant to suicidal behavior. Bowlby wrote that completed suicides are frequently motivated by attachment issues involving a deceased person, such as a wish to reunite with the deceased (a "magical" wish born out of a disbelief that the loved one is truly gone and/or a sense that a permanent separation is too unbearably painful to live with), an attempt to destroy oneself for causing the death, or an effort to exact revenge. Attempted suicides are more likely to represent a strong distress signal aimed at eliciting attentive support from a living caregiver who is perceived to be neglectful or unavailable or an act of punishment of the caregiver, perhaps in retaliation for being unavailable or for the pain one has received at the caregiver's hands (Adam, 1994; Hendin, 1975). Thus, suicidal

behavior is viewed as a type of insecure attachment behavior, that is, an interpersonal coping act that is intended to temporarily fulfill attachment needs but one that is ultimately ineffective at eliciting consistent parental caregiving.

> David is a 17-year-old who lives with his biological parents and younger sister. His father is absent much of the time on extended business trips, leaving him and his sister alone with their alcoholic mother. One particular Saturday, his mother began drinking in the morning and continued steadily through the day. As often happened in such instances, the mother grew increasingly irritable and argumentative, while David tried his best to remain disengaged. Apparently upset by his emotional distance, the mother's anger intensified. She insulted him for being a cold person and told him that other family members agreed with her view of him. Angry and hurt, David grabbed a bottle of acetaminophen in full view of his mother and sister and ingested fistfuls. She made no move to stop him, and he left the house. Interviewed later, after receiving medical treatment at an emergency room, he stated that he took the pills because he wanted to show her how much she was hurting him and that she could not keep on doing that to him.

Researchers have investigated whether youngsters who commit suicide or attempt suicide are more likely to have suffered losses of various types. Losing a parent to death does not seem to raise the odds of completed suicide in childhood or adolescence, even though it has been shown to pose a risk for suicide later in the life course. Death of a parent has not been shown to increase the risk of adolescent suicide attempts or suicidal ideation, either. Researchers have broadened the question to investigate whether loss of a parent for reasons other than death seems to increase the odds of suicidal behaviors. Studies that group together losses due to various sources (e.g., loss due to separation, divorce, removal to a foster home, "change in caretaker") tend to find that loss does pose a risk of both completed suicide and nonlethal suicidal behaviors (Brent, Perper, et al., 1994; De Wilde, Kienhorst,

Diekstra, and Wolters, 1992; Fergusson et al., 2000), but, with such a large grab-bag of loss events, it is possible that the effects are the result not only of the loss per se but of a set of major life changes that accompany the loss. When change in parents' marital status is examined separately, the picture is less clear. Gould and her colleagues (1998) reported that marital separation or divorce—especially if recent—is more frequently found in the histories of completed suicides than in community controls, but the evidence suggests that the impact of the loss depends upon whether there is psychopathology in the mother or father. With regard to attempted suicide, the research evidence is mixed and inconclusive. The broader body of work on divorce teaches that the adjustment of children depends upon many factors, including the adjustment of the parents, the quality of the relationship between the parents, the availability of the parents and the quality of the parent-child relationships, and so forth.

As an aside, some research studies have investigated family structure, for example living in a single-parent home, without specifying whether or not that structure stemmed from a loss of a parent. In general, the findings show that suicidal ideation and suicide attempts occur at higher than expected rates among youth living without either biological parent or with only one biological parent (Wagner, Cole, and Schwartzman, 1995); however, suicidal behavior is no more common than other mental health problems among such youths (Brent, Kolko, et al., 1993). Whenever these sorts of family structure issues are considered, it is important to take into account other factors that accompany the family structure and that may influence the adjustment of the youth, such as lower socioeconomic status and a variety of acute and chronic stresses.

With regard to the interpersonal attachment function that may be served by nonfatal suicidal behavior, some of the strong parental emotions that may be elicited by the suicide attempt—as I noted in the section on family communication—may be attachment related. My students and I found a statistically significant rise in parents' caring and sad emotions from prior to the adolescent's suicide attempt to postattempt, suggesting that it can indeed serve to elicit caring support from a caregiver (Wagner et al., 2000). Yet, about 50 percent of mothers and fathers feel hostile emotions toward the adolescent. Parents may be angry because they believe that the adolescent's suicide

attempt was "manipulative," a punishment or retaliation against the parent for being too controlling or for not letting the adolescent get his or her way in a dispute. Anger may also arise because the suicide attempt is a threat to the very existence of an important attachment relationship. Consider parents' response when their toddler runs into the street as a car is beginning to approach. A parent may scream angrily at the child as the bolt of fear surges: "What are you doing! You know better; didn't I teach you not to do that?!" Parents of adolescent suicide attempters may feel the same surge of protective anger as their fight/flight system is activated: "How can you do this?!"

In Bowlby's theory, the quality of the attachment relationship is most evident at times of stress or threat. At such points, a healthy caregiver-baby relational system serves fairly quickly to soothe the baby's distress in a coordinated way, while an unhealthy relationship is ineffective at soothing the baby and is marked by secondary coping efforts by the baby to manage the resulting chronic anxiety. The secondary efforts can involve anxious, ambivalent, perhaps angry efforts to solicit caregiving, or they may entail distancing, avoiding, and minimizing of any attachment-related emotions. Repeated experiences in early childhood with parenting that is inconsistent or rejecting ultimately gives rise to maladaptive "working models" of attachment. These are cognitive representations of the anxiety-ridden or distant caregiver-child relationship that filter one's perceptions of the interpersonal world and shape one's expectations of what is possible in future close interpersonal relationships (Bowlby, 1969). For example, an adolescent who was insecurely attached to her parents during infancy and preschool may be more likely to perceive danger as she begins to develop intimate romantic relationships. She may develop a coping style of vigilantly monitoring her partner's behavior, perceiving any wish for independence or even minor conflicts as carrying the threat of rejection. Alternatively, the child of a parent who was harsh or rejecting may stylistically downplay the importance of emotion within a romantic relationship, avoid emotional encounters, and seem relatively invulnerable on the surface. Research has shown, however, that this "dismissing" stance can be a veneer that masks internal physiological activation when the attachment system is challenged (Dozier and Kobak, 1992). The adolescent who perceives danger in romantic relationships and the one who downplays emotions

both lack a sense of safety within close relationships and a sense of confidence in their ability to manage the strong emotions that arise in such relationships. In a sense, the adolescent does not know for sure that anyone will be emotionally present if needed. Suicidal behavior may seem like an answer to escape from emotional pain or, as I already noted, a desperate way of soliciting caring attention.

In completed suicides, attachment relationships have rarely been studied. Typically, attachment is assessed by observing relationship behaviors (in young children) or by self-report or interview of the "state-of-mind" regarding attachment. Of course, neither is possible in the case of suicide. One research study, assessing a sample of 18 parents, found that adolescent completed suicides may have been more fearful of forming close relationships than were community controls (Kaplan and Maldaver, 1993).

Attachment style has been more frequently studied with suicidal adolescents. Adam, Sheldon-Keller, and West (1996) used the Adult Attachment Interview (AAI; George, Kaplan, and Main, 1985) to compare the attachment status of 69 adolescents with a history of suicidal behavior or ideation to that of 64 psychiatric controls. The AAI is an interview that is purported to tap into participants' "state of mind" by requiring them to recall attachment-relevant qualities of their childhood relationships with their caregivers, including caregivers' physical and emotional availability during stressful episodes. The interview was coded with Main and Goldwyn's (1984) system, which classifies attachment styles as either secure, dismissing of attachment, preoccupied by attachment experiences, or unresolved (i.e., confused, dissociative) with regard to trauma (experiences of abuse or loss). Adam and colleagues found that the suicidal adolescents were more likely than controls to be classified as "unresolved" with regard to trauma, that is, their discursive manner with regard to possibly traumatic events contained apparent lapses in continuity and/or beliefs that were clearly irrational or illogical. One might be tempted to question whether performing the AAI coding is worth the time and energy if what it ultimately yields is a complex sign that the youth has been traumatized. However, in their sample, the suicidal youth were no more likely than controls to have been exposed to traumatic incidents. Thus, it was not the exposure to trauma per se but the emotional and

cognitive responses to it that distinguished youth who were suicidal. Those who were characterized as both "unresolved" and "preoccupied" with attachment (angry, anxious, emotionally entangled) had the highest likelihood of being in the suicidal group.

Work by P. Michelle Mullaley when she was a graduate student on my research team may help to explain more about how preoccupied attachment is linked to suicidal behavior. Our team coded the AAI with Roger Kobak's Q-sort adaptation of the system of Main and colleagues (Kobak and Sceery, 1988), which can yield the same attachment classifications with the exception of the "disorganized" category. Mullaley (2003) found that adolescent suicide attempters with a preoccupied attachment style found the events that triggered the suicide attempts to be more highly stressful and less controllable than other attempters. They also used the greatest number of coping strategies, suggesting that they become activated and engaged by their distress, with the suicide attempt being their ultimate coping effort. The study included an 18-month follow-up of the adolescents, and Mullaley found that attempters with the preoccupied attachment style had the highest levels of suicidal ideation across the follow-up and were the most likely to reattempt suicide. In contrast, those with the "dismissing" attachment style—those who avoided emotion or downplayed the significance of formative attachment experiences—were least likely to reattempt suicide.

Taken together, the two projects using the AAI suggest that state of mind with regard to attachment does have implications for suicidal behavior. Attachment in both of these studies was measured during adolescence. In contrast, Klimes-Dougan and associates (1999) found that attachment status as observed early in childhood did not predict suicide attempts many years later in adolescence. It is possible that intervening events or changes in attachment may be important factors to consider when understanding the long-term implications of early attachment relationships.

Marital difficulties. Writing about families of suicidal youth, theorists have described couples who are ambivalent about their relationships, who make threats of leaving, and who displace their conflict onto the child (Pfeffer, 1986). There are several processes by which these factors may affect suicidal youth. Displacing conflict—one form

of "triangulation" in families—is similar to the scapegoating process I have described. Younger children may blame themselves for their parents' distress, a perspective that may be virtually confirmed when the conflict is turned on the child. We know from basic developmental research that overhearing parental arguments can be very stressful to children (Cummings, Goeke-Morey, Papp, and Dukewich, 2002), and overhearing threats of separation is particularly upsetting (Bowlby, 1973). Conflict in itself is not a problem if it is constructive and parents can effectively "repair" the relationship afterward, but hostile conflicts that remain unresolved are more troublesome (Goeke-Morey, Cummings, Harold, and Shelton, 2003; Gottman, 1999). Children may fear that their families will disintegrate. Parents in unhappy marriages are also more likely to be depressed, which in turn makes them less emotionally available and responsive to the child. Of course, many suicidal youngsters are raised in single-parent households, in which case marital relationships are unlikely to carry much explanatory weight (unless there are lasting impacts of early exposure to marital conflict or there is ongoing conflict between ex-spouses).

Researchers of suicidal youngsters have yet to investigate the impact of marital processes such as communication, problem solving, and so forth. But, a small number of investigators have assessed marital satisfaction and marital conflict with rating scales. In general, any evidence that the marital relationship contributes to suicide attempts or suicidal ideation is inconsistent at best, and there is no evidence that it contributes to completed suicide. Of the few positive findings, two are particularly worth noting. Kosky (1983) found that children and young adolescent psychiatric inpatients who had attempted suicide were more likely than other inpatients to have been exposed to violent interactions between their parents, and Myers and colleagues (1985) reported that mothers of adolescent psychiatric inpatients with suicidal ideation are more likely than mothers of other inpatients to have been abused by their spouse. So, while it is probably not correct to implicate marital distress in general as a risk factor for suicidal behavior in offspring, conflict that is violent may be sufficiently upsetting to play a contributory role.

Family psychopathology. Unlike the other areas I have discussed in this chapter, family psychopathology has not been the centerpiece of theoretical models of the development of suicidal behavior in young

people. Yet, researchers have been keenly interested in whether psychopathology among relatives increases the odds of developing suicidal symptoms. Some of the work has focused on whether suicidal behaviors in one member of a family are associated with an increased risk of suicidal behavior within and across generations (i.e., familial "concordance"), and other work has focused on whether any of a broad range of family psychopathologies poses a risk for the development of suicidal behavior in relatives.

Familial concordance for suicidal behaviors would be consistent with models of genetic influence on suicidal behavior. Genetic influences do not necessarily imply the presence of a particular "suicide gene" that is transmitted within families; instead, children may inherit from parents a predisposition to certain psychopathology (e.g., depression) that in turn increases the odds of engaging in suicidal behaviors in both generations. Family concordance for suicidal behaviors may also be evidence of environmental factors such as "modeling" (i.e., imitation) of other family members' self-destructive or suicidal behaviors or of positive or negative reinforcement of the child's suicidal behaviors (for example, family members may have trained one another to respond to suicidal behaviors with positive, caring attention or to "use" suicidal behaviors to effect a reduction or cessation of negative or aversive behaviors by others).

The presence of family psychopathology other than suicidal behavior can influence the development of suicidal symptoms through both genetic and environmental pathways as well. As I already noted, genetic transmission of a predisposition to an affective disorder like depression can increase the odds of suicidal behavior. Environmental processes may also be operative. For example, parents with psychopathology may use harsh, neglectful, or inconsistent parenting styles that in turn increase the risk of depressive and suicidal symptoms (Downey and Coyne, 1990); indeed, in one study, maladaptive parenting during childhood or early adolescence mediated the effects of parental psychopathology on later (late adolescent, early adulthood) suicide attempts (Johnson et al., 2002). In the following sections, I present a summary of what we currently know about psychopathology in first-degree relatives (parents and siblings) of youth who complete and attempt suicide. The broader question of whether there is a genetic influence on suicidal behavior is addressed in Box 4.1.

Box 4.1

Mental health researchers have several methods of determining the presence of a genetic influence on a particular problem, such as suicide. The simplest approach is to examine whether the behavior "runs" in families. As noted in the general text, studies of adolescent completed suicide have shown a higher than expected incidence of suicidal behaviors in first-degree relatives than is found in other families from the community. Studies of adults have produced similar results. To take one example, Egeland and Sussex (1985), studying families in the Amish community of Pennsylvania, found that only 26 persons had committed suicide during the 100-year period from 1880 to 1980. Of those suicides, 75 percent were clustered among four families, supporting the notion of familial transmission. There was a high rate of affective disorders within those four families, but there were similarly high rates in several other families with no history of suicide, raising the question of whether suicidal behavior may be transmitted separately from psychopathology. However, the fact that most of the suicides occurred within just a few families does not mean that genetic or biological factors were responsible for them. Disentangling genetic and environmental contributions to suicidal behavior requires the use of so-called behavioral genetics research designs.

Two such designs—twin and adoption studies—have been used. The twin studies compare monozygotic (identical) twins, who share 100 percent of their genes, with dizygotic (fraternal) twins, who share only 50 percent of their genes and should therefore show lower concordance for suicidal behaviors. Specific mathematical techniques can be used to estimate the degree of heritability, as well as the contribution of environmental factors that differentiate behaviors of the twins. Roy and colleagues (e.g., Roy and Segal, 2001) conducted a series of studies of twin pairs in which one co-twin had committed suicide and found higher rates of suicidal behavior in the surviving monozygotic co-twins than in the dizygotic co-twins.

In adoption studies, researchers investigate individuals who were separated from their biological families at birth or shortly thereafter. They share genes with their biological relatives but do not share a common environment, so any resemblance to the biological relatives should be a function of genes. In contrast, any resemblance of adopted children to their adoptive family members should be a function of shared environment. Research conducted with 57 adoptee

suicides in Denmark by Papadimitriou and colleagues (Papadimitriou, Linkowski, Delabre, and Medeleuicz, 1991) found that, of 269 biological relatives, 12 had died by suicide, whereas none of the adopting relatives had completed suicide. Going a step further, the researchers examined a control group of 269 adoptees who were matched with the completed suicides on demographic variables as well as on such factors as time spent in an institution prior to adoption and found that only two biological relatives of the controls had died by suicide (a statistically significant comparison). Thus, both the twin and the adoption designs have provided evidence of a genetic contribution to suicide and suicidal behaviors. But, can biological research help to explain what the nature of such a genetic contribution might be?

Findings from researchers working at the molecular genetics level may provide some clues about the mechanisms of transmission. One area of primary focus has been the serotonin system. Low serotonin levels have been implicated in suicide, particularly suicides marked by highly aggressive and impulsive acts (e.g., Arango and Underwood, 1997). Investigations have centered on two genes involved in regulation of the serotonin system, the serotonin transporter gene (Lesch et al., 1996) and the tryptophan hydroxylase gene (Mann et al., 1997; Roy et al., 2001; Turecki et al., 2001). The serotonin transporter genotype has been significantly associated with a history of suicidal behavior, but the findings remain preliminary, and replication with additional samples is needed. Likewise, tryptophan hydroxylase genotype has been associated with a history of suicidal behavior as well as completed suicide, but subsequent efforts to replicate those findings have produced conflicting results. Work in these areas is promising, and more definitive answers about biological processes involved in suicidal behaviors should be forthcoming.

First-degree relatives of adolescents who have completed suicides are very similar to first-degree relatives of suicidal adolescents on psychiatric inpatient units with regard to psychopathology of various sorts (suicidal behavior, affective disorder, substance or alcohol abuse, or antisocial behaviors) (Brent et al., 1988). However, when compared with nondisordered families in the community, first-degree relatives of completed suicides have higher rates of both suicidal behaviors and

affective disorders, that is, depressive disorders and bipolar disorder (Brent, Bridge, Johnson, and Connolly, 1996; Brent, Perper, et al., 1994; Gould et al., 1996). Those findings held even after statistically controlling for the adolescents' psychopathology, which means that the influence of parental psychopathology on offsprings' suicides is not solely a function of its influence on psychopathology in the child. There also is some evidence of higher rates of substance abuse in first-degree relatives of completed suicides than in community controls, although the evidence on that point is not consistent.

Turning to suicide attempts and suicidal ideation, the findings are very mixed on the question of whether suicidal symptoms in offspring are linked to suicidal symptoms in parents, and there certainly are many instances of suicidal behaviors in youngsters whose parents were never suicidal. Broadening the lens, parental affective disorders have indeed been shown to be predictive of later suicidal behavior and ideation in offspring (Fergusson et al., 2000; Klimes-Dougan et al., 1999; Klimes-Dougan, Lee, Ronsaville, and Martinez, 2008), although a number of studies suggest that the rates of parental affective disorders are similar in parents of youths with other types of psychopathology. Similarly, alcohol and substance abuse in parents have also been shown to increase the chances of later suicidal ideation and attempts in offspring (Fergusson et al., 2000) but probably do not occur more frequently in parents of suicidal youngsters than in parents of other disordered youth (Brent, Kolko, et al., 1993; Pfeffer, Normandin, and Kakuma, 1994). Researchers have shown that rates of antisocial personality disorders and criminal behaviors are higher in the first- and second-degree relatives of youth with current or past suicidal behaviors/ideation than in community controls or clinical controls with other psychopathology (Fergusson et al., 2000; Pfeffer et al., 1994).

In general, there is a tendency for suicidal youth to come from families with psychopathology in parents and/or siblings. Youth who take their own lives are more likely than youth from their communities to have had parents and/or siblings who were suicidal or had affective disorders and who may have had alcohol or other substance abuse problems. Parental affective disorders and alcohol or substance abuse problems increase the odds of later suicidal behaviors in offspring,

and antisocial personality disorder among first-degree relatives is also associated with nonfatal suicidal behaviors.

Other Relationship Influences

Although the family remains an important source of support as children progress through adolescence, peer relationships increasingly gain importance, as was described in chapter 3. Younger children rely on their parents for emotional support, and, while that remains true for well-adjusted youths as they move through adolescence, the quality of connections with peers has critical implications for emotional well-being. Those adolescents whose relationships with parents are strained and who have felt to some degree unloved and unaccepted by parents may be particularly in need of peer support and may gravitate to peer networks that are less than optimal in terms of deviance, substance abuse, and similar behaviors, because they can feel accepted there.

Peer groups can be a source of support and acceptance, but the flip side is that they can also be a source of pain and social pressure. Acceptance of oneself during adolescence is often highly dependent upon acceptance by one's peers, particularly peer groups with social prestige. One must look and dress a particular way, behave in particular ways, and have the "right" boyfriend or girlfriend or else risk ridicule and embarrassment by peers. The degree to which girls' self-esteem can be hitched to judgments about their physical appearance and their successes in romantic relationships has been widely written about, but pressures on boys are considerable as well. For example, in many male adolescent peer groups, there is an unspoken imperative to be cool, unaffected, and unworried, regardless of circumstances. To express vulnerable feelings is to invite negative judgments. The judgments may be subtle or masked in the form of humor or teasing, and reacting badly to the teasing can be reason enough to elicit further teasing. For those who are sensitive to criticism, these judgments can be powerfully upsetting.

Developmental psychologists have for many years documented that difficulties in peer relationships are linked to a variety of mental health problems. Yet, there is surprisingly little research on the peer relationships of suicidal youngsters, and in particular there is an

almost complete absence of research that investigates the process by which peer relationships might play a role in the development of suicidal symptoms. I provide brief reviews of work on peer relationships more generally and on romantic relationships more particularly.

Peer relationships. Suicidal young people are more likely than other youths to experience stress in their relationships with peers and to have conflict with peers (Adams, Overholser, and Spirito, 1994; Topol and Reznikoff, 1982). Problems in friendships and other peer relationships are among the most frequently cited immediate precipitants or triggers of suicide attempts.

Suicidal adolescents may report a large social network and may engage in frequent contacts with peers, yet still feel alone and isolated. Researchers find that suicidal adolescents are more likely than other adolescents to feel socially isolated, like a "loner," and that they do not fit into any peer group (Hawton, Fagg, and Simkin, 1996). Adolescents who attempt suicide are more likely even than suicidal ideators to be isolated during their suicidal episodes (Negron, Piacentini, Graae, Davies, and Shaffer, 1997). They tend to feel less satisfied with their relationships, to feel less supported, and to have lower trust in peers than do others (Groholt, Ekeberg, Wichstrom, and Haldorsen, 2000; Rubenstein, Heeren, Housman, Rubin, and Stechler, 1989). Suicidal behavior and ideation are also associated with feelings of loneliness (Roberts, Roberts, and Chen, 1998). Researchers have provided suggestive evidence that individuals who were abused or experienced other maladaptive parenting during childhood may find it extremely difficult to make and maintain friendships as adolescents, which in turn places them at risk for suicidal behavior (Johnson et al., 2002). Isolation, alienation, disconnection—all seem to be key to the experience of pain that characterizes suicidality in adolescence. This idea is taken up again in chapter 5.

Researchers have shown that the severity of suicidal symptoms is linked to the level of difficulties within peer relationships. For example, feeling less likable is associated with lower levels of peer support, which in turn have been linked to greater risk of suicide attempts, as well as suicidal and hopeless feelings (DiFilippo and Overholser, 2000; Harter, Marold, and Whitesell, 1992; Lewinsohn et al., 1994). Certain negative qualities of peer relationships have also been

implicated in suicidal ideation. For example, higher levels of suicidal ideation have been shown to be directly or indirectly related to higher levels of covert aggression within friendships, as well as having "deviant" peers, that is, those who engage in more antisocial behaviors (Prinstein, Boergers, Spirito, Little, and Grapentine, 2000; Windle, 1994). Youngsters with suicidal ideation are also more likely to have a greater number of suicidal friends (Prinstein, Boergers, and Spirito, 2001). Surrounding oneself with suicidal friends can serve to support or reinforce engaging in a self-destructive lifestyle. However, we should not overlook the possibility that suicidal friends can also serve more positive functions for one another.

> Crystal rested her neck and back against a tree in an isolated corner of the park. She had come here in the middle of the night, razor in her pocket, to end her life after events had proven to her one last time that nothing would ever go her way. She smoked some pot, then, summoning her courage, made a long, deep incision in her arm and lay back, waiting for blackness to come. Within moments, though, she thought of her best friend, Marleny. "I can't do this to her," she thought. "If I do this, then she will kill herself. If she kills herself, then Gina will kill herself also. No, don't do this, we've kept each other alive." She rose up and started to walk shakily toward the path. Ultimately, she was found by a passerby, who called for an ambulance.

Child development research, particularly research focused on aggressive behaviors, has made use of peers as informants using so-called sociometric assessments. In that type of research, all of the youngsters in a relevant social setting—typically a classroom—provide information about the various members of that small community, resulting in a metric of the social characteristics of children that is based on how they are viewed by their peers. Each child may provide ratings of all the other children on scales (for example, of aggression and likability), or each child may "nominate" all of the children who meet certain criteria, such as being your best friend, getting in fights, and so forth.

Peer nominations were used in a study I conducted in conjunction with researchers at Johns Hopkins School of Public Health. Kellam and his colleagues (2004) had assessed a carefully defined urban population of predominantly African American children beginning in first grade, with reassessments at frequent intervals through late adolescence (ages 19–20). In the spring of first grade, classmates nominated those children who were best friends, who worried, started fights, tended to get in trouble, were sad, and were alone a lot of the time. In analyses that have yet to be published elsewhere, we found that—after controlling for levels of depression in 4th, 5th, and 6th grade—boys who in 1st grade had the highest proportion of classroom nominations for starting fights were more likely than other boys to have wished they were dead at some point by late adolescence. Also, those boys who were viewed as most likely to get into trouble in 1st grade were more likely than others to have attempted suicide by late adolescence, again after controlling for depression in the grade school years. In other words, African American boys who as adolescents became suicidal tended to stand out in the minds of their 1st-grade peers as aggressive children who got into trouble. The same findings did not hold for girls, however, for whom none of the sociometric indices was predictive. If these results can be replicated, they suggest that 1st-grade sociometrics might provide a very useful early "screener" that can detect certain boys at risk for later suicidality. It is interesting that depression does not seem to be part of the process for those boys. Although early aggression may not be the most obvious candidate as a predictor of later suicidality, other researchers, such as David Shaffer and colleagues (1996), have found that externalizing problems such as conduct disorders characterize a sizable proportion of suicides, particularly for males.

Bullying. Also related to the topic of aggression, bullying and victimization by peers have been linked to suicidal symptoms. Both males and females who are victimized by peers are at higher risk for suicidal behavior, and as many as 20 percent of adolescents name peer victimization as the main factor precipitating a suicide attempt (Cleary, 2000; Prinstein, 2003). Prinstein has suggested that, in addition to acting as a stressor that directly precipitates suicidal behavior, peer victimization may have an influence via indirect pathways on

other sources of vulnerability, for example by contributing to negative attributional styles, depressive symptoms, social isolation and loneliness, or lower social support.

Curiously, researchers have shown elevated suicidal ideation not only among victims but also among bullies themselves (Erling, 2002). That interpersonal aggression and suicidal urges can overlap is no surprise to us anymore given infamous homicide/suicide tragedies such as those that took place at Columbine High School in April 1999 and, more recently, at Virginia Tech University. The senseless murders that took place at Columbine sometimes overshadow the fact that the awful episode ended with both Eric Harris and Dylan Klebold turning their firearms on themselves. These two youths were not the "typical" school shooters, yet in many respects they fit the FBI profile of such youths (FBI Academy, 2000). Harris had antisocial characteristics, a callous disregard for life, and a sense of superiority over his peers. Klebold was more visibly unhappy and angry. Their actions seem not to have been a retaliation against particular people or a particular perceived injustice but the expression of a generalized rage at a world they blamed for all that is wrong, a world from which they were alienated and that they could never forgive. They had systematically planned for a spectacular event of historic proportions, beginning with the explosions of two large bombs in the cafeteria that would likely have killed hundreds of students if they had detonated successfully. Their suicides may have been a part of the blaze of destruction they wished to create—it was later revealed that one of their alternate plans if they could not escape involved hijacking an airplane they would crash in New York City.

Seung-Hui Cho, the shooter who terrorized the campus of Virginia Tech in April 2007 before shooting himself to death as law enforcement personnel approached, was largely mute not only at Virginia Tech but throughout his adolescent years, his angry and violent tendencies communicated only in his writings and provocative non-verbal behaviors. Reportedly fascinated with the events at Columbine as they unfolded during his middle school years, he wrote of wanting to repeat them. Indeed, there are notable parallels between the two episodes. Like Harris and Klebold, Cho apparently planned carefully for his shootings, acquiring weapons over a period of months and

practicing his accuracy at a firing range. His mutism had reportedly been a source of teasing and bullying during his adolescent years, and, like the Columbine shooters, he grew increasingly alienated from his peers. His violent rampage was apparently energized by a global rage at all who unjustly cause humiliation and suffering, whom he directly blamed for his murders and suicide: "Now you have blood on your hands that will never wash off." Cho famously fell through the cracks of the Virginia mental health system. Court ordered into outpatient treatment after a psychiatric evaluation in late 2005, he received no follow-up by the court or any community agency to determine whether he in fact had complied with the order, which he had not. Multiple reviews of the Virginia emergency mental health procedures and resources were initiated in the aftermath of this tragedy.

Romantic relationships. Early adolescence is the point at which most youngsters begin to explore their first romantic relationships. At that age, the most significant aspect of the relationship may be the very fact of having a boyfriend or girlfriend, particularly if he or she has high status within the peer culture. Young adolescents typically are just starting to learn what they like or do not like in a romantic partner, and relationships at this point tend to be short-lived affairs. Often, they begin with a rush of excitement and anticipation: "This boy/girl who I like really likes me, too!" But, as I discussed in chapter 3, young adolescents do not yet realize the implications of the rush of intense emotions and the complicated patterns of approach-avoidance behaviors that typically accompany dating and intimacy. How does one handle the vulnerabilities, the jealousies, the fears, the need to be validated, the need to have some space from each other? How does one handle those same needs as they arise in one's partner without being too aloof or so intensely engaged that it scares them off? For young adolescents, romantic relationships do not tend to involve intimacy or close communication—indeed, romantic partners tend not to become a source of intimacy and support until mid- to late adolescence (Furman, 2002). Thus, there is no foundation for handling problems or conflicts as they arise, and they tend to be interpreted as meaning that the relationship has failed and should be terminated.

Although the emotions that accompany romantic relationships are challenging for most young adolescents, they can be particularly

challenging for those with preexisting vulnerabilities in terms of emotion regulation and supportive relationships. Those adolescents may be susceptible to entering into relationships at a very young age, longing for the approval and the sense of desirability that accompany the relationship in its initial stages. The adolescent can become powerfully attached to those positive feelings—and to the partner who evokes them—even in a short-term, noncommitted relationship that may lack true intimacy. He may place enormous hope in the relationship, seeing it as the source of the deep and true love he has failed to receive from other sources, thus setting himself up to have his hopes severely dashed. The possibility or actuality of the relationship being terminated can be terrifying, eliciting feelings of desperate pain. Being rejected by a romantic partner may cause the adolescent to feel completely worthless and unlovable. Without the perspective one gains from having been through multiple relationships, some adolescents may believe that love and acceptance are not possible for them, that they will never again have the wonderful experiences of being truly desirable. These painful feelings are not all that uncommon among young adolescents, but for some vulnerable adolescents they can be overwhelming. Such adolescents are relatively unable to soothe their own raw emotions or elicit support from friends or family that helps them through the crisis. Indeed, a breakup with a romantic partner is one of the most frequently cited triggers of suicide attempts during adolescence.

> The level of abuse and neglect trauma endured by Denise in her first 9 years of life is almost beyond belief. Born in an inner-city neighborhood to a drug-addicted adolescent mother, she was often left alone both day and night to look after her three younger siblings, stealing food to ease their hunger pangs. Her physical beatings were so frequent they became almost routine, but her strongest memory is of her baby sister dying in her arms. She and her remaining siblings were ultimately adopted into a caring family when she was 11. In her senior year, her high school sweetheart asked her to marry him. It was a dream come true, and her life felt complete and perfect. Before long, though, the

relationship began to sour. Denise felt entirely dependent on him to fulfill her emotional needs, and he felt suffocated. He wanted more independence, which caused her to feel even more dependent and threatened. Their arguments grew increasingly frequent until he abruptly broke off the engagement following one particularly bitter disagreement. She pleaded for him to reconsider, but he refused, leaving her in emotional agony, perplexed over what she had done wrong. She knew she no longer wanted to live and ingested a life-threatening overdose of acetaminophen.

There are other ways in which romantic relationships can be tied to suicidal behavior. Adolescent females whose biological maturation occurs earliest are most at risk of mental health problems, probably because they receive attention from older boys—including pressures for sexual behavior—before they are developmentally ready to cope with it (Ge, Conger, and Elder, 2001). Although early pubertal maturation has been associated with depressive symptoms in girls, to my knowledge no study has examined whether it is specifically linked to suicidal symptoms.

For some, romantic relationships can involve extreme stresses. As many as 20 percent of females report having been a victim of physical or sexual abuse by a dating partner. Those adolescents who are most in need of validation and support in their early romantic relationships may be more tolerant of inappropriate—or even violent—partner behavior, because they do not trust their ability to manage the painful emotions of terminating the relationship or because they may blame themselves for eliciting the abusive treatment.

Gay, lesbian, bisexual, and transgender (GLBT) relationships. The possibility that suicidal behavior is a significant public health problem among GLBT youths first surfaced in the late 1980s, with the publication of Gibson's (1989) controversial literature review within the HHS Secretary's Youth Suicide Task Force report. Even though Gibson concluded that as many as 30 percent of youth suicides are committed by those with a gay or lesbian sexual orientation, many legislators and policymakers maintained their distance from an issue that was not viewed as family friendly. Gibson's conclusions were not

grounded in studies with sound methodology. Indeed, research in the ensuing years suggests that his estimates for completed suicide were inflated. However, there is no doubt of the substantial risk for nonfatal suicidal behavior faced by many GLBT adolescents.

Whereas studies using so-called samples of convenience—samples that are easily recruited from clinics or advertisements but are unlikely to be representative of the overall population of GLBT youths—had shown a heightened risk of completed suicide, two studies using carefully defined populations of young males have not shown any elevated suicide risk (Rich, Fowler, Young, and Blenkush, 1986; Shaffer, Fisher, Hicks, Parides, and Gould, 1995). In addition, the major risk factors for suicide among gays were similar to those found in other studies of young completed suicides, that is, psychopathologies, particularly affective and substance abuse disorders. Yet, as others have pointed out, it is difficult to draw conclusions about the proportions of suicides with great certainty, because the actual prevalence of gays and lesbians in various populations is often unknown (McDaniel, Purcell, and D'Augelli, 2001). For example, in Rich and colleagues' work in San Diego, 11 percent of the suicides among young adult males were gay, and the authors' conclusions about the lack of elevated risk were based on old data from Kinsey indicating that gay men made up 10 percent of the U.S. male population. More recent estimates from the 1990s indicate that only 5 percent of U.S. males are gay, but the actual proportion in San Diego might be higher than the national rates. The point is that different assumptions can result in varying conclusions about whether GLBT orientation provides a heightened risk. In addition, the psychological autopsy studies may underestimate GLBT youths if family and friends are unaware of the deceased's sexual orientation, perhaps because the young person had not informed significant others or had not yet self-identified as GLBT.

Attempted suicides by GLBT youths have not been assessed in large-scale, nationwide surveys. However, more geographically constricted surveys of high school students have been conducted, including ones using the Youth Risk Behavior Survey (developed by the CDC, as described in chapter 1) with representative samples of students across Massachusetts. These have found that approximately two to three times as many GLBT youths as heterosexual youths report having

attempted suicide (Faulkner and Cranston, 1998; Garofalo et al., 1998). When studies report the rates separately by gender, the elevated rates for males are even more striking. That is, GLBT males are roughly five to six times more likely than heterosexual males to have attempted suicide, whereas GLBT females are roughly 50 percent more likely to have done so than their heterosexual counterparts (e.g., Ramafedi, French, Story, Resnick, and Blum, 1998). Fergusson and colleagues (Fergusson, Horwood, and Beautrais, 1999), investigating a sample of more than 1,200 youths they had tracked longitudinally from early childhood, found that 9 of the 28 GLBT youths (32.1 percent) had attempted suicide by age 21, whereas approximately 7 percent of the heterosexual youths had done so, an effect that is statistically significant. GLBT youths were also at higher risk for suicidal ideation and depression.

Males who self-identify as gay in early to mid-adolescence appear to have the most difficult mental health adjustment problems, particularly with regard to substance abuse and suicide attempts. The process of initial disclosure to friends and family can be especially trying when it occurs during this developmental period (McDaniel et al., 2001). Prejudice, discrimination, and harassment against gay, lesbian, transgender, and questioning individuals remains all too common, particularly in adolescence, and may be associated with distress and suicidal behavior, although evidence for those links has not been specifically provided in the research literature.

Savin-Williams and Ream (2003) point out that it is a mistake to consider GLBT as a monolithic group when considering suicide risk. There is great diversity among adolescents who are not exclusively heterosexual, and many who explore their sexuality do not have a gay identity and have not disclosed their sexual orientation to others. The more visible and behavioral signs of gay status may result in increased stress and loss of support, which in turn increase the risk of suicidal behavior among those who are already vulnerable by virtue of other risk factors that are equally common to heterosexual suicidal people. Indeed, researchers have shown being "typed" as gay (i.e., being viewed as not conforming to the male gender stereotypes in American culture) and losing a friend because of disclosure of sexual orientation are among the factors contributing to higher risk of suicidal behavior among gay males (Hershberger, Pilkington, and D'Augelli, 1997).

Summary: Social Relationships and Suicidal Behavior

It is apparent from the various sections of this chapter that social relationships are tied in important ways to suicidal behaviors in young people. When family relationships and family communication are strained, distant, or hostile, then suicidal behaviors are more likely. Other family factors of importance include differential parent-child relationships within families (that is, differences in degree of parental warmth and control toward various siblings that are consistent with scapegoating), certain types of parental psychopathology, and attachment-related problems, including unresolved or preoccupied attachments, and losses stemming from any of a variety of causes. The peer world of suicidal youngsters has also been investigated, although to a lesser extent. Many suicidal youngsters experience a good deal of loneliness and withdraw into social isolation, particularly during episodes of suicidal behavior. Some are victimized by bullies. Rejections and breakups of romantic relationships are among the most common triggers of suicidal behaviors. Some suicidal youth are aggressive toward peers, perhaps viewing them as the source of their relational difficulties. Many express aggression in covert ways, but some are more outwardly aggressive, bullying others or gravitating toward "deviant" peer groups, those at the margins of the peer world who often tend toward antisocial acts.

Stepping back from these various findings, it is apparent that the social worlds of suicidal youths tend not to provide emotional nourishment. Instead, they tend to be marked by emotional pain of various sorts—rejections, feelings of being unloved or unwanted, loneliness, isolation, disconnection from others. At a developmental phase when it is paramount to feel one is worthy of acceptance by others, suicidal adolescents may feel they have fallen impossibly short of the mark. They don't belong, not with family, not with the majority of peers. Not having any apparent way of comforting themselves or reaching out to others, they may believe that the suicidal act—the ultimate cut-off from humanity—is their only alternative.

5

Stress, Coping, and Emotion Regulation

Change characterizes the human condition, and, other than the first two years of life, at no phase in human development is change more pervasive and rapid than in adolescence. Everything changes. The body transforms in size, strength, and shape, in reproductive capability, in cognitive and emotional capacity and processing. Change is not limited to the adolescent—the world around the adolescent changes in many respects. Friends and other peers look differently, act differently, and want different things than they did just a short time before. Adolescents change schools, often entering expanded communities of peers, unsure of whether and how they will be accepted. Adults expect more from them—more maturity and responsibility, more schoolwork. They expect more from adults, particularly more freedom and more choices, yet they may not have the necessary experience or perspective to handle as much autonomy

as they seek. Adolescents think about themselves and others in more complex ways, often absorbed by such questions as who they are, how they appear to others, and whether they measure up to the standards of their peers or their own ideals.

Normative change can be stressful, especially when multiple changes occur simultaneously, as they surely do during adolescence. Of course, adolescents differ from one another in the ways in which they respond to change. Certain characteristics of the adolescents' current environment can powerfully influence how they respond to normative change. Adolescents who are already grappling with one or more chronic strains (such as those associated with a violent neighborhood, poverty, racism, parental substance abuse, and so forth) or who are in the midst of adapting to an acute disruption such as a parental divorce will probably find it considerably more difficult to adjust to normative adolescent transitions. Their own emotional and problem-solving resources are already highly taxed, and potential supports such as their parents may be relatively unavailable emotionally and otherwise.

Variability in adolescents' responses to change is also a function of relatively enduring differences in their coping styles. Adolescents vary greatly from one another with regard to their ability to problem-solve and to regulate their emotions in the presence of challenges, both because of long-standing differences in individual characteristics such as temperament and cognitive abilities and because of differences in their histories of relationships (e.g., the quality of early attachments) and exposure to adversity. Previous experiences can influence their perceptions of whether or not a particular circumstance is stressful, their perceived ability to cope with it, and even their biological capacity for managing stresses, as discussed in a later section of this chapter.

Before we proceed, it may be helpful to consider briefly the meaning of the term "stress." Stress has been defined and measured in quite a variety of ways in the psychological literature: an environmental change or occurrence, a particular type of physiological activation (i.e., activation of the hypothalamic-pituitary-adrenal, or HPA, axis), a negative subjective emotional state, a major acute event,

a chronically adverse circumstance, a pile-up of everyday "hassles," and more (Wagner, 1990). Lazarus and Folkman (1984) offered a definition that has been widely adopted: "A particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being" (p. 19). A notable aspect of their definition, and a large part of its appeal, is its conceptualization of stress as a transaction between the environment and the person and the centrality of an appraisal process. Thus, stress is to some extent in the "eye of the beholder," a product not only of properties of the environment but also of individual differences in cognitive and emotional processing and responding.

That perspective is important when we consider the body of research studies on stress in suicidal youth. Almost all of that research conceptualizes and measures stress as a count of negative events occurring over a particular time period. For example, adolescent suicidal behavior is often preceded by weeks or months of high or increasing numbers of negative events (Gispert, Davis, Marsh, and Wheeler, 1987). Also, suicide attempts and completed suicides are often triggered by negative events such as a breakup with a boyfriend or girlfriend, a conflict with a parent, an academic failure, and so forth (Beautrais, Joyce, and Mulder, 1997). These "events" are not necessarily independent of the youngster's perceptions or behaviors, an issue that is sometimes overlooked in the writings on stress and suicide. For example, some adolescents are more likely than others to appraise a variety of individual and interpersonal situations as potentially threatening, and their perceived or actual ability to cope (i.e., to manage their emotions, communicate, and problem-solve) is likely to influence the numbers of stressful events they report. Also, the ways in which a youngster responds to a situation influences the behavioral responses of others. For example, irritable or critical responses are more likely to elicit negative responses in others, increasing the odds of such stressful events as interpersonal conflict and rejections.

The findings that stresses typically precede suicidal episodes have led researchers to strive to identify vulnerabilities in adolescents'

coping skills, with the presumption that if they can learn to better manage such stresses, the likelihood of future suicidal episodes will be reduced. That work is important and makes good sense. The point here is that the stress itself is not entirely a "given." Interventions that target emotion regulation and coping vulnerabilities might also address the cognitive, emotional, and behavioral processes that generate unnecessarily elevated levels of stress.

In this chapter, I investigate what we know about how suicidal youth perceive and manage stressful situations and emotions. One obvious distinction between suicidal and nonsuicidal youths is that the suicidal behavior itself can be viewed as a coping response that is not in the repertoire of nonsuicidal youngsters. As such, suicidal behavior represents a response to elevated levels of stress and distress (Simonds, McMahon, and Armstrong, 1991). In most instances, it would be a mistake to understand suicidal coping behavior as an isolated event. Rather, it is probably best viewed as a culmination of long-standing coping difficulties. Long-term ineffective coping that allows stresses to perpetuate is of critical importance, as researchers continue to amass evidence that prolonged stress has negative, long-term effects on both physical health (e.g., cardiovascular and immune system functioning) and mental health, including depression. Some of the recent discoveries on the biological impact of stress are featured in Box 5.1.

The boundaries between environment and person are dissolving as we learn more about how the brain changes and adapts, so-called brain plasticity. Environmental stressors can bring about structural and functional alterations in the brain that influence coping characteristics of a person, including heightened perceptions of threat and diminished capacity to respond effectively. In turn, those can result in elevated and prolonged stress and distress and thus the potential for further brain adaptation. We therefore explore coping characteristics, bearing in mind that they are important not only with regard to the short-term role they may play in the stress processes surrounding suicidal behavior but because of their longer-term implications for youngsters' capacity for managing stress.

Box 5.1

Neuroscientists have made the disturbing discovery that the impact of stress on mental health may become enduring by virtue of the damage done to portions of the brain that are central to learning and memory. The work began with rats, as researchers showed that when their glucocorticoids (i.e., stress hormones) were experimentally manipulated to remain elevated over a period of months, the rats suffered permanent atrophy in the dendrites of neurons in the hippocampus. Extending this work to humans, researchers using magnetic resonance imaging (MRI) have shown hippocampal volumes as much as 15 percent lower among those with a history of depression (but no current or recent episode) than among those with no such history (Bremner et al., 2000; Sheline, Sanghavi, Mintun, and Gado, 1999). The more prolonged the depression, the greater the enduring loss of volume in the hippocampus. Glucocorticoids are the most likely culprit, given how commonly they are elevated in depressed people and their association with other human disorders involving hippocampal volume loss, including posttraumatic stress disorder (PTSD) and Cushing's syndrome (Sapolsky, 2005). The hippocampus plays a vital role in memory and learning, including rapid encoding of relationships between events. Damage to it can thus have serious implications for a variety of coping-related functions, including acquisition of episodic memories of stressful situations that would facilitate later rapid recognition of similar situations (even given only partial cues) and thus the production of coping responses that are appropriate to the context.

Stress appears to have other negative effects on the brain. Functional MRI studies of persons with PTSD show a hyperreactivity of the amygdala, an area of the brain associated with processing of fear and anxiety, and an underresponsivity of the medial prefrontal cortex, an area involved in regulation of emotion (Shin et al., 2005). The implication is that exposure to intense stress may bring about alterations in brain functioning that promote later "switching on" of fear and anxiety. Chronic stress has also been linked to decreased functioning of the dopaminergic system in rats, which is important because of its role in such disorders as depression, schizophrenia, and Parkinson's disease (Izzo, Sanna, and Koob, 2005).

Cognitive States Associated with Suicidal Behavior

Tendencies toward certain types of negative cognitions have been observed in suicidal youth. These can be conceptualized as vulnerabilities that predispose individuals toward perceiving their worlds as threatening, perceiving themselves as too incompetent to cope with situations, and perceiving no promise of a better future. Much of the research in this section focuses on cognitions that characterize not just suicidal youth but depressed youth as well.

Perceptions of low self-worth. Assessments of youth receiving treatment in mental health clinics and assessments conducted in schools suggest that many suicidal adolescents hold generalized views of themselves as relatively worthless and incompetent (Kienhorst, de Wilde, Van Den Bort, Diekstra, and Wolters, 1990; Overholser, Adams, Lehnert, and Brinkman, 1995). Lower perceptions of self-worth are linked not just to the presence of suicidal symptoms but to their intensity as well. The more negative the perception of oneself, the greater the suicidal intent, the larger the number of self-destructive behaviors, and the greater the lethality of suicide attempts (Robbins and Alessi, 1985). Just how generalized negative self-perceptions are linked to suicidal behavior has not been well explored, but there are some likely possibilities. If the adolescent feels intensely self-critical, especially following a situation involving a perceived failure, he may have the urge to express this feeling physically by injuring or even destroying his body. Or, being convinced of his worthlessness or incompetence, he may see it as obvious that he no longer deserves to live and/or to burden others. Generalized negative perceptions of the self also play a role in the cognitive models of Beck and others, described in the section on cognitive diatheses.

There is at least one other way in which generalized negative self-perceptions may result in suicidal behavior: a wish to escape from painful self-awareness. As I mentioned briefly in the chapter on theory and development, Baumeister (1990) described a *cognitive deconstruction* that can be associated with the suicidal mind state—a sort of radical avoidance that can take place when meaningful self-awareness feels too painful to bear. In the suicidal mind state, individuals are often disconnected from their futures, including concerns about the

possible negative consequences of their behavior, and may be ripe for engaging in thrilling and risky behaviors as an appealing escape from the pain of meaningful self-awareness.

The "cognitive deconstruction" construct bears some resemblance to so-called *dissociative states* that have also been found to be more common among suicidal adolescents (Orbach, Kedem, Herman, and Apter, 1995), that is, self-protective states in which painful emotional memories are partitioned out of awareness. Such partitioning is effective and useful in the presence of extreme stress and distress. However, as a chronic coping mechanism it is problematic for two reasons. It is a disconnection from oneself, which makes it impossible to construct meaningful self-narratives that weave together past, present, and future. Second, the disconnection from a portion of one's emotional life makes it impossible to connect fully with others. Disconnection and lack of meaning—especially in combination—are likely to render one more susceptible to depression and suicidal feelings. There is some evidence that suicidal youth may also become detached from awareness of their bodies, as reflected in their greater threshold and tolerance for physical pain when compared with non-suicidal psychiatric patients or community controls (Orbach, Mikulincer, King, Cohen, and Stein, 1997). Dissociation from the bodily self may be one reason why suicidal persons are capable of inflicting physical self-injury.

Cognitive diatheses. Theories have posited cognitive diatheses that may render individuals susceptible to depressive symptoms, including suicidal ones. In particular, individual differences in characteristic ways of interpreting stressful negative events may affect how vulnerable one is to developing depression following an event.

In chapter 3, I described the cognitive theory of Aaron Beck and colleagues (Beck, Rush, Shaw, and Emery, 1987), in which cognitive schemas consisting of negative beliefs about self, others, and the future—and associated dysfunctional attitudes and cognitive distortions—constitute a vulnerability to depressive and suicidal symptoms. More recently, cognitive theorists have emphasized the interconnectedness of cognitions and beliefs with patterns of emotion, physiological activation, and behavior, in integrated wholes or "modes." A suicidal mode was first described by Beck (1996) and

more fully articulated by Rudd (2000). When suicidal beliefs are activated—perhaps by external threat or loss, perhaps by particular cognitions, emotions, or bodily sensations—so too are any of a host of mixed negative emotions, as well as physiological arousal and suicide-related behaviors (e.g., planning or rehearsing suicide, suicide attempt). The suicidal beliefs about self (e.g., unlovable, incompetent), others (e.g., rejecting), and future (e.g., endless distress that is more than one can tolerate) are linked with particular assumptions, such as the necessity of always being perfect or always pleasing others in order to be accepted and loved. Certain "compensatory strategies," or characteristic coping styles, follow from these assumptions—for example, perfectionism or an effort to fulfill others' needs at the expense of one's own.

For Beck and colleagues, as well as for Rudd, hopelessness is the most pervasive cognitive-affective component of the suicidal state of mind (e.g., Beck et al., 1990; Rudd, 2000). Among adolescents, hopelessness is consistently associated with suicidal ideation and behavior, but its contribution to the processes leading to suicidal behavior is not always distinguishable from that of depression (Boergers, Spirito, and Donaldson, 1998; Marciano and Kazdin, 1994). Still, some researchers have found that it does contribute to suicide risk beyond the risk posed by depression alone, that it boosts the risk of attempted suicide among adolescents in the midst of a depressive episode (Dori and Overholser, 1999; Nock and Kazdin, 2002), and that it is more severe among those who have made multiple attempts, rather than a single attempt (Esposito, Spirito, Boergers, and Donaldson, 2003).

One possible reason for the inconsistent findings is that hopelessness may play a critical role for some but not all suicidal youngsters. There is evidence that hopelessness may be a more important component of the suicidal state for girls than for boys (Cole, 1989a; Spirito, Overholser, and Hart, 1991). As I discuss later in this chapter, some suicidal adolescents—perhaps more boys than girls—are less characteristically hopeless than they are angry and impulsive. Also, the usual tack of considering hopelessness to be a global construct and measuring it with queries about general perceptions of the future may be a mistake, because many adolescents are probably more hopeless about certain areas of their lives than others. For example, for

some adolescents, hopelessness about one's social relationships is more closely linked with suicidal ideation than is general hopelessness (Heisel, Flett, and Hewitt, 2003).

A second major cognitive model of depression also prominently features hopelessness and indeed is dubbed the *hopelessness theory* (Abramson, Metalsky, and Alloy, 1989). In this model, a diathesis for depression is rooted in a tendency to attribute negative events to causes that are stable and global, a so-called depressogenic attributional style. Thus, the implications of receiving a poor evaluation on a particular piece of work might be very painful if the feedback is viewed as arising from an enduring incompetence that extends to all areas of life, rather than a specific, limited problem (which would be more readily fixed or overcome). The model proposes two additional aspects of a negative cognitive style that predispose individuals to develop depressive symptoms following a negative, stressful event: a characteristic belief that the events will surely have important negative consequences and a proclivity for inferring negative self-characteristics from stressful events, such as the belief that one is deficient or unworthy. Thus, following a breakup with a boyfriend, an adolescent might conclude: "My boyfriend dumped me because I'm too difficult to get along with, and every guy I get involved with will dump me sooner or later." The negative cognitive style is thought to be a particularly potent predisposing factor for hopelessness if the person has a ruminative coping style (Nolen-Hoeksema, 2000) in which these negative inferences are replayed over and over again in the mind. Hopelessness, in turn, increases the likelihood of developing both depression and suicidal ideation.

A number of researchers have found associations between various aspects of negative cognitive styles (including negative automatic thoughts, worrying/ruminating, depressogenic attributional styles, negative beliefs about the self) and suicidal symptoms in both children and adolescents (Klimes-Dougan et al., 1999; Nock and Kazdin, 2002; Reinecke and DuBois, 2001; Rotheram-Borus, Trautman, Dopkins, and Shrout, 1990; Summerville, Kaslow, Abbate, and Cronan, 1994). However, while research findings are quite consistent in showing that depressed individuals have the cognitive vulnerabilities for depression, the findings have not been as strong when it comes to

showing the presence of the negative cognitive patterns among those who are in remission following a depressive episode (Haffel et al., 2005). That suggests that the cognitive tendencies may be features of depressive thinking that dissipate or vanish once the depressive symptoms lift and do not necessarily constitute a predisposing vulnerability for depression.

The real cognitive vulnerability for those at risk of depressive and suicidal symptoms may be the tendency for negative attitudes and beliefs about oneself to be reactivated in the presence of even mild levels of sad emotion. Researchers have shown that experimental induction of mild dysphoria, for example by playing sad music or by asking people to recall sad events, results in greater activation of dysfunctional cognitive patterns among previously depressed persons than among those without a depressive history, and the greater the level of activation, the higher the risk of later depressive relapse (Segal, Gemar, and Williams, 1999). It seems that a small degree of negative emotion can set off a ruminative chain of negative, self-critical beliefs about oneself as incompetent or defective. As the person becomes absorbed in the ruminations, they multiply and proliferate, eventually expanding into full-blown suicidal and depressive symptoms. Paradoxically, the very rumination that amplifies the depressive symptoms may be seen by the person as a potential means of figuring out how to find relief (Segal, Teasdale, and Williams, 2004), as if sufficient rumination will eventually result in thinking one's way out of a given problematic situation. As is discussed in chapter 7, cognitive-behavioral interventions that provide training in accepting and fully experiencing negative emotions seem to have promise in short-circuiting the tendency to respond to such emotion with automatic, habitual negative patterns of cognitive processing.

Alloy and colleagues (2000) provided persuasive evidence that depressogenic cognition is not just a feature of depression but a true vulnerability for the development of depression when coupled with triggering stressful events. They demonstrated that individuals who are free from a current diagnosis of depression but who nonetheless exhibit the depressive cognitive style, that is, the tendency to make negative inferences about the causes, consequences, and implications for self-worth following a stressful event, were more likely to have

experienced a past episode of depression than those lacking such vulnerabilities (Alloy et al., 2000). Further, using a powerful prospective research design, they demonstrated that those with the negative cognitive style are more likely to develop a first episode or a recurrent episode of major depression when tracked over a 2.5-year follow-up (Robinson and Alloy, 2003).

Gibb, Alloy, Abramson, and their colleagues have also empirically demonstrated the clear implications of cognitive vulnerabilities for the development of suicidal symptoms. Specifically, they showed that the negative cognitive style is predictive of suicidal ideation in college students across the same 2.5-year follow-up and that hopelessness fully mediated that relationship (Gibb et al., 2001). In other words, rather than directly influencing suicidal symptoms, the negative cognitive style gives rise to hopelessness, which in turn sets the stage for suicidal symptoms. This is more evidence that a hopeless state of mind is a key to understanding the development of suicidal symptoms, at least for many adolescents.

Perceived control. Researchers have investigated another cognitive factor with implications for suicidal adolescents, so-called locus of control. An internal locus of control indicates a general belief that future outcomes are primarily under one's control, whereas an external locus of control implies the belief that future outcomes are primarily in the hands of powerful others or alternative uncontrollable factors (chance, fate). Perhaps not surprisingly, adolescents who have attempted suicide tend to report a more external locus of control than adolescents without any psychiatric problems, but not more than other depressed adolescents who are not suicidal (Beautrais, Joyce, and Mulder, 1999; Kienhorst, de Wilde, Diekstra, and Wolters, 1992). This seems to reflect a tendency to underestimate the degree of personal control they may have over the events in a given situation (Piquet and Wagner, 2003). Researchers have also found that depressed youngsters who attempt suicide tend to blame themselves more than they should for negative life events (Joiner and Wagner, 1995; Rotheram-Borus et al., 1990). At first blush, these two findings may seem like a logical contradiction, but of course cognitions and emotions often do not abide by the principles of logic. Adolescents who attempt suicide have a tendency to fault themselves for stressful situations but often feel

powerless to change them even when they perceive they have played a role in causing them (K. G. Wilson et al., 1995).

To assume that suicidal adolescents' perceptions of low control are always a function of a cognitive distortion would be a mistake. Some suicidal adolescents do indeed find themselves in situations that are difficult or impossible for them to change, such as living with emotionally unstable parents, losing a parent, and so forth. Indeed, Michele Piquet and I found that "objective" coders rated the stressful circumstances faced by adolescents who had recently attempted suicide as less controllable than those faced by a group of adolescents who had never attempted suicide but were matched on psychiatric diagnosis and other factors (Piquet and Wagner, 2003). Clearly, there are circumstances in which perceptions of low control are accurate and adaptive. What is problematic is if the perceptions become fixed and global so that future events in differing circumstances are perceived through cognitive lenses that are no longer appropriate or useful.

Coping and Emotion Regulation of Suicidal Youth

Beyond the characteristic cognitive styles that we have been discussing, investigators have also considered a broader range of coping styles and ways of regulating emotion that are associated with suicidal behavior. In general, suicidal adolescents tend to be more likely than others to avoid facing their problems and to be less adept at solving those problems they do face. They also seem to be less skilled at managing strong emotions. As a consequence, they may become overwhelmed by sad emotions or react reflexively with impulsive or aggressive behaviors.

Problem solving. Adolescents who attempt suicide are prone to having difficulty generating, selecting, and implementing solutions to problem situations, particularly problems involving stress in interpersonal relationships (Kingsbury, Hawton, Steinhardt, and James, 1999; Rotheram-Borus et al., 1990; Sadowski and Kelley, 1993). The solutions that they do propose are too often inappropriate or more likely to exacerbate the stress than to relieve it (K. G. Wilson et al., 1995). There seems to be a certain lack of cognitive flexibility among

suicidal children and adolescents, a tendency to rigidly perceive a limited range of solutions or approaches when faced with either abstract or interpersonal problem situations (Fremouw, Callahan, and Kashden, 1993; Levenson and Neuringer, 1971). One example of this was documented by Priester and Clum (1993), who showed that college students who attempted suicide tended to focus insistently on "cons," that is, the reasons why possible solutions would be unworkable in a given situation. This may be part of the powerless, helpless stance mentioned earlier in connection with the cognitive diathesis for suicidal symptoms. Adolescents with higher levels of suicidal symptoms are less likely than others to have much confidence in their ability to solve interpersonal problems (Cole, 1989a).

Importantly, many of the research findings show that suicidal adolescents demonstrate problem-solving deficits when compared to "normal" controls but roughly equivalent problem-solving skills when compared to those with other psychiatric problems. In other words, difficulty with problem solving seems to be less a unique characteristic of suicidal youth and more a feature of youth who grapple with a variety of mental health problems (Negron, Piacentini, Graae, Davies, and Shaffer, 1997).

A lack of flexibility in problem solving is a theme in research and theory on perfectionism as a risk factor for suicidal behavior. Hewitt, Flett, and colleagues (e.g., Hewitt, Flett, Sherry, and Caelian, 2006) have described a process among perfectionists in which a proclivity to perceive that they have repeatedly failed to meet the standards and expectations of themselves or others results in chronic stress and perceived worthlessness. Despite this, they refuse to adjust their standards downward to more realistic levels, instead persistently striving even while repeatedly falling short. Hewitt and associates argue that, particularly if the unreachable standards are perceived as being set by important others (*socially prescribed perfectionism*), the perfectionist is subject to hopelessness and social withdrawal as she becomes convinced that she is incapable of earning the approval that she so desperately needs and seeks. Socially prescribed perfectionism has been linked to higher levels of hopelessness and suicidal ideation in samples of adolescents being treated for suicidal symptoms (Enns, Cox, and Inayatulla, 2003).

Approach and avoidance coping. The accumulated wisdom of many years of basic and applied developmental research suggests the presence of two primary systems of motivational and self-regulatory processes: one oriented toward approach behaviors and the potential for rewards, the other oriented toward avoidance behaviors and the potential for punishment (Derryberry and Reed, 1996). Beginning early in life, children tend to favor stylistically one or the other of these regulatory systems. In other words, some children seem to be naturally drawn to explore what is novel and unknown and are optimistic that rewards and positive emotions will follow from approach behaviors. Other children attend to the potential for punishment and threat in novel or uncertain situations and seem to be inherently more avoidant, inhibited, and pessimistic (Kagan, 1994), as well as emotionally reactive (Rothbart and Ahadi, 1994).

Each of these two styles has its benefits and drawbacks. An approach style can be rewarding, since the youngster is highly motivated to take action to seek goals. It fits a certain American cultural ideal, the "just do it" personality. However, there are potential drawbacks. Children and adolescents who see only the potential for gain and rewards may fail to detect threat cues indicating that a particular situation may be risky or harmful. They may have difficulty inhibiting their responses when situations call for restraint— a person who "just does it" often responds impulsively and without much forethought.

The inhibited style also has its strengths and weaknesses. Children and adolescents with this style take time to appraise the potential pitfalls in a situation and so are more cognizant of risks. Their style fits well with the traditional classroom environment, where they are more likely to thrive than a child with an approach style. On the other hand, they are more likely to focus inflexibly on the potential for risk and danger and have more difficulty redirecting their attention from threat onto positive aspects of situations or sources of emotional relief. They thus are more likely to experience ongoing emotional distress and physiological arousal. It is no wonder, then, that they tend to steer clear of stressful challenges. In so doing, they deprive themselves of opportunities to learn new coping skills and develop self-perceptions of their own coping effectiveness.

Researchers studying the coping of suicidal youth have often used measures that provide information about the approach-avoidance dimension. The major research finding is that many suicidal youths have an avoidant and passive coping style. They are more likely than others to deal with stressful situations by withdrawing from them socially, avoiding direct confrontation, and worrying about them while wishing they would change (Asarnow, Carlson, and Guthrie, 1987; Kingsbury et al., 1999; Klimes-Dougan et al., 1999; Spirito, Francis, Overholser, and Frank, 1996). This style cannot be accounted for by depression—suicidal adolescents with an affective disorder are less assertive and more submissive than nonsuicidal adolescents with an affective disorder (Brent, Kolko, Allan, and Brown, 1990). The avoidant coping style is not surprising in light of the previously discussed research indicating that suicidal youth tend to perceive situations as being a function of external forces. If a situation seems beyond one's control, what good would it do to engage in active coping efforts? Why not simply hold back and hope that things might change for the better?

As with perceived control, however, it would be an error to assume that avoidant coping is always maladaptive. This is fairly easily grasped when considering extreme stresses; for example, most of us would agree that fleeing from a wild bear is a function of an innate wisdom, rather than a sign of poor coping. Other examples are more relevant to suicidal youth. For example, it might be best to avoid direct confrontation with an unpredictable or aggressive person. Indeed, substantial numbers of suicidal youngsters have been exposed to traumatic stresses involving physical or sexual maltreatment (Deykin, 1989). A choice to refrain from interactions with those who were previously aggressive or persons who bear a similarity to them may be made consciously and deliberately. On the other hand, persons with traumatic memories are (understandably) prone to overestimating the likelihood of similar stresses and so may reflexively avoid even "objectively" neutral or positive situations for fear of being retraumatized (Berntsen and Rubin, 2006).

The element of conscious choice in the coping process has been explored by Bruce Compas and colleagues, who proposed that coping responses can be fruitfully categorized along two dimensions:

engagement versus disengagement with the stressor, and voluntary versus involuntary (Compas, Connor-Smith, Saltzman, Thomsen, and Wadsworth, 2001). Their engagement-disengagement dimension closely resembles the approach-avoidance dimension as discussed here. The voluntary-involuntary dimension distinguishes between responses involving volition and conscious effort and those that are automatic and outside volitional control. The two dimensions are crossed with each other in their model, so that both voluntary and involuntary responses are distinguished as involving either engagement with the stressor or one's response to the stressor on the one hand and disengaging from the stressor or one's response to it on the other. Compas and his team have provided research evidence in support of the usefulness of their model using coping questionnaires with samples of adolescents (Connor-Smith, Compas, Wadsworth, Thomsen, and Saltzman, 2000).

In work with my research team, Michele Piquet and I applied Compas's dimensions to suicidal adolescents' responses obtained in the course of interviews about how they coped with significant recent stresses (Piquet and Wagner, 2003). Using an original coding system, trained raters assigned adolescents' responses into 1 of 37 coping categories (examples included "Direct Action," "Cognitive Avoidance," and "Seeking Emotional Support"). Each of those 37 categories was classified along the two dimensions of the model developed by Compas and colleagues, yielding scores that indicated the extent to which adolescents made each of four types of coping responses: those that were "effortful" (i.e., voluntary) and involved approaching the stressor or one's response to it, those that were effortful and involved avoidance (i.e., disengagement), those that were "automatic" (i.e., involuntary) and involved approaching the stressor or one's response, and those that were automatic avoidance responses. The scores for adolescents who had made a recent suicide attempt were compared with those of adolescents who had never attempted suicide but who were closely matched on psychiatric diagnosis and other characteristics. Adolescents who had attempted suicide were significantly less likely than the matched controls to make effortful approach responses, such as communication aimed at problem solving. However, they were significantly more likely to make approach responses that were automatic,

that is, impulsive and aggressive responses such as venting negative emotion or destructive action.

These results were interesting in at least two respects. From a methodological perspective, they showed the importance of considering automatic responses alongside effortful ones and the limitations of relying on the approach-avoidance coping dimension alone. Had we ignored the distinction between effortful and automatic responses, we would have overlooked important variation within the approach-avoidance dimension. Second, they provide food for thought about the linkages between avoidant coping and impulsive or aggressive behaviors. To characterize the coping of suicidal adolescents as "passive" because such adolescents tend to respond with avoidant coping and to underutilize active, problem-solving coping may be quite misleading. That is, at least some suicidal adolescents do make approach responses, but they are of the variety that spring forth in automatic and unconstructive ways. Perceiving themselves as "stuck" in situations in which they cannot or will not take direct and active coping steps, some suicidal adolescents become frustrated and angry and vent this in destructive and impulsive ways. Self-destructive behavior may emerge from the same emotional source—as noted in chapter 3, some psychodynamic theorists have conceptualized suicidal behavior as a turning of aggression against the self (Menninger, 1938). Responding to stresses with aggressive and impulsive behavior is a topic that is addressed in a bit more detail later in this chapter.

One other finding from our own work on coping may have important implications for clinical interventions with suicidal youngsters (Piquet and Wagner, 2003). Among adolescents who had attempted suicide, those who employed more automatic avoidance coping responses—for example, reflexively avoiding direct action to manage the stressor or ignoring the stressor—rated themselves as having coped more effectively with the stressor. On the other hand, among the psychiatric controls who had not attempted suicide, greater use of automatic avoidance responses was associated with perceiving oneself as having coped *less* effectively with the stress, and those who felt they had coped more effectively had used a significantly higher proportion of *effortful* avoidance responses (examples include taking a break to relieve stress, deliberately refocusing attention to

achieve emotional relief, and restraining oneself from unconstructive actions). The two different groups of adolescents, both hospitalized in the midst of an acute mental health crisis, had two different perceptions of what "worked" in dealing with stresses. Adolescents in both groups felt they coped better when they disengaged from the stress, but the ways in which they disengaged differed. Disengagement itself is not necessarily problematic, particularly in the presence of relatively uncontrollable stresses or when situations are highly or chronically stressful. In the control group, the disengagement was a voluntary one and often served to allow the adolescent to calm down in order to cope more constructively at a later point. Among those who had attempted suicide, the preferred mode was a reflexive disengagement, a giving up, without any intention of returning to more constructive engagement with the stress.

In interpreting these findings, it may be useful to consider the ways in which effortful processing plays a role in managing powerfully emotional situations. Effective coping in such situations requires effortful information processing, such as the ability to inhibit impulsive responses and to flexibly shift attention toward and away from emotionally arousing people or other stimuli (Posner and Rothbart, 2000; Wilson and Gottman, 1996). By their very nature, though, such situations can trigger physiological activation and anxiety that make effortful processing more challenging. Suicidal youth may be particularly reactive in certain stressful situations—that is, their physiological reactivity may be especially rapid or intense—which may greatly reduce their capacity for effortful responses, even those aimed at self-soothing. Instead, they automatically flip into "fight or flight" mode, responding with either impulsive or aggressive behaviors or disengagement. They generally do not feel they have coped effectively after responding in "fight" mode, but they may view automatic avoidance as quite effective because it can rapidly alleviate the physiological reactivity and associated distress.

Adolescents also may feel that avoidance is particularly effective when they do not believe there is anything else they could have done to cope in a given situation. As was already noted, "objective" ratings by coders suggested that those who attempted suicide did appear to be facing stresses that were somewhat less controllable than those

faced by the controls, so it would be misleading to presume that their avoidance is entirely inappropriate. However, suicide attempters' perceived effectiveness scores were significantly higher than researchers' "objective" ratings of how effectively the adolescents coped (Piquet and Wagner, 2003). In other words, the coders judged that the adolescents could have responded more effectively than they did.

Of course, one could question whether the coders' judgments are fair—after all, it would be easy for coders who have not found themselves in such trying situations to second-guess how effectively the adolescent should have been capable of responding. There is reason to think, though, that the coders' effectiveness ratings do represent meaningful judgments. Specifically, the coders' ratings of coping effectiveness were significant predictors of the trajectory of suicidal ideation across the 2-year span following the suicide attempt (Piquet and Wagner, 2003). Examining suicidal ideation scores obtained at 6-month intervals, the higher the coping effectiveness score at the initial time point, the greater the drop in suicidal ideation across the ensuing time points. The adolescents' ratings of their coping effectiveness were not systematically related to the course of their suicidal symptoms.

If the coders' ratings are to be believed and suicide attempters do overestimate how effectively they cope, this may have some important implications for the ways in which clinicians might intervene to improve coping skills. Adolescents who feel they have coped well with a situation may not be terribly receptive to learning and implementing new coping skills. This is not to say that it is unimportant to train adolescents to have a broad repertoire of coping skills and resources on which to draw. It does imply that such training may not be sufficient to effect change if the adolescent does not believe that responding differently is likely to yield a satisfying outcome. Why bother to engage if the likely outcome is nothing more than increased stress and distress? Thus, it is important for those designing and planning interventions for suicidal youth to take into account aspects of the situation that may affect coping, including perceptions of control and effectiveness. In some cases, the situation may appear intractable to an adolescent who does not feel it is possible for a particular person (e.g., a parent) to communicate well or interact responsively. Family therapy may be

advisable in such a case; if the adolescent can start to see that even a small degree of change might be possible, he may become more motivated to engage in active coping. With many adolescents, it may be fruitful to use cognitive therapy to examine their assumptions—some of which may be long held—about the controllability of certain situations or their beliefs about the potential effectiveness of engaging with the stressor.

Emotion regulation. The term *emotion regulation* generally refers to processes involved in the self-regulation of emotion (Kopp, 1989). We have already discussed some ways in which approach or avoidance coping responses are employed to modulate strong emotion in the presence of stressful events or circumstances. Emotion regulation is a broader term than coping, because it applies to situations other than stressful ones. The ways in which adolescents manage emotions on an ongoing, everyday basis would seem to be of great relevance to the development of suicidal behavior. Indeed, Shneidman described the suicidal state as one in which negative emotions reach levels of intense mental pain that the individual finds intolerable. Researchers have found evidence that suicidal adolescents do experience intense negative emotions, including anxiety, dysphoric affect, and anger (Shaffer, Garland, Gould, Fisher, and Trautman, 1988) and that as many as 75 percent of adolescent suicide attempts are at least partly motivated by a wish to "stop feeling pain" (Kienhorst, de Wilde, Diekstra, and Wolters, 1995).

> Jerome is a 17-year-old male who suffered from repeated serious episodes of depression and anxiety. Years earlier, he had been the victim of repeated physical abuse. Driving to school one morning, he got into a "fender-bender" accident. In class, he found that he could not concentrate or do any work. "Thoughts kept racing through my head," along with feelings of desperation, fear, anger, and sadness. So he left school mid-morning and drove home, where he swallowed some pills "to keep the pain inside." The thoughts and emotional pain persisted, so he took more and more pills, whatever he could find. When his mother came home unexpectedly early, she discovered him unconscious. He

survived after CPR and treatment in a hospital intensive care unit.

Only a few studies of suicidal youth have examined emotion regulation processes other than those invoked in response to stressors. There is evidence that adolescents who have attempted suicide have frequent difficulties regulating negative emotions, particularly anger and sadness (Khan, 1987) and more difficulty modulating negative emotional states than those with suicidal ideation only (Zlotnick, Donaldson, Spirito, and Pearlstein, 1997). Suicidal behavior itself may serve as an emotion regulatory device; studies of the acute suicidal episode suggest that negative emotions may be temporarily reduced by suicidal behavior (Goldston et al., 1996; Negron et al., 1997). For some youngsters, suicidal behaviors can become a habitual method of emptying emotional pain from awareness, a theme to which I return near the close of this chapter.

Impulsivity and Anger in Suicidal Youth

As I have already noted, some of our coping research findings point to the potential importance of impulsive and angry coping responses in suicidal youth. The large body of research on depressive and anxiety disorders among suicidal youngsters has overshadowed a much smaller set of papers showing that suicidal youngsters tend to be more angry and to show more aggressive and impulsive behavioral styles than do either community or clinical control groups (Askenazy et al., 2003; Kashden, Fremouw, Callahan, and Franzen, 1993; Kingsbury et al., 1999). Aggression and impulse control problems have been associated with greater suicidality in children as young as 6 to 12 years of age (Pfeffer, Plutchik, Mizruchi, and Lipkins, 1986; Pfeffer, Solomon, Plutchik, Mizruchi, and Weiner, 1982).

Not only has impulsivity been found to broadly characterize the behavioral style of suicidal youngsters considered as a group, but it also characterizes many of the suicidal behaviors themselves. During adolescence, many if not most suicide attempts are unplanned (Brown, Overholser, Spirito, and Fritz, 1991). In one study of adolescents and young adults who had made suicide attempts of

life-threatening severity, 24 percent had carried out the attempt within 5 minutes of having made the decision to do so (Simon et al., 2001). In a second study, Negron and colleagues (1997) found that 69 percent of adolescents who came to a hospital emergency room in the midst of a suicidal crisis had contemplated the suicide attempt for fewer than 30 minutes before its implementation and only 7 percent had thought about it for 2 hours or longer.

> Fifteen-year-old Diane lived with her brother, stepfather, and mother. Some years ago she suffered repeated physical abuse at the hands of an uncle with whom contact was now restricted. During a heated family discussion over dinner one night, she became upset when she felt her mother aligning with her stepfather, telling Diane to "butt out" while allowing the stepfather to continue his immature behavior. Feeling devoid of emotion as she washed the dishes after dinner, she took some pleasure in the painful sensations of the hot water on her skin. Thoughts of suicide did not cross her mind until she spotted her bottle of lithium tablets near the sink, and within minutes she had swallowed them all. Secretly she wished someone would notice and would stop her, but no one did and she kept it to herself.

What else do we know about impulsivity among suicidal youngsters? For one thing, those adolescents who attempt suicide impulsively are less hopeless and depressed but more aggressive than those whose attempts are more carefully planned or contemplated over a longer period of time (Brown et al., 1991; Simon et al., 2001). Impulsivity may actually be of little relevance to suicidal behavior among many of those who are depressed, since depressed adolescents who attempt suicide are no more impulsive than their depressed nonsuicidal counterparts (Horesh, Gothelf, Ofek, Weizman, and Apter, 1999). Suicidal males are more likely to exhibit an impulsive style than suicidal females (Horesh et al., 1999; Simon et al., 2001), although even among females the severity of suicidal symptoms seems to be highest among those who are most impulsive.

Box 5.2

The pursuit-withdrawal patterns described in writings on couples' interaction is a pattern that shares some elements of the approach/avoidance and fight/flight dichotomies mentioned earlier in this chapter. John Gottman (1999) has described *stonewalling* behavior, in which individuals—more commonly men than women—remain physically present but become silent and emotionally nonresponsive. We might consider such behavior to represent a "flight" or avoidance position. "Fight," or aggressive/pursuit behavior, might involve critical or contemptuous responses toward the partner. Those two responses can fuel each other. Consider an exchange between male and female partners. A stonewalling response may occur when a man feels overwhelmed by his own intensely negative emotion arising in response to his feeling criticized by his partner. The emotional distance of the stonewalling may in turn trigger feelings of loneliness and abandonment in the woman. Unable to tolerate those painful emotions, the woman moves to alleviate them by aggressively pursuing the stonewaller, demanding that he respond. That, in turn, triggers further emotional withdrawal, and the cycle continues and escalates. Ultimately, both individuals feel distressed, unconnected, and misunderstood.

Although Gottman and others describe such a sequence in relation to conflict in romantic partners, the pattern can occur in other relationships as well. For example, adolescent stonewalling and parental pursuit may mutually feed each other. A parent's question about the adolescent's whereabouts on the previous evening may cause the adolescent to feel criticized and distrusted. If the adolescent shuts down emotionally, the parent may follow with angry pursuit, feeling disrespected and frustrated by the lack of response, perhaps coupled with an underlay of vulnerable emotions such as worry about the child's safety or hurt evoked by the emotional distancing of the child. Some adolescents would respond to the same parental question with an angry outburst, which could elicit retaliatory aggression by the parent. Those who flee and those who respond aggressively use two different interpersonal strategies to address the same problem—how to manage strong emotions that arise in their relationship with their parent.

Anger seems to be an exceedingly common aspect of the suicidal mind state. Negron and associates (1997) analyzed emotions reportedly experienced by suicidal individuals before, during, and after their crisis. Almost 70 percent of those attempting suicide reported that they felt angry in the midst of the episode, a higher percentage than those who reported feeling depressed (53 percent). That is not how most of us typically imagine the mind state of the suicidal youngster. Indeed, for some the anger may provide the necessary motivational energy for the suicidal act.

Whether or not a youngster is prone to respond to stress and challenge with aggression and impulsivity is almost certainly affected by individual differences. I have already discussed temperament differences, approach versus avoidance temperamental tendencies, which can play an important role. Cognitive factors have also been shown to influence aggression; for example, some youngsters tend to blame others when problems arise or to perceive that others have a hostile intention toward them, both of which are connected with increased likelihood of aggression (Dodge, 1993). Individual differences are not the only factors that play a role, however. Interpersonal factors also influence behavior and may be particularly important given how frequently youngsters' suicidal behaviors are triggered by interpersonal conflicts. The interface between interpersonal factors and individual coping or emotion regulation has not been well described in suicidal youths. In Box 5.2, I describe research on one interpersonal pattern that is commonly found among marital partners but that may be applicable to certain aspects of parent-child interactions in families of suicidal youths.

Suicidal Behavior as Emotion Regulation

One of the intriguing findings reported by Negron and associates (Negron et al., 1997) in their work on angry emotions involved their analyses of the process of change across the suicidal episode. Whereas close to 70 percent of suicidal adolescents reported feeling angry emotions in the midst of the suicidal episode, in the aftermath of the suicide attempt only 13 percent reported feeling anger, a substantial

drop. Not only was there a large reduction in anger in the wake of the attempt; there were also substantial drops in the percentages reporting depressed emotions (from 53 percent during the episode to 22 percent afterward) and hopelessness (69 percent, falling to 13 percent). Clearly, if suicidal behavior brings about such dramatic relief from negative emotion, it can function as a powerful negative reinforcement for the adolescent. What is there about the suicidal behavior that brings about relief from the anger?

One possible explanation that is centered on anger draws on both psychodynamic theory and animal stress research. Specifically, the suicidal behavior may function as an angry attack directed toward the self. Research with rats has shown that the opportunity to express aggression and anger can reduce some of the negative consequences of the stress response on the brain. Specifically, rats who bit aggressively following stress exposure (for example, biting a wooden stick or biting another rat) showed greater suppression of stress-induced noradrenaline secretion and corticotrophin-releasing factor in the central nervous system and were less likely to develop gastric ulcers than rats that were not allowed to bite (Hori, Yuyama, and Tamura, 2004; Tsuda et al., 1988). In other words, finding a way to physically vent anger serves to reduce stress.

Clearly, there are alternative explanations besides biochemical ones. Attempted suicide can bring about a shift in the meaning and significance of one's circumstances and emotional pain. For some, the suicidal act means facing one's own mortality, an experience that can broaden one's perspective: faced with the prospect of the cessation of life, one's current problems and worries can suddenly seem relatively insignificant. Many youth find themselves thinking about their friends or family when contemplating their own suicide and begin to realize that their death would hurt others too much. Becoming aware of their interconnection with others can shift their perspective, making them less self-absorbed in their emotional pain. The suicidal behavior may actually elicit the supportive help of family, friends, or professionals, which also diminishes the separateness and isolation so central to the suicidal mode.

In a broader sense, suicidal behavior may function similarly to other self-destructive coping mechanisms that are used impulsively to

bring about emotional relief. For example, binge eating, alcohol and drug use, impulsive sexual behavior, thrill seeking of various sorts, getting in a physical fight, and so on are engaged in by adolescents as well as adults when powerful negative emotions arise. Some of these (eating, drinking) tend to "numb" the individual from the emotional pain. Others may serve their function by refocusing attention on the here-and-now experience of a risky thrill. Some self-destructive behaviors surely serve a similar function; for example, acute physical self-injury, with the immediacy of the experience of pain and sight of blood, can refocus attention away from emotional distress.

It is important not to overlook those adolescents for whom the suicide attempt does not apparently relieve their negative emotion. Some of them may find alternate, more constructive approaches to their emotional distress. Some of them may, unfortunately, repeat their suicidal act, next time choosing a more lethal method.

Summary

The ways in which suicidal youngsters cope with stresses and regulate emotion have great implications for understanding the conditions that give rise to the suicidal behavior and for the development of interventions to address those conditions. In one sense or another, the coping and emotion regulation issues and difficulties reviewed in this chapter are attempted solutions to problems or painful emotional states. Some of the work on coping has revealed cognitive processes related to conditions and disorders that set the stage for suicidal behavior, including negative self-evaluations, self-blame, and other cognitive biases associated with depression and hopelessness. In vulnerable adolescents, even a relatively insignificant event may generate an extended stream of ruminative churning, which in essence is a misguided and ineffective attempt to think one's way to a solution or to a happier emotional state. Researchers have also discovered that suicidal adolescents tend to avoid facing their problems and avoid experiencing their negative emotions, often feeling powerless to change the difficult circumstances they face and incapable of handling the distress. Withdrawing from a situation makes sense if one perceives it as unchangeable. In the short term, avoidance can be quite rewarding, since it often reduces

the immediate emotional distress. Perhaps that is why those suicidal youth who reflexively avoid stresses often feel they have coped more effectively than do other suicidal youths.

Some suicidal youngsters are prone to impulsivity and aggression. Such behaviors may serve an emotion regulatory function. That is, impulsive or aggressive reactions can be reflexive attempts to control one's environment and/or one's experience. For example, lashing out at another can reduce external stress by causing the other to quiet down, to leave the situation, and so forth. Impulsive and risky sex can provide short-term excitement that masks one's emotional pain, and a suicide attempt can be an impulsive effort to quickly eliminate distress. To the extent that these behaviors are effective in downregulating negative emotion, they are strengthened and maintained each time they are enacted. One of the challenges facing clinicians is that the impulsive and avoidant coping styles are often deeply ingrained in part because they do provide short-term relief. As we shall see in chapter 7, many of the approaches for intervening with suicidal youth aim at replacing these coping habits with more adaptive alternatives, including learning how to better tolerate negative emotion without retreating or attacking oneself or others, implementing constructive stress relief, and learning effective problem solving and communication.

6

Psychopathology

Psychopathology is probably the single most frequently studied factor in the research literature on suicidal behaviors. As we shall see, it could hardly be otherwise. The large majority of suicidal youth are afflicted with one or another form of psychopathology. Indeed, suicidal behaviors are symptoms of certain psychopathologies, specifically depression and borderline personality disorder. The relationship between psychopathology and suicidal behavior can perhaps be best understood by considering processes of coping and emotion regulation, as discussed in the previous chapter. Suicidal behavior for some people represents an effort to cope with the distress associated with symptoms of psychopathology. Beyond that, psychopathology itself can in many instances be viewed as an expression of maladaptive patterns of coping and emotion regulation that have become habitual, pervasive, and inflexible (Gross and Munoz, 1995; Malatesta and Wilson, 1988). Often, the issues center around a dysregulation of the

frequency, intensity, and duration of the experience and/or expression of negative emotions. This is a theme to which I return at the conclusion of the chapter.

Psychopathology: A Necessary Condition for Suicidal Behavior?

It is a commonly accepted belief in the psychiatric community that psychopathology is found in the history of all adolescent completed suicides. Is that true? Largely. Across the various psychological autopsy studies, the vast majority of deceased adolescents have diagnosed psychopathology, either definite or probable. Fleischmann and colleagues (2005) recently reviewed all such studies of adolescents and emerging adults and found the presence of at least one disorder in 88.6 percent of cases. Older adolescents ages 16 to 19 are more likely than those ages 13 to 15 to have a psychiatric disorder (Brent, Baugher, Bridge, Chen, and Chiappetta, 1999).

Of course, the fact that psychopathology was present does not explain a suicide. Very few youths with psychopathology commit suicide; in fact, the majority of depressed young people do not even attempt suicide (Fergusson, Beautrais, and Horwood, 2003). The role of psychopathology is probably best understood by considering it as part of a developmental process whereby a variety of internal and environmental factors contribute to the emergence of suicidal behavior. Nevertheless, it is vitally important to understand the contributions of psychopathology because, even in cases in which it is but one of a number of contributing factors, awareness of its contribution can aid in early detection and prevention of suicide by professionals, parents, or friends.

The findings with regard to psychopathology in young people making suicide attempts are quite comparable to those for completed suicide. Depending on the study, anywhere from roughly 75 percent to upward of 90 percent of youths making a suicide attempt meet diagnostic criteria for one or more psychiatric disorders (Andrews and Lewinsohn, 1992; Gould, King, et al., 1998), with higher rates in samples of medically serious suicide attempts than in general population or community studies.

Thus, a psychiatric disorder is generally present in completed or attempted suicides, but it is not a prerequisite. We can often learn much by examining the exceptions to a rule. Two groups of researchers—Martunnen and colleagues, working with adolescents in Finland (Marttunen, Aro, Henriksson, and Lonnqvist, 1994; Marttunen et al., 1998), and Brent and associates, with adolescents in Pennsylvania (Brent, Perper, Moritz, Baugher, and Allman, 1993)—were curious to learn more about adolescents without psychopathology who nonetheless took their own lives. Both researchers compared a handful of youth suicides without psychopathology to those with psychopathology, and Brent and colleagues also included a community control group. The studies yielded findings that partially overlapped and were partially distinct. In Finland, none of the youths without psychopathology had made previous suicide attempts, nor had they received any psychiatric help for their problems. That contrasts with the adolescents without psychopathology in Pennsylvania, many of whom had used psychiatric services, had histories of suicidal ideation or previous attempts, and had families with histories of psychopathology, although each of those factors occurred significantly more often among those with psychopathology. In both locations, the completers without psychopathology had fewer recent life stresses than those with psychopathology, but disciplinary problems stood out as potentially important. Specifically, Brent and colleagues found that those without psychopathology were more likely than community controls to have prior disciplinary problems or trouble with the law, and Martunnen and associates found that they were more likely to have experienced a disciplinary problem in the 24 hours preceding the suicide. The suicide victims without psychopathology in Pennsylvania were more likely than those with psychopathology to have a loaded firearm in the home, and those in Finland were more likely than their disordered counterparts to use a firearm to commit suicide. These findings indicate that the Finnish youngsters seem to have given few signs of prior disturbance; yet, they all had communicated to someone that they felt suicidal, often doing so for the very first time the day before the suicide. Thus, the entire process seems often to have been short lived for the Finnish youth—a disciplinary crisis, a warning sign, and a firearm death all within 24 hours—leaving little time for others to intervene.

These findings raise as many questions as they answer. They seem to suggest that some adolescents who are coping well enough to show no apparent psychopathology can still be vulnerable to being thrown into an abrupt suicidal crisis over an acute event, particularly one in which they are in serious trouble with the law or parental rules. If a firearm is available, they are at risk for taking abrupt action to end their life, giving little warning. This obviously is a disturbing possibility. At the same time, the findings also indicate that, while not showing full-blown disorder, at least some of these youths do have some preexisting signs of being troubled when compared with the typical youth in the community, including a history of suicidal symptoms and/or psychiatric treatment and family histories of psychopathology.

Among the questions that arise is whether part of the issue is a function of methodological limitations in our diagnostic assessment. Perhaps our diagnostic systems are in some cases failing to detect psychopathology that was indeed present? For example, depression can be more difficult to assess in young people than in adults, sometimes manifesting behaviorally as oppositional behavior or boredom, so that some true cases may be overlooked. Developmental researchers have pointed out that the full-blown expression of certain symptoms of depression requires a cognitive sophistication not yet achieved by all youth, including the ability to project one's self-construct into the future, awareness of inconsistencies in the real versus ideal self, the capacity for making social comparisons, and abstract moral reasoning (necessary for much of the enduring guilt associated with depression) (Weiss and Garber, 2003). Psychopathology can remain undetected for other reasons as well. Perhaps these adolescents intentionally hid their distress from others? In the case of completed suicides, perhaps some of the parents and other informants did not want to acknowledge psychopathology, because to do so would mean that they could have, or should have, known enough to prevent the suicide? These are questions that might fruitfully be addressed by researchers in the coming years.

Which Types of Psychopathology Pose the Greatest Risks?

Three broad classes of psychopathology—mood, disruptive, and substance abuse disorders—accounted for more than 70 percent of

diagnoses found in Fleischmann and colleagues' review of studies of completed suicides in young people. They thus are reviewed first, followed by personality and anxiety disorders, which were found in smaller but still substantial numbers. The risk of suicide among schizophrenics is high, but schizophrenia accounts for a negligible proportion of suicides in young people and is not discussed further.

Mood disorders. Common knowledge suggests that the single most common disorder among suicidal adolescents would be a mood disorder, particularly depression. Although that is in fact accurate, and while the presence of a mood disorder greatly increases the risk of suicidal behavior, what may come as a surprise to many are the large numbers of suicidal youths who do not suffer from a mood disorder. In their review, Fleischmann and colleagues (2005) found that 42.1 percent of adolescent and young adult completed suicides had a mood disorder. That is a very large percentage, but perhaps smaller than one might expect, given the apparent linkage of depression and bipolar disorder with completed suicide. Mood disorders are found in comparable or perhaps slightly larger numbers in the histories of youths attempting suicide (Beautrais, 2003c). Of course, mood disorders must be a critical target of prevention efforts. Indeed, the population-attributable risk of mood disorders for completed suicide (i.e., the maximum percentage by which suicides might be reduced if mood disorders could be eliminated among young people) has been estimated to range from 37 percent to 46 percent (Brent, Perper, Moritz, Allman, Friend, et al., 1993; Shaffer et al., 1996).

Examining the distinctions within this category, we find that depressive disorders are the most common of the mood disorders in suicidal youths. Researchers have shown that youth with a diagnosis of major depression are 20 to 27 times more likely than those without it to commit suicide (Fleischmann et al., 2005), with the risk posed by depression being higher for females than for males (Shaffer et al., 1996). A sizable number of studies have documented the risk posed by depression for attempted suicide in children and adolescents, including research showing that current depression is predictive of future suicide attempts (Gould, King, et al., 1998; Lewinsohn et al., 1994; Pfeffer et al., 1986). Dysthymia, the milder and more chronic variant of major depression, is also found in sizable numbers (20 percent to 25 percent) among youngsters attempting suicide (Brent et al.,

1988; Gould, King, et al., 1998). In a population of African American youths, my colleagues and I demonstrated that depressive symptoms as early as 4th grade are predictive of suicide attempts in late adolescence, with a stronger predictive relationship for females than males (Ialongo et al., 2004).

Bipolar disorders are considerably less common among suicidal youngsters than depressive disorders. Brent and associates in each of two studies found a lifetime history of bipolar spectrum disorders in roughly 20 percent of completed adolescent suicides but in only 3 percent of community controls (Brent et al., 1988; Brent, Perper, Moritz, Allman, Friend, et al., 1993), and Shaffer and colleagues (1996) found bipolar disorders in only 3 percent of male and in none of female adolescent suicides in their study. Similarly, among youth in community and inpatient samples who attempt suicide, fewer than 10 percent have experienced a manic episode (Brent et al., 1988; Gould, King, et al., 1998), although that rate is significantly higher than the rate of such episodes in nonsuicidal youth in the community.

Since most adolescents with affective disorders never become seriously suicidal, an important question is, what distinguishes those who do from the rest? Brent and colleagues (Brent et al., 1990) sought the answers by comparing samples of affectively disordered adolescents with and without suicidal symptoms (i.e., serious suicidal ideation or a suicide attempt). They found that among suicidal youths the affective disorders began at an earlier age (approximately 12 versus 15 years of age for the nonsuicidal group) and were of longer duration (3.4 years versus 1.7 years, on average) and that the depressive symptoms were more severe. In other words, among youngsters with affective disorders, those who develop serious and persistent episodes early in adolescence are at highest risk for subsequent significant suicidality.

Conduct problems and other "disruptive" disorders. Although depression is the disorder that most people associate with suicide, disruptive disorders (i.e., conduct, oppositional-defiant, and attention-deficit disorders) are probably the most often overlooked disorders in terms of the risk they pose for suicidal behavior. That is particularly true for conduct disorder, by far the most prevalent of the three among suicidal youths. It is tempting to assume that aggressive, antisocial, oppositional youngsters would be at low risk for suicidal behavior because

they habitually turn emotions outward, taking them out on others. Yet, the same youngster who manages the tension associated with an inability to tolerate uncomfortable emotions by lashing out at others may also lash out at himself. Some of the well-publicized episodes of murder-suicide, such as the 1999 tragedy at Columbine High School, are examples of antisocial behaviors combined with self-destruction.

As I discussed in chapter 4, peer relationship factors, which are associated with antisocial behavior in children and adolescents more generally, may help to explain such behavior in suicidal youngsters, as well, and deserve more research. In particular, rejection by peers can result in a sense of alienation from the mainstream, and some youngsters gravitate to cliques of deviant peers, where they are trained in and rewarded for committing antisocial acts.

Studies of completed suicides show that many such youngsters have one or another disruptive disorder, especially conduct disorder. Shaffer and colleagues (1996) found conduct disorders in 46 percent of the completed suicides in their sample, including 32 percent of females and 50 percent of males, and a population-attributable risk (PAR) of 24 percent (i.e., elimination of conduct disorders could result in as much as a 24 percent reduction in the suicide rate). The combination of a mood and disruptive disorder was found in 13 percent of the sample, including 20 percent of girls. Other researchers have found lower rates of disruptive disorders; for example, Brent, Perper, Moritz, Allman, Friend, et al. (1993) reported conduct disorders in 28 percent of their sample, with a PAR of 16 percent. The average rate of disruptive disorders across studies of adolescents and young adults is 21 percent, including 14 percent with conduct disorder (Fleischmann et al., 2005). Conduct disorders are more often found in older adolescent suicide victims than in younger ones (Brent et al., 1999). Among adolescents with disruptive disorders, those who complete suicide are more likely than their nonsuicidal counterparts to abuse alcohol and other drugs, to have a history of being physically abused, to have made a previous suicide attempt, and to have a first-degree relative with a mood disorder or who abuses alcohol (Renaud, Brent, Birmaher, Chiappetta, and Bridge, 1999).

As with most disorders, the findings for attempted suicide parallel those for completed suicide. Disruptive behaviors are clearly

associated with suicide attempts, but the percentages range fairly widely depending on the setting and the age range. For example, in their high school sample, Andrews and Lewinsohn (1992) found that 17 percent of those making a suicide attempt had a history of a disruptive behavior disorder, including 32 percent of males and 11 percent of females. Gould and associates (1998) found disruptive behavior disorders in 29 percent of older children and adolescents in the community attempting suicide and 34 percent of those with suicidal ideation; both rates were higher than the rate of disruptive disorders in nonsuicidal controls. Aggression has been associated with more severe levels of suicidal behavior among children ages 6 to 12 receiving inpatient or outpatient treatment, and assaultive behavior in schoolchildren raises the odds of developing suicidality two years later (Pfeffer, Zuckerman, Plutchik, and Mizruchi, 1984). Ialongo and colleagues (2002) found disruptive disorders in significantly more urban, African American suicide attempters and ideators (roughly 50 percent in each) than in nonsuicidal older adolescents and young adults. In that study, as well as Andrews and Lewinsohn's predominantly Caucasian sample, disruptive disorders were independently associated with suicidal behavior after other psychiatric disorders were controlled for, but contrary results were reported by Gould and colleagues. Disruptive disorders are found in relatively high numbers (30 percent with a current conduct disorder) among suicidal inpatients (e.g., Brent et al., 1988), and in the lifetime histories (37 percent) of adolescents and young adults making a medically serious attempt (Beautrais, Joyce, and Mulder, 1996).

Alcohol and drug abuse. Substance abuse is linked to suicidal behaviors in several ways. It has long been recognized that alcohol can provide a disinhibition mechanism for the impulsive suicide. Studies have shown that nearly 50 percent of adolescent completed suicide victims may be intoxicated with alcohol at the time of their death (Brent, Perper, and Allman, 1987) and that adolescents who used a firearm to commit suicide were almost five times more likely to have consumed alcohol than those who used alternative methods. In the aftermath of a painful stress such as a relationship breakup, getting drunk can increase the risk of impulsive self-destructive acts that may prove fatal particularly if there is an available firearm.

Substance abuse can play different roles in suicidal behavior for different adolescents. It has been implicated as one component of an aggressive-impulsive typology that characterizes a subset of suicidal adolescents (Apter et al., 1995; Esposito-Smythers and Spirito, 2004) and that may have biological underpinnings. Chronic use of substances, particularly alcohol, can also have a depressogenic effect that results in hopelessness and suicidal behavior (Page, Allen, Moore, and Hewitt, 1993). In the subtype of suicidal youths who are lower on the aggressive/impulsive spectrum but higher in depression, anxiety, and related distress, alcohol and substance abuse can reflect a self-medicating coping effort aimed at numbing painful emotion (Esposito-Smythers and Spirito, 2004).

The magnitude of the link between a diagnosable substance abuse disorder and completed suicide is substantial. Youths with such disorders are 5 to 10 times more likely to complete suicide (Fleischmann et al., 2005), and population-attributable risks have ranged from 16 percent to 25 percent (Brent, Perper, Moritz, Allman, Friend, et al., 1993; Shaffer et al., 1996). Sex differences are commonly found—for example, Shaffer and associates reported substance abuse disorders in 42 percent of boys but only 12 percent of girls. Researchers have also found substance abuse to be more prevalent in older than in younger adolescents (Brent et al., 1999).

Perhaps the most important story of substance abuse emerges when one examines the rates of comorbidity with other psychiatric disorders. The triple combination of substance abuse and mood and disruptive disorders was found in 20 percent of older boys and 16 percent of all boys in Shaffer and colleagues' (1996) sample of completed suicides, and 5 percent of those boys had an anxiety disorder as well. Brent, Perper, Moritz, Allman, Friend, et al. (1993) found that close to one-half of completed suicides with a substance abuse disorder had a comorbid affective disorder, and one-third had a comorbid conduct disorder. The combination of the affective disorder and the substance abuse leads to a risk of suicide significantly greater than that posed by substance abuse alone.

The findings for substance abuse in attempted suicides are fairly similar. Both alcohol and drug abuse are found more often in suicide attempters than in controls, with estimates ranging from 17 percent

in high school students (Andrews and Lewinsohn, 1992) to 66 percent in a sample of adolescents in New Zealand (Fergusson and Lynskey, 1995). As with those completing suicide, substance abuse is more often found in males than females and in older than younger adolescents. It is predictive of future suicide attempts one year later (Andrews and Lewinsohn, 1992) and is independently associated with suicide attempts even after one controls statistically for mood, disruptive, and anxiety disorders in a broad cross section of boys (Gould, King, et al., 1998), as well as African American older adolescents and young adults (Ialongo et al., 2002). Gould and colleagues found higher rates of substance abuse among adolescents who attempt suicide (17 percent) than in those with suicidal ideation alone (3 percent), which replicated previous reports (Garrison, McKeown, Valois, and Vincent, 1993), and this may provide another indication that the substance abuse serves to disinhibit the self-destructive behavior.

Comorbidity of substance abuse and other disorders amplifies the risks for suicide attempts in much the same manner as for completed suicide. Major depression is associated with substance abuse among those attempting suicide (Kandel, Raveis, and Davies, 1991), and comorbid conduct problems with alcohol or drug abuse are associated with greater risk of attempted suicide (Wagner, Cole, and Schwartzman, 1996).

Personality disorders. Across studies of completed suicides in adolescents and young adults, roughly 12 percent have a personality disorder (Fleischmann et al., 2005); however, almost 40 percent of the research studies of completed suicide did not assess personality disorders, which may mean that the 12 percent figure is an underestimate. Brent and others (Brent, Johnson, et al., 1994) found probable or definite personality disorders in 42 percent of completed suicides and 12 percent of controls, and those with a personality disorder were 13 times more likely to commit suicide than those without one (Brent, Bridge, Johnson, and Connolly, 1996). Shafii and colleagues (1988) reported that 29 percent of their sample of suicide victims but only 10 percent of controls had a personality disorder, and 50 percent of a sample of completed suicides in Belgium were diagnosed with a personality disorder (Portzky, Audenaert, and van Heeringen, 2005). Although borderline and antisocial personalities make up almost three-fourths

of the personality disorder diagnoses across studies, Brent and associates (Brent, Johnson, et al., 1994) found relatively high numbers of so-called Cluster C personality disorders as well, particularly avoidant and passive-aggressive personality. The same study reported considerable comorbidity among those with a personality disorder, including substance abuse (44 percent of those with a personality disorder), conduct disorder (45 percent), and major depression (30 percent); looked at the other way, among those with nonpersonality psychopathology, 44 percent had a comorbid personality disorder. Despite this overlap, however, personality disorders still remained independently associated with completed suicide when the nonpersonality disorders were controlled for.

These data for completed suicides are important because it is all too easy to dismiss suicidal behavior among youths with personality disorders as "manipulative," that is, made only to achieve an interpersonal gain and not to be taken as a "real" risk for completed suicide. Many youngsters with personality disorders, particularly borderline personality, do engage in repetitive self-mutilation (e.g., superficial cutting of wrists, picking at wounds, self-burning), as well as repeated suicide attempts of relatively low lethality. Yet, to perceive those behaviors solely as attention seeking or manipulative is to overlook the considerable emotional pain from which most of these youth are trying to escape or find relief (Boergers, Spirito, and Donaldson, 1998; Hawton, Cole, O'Grady, and Osborn, 1982).

A number of studies have shown higher rates of personality disorders among suicide attempters than among nonsuicidal controls, including controls with psychiatric disorders (Brent, Johnson, et al., 1993; McManus, Lerner, Robbins, and Barbour, 1984; Pfeffer, Newcorn, Kaplan, Mizruchi, and Plutchik, 1988). Studies also document substantial comorbidity of personality disorders with affective disorders among those attempting suicide.

As an addendum to this topic of personality disorders, I include a brief discussion of multiple suicide attempters. As already mentioned, many borderline personality–disordered youth make repeated suicide attempts, although of course not all multiple attempters have borderline pathology. Anywhere from 15 percent to 50 percent of adolescent suicide attempters have made one or more previous attempts, depending

on the research study. Researchers have noted a number of characteristics that differentiate them from those making a first suicide attempt. They are at somewhat higher risk of completed suicide; for example, one study estimated the risk of completed suicide at 4 percent in multiple attempters but 1 percent in first-time attempters (Kotila and Lonnqvist, 1987). They also are at higher risk of making another suicide attempt and of doing so more rapidly (Goldston et al., 1999). Multiple attempters tend more often than first-time attempters to have affective disorders, to be more depressed, angry, and impulsive, and to have ongoing life stress and poorer problem-solving skills (Gispert, Davis, Marsh, and Wheeler, 1987; Goldston et al., 1998; Hawton, Kingsbury, Steinhardt, James, and Fagg, 1999; Stein, Apter, Ratzoni, Har-Even, and Avidan, 1998). Joiner and Rudd (2000) theorized that with each ensuing attempt, suicidal crises may become more easily triggered by interpersonal and other stimuli and more severe, as suicide-related cognitions and coping patterns become more accessible and readily activated. Consistent with this, they found that repeat attempters had more severely depressed moods than first-time attempters upon hospital admission, although the duration of their crises was no different (i.e., greater intensity did not necessarily mean longer duration).

The highest risk period for reattempting suicide is within the first 6 to 12 months, according to studies that have tracked adolescents for as long as 5 years following discharge from inpatient units, with rates in the first 6 months ranging from 15 percent to 18 percent (Brent, Kolko, et al., 1993; King et al., 1995) and diminishing thereafter (Goldston et al., 1999). The trajectories may differ for younger children, however. Following a sample of suicidal inpatient children ages 6–12 following discharge, Pfeffer and colleagues (1991) found that 26 percent ultimately attempted suicide across the 6- to 8-year follow-up, but only about 5 percent did so within the first 2 years, and the first follow-up attempt did not occur until an average age of 14. Thus, the lag time seems to be longer in younger children.

There also is evidence that the timing of a suicide attempt following discharge from a psychiatric hospital is associated with trajectories of suicidal ideation. Prinstein and associates followed a group of young adolescents across an 18-month period after hospital discharge and found that the overall group had a period of declining suicidal

ideation in the initial 9 months, followed by rising suicidal ideation in the ensuing 9 months (Prinstein et al., 2008). However, those adolescents whose suicidal ideation declined the least during the initial 9 months postdischarge were at highest risk of attempting suicide during that time span, whereas those adolescents whose suicidal ideation rose the most sharply from 10 to 18 months were most likely to attempt suicide during that latter time interval.

Anxiety disorders. Anxiety has been shown to be related both to completed and to attempted suicides in youths. Fleischmann and colleagues' (2005) review of the literature reported anxiety disorders in 7.6 percent of completed suicide cases, but the rates vary across studies. For example, Shaffer and associates (1996) reported an anxiety disorder in roughly 27 percent of completed suicides. Brent, Perper, Moritz, Allman, Friend, et al. (1993) detected anxiety disorders in approximately 12 percent of completed suicides, a significantly higher rate than was found in community controls; that group difference was primarily a function of higher rates of overanxious disorder (i.e., generalized anxiety), and completed suicides were no more likely than controls to have panic disorder, obsessive-compulsive disorder, separation anxiety, or a specific phobia.

Anxiety disorders tend to be more common in those who attempt suicide than in those who complete suicide (Beautrais, 2001). Rates of anxiety disorders among suicide attempters have ranged widely across studies, including roughly 15 percent of high school students (Andrews and Lewinsohn, 1992), 15 to 25 percent of hospitalized adolescents or young adults (Beautrais, 2001; Goldston et al., 1998), and upward of 50 percent of community samples of older children and adolescents (Fergusson and Lynskey, 1995; Gould, King, et al., 1998). Higher frequencies of anxiety disorders and stronger associations with suicidal symptoms are often reported for females than for males. Gould and associates reported rates of specific anxiety disorders among the attempters in their study; the most common were overanxious disorder (28.6 percent) and separation anxiety (23.8 percent), and the least common was panic disorder (2.4 percent). However, the low frequency of panic disorder among those who attempted suicide should not lead one to conclude that panic is irrelevant. Gould and her collaborators found that panic attacks were significant predictors

of suicidal symptoms (attempts or ideation), even after taking into account the contribution of other psychiatric disorders, particularly among girls; panic attacks were found in roughly 15 percent of those with suicidal symptoms.

It is important to note that anxiety co-occurs frequently with depression. Certainly, some youth develop anxiety disorders in the absence of depression, but such pure disorders are probably more the exception than the rule. Indeed, some research indicates that depression and anxiety are part of a single mixed syndrome in children and adolescents, rather than two distinct entities (Wadsworth, Hudziak, Heath, and Achenbach, 2001). The levels of anxiety co-occurring with a depressive disorder or of depressive symptoms co-occurring with an anxiety disorder are not always sufficient to reach the threshold for diagnosing a second disorder, but diagnostic comorbidity has been documented in a sizable number of cases. For example, in Shaffer and colleagues' (1996) study of completed suicides in New York, 7 percent of males and 12 percent of females had comorbid mood and anxiety disorders, and Brent, Perper, Moritz, Allman, Friend, et al. (1993) reported that 21 percent of completed suicides with an affective disorder were comorbid for anxiety. The overlap is considerably higher when anxiety disorders are the starting point; the same study found that 87.5 percent of completed suicides with an anxiety disorder also had an affective disorder. It is reasonable to assume that many if not most suicidal youths with an anxiety disorder are also experiencing at least some degree of depression.

One particular category of anxiety-related symptoms that merits special attention is posttraumatic stress disorder (PTSD). There has been surprisingly little research on the connection between PTSD and suicidal behavior in youngsters. Psychological autopsy studies have not included PTSD among the symptoms assessed, nor have most studies of suicidal ideation or attempts in children and adolescents. This is striking given the well-documented associations between a history of sexual or physical maltreatment and suicidal symptoms (Deykin, Alpert, and McNamarra, 1985; Fergusson, Woodward, and Horwood, 2000), since maltreatment can give rise to PTSD symptoms. The few existing studies indicate that higher levels of PTSD symptoms in high school students are predictive of higher suicidal ideation after levels

of depression are controlled for, but significant associations of PTSD symptoms with suicide attempts are not maintained after one controls for other psychiatric symptoms (Mazza, 2000; Wunderlich, Bronisch, and Wittchen, 1998).

Adjustment disorders. Adjustment disorders are diagnosed in roughly 10 percent of adolescent suicides (Fleischmann et al., 2005; Shaffer et al., 1996). These are disorders in which stressors give rise to temporary (not greater than 6 months) psychological distress or significant impairment in social or academic realms. Adjustment disorders are not applied in instances of bereavement and are diagnosed only when other diagnostic criteria are not met; for example, if a stressor results in a major depression, that diagnosis is given priority over an adjustment disorder diagnosis. Comorbidity with other disorders does occur in roughly 25 percent of youth suicides with adjustment disorder (Groholt, Ekeberg, Wichstrom, and Haldorsen, 1997; Shaffer et al., 1996). Taking comorbidity into account, for somewhere between 5 percent and 10 percent of youths, the only psychopathology that preceded their completed suicides is a strong emotional (e.g., depression, anxiety) and/or behavioral (e.g., conduct problem) reaction to a recent stressor. Research with high school students who have attempted suicide indicates an adjustment disorder prevalence of 10 percent in females and 7 percent in males (Andrews and Lewinsohn, 1992). In psychiatric inpatients, adjustment disorders are found more often in first-time attempters than in nonsuicidal adolescents, but they are not distinguishing features of inpatients with multiple attempt histories (Goldston et al., 1998).

Other Biological Factors

Before leaving the topic of psychopathology, it is worth returning to the subject of biological factors in suicide, which was introduced in chapter 4. Work on biological factors has progressed along three broad fronts. The oldest line of research investigated metabolites of the neurotransmitter serotonin in the cerebrospinal fluid. Specifically, 5-hydroxyindole acetic acid (5-HIAA) is slightly lower in the brain stems of completed suicides than in the brain stems of controls (Mann, Arango, Marzuk, Theccanat, and Reis, 1989). Similar results

have been found in people with a history of relatively violent suicide attempts (Asberg, Nordstrom, and Traskman-Bendz, 1986). There is some evidence that lower 5-HIAA is also predictive of future attempts and completions (Nordstrom et al., 1994).

Second, investigations of anatomical features of the brains of living and deceased suicidal people have shown fewer type 1A serotonin receptors and serotonin transporters in the prefrontal cortex (Mann, Waternaux, Haas, and Malone, 1999). Both of those have been implicated in the development of depression. What is particularly interesting is that the association of these serotonin factors with suicide has been shown to occur independent of depression (Mann, 2003). Because of the areas of the brain involved, researchers have suggested that the effect of the biological defects is an impaired ability to inhibit behavioral responses and thus a predisposition toward impulsivity (including suicidal behaviors) in the presence of stress. Consistent with that hypothesis is biological evidence suggestive of heightened, prolonged stress responses in suicide victims, including abnormalities in the hypothalamic-pituitary-adrenal axis (the body's main stress-regulating system) and upregulation of tyrosine hydroxylase (an enzyme involved in the biosynthesis of noradrenaline, which increases during stress) in certain brain areas of completed suicides (Bunney, Fawcett, Davis, and Gifford, 1969; Mann, 2003).

Other researchers have examined specific candidate genes that may be involved in suicidal behaviors, as noted in chapter 4. Polymorphisms in the serotonin transporter gene and in tryptophan hydroxylase, an enzyme involved in serotonin biosynthesis, have been documented in suicidal people, but results have been inconsistent (Bellivier et al., 2000; Lalovic and Turecki, 2002). In part, the inconsistent results may be due to variability in suicidal behavior (i.e., the phenotype) that is not well specified in the studies. It is also possible that more robust findings might emerge as researchers begin to examine the influences of particular combinations of multiple genes.

Summary

By way of summary, I pose a few questions regarding the rich and varied set of findings reviewed in this chapter. First and most simple,

what do we know about the types of psychopathology commonly found in suicidal youth? Second, beyond their descriptive value, how might the findings help to explain why youths become suicidal? Third, what important information remains to be learned regarding the role of psychopathology?

What do we know? A wide spectrum of psychopathologies is found in suicidal children and adolescents. Mood disorders—especially depression—are the most common disorders, and the more intense and protracted the mood disorder, the greater the risk of suicidal behavior. Substance abuse, disruptive, anxiety, and personality disorders have also been found in substantial numbers. The presence of multiple disorders increases the odds of suicidal behavior, particularly the combination of mood disorders and other disorders and the triple combination of mood/substance abuse/conduct disorder. A great deal of research attention is currently focused on biological factors, especially ones related to the serotonin system; particular serotonin receptor sites are of interest for their role not only in depression but in executive control over behavior as well.

Do the findings help to explain the development of suicidal behavior? The great variability in diagnostic profiles across suicidal youths is in keeping with the theme of equifinality introduced in chapter 3, which holds that multiple different pathways can result in the common outcome of suicidal behavior. Simply put, suicidal youngsters can look quite different from one another with regard to psychopathology. Our understanding of the role of different diagnoses is complicated by the presence of comorbidity in substantial numbers of suicidal youths. Comorbidity can contribute both to variability between those with the same disorder and to commonalities across those with different psychopathologies. For example, the interpersonal and individual coping processes of a depressed child with comorbid conduct disorder may differ markedly from those of a depressed child with comorbid anxiety; the latter child may have less in common with the former than with other anxious children who fail to meet diagnostic criteria for depression. The duration of a disorder is also vital to understanding its impact. A child with long-standing depression might have considerably different styles of managing stresses than one whose experience with depression is limited to a couple of weeks. All other

things being equal, when encountering perceived threats, depressive or suicidal response modes are likely to be triggered more rapidly and intensely for those with a longer duration of illness.

The main point is that simply knowing that a child has a particular diagnosis is not terribly informative with regard to suicide risk. Comorbidity, intensity, and duration of symptoms must be considered as part of the full picture. Beyond that, as foreshadowed in the introduction to this chapter, the implications of any diagnostic picture for suicidal behavior may be mediated by the role of emotion regulation and coping. As discussed in the chapter on coping, researchers have learned a good deal about the characteristic ways in which suicidal youngsters respond to stress. We also know that certain disorders are associated with particular patterns of coping and emotion regulation. Thus, a comprehensive profile of psychopathology can give important clues about possible or likely coping difficulties faced by a youngster, which may have a direct bearing on her risk of suicidal behavior.

The suicidal mode (Beck, 1996; Rudd, 2000), discussed in previous chapters, can provide a helpful framework for organizing our thinking on the interplay of coping and psychopathology. To illustrate, I will use depression as an example. Recall that the suicidal mode contains cognitive, affective, physiological, and behavioral-motivational components. Certain cognitions and beliefs that are common responses to stressful situations among depressed persons are also characteristic of the suicidal mode, such as viewing oneself as unlovable or incompetent, viewing others as rejecting, and so forth. Depressed persons also experience a variety of strong dysphoric emotions that are typical of the suicidal mode—sadness, guilt, irritability, and others—and their coping tendency is to try to shut out those emotions, rather than to experience and tolerate them. For many depressed adolescents, the behavioral-motivational system involves a proclivity toward escaping and avoiding stressful situations, rather than utilizing more adaptive problem-solving and other active coping skills. Suicidal behavior can be one such escape mechanism.

Comorbidity can be viewed in terms of its implications for different styles of regulating emotion and coping. Those depressed youngsters with comorbid anxiety may be most prone to intense and habitual physiological activation in response to stresses; elevated

negative emotion (fear) and a tendency toward coping with behavioral withdrawal or avoidance may also predominate. Depressed youngsters with comorbid substance abuse may use drugs or alcohol to numb painful emotion. Also, the disinhibition that can accompany substance use may influence the behavioral-motivational system, increasing the possibility of impulsive risky and self-destructive behaviors; disinhibition can also be a means of escaping from painful self-awareness, as Baumeister (1990) noted. Those with conduct or antisocial disorders accompanying depression are more likely to make impulsive and aggressive coping responses, and comorbid personality disorder, particularly borderline personality, is also associated with difficulties regulating behavioral and emotional impulses. Ineffective regulation of behavioral and emotional impulses increases the risk of suicidal behaviors, as I have discussed elsewhere. Thus, knowledge of the psychopathology can point the way to assessing and considering particular sorts of problems in cognitive, emotional, physiological, and behavioral responses to stress that predispose youngsters to suicidal behavior.

What don't we know? Notwithstanding the substantial body of findings on psychopathology, much remains to be learned. Rather than providing a complete list of topics in need of further research, I will highlight two areas of inquiry that have been underresearched and that are deserving of more attention, given their potential relevance to treatment and prevention.

First, we still know relatively little about the developmental course of suicidal symptoms. Most of what we know is based on retrospective accounts of suicidal adolescents.

Can we observe precursors of adolescent suicidal symptoms in childhood? If such precursors are present, what factors might accelerate certain children's movement along a pathway toward suicidal behavior, and what factors might divert them from such pathways? What is the course of suicidal symptoms in children and in adolescents? Emerging data from community studies indicate that suicidal ideation during childhood (Herba, Ferdinand, Van der Ende, and Verhulst, 2007) and suicidal ideation or attempts during adolescence (Fergusson, Horwood, Ridder, and Beautrais, 2005; Reinherz, Tanner, Berger, Beardslee, and Fitzmaurice, 2006) are predictive of a

heightened risk of various mental health problems in young adult-
hood, including suicidal ideation, suicide attempts, depression, anxi-
ety, and poor general functioning. However, we still know little about
why suicidal symptoms are persistent or recurrent for some youths
but not others, or about how long suicidal episodes tend to last, how
frequently they reoccur, and what might predict the reoccurrences.

   Related to those questions are issues regarding differing typolo-
gies or trajectories toward suicidal behavior. First, questions remain
regarding distinctions between adolescents who make multiple sui-
cide attempts or are chronically suicidal and youth who make but a
single suicide attempt. For example, are there different risk pathways
for those two groups? Do they respond differently to treatments? It
also will be important to determine whether there are meaningful
and reliable differences in subtypes of suicidal youths with differing
patterns of comorbid symptoms, particularly with regard to prognosis
and response to different treatments.

7

Assessment and Treatment

To say it is vital to develop the most effective possible treatments for suicidal youths is no overstatement. As noted previously, adolescents who have attempted suicide are at higher risk of completed suicide, particularly within the subsequent 12 months. Timely treatment in the aftermath of an attempt may prevent a later suicide. Of course, averting a suicide is not the only reason to provide effective intervention for suicidal youths. Follow-up studies in which suicidal youngsters are tracked over time show that such adolescents face an increased risk of suffering from distress and adjustment problems of various sorts, including recurrent suicidal behavior, depression and hopelessness, conduct problems, occupational and academic problems, difficulties maintaining satisfying social relationships, substance abuse, and more (Hawton, O'Grady, Osborn, and Cole, 1982; Lewinsohn, Rohde, and Seeley, 1994; McKeown et al., 1998; Spirito et al., 1992). The developmental neuroscience findings discussed previously even

suggest that intervention during adolescence may provide a critical opportunity to develop effective emotion regulation pathways before the brain becomes less malleable. In this chapter, I review the state of the science and practice of clinical assessment and treatment for suicidal youngsters. This chapter does not provide a comprehensive treatment guide or manual for clinical practice, and those seeking such materials may want to explore alternate sources (Berman, Jobes, and Silverman, 2006; Ellis and Newman, 1996; Henriques, Beck, and Brown, 2003; Jobes, 2006; Miller, Glinski, Woodberry, Mitchell, and Indik, 2002; Rudd, Joiner, and Rajab, 2001; Shea, 1999). Instead, my purpose here is to serve as an informed guide by organizing the information on assessment and treatment, devoting the greatest attention to the most important work and critically evaluating the current state of knowledge.

For almost everyone concerned with the suicidal youngster—parents, clinicians, emergency department and other crisis workers, school personnel—a primary task is to determine the nature of imminent risk of suicide and to take steps to decrease that risk or quickly seek professionals who can do so. Thus, I begin this chapter with a discussion of assessment and management of acute risk.

Beyond a suicidal crisis, though, assessment and treatment issues can become much more difficult to define because of the great diversity in suicidal youths. As I have noted in earlier sections of this book, suicidal behavior can be a common end point for youth with vastly differing risk profiles, including those who are depressed and anxious, inhibited, avoidant, aggressive, or impulsive. Psychosis, severe attachment disorders, substance abuse, maltreatment, and family stresses may be among the great variety of major issues to be dealt with in assessment and treatment. It is no wonder that very few comprehensive models for treatment of young suicidal people have appeared. Instead, the prevailing approach has been to identify and treat the psychopathology found in any given youngster, with the presumption that by treating the psychopathology one is thereby treating the root causes of the suicidal behavior. However, as I noted in the chapters on theory, coping, and psychopathology (chapters 3, 5, and 6), that may not be the case. Even after psychopathology subsides, predisposing factors discussed in previous chapters, such as suicidal belief modes or

avoidant coping styles, may be dormant but easily reactivated. Thus, a comprehensive and effective approach to intervention for youth suicidal behaviors would do well to assess the relevant predisposing factors and determine which are most important for any given youngster (Rudd et al., 2001). In this chapter, I provide a discussion of many of those factors, within a developmental context. I also devote a section to a discussion of the controversy surrounding the use of antidepressant medication with youngsters.

Assessing and Managing Acute Suicide Risk

Assessing the severity and risk of suicidal ideation is among the most challenging and anxiety-provoking tasks ever faced by a clinician. The consequences of a mistake can be grave, not only in terms of the risk to the adolescent for suicidal behavior or even death but because of the potential risk to the clinician. Losing a client to suicide is so immensely painful (Jones, 1987) that the mere possibility of it is sufficient to generate anxiety around management of suicidal symptoms. The possibility is not far-fetched; research suggests that roughly 50 percent of psychiatrists and 20 percent of clinical psychologists will lose a client to suicide at some point in their careers (Chemtob, Hamada, Bauer, Kinney, and Torigoe, 1988; Chemtob, Hamada, Bauer, Torigoe, and Kinney, 1988). As if the potential for loss were not enough, a suicide in one's practice carries the potential for a malpractice lawsuit being brought by the survivors. Indeed, as many as one-third of survivors consider bringing a malpractice suit against the treating clinician, although far fewer follow through with it (Peterson, Luoma, and Dunne, 2002). Clinicians working with suicidal people should be well versed in relevant risk-management issues, a full discussion of which can be found elsewhere (Berman et al., 2006; Bongar et al., 1998).

The unfortunate truth is that mental health professionals cannot predict suicide with a high degree of accuracy. Predictive research models are hindered by the low base rate of youth suicides. Although the rates are way too high in terms of human life, they are low for purposes of developing accurate predictive models. Indeed, the highest level of accuracy across a number of predictions is achieved if one simply predicts that a suicide will never occur. That is plainly unhelpful

to the clinician, for whom the potential downside of a "false negative" (i.e., a failure to predict suicide when it in fact occurs) is far worse than a "false positive" (in which suicide is predicted but does not materialize). In some situations—for example, when screening high school students for suicide prevention—excessive false positives are quite problematic, since providing follow-up assessments or services to large numbers of questionably suicidal students can be a drain on precious service resources. That is much less true in a clinical setting, where the task is generally to ensure the safety of just one child. Informed and experienced clinicians know that it is not their job to be 100 percent accurate. What is most important is gathering enough data to make a reasonable determination of the level of immediate risk faced by the child and to develop and implement an appropriate short-term treatment plan. Suicidal crises are transient, and a well-timed intervention may literally save a life.

Areas to Be Assessed

Rudd and colleagues (2001) have provided a useful framework for areas to be covered in the clinical assessment of suicide risk, as well as guidelines for ranking the level of risk. Although they are not writing specifically about adolescents, their framework is applicable, and I have added some supplemental issues and factors that may be particularly pertinent to young people.

> 1. *Predisposing factors that are known to be associated with increased risk of suicide.* Many such factors have been discussed in this book, and no assessment interview will consider the complete array of risk factors. There are several factors, though, that may be most important to consider. These include (a) recurrent and/or severe psychopathology (see further discussion in #3); (b) suicidal symptoms that occur relatively soon after discharge from a psychiatric inpatient unit; (c) a history of physical or sexual abuse (d) a history of major separation, loss, rejection, or neglect in the relationship with caregivers; (e) previous suicidal behavior, particularly if a potentially lethal method was

used (also discussed in greater detail in #6); (f) male gender. Most of these factors increase risk by virtue of increasing the youngster's vulnerability to experiencing intense emotional pain. The last two factors increase risk because they encompass those who are more prone than others to take serious suicidal action when experiencing strong distress; that is, they are more likely to behave impulsively and to use more lethal methods.

2. *Identifiable precipitant stressors* may trigger suicidal behavior. Among the most common of these for adolescents are recent relationship losses or perceived rejections (e.g., from a romantic partner), academic pressures or failures, and conflicts and arguments with family members or with a romantic partner. Such stresses may activate intense painful emotion in vulnerable youth, setting off a cascade of maladaptive coping that can set the stage for suicidal behavior.

3. *Symptoms of psychopathology* should be carefully assessed, including both DSM-IV Axis I and Axis II disorders. Recall from chapter 6 that affective, conduct/antisocial, substance abuse, anxiety, and cluster B and C personality disorders are most common in adolescents. Comorbidity merits particular attention because certain combinations of disorders—particularly comorbid substance abuse and affective or conduct disorders—greatly increase the risk of suicidal behavior. Rudd and colleagues recommend obtaining ratings of the severity of symptoms, particularly depression, anxiety, and anger/agitation, on 10-point scales (e.g., for depression 1 = the best the client has ever felt, 10 = feeling so depressed that one cannot function or is highly suicidal). Such ratings can make it easier for some clients to communicate the severity of the symptoms and also provide a useful point of comparison for reassessments performed at a later date. Note that, in conjunction with the questions about anger and agitation, it is helpful to inquire whether those feelings are sometimes characterized by a great sense of urgency, as if the person needed to do

something to obtain relief; such urgency is characteristic of many who engage in suicidal behavior. As noted in chapter 5, the majority of adolescent suicide attempters report feeling angry during the suicidal episode.

4. *Hopelessness* is important to assess independently, even though it is a component of depression. It too can be rated on a 1–10 scale. Even though hopelessness is not as consistent an independent predictor of suicidal behavior in adolescents as it is in adults, it can be a sign of a serious suicidal process for many youngsters. Some suicidal adolescents who do not report high levels of negative expectations of the future (hopelessness) may instead have only vague notions of their future, because they avoid thinking about it very much. Thus, it can be revealing to ask adolescents to provide descriptive examples of how they expect to be in a year's time (Markus and Nurius, 1986). Those without expectations or who expect the status quo to continue may be at higher risk for suicidal behavior.

5. *Suicidal thoughts* must be assessed carefully. Suicidal thoughts have been conceptualized as including both passive and active ideation. Passive ideation involves painful cognitions and emotions about one's life, such as feeling that life is not worth living, believing that one's death would relieve the family of a burden, wishing for one's own death, feeling hopeless about the future, and so forth. Active suicidal ideation includes thoughts about suicidal action, including thinking about the method one would use, making specific plans for suicide, concealing one's suicidal intentions, expressing uncertainty about whether the suicidal urges are controllable, and so forth. In other words, active suicidal ideation involves thinking about suicide as a solution to the pain of the passive ideation. The frequency and duration of symptoms of suicidal ideation should be assessed, along with ratings of the severity (on a 1–10 scale). Youngsters' stated intent to take their own life can be assessed with the following query: "On a 10-point scale, how likely are you to kill yourself in the next 24 to 48 hours?"

An exploration of any specific plans should assess when, where, and how the youngster intends to take action. The availability and lethality of the method are important indicators of the severity of the crisis. Other behaviors that are signs of severe suicidal ideation include any steps taken in preparation for suicide (e.g., storing up sufficient numbers of pills, securing access to a weapon, giving away possessions) or practicing/rehearsing suicide (e.g., scouting or visiting the planned location of the suicide, practicing making a noose). Also relevant is whether the youngster has told anyone about the suicidal ideation. Adolescents are not as likely to leave suicide notes as are adults; thus, the absence of a note cannot be taken as a lack of sincerity or true intent.

It is not uncommon during the adolescent years to explore themes of death and suicide in one's creative writing (poems, stories) or artwork, and the occasional appearance of such work in the absence of any other suicide risk factors is not in itself a cause for alarm (although exploring the meaning of the work with an adult might be useful in any case). If the themes are recurrent or accompanied by other risk factors, such as signs of depression, then it is important to follow up with assessment by a trained counselor or other professional.

It may be worthwhile to assess the presence of any images or fantasies of what will occur after the adolescent's death. Recall from chapter 3 that, while most children begin to understand the irreversibility of death by ages 6 to 9, the belief that one comes back to life after death is more often found in suicidal than in nonsuicidal children and may reappear temporarily in a sort of "regression" among youth in the midst of a suicidal crisis (Carlson, Asarnow, and Orbach, 1994; Kastenbaum, 1992; Pfeffer, 1986). Fantasies of reuniting with a deceased loved one or of witnessing the reactions of others after one's death may strengthen the wish for suicide.

Also important are inquiries regarding the reasons for wanting to kill oneself as well as the reasons for staying

alive (e.g., What keeps you from taking action to kill yourself?). Those who have powerful reasons for wanting to die (e.g., to stop unending emotional pain, to relieve others of the burden they pose) are at higher risk than others. Conversely, those with compelling reasons to live are at lower risk than those who see no reason to refrain from suicide, especially if the reasons to live are interpersonal, such as concern about the negative impact one's suicide might have on important others. Brown and colleagues found that a moderate to strong wish to die, coupled with an absence of a wish to live, was a potent predictor of completed suicide in adults (Brown, Steer, Henriques, and Beck, 2005). Thus, simple ratings of those two constructs may prove to be a useful adjunct to other assessments of the suicidal state.

6. *Previous suicidal behavior.* The assessor should make inquiries regarding the number of previous occurrences of suicidal behavior and ascertain the details of each incident, including (a) the method used (which is one determinant of medical lethality), (b) the circumstances, particularly those that signal the level of suicidal intent, such as taking steps to avoid discovery (timing, isolation), notifying potential helpers, or leaving a suicide note, and (c) whether or not the person was glad to have survived the attempt, which has been predictive of suicide in adults (Brown, Steer, et al., 2005).

7. *Impulsivity, self-control.* This area of inquiry overlaps to some extent with the assessment of psychopathology (#3), but it merits additional discussion. As noted in chapter 5, impulsivity is highly characteristic of a subset of adolescents who attempt suicide. Assessing the history of impulsive behavior among those with suicidal ideation may aid in detecting those suicidal adolescents at greatest risk of sudden suicidal behavior. In addition, it may prove useful to inquire about the youth's subjective perceptions of feeling "out of control," as well as the existence of an agitated urge to take action (as described in #3).

8. *Protective factors.* The clinician should inquire about the presence of key resources that may mitigate the

enactment of suicidal urges. Chief among these are (a) supportive and secure relationships with family members, peers, or other adults; (b) strong emotion-regulation skills and confidence in the ability to utilize these in the midst of a stressful crisis. Regarding supportive relationships, two important aspects are whether the child or adolescent perceives that caring emotional connections are available during times of high stress or crisis and whether there is a tendency to retreat from others when feeling highly distressed. Regarding emotion regulation, it is important to assess the youngster's ability to tolerate distress without becoming overwhelmed or excessively avoidant. Can the youth effectively calm himself when feeling emotional pain? Or does he ruminate about it, harshly turn against himself (blame or criticize himself), or numb or hurt himself in any of various ways?

These eight areas are typically assessed in a clinical interview, and Rudd and colleagues have provided some examples of possible interview questions for most of these topics (Bryan and Rudd, 2006; Rudd et al., 2001). Standardized measures of several of these areas can be included in the assessment if time permits and the crisis is not terribly urgent. One might include standard measures of stress, various aspects of coping (avoidance, rumination, problem solving), as well as measures of suicidal ideation and hopelessness that are reviewed later in this chapter.

Many of these same areas are also covered in the brief "Suicide Status Form" (SSF) developed by Jobes and colleagues (Jobes, Jacoby, Cimbolic, and Hustead, 1997) as part of the "Collaborative Assessment and Management of Suicidality" approach that will be described in the treatment section of this chapter. The SSF is completed jointly by the clinician and client in the course of a dialogue and is repeated in ensuing therapy sessions as long as the suicidal symptoms persist. The SSF includes Likert-type ratings (1 = low to 5 = high) on five constructs. The first three are based on Shneidman's (1996) model: psychological pain, press (feeling pressured, overwhelmed), and perturbation (agitation). Hopelessness and self-hate are also assessed. In

addition to the five ratings, the SSF assesses the content of the client's thoughts in each of the five areas (e.g., "What I find most painful is___."). Included as well are ratings of the levels of "wish to live" and "wish to die" and an open-ended inquiry on the respondent's reasons for wanting to live and to die. The SSF provides a useful framework for assessing suicide risk, although its scope is limited to suicide-related thoughts and feelings; it does not include an assessment of predisposing factors, protective resources (other than reasons for living), a history of suicidal behaviors, or a diagnostic interview.

Levels of Risk

Using the information gathered in the clinical interview, a clinician can assign the adolescent to one of five levels of risk according to a system presented by Rudd and associates (2001). Their approach to grading severity is certainly not the only available one; for example, Berman and colleagues (2006) provide three levels of risk. I present it here because it works well in tandem with their assessment framework and appears to have clinical utility. Each category encompasses multiple factors, so a given youngster will probably not match all features of any rating, and the clinician assigns the level with the closest fit.

Level 1 = *Nonexistent.* There is no suicidal ideation.

Level 2 = *Mild.* Suicidal ideation is present, but the intensity, duration, and frequency are low, there is no intent to kill oneself or plan to do so, psychopathology is mild, self-control is good, there are few predisposing factors and clear protective factors. Persons with mild risk should receive ongoing evaluation to monitor for any changes in their suicidal ideation.

Level 3 = *Moderate.* At this level, the individual still does not intend to kill herself, although a suicide plan may have been considered. Suicidal ideation is present and may even be frequent but is not intense or enduring. Psychopathology is mild and the person is maintaining self-control. Although there may be some predisposing factors, there also are some clear protective factors.

At this level the clinician should conduct frequent, recurrent evaluations of suicide risk and implement aspects of an appropriate action plan, as discussed later in this chapter, in the intervention

section. The clinician may want to consider the possibility of increasing the frequency of outpatient therapy and of using medication to assist in symptom management.

Level 4 = *Severe.* The youngster is experiencing intense suicidal ideation that is both frequent and enduring. A suicide plans exists, and there is evidence of suicidal intent in the choice and availability of methods and preparations. Self-control is questionable, symptoms of psychopathology or distress are severe, and there are significant predisposing factors and few if any protective factors. However, the person at level 4 does not express the clear intention to die by suicide. The clinician should make arrangements for an immediate evaluation for inpatient hospitalization, and the youth should be monitored at all times for safety.

Level 5 = *Extreme.* The clinical picture is the same as in Level 4, with the addition of clear self-reported intent to die. As with level 4, immediate evaluation for inpatient hospitalization is necessary.

The role of subjective suicidal intent is obviously important in the Rudd et al. (2001) rating system, particularly in distinguishing levels 4 and 5. Some would take issue with their heavy emphasis on it, because, as noted in chapter 2, reports of intent can be quite unreliable. For example, adolescents may deny or minimize intent for various purposes (e.g., to avoid hospitalization), may inflate intent in order to cause worry or concern, or may be ambivalent or confused about their intent. Clearly, subjective intent alone should not be the defining characteristic of the degree of risk. For example, if the circumstances of a certain suicidal episode are obviously very serious, then a denial of suicidal intent may not carry much weight for clinical risk determination. However, in other cases, the presence of subjective intent may add importantly to the clinical judgment of risk. If a youngster took a mild overdose but believed that she ingested enough to die and was disappointed when she survived, then subjective intent may well constitute the critical component of a decision to hospitalize.

Other Considerations for Ensuring Client Safety

Beyond the helpful guidelines and ratings of Rudd and associates (2001), some additional factors to weigh in determining the need

for hospitalization with children and adolescents were offered by David Shaffer and Cynthia Pfeffer in the suicidal behavior *Practice Parameter* published by the American Academy of Child and Adolescent Psychiatry (2001). Among the factors that might contribute to a determination to hospitalize is an apparent inability to form a clinical alliance with the clinician. The clinician may sense a guardedness or lack of credibility in the youngster's accounts of behaviors, emotions, or cognitions. A lack of openness may signal that, as an outpatient, the youngster cannot be trusted to openly admit the presence of suicidal intent or a suicide plan to a caregiver or anyone else. In addition, the clinician must judge whether family members have the knowledge, ability, and willingness to carefully monitor the adolescent for signs of increased suicidality and to implement a safety plan should the need arise.

If there is a firearm in the home, the clinician should discuss with family members the grave threat it poses before making any decision to manage the youngster as an outpatient. If the family will not agree to remove it temporarily, the clinician should at least receive assurances that family members will take every precaution to secure it in such a manner that it cannot be used by the adolescent. A safety discussion should also include the importance of removing or securing other potentially lethal methods (for example, medications). Finally, the assessing clinician should construct a follow-up plan for assessment and treatment that seems workable and manageable to the family.

I am aware that hospitalization is discussed here as if it is the ultimate, safe treatment option. It is in fact the option of choice when all less restrictive alternatives are too risky or have failed. Hospitalization removes the youngster from the stresses faced in everyday life, may provide a temporary reprieve for the family, and offers a safe environment with around-the-clock monitoring. However, studies have yet to document that inpatient treatment is effective at reducing suicidal behaviors, including studies that compare inpatient admission and nonadmission, as well as studies that examine the effectiveness of particular inpatient treatments (Comtois and Linehan, 2006). With length of stays shortened dramatically by managed-care insurers, there typically is not sufficient time to stabilize the youngster on a

medication. Even though multiple assessments are usually conducted by professionals with differing areas of expertise, thereby providing several perspectives on the problems and treatment possibilities, there is very little time for integrating those assessments into any coherent treatment plan. Youngsters are rapidly discharged back to their stressful environments with at least some arrangements for follow-up outpatient care, but many either never attend outpatient treatment or drop out after a handful of sessions (Trautman, Stewart, and Morishima, 1993). Hospitalization can be necessary and helpful, but we must not overestimate its benefits.

Safety contracting. The issue of safety contracting arises in almost any discussion of management of acute suicide risk. Safety contracts, sometimes called "no-suicide" contracts, typically involve an agreement between the client and the clinician that the client will not attempt suicide and will notify someone (a parent, the therapist, another trusted adult, a suicide hotline) if a suicidal urge arises. Clinicians are frequently trained to implement such contracts with suicidal clients and routinely do so. Are they a good idea? Probably not, at least not in the simple form in which they are most often employed.

First and foremost, there is no evidence to show that a safety contract actually works in preventing suicide (Jobes, 2003; Reid, 1998), and any sense of security a clinician reaps from using a safety contract is probably a false one. The research on contracts' effectiveness is sparse, but one survey of psychiatrists in Minnesota found that 41 percent of those who used them had a patient commit suicide or make a serious suicide attempt after having contracted to safety (Kroll, 2000). Some clinicians may believe that having made a suicide contract with a client affords protection from malpractice suits, but that is not the case. The safety contract is not considered to be a legal contract by the courts and is no substitute for a comprehensive written treatment plan aimed at maximizing the safety of the client. The other major problem with safety contracts is that they can be coercive. The direct or indirect threat is that the practitioner will have the client hospitalized if he does not enter into the safety contract. The client may then agree to the contract in order to avoid negative confrontation or consequences, with little or no intention of upholding his end of the bargain.

Why bother with the safety contract? For one thing, the discussion with the client about the contract can be informative. A youngster who refuses to agree to a safety contract or expresses uncertainty about whether she can agree to keep safe immediately raises a "red flag" for the practitioner, who will likely begin to consider hospitalization. Safety contracting may also reveal something important about the strength of the therapeutic alliance (American Academy of Child and Adolescent Psychiatry, 2001). A willingness to engage in the contract may be an indicator of a trust in and commitment to the therapeutic relationship itself, while reluctance to do so may signal that the client lacks faith in the therapist and the mental health system.

Commitment to the therapeutic process is central to an alternative to safety contracting that is advanced by Rudd and associates (Rudd et al., 2001). Rather than asking clients to commit to what they will not do (i.e., suicide), they engage clients in a discussion of what they *will* do, namely to commit to a treatment plan in which they are invested in living. The written "commitment to treatment statement" asks the client to agree to engage fully in treatment, including attending sessions, actively participating in the session, completing homework assignments, trying new behaviors, and so forth. It also asks that they pledge to implement a crisis response plan when feeling suicidal and that they make a commitment to living. The crisis response plan itself is more than a simple agreement to contact someone in the event of an emergency. Written on a small "coping card" that the client carries at all times, it contains a series of steps to take when feeling suicidal that begins with a self-inquiry into the beliefs that underlie the current suicidal episode and possible actions to take in order to self-soothe. If those coping efforts prove ineffective at alleviating the suicidal ideation, the next step is to telephone an available helper (e.g., a hotline) or to go to an emergency room. In general, the idea is to have the client promise to take responsibility for actively engaging in the therapeutic process.

Formal Assessment of Suicidal Symptoms

Beyond a clinical interview, clinicians and researchers may require psychometrically sound structured or semistructured measures of

suicidal symptoms for a number of purposes. Often, the aim is to reliably and validly quantify levels of risk, particularly risk of future suicide or suicide attempts. There are other purposes as well: to reliably monitor a child's progress over time, to determine the beneficial effects of treatment on suicidal symptoms, to examine risk factors for suicidal symptoms in research, or for surveillance of the prevalence of suicidal symptoms in a given population. A variety of structured and semistructured measures have been developed to assess suicidal symptoms, and I briefly review here a number of the most important, widely implemented, and useful ones.

Those who are interested in further information on this topic should consult David Goldston's (2000; 2003) thorough review and critique of measures of child and adolescent suicidal behavior. Among Goldston's conclusions is the sobering acknowledgment of limitations in our knowledge of the quality of existing measures. Few measures have been shown to be associated with differential response to treatments. Also, despite the fact that prediction of suicide risk is often the main goal of assessment, there is little evidence from prospective studies that any of the measures are predictive of risk of future completed or attempted suicide. Most claims that a measure assesses suicide risk are made on the basis of retrospective associations with past suicidal behavior, not predictions of future behavior. The fact is that establishing the predictive validity of measures of suicide risk presents some tough methodological and ethical hurdles. For one thing, since youth suicide is infrequent, it requires very large samples to statistically predict future suicide with any given measure, and gathering large samples is very costly in terms of time and resources. A second challenge arises when researchers find an elevated score on a measure purported to assess suicide risk. Ethically, they must intervene and refer the youth for further testing and/or treatment, but in so doing they are dropping the very participants whose data might provide the strongest evidence of predictive validity.

One additional point that is worth making at this juncture is that some degree of inaccuracy and bias in the measures that are reviewed in this section may be an inevitable outgrowth of a wish by many youth to forget their suicidal symptoms. Klimes-Dougan and colleagues (Klimes-Dougan, 1998; Klimes-Dougan, Safer, Ronsaville,

Tinsley, and Harris, 2007) found that a sizable proportion of youth fail to accurately recall previously reported suicidal thoughts and behaviors. Importantly, those who make such errors have lower distress and higher scores on various measures of current mental health than adolescents who accurately recall previous suicidal symptoms. Klimes-Dougan and colleagues suggest that forgetting past suicidal symptoms may be a sign of youths' wish to move on rather than to incorporate painful memories into their life stories.

Measures of Suicidal Ideation

A number of scales have been widely used with adolescents, including some measures that were developed for adults and some that were developed specifically for youngsters. Rather than review all of the scales, I briefly review some of the most commonly used ones, again referring the reader to Goldston's (2000) review for a more comprehensive compilation.

The 15-item *Suicidal Ideation Questionnaire—Junior* (SIQ-JR) and the 30-item *Suicidal Ideation Questionnaire* (SIQ) are widely used measures of suicidal ideation in younger adolescents and older adolescents, respectively (Reynolds, 1987). They can be useful in clinical research and assessment, and the briefer SIQ-JR might also be considered for use in large-scale epidemiologic studies. They assess passive suicidal ideation (i.e., wishing one were dead), as well as more active suicidal ideation. There is no item for attempted suicide. Internal consistency and test-retest reliabilities of both measures are good, there is extensive evidence of concurrent validity with measures of psychopathology and suicidal symptoms (e.g., Hovey and King, 1996; Pinto, Whisman, and McCoy, 1997), some support exists for the predictive validity of the SIQ-JR with regard to future suicidal behavior and ideation (e.g., Huth-Bocks, Kerr, Ivey, Kramer, and King, 2007; King et al., 1995), and the measure has detected the effects of pharmacological treatment (Colle, Belair, DiFeo, Weiss, and LaRoche, 1994).

The *Suicide Probability Scale* (SPS) is a 36-item self-report questionnaire designed to assess four areas of suicidal symptoms in individuals ages 14 and up: hopelessness, suicidal ideation, negative self-evaluation, and hostility (Cull and Gill, 1988). It is potentially

useful in clinical assessment and clinical research or as a screening tool. Internal consistency and test-reliability coefficients have been demonstrated to be strong. Although it was primarily developed with adults, it has been used successfully with adolescents, showing evidence of good convergent validity with other measures of suicidality, discriminating between suicidal and nonsuicidal youngsters, and predicting future suicidal symptoms (Huth-Bocks, Kerr, Ivey, Kramer, and King, 2007; Kaplan, Pelcovitz, Salzinger, Madel, and Weiner, 1997; Osman et al., 1998).

The suicide items from various versions of the *Diagnostic Interview Schedule for Children* (DISC) (e.g., Shaffer, Fisher, Lucas, Dulcan, and Schwab-Stone, 2000) have been used in a sizable number of research studies with clinical and community samples (e.g., Gould, King, et al., 1998; King, Katz, et al., 1997). The DISC is a highly structured psychiatric interview designed for lay interviewers that assesses a wide range of disorders in older children and adolescents, and results have shown acceptable concurrent validity with measures of psychopathology and other indices of suicidal symptoms. Evidence for test-retest reliability of the various suicidal ideation items across 1- to 2-week intervals is generally good (Goldston, 2000). My own research team has combined items from the DISC 2.3 (Shaffer, Fisher, Piacentini, Schwab-Stone, and Wicks, 1992) and the first version of the DISC (Costello, Edelbrock, and Costello, 1985) to create a 10-item suicidal ideation scale that has shown internal consistency coefficients in the upper 0.80s and good stability across 6-month intervals with clinical samples of adolescents. We have also predicted longitudinal trajectories of suicidal ideation from measures of adolescents' coping effectiveness (Piquet and Wagner, 2003) and have prospectively predicted suicide attempts, as measured with an item from the DISC 2.3, by such factors as observed family interaction and adolescents' reports of sibling differential treatment by fathers (Aiken, Zimmerman, and Wagner, 2008; Silverman, Parrish, and Wagner, 2008).

Two versions of the *Schedule for Affective Disorders and Schizophrenia, School Age* (K-SADS), have been frequently used to assess suicidal symptoms in youths: the *Epidemiologic Version* (K-SADS-E) (Orvaschel, 1994) and the *Present State Version* (K-SADS-P) (Ambrosini, 2000). All versions of the K-SADS are semistructured interviews

designed to assess psychopathology in research samples of children and adolescents, with separate interviews for parents and youths. Unlike those who administer the DISC, those administering the K-SADS must be trained in psychopathology and diagnosis. The K-SADS-E assesses both the current episode and the most severe of any previous episodes of each psychiatric disorder, whereas the K-SADS-P focuses only on the present episode and on symptoms over the past year. The epidemiologic version includes more detailed items on suicidal ideation than the present-state version. The K-SADS interviews have been used in Brent and colleagues' psychological autopsy studies (e.g., Brent et al., 1988), as well as in studies of community and clinical populations of youths (e.g., Lewinsohn et al., 1994; McKeown et al., 1998; Myers, McCauley, Calderon, and Treder, 1991). The K-SADS-E and K-SADS-P suicide items have been shown to have adequate concurrent validity in relation to measures of psychopathology and to be predictive of future suicidal ideation and behavior (Brent et al., 1990; Lewinsohn, Rohde, and Seeley, 1993; Lewinsohn et al., 1994; Mc-Keown et al., 1998; Myers et al., 1991).

The *Spectrum of Suicidal Behavior Scale* (Pfeffer, 1986) is a rating scale for assessing the severity of suicidal symptoms on the basis of a clinical interview with children and adolescents; it is suitable for clinical assessment or research. The original version used a 5-point scale with 1 = no suicidal ideation or attempt, 2 = suicidal ideation (thoughts or verbalization of suicidal intent), 3 = suicidal threat (verbalization of impending suicidal action or a precursor action), 4 = a mild suicide attempt (based on medical lethality, that is, no medical attention was warranted and there was no threat to life), and 5 = a more severe attempt. A revised version includes only 3 scale points: 1 = no suicidal ideation or suicide attempt, 2 = suicidal ideation or suicidal threat, and 3 = a suicide attempt was made (regardless of medical lethality). Research has demonstrated very good interrater reliability, and ratings have been predictive of future suicidal ideation and suicide attempts several years later (Pfeffer, Conte, Plutchik, and Jerret, 1979; Pfeffer et al., 1993).

The *Columbia Suicide Screen* (CSS) (Shaffer et al., 2004) is an 11-item self-report questionnaire designed for screening in community settings. It assesses lifetime suicide attempts and suicidal ideation in

the past 3 months, as well as 3-month prevalence of negative mood (depressive, anxious) and substance abuse. Contingent questions regarding the perceived need for or receipt of treatment are asked if the initial responses meet a criterion. The mood and substance abuse questions are included because of their strong association with suicidal symptoms. Shaffer and colleagues reported adequate test-retest reliability for the suicide items. Using a validity criterion of the presence of DISC 2.3 suicidal ideation or suicide attempt plus a diagnosis of major depression, dysthymia, or substance abuse/dependence, they found in a large sample of high school students that the presence of CSS suicidal ideation or a previous suicide attempt yielded a high sensitivity of 0.88 but a specificity of 0.72. A more elaborate algorithm consisting of a combination of CSS suicidal ideation or suicide attempt and a score that exceeds a cutoff for both depressive and anxiety items yielded the best balance of sensitivity (0.75) and specificity (0.83).

Although termed *The Scale for Suicide Ideation* (SSI), Beck, Kovacs, and Weissman's (1979) measure is broader in scope than the other measures of suicidal ideation discussed here. A professional rates both active and passive wish to die, duration and frequency of suicidal ideation, reason for wanting to attempt suicide, deterrents to taking suicidal action, availability and type of method, capability (courage, competence), preparations, and communications about suicidal intent. Developed for use in clinical research or assessment with adults, the 19-item SSI has shown good internal consistency and evidence of convergent validity when used with preadolescent children (Allan, Kashani, Dahlmeier, Taghizadeh, and Reid, 1997), and a 21-item self-report version has yielded similar psychometric properties with adolescents (Kumar and Steer, 1995); however, predictive validity has not been shown.

Measures of Suicidal Intent and Lethality

The term "suicide intent" is often used to connote the subjective or reported wish to die, but the best known measures of suicidal intent include professionals' ratings not only of subjective intent at the time of a particular episode of suicidal behavior but also of "objective" indicators of intent, that is, circumstantial factors such as whether the

youngster was isolated when attempting suicide, whether precautions against discovery were taken, and so forth. Since the circumstantial factors could also contribute to the lethality of the attempt, they are included in measures of lethality as well, thereby providing some overlap in the measurement of the two constructs.

The *Suicide Intent Scale* (Beck, Schuyler, and Herman, 1974) and its slightly modified sibling, the *Pierce Intent Scale* (Pierce, 1977; 1981), were both developed and validated with adults but have been used successfully with adolescents. Good internal consistency reliability and evidence of concurrent validity have been found with the Beck scale, although its ability to predict future suicidal behavior with adolescents remains uncertain (Spirito, Sterling, Donaldson, and Arrigan, 1996). The Pierce scale has been shown to be associated with independent clinician ratings of the seriousness of episodes of adolescent suicidal behavior (Wagner, Wong, and Jobes, 2002).

The *Risk-Rescue Rating Scale* (Weisman and Worden, 1972) is a 10-item clinician-rated scale for determining the lethality of a suicide attempt. Five items relate to medical lethality (e.g., impaired consciousness, severity of lesion or toxicity), and five assess the circumstances of the attempt (e.g., isolation, probability of discovery); each is rated on a 3-point scale. A total risk-rescue score combines the two components. The measure has been used in several studies of adolescents (Brent, 1987; Groholt, Ekeberg, and Haldorsen, 2000), and evidence of concurrent validity has been demonstrated, but predictive validity has yet to be established, and the interrater reliability of the measure with adolescents is questionable (Spirito, Brown, Overholser, Fritz, and Bond, 1991).

The *Lethality of Suicide Attempt Rating Scale* (LSARS) was developed to provide a relatively objective measure of medical lethality (Smith, Conroy, and Ehler, 1984). Ratings are made along an 11-point scale, 9 of which are anchored by descriptors as well as examples of methods and circumstances (e.g., isolation, notifying a potential helper, precautions against discovery). The descriptors and examples cover a wide range of methods (e.g., cutting, ingestion of medication or other substances, strangulation, jumping, use of firearms), although examples are not provided for every method at each scale point. The measure yields a single rating that integrates both circumstances and

medical lethality. A unique aspect of the LSARS is the inclusion of a table of 170 prescription and nonprescription drugs along with the lethal doses at which 50 percent of the population would be expected to die (LD_{50}) for two body weights, 125 lbs. and 170 lbs. The scale descriptors make reference to the LD_{50}, allowing the researcher to integrate the table with the scaling points. One of the challenges in using the scale is that suicide attempters often ingest multiple substances or ingest alcohol or illicit drugs along with medications, but drug interactions—which can be quite complex and consequential—are not taken into account.

Smith et al. (1984), as well as others (Nasser and Overholser, 1999), have reported very good interrater reliabilities for the LSARS, with intraclass correlation coefficients (ICC) ranging from the 0.80s to 0.90. In work with the LSARS, my research team similarly obtained an interrater ICC of 0.88. The lethality ratings have been correlated with a variety of indicators of concurrent validity in studies of adolescents, including measures of psychopathology, coping skills, and suicidal intent (Lewinsohn, Rohde, and Seeley, 1996; Nasser and Overholser, 1999). My colleagues and I found that LSARS scores were strongly correlated with the independent ratings of experts (r = 0.81) and general clinicians (r = 0.71) on the seriousness of episodes of suicidal behavior and were moderately correlated with experts' (r = 0.41) and general clinicians' (r = 0.40) decisions as to whether or not the episodes constituted a suicide attempt (Wagner et al., 2002). We also have found that, in the immediate aftermath of an offspring's suicide attempt, mothers of adolescents who had made a more lethal attempt (LSARS ratings >= 5.0, indicating death was at least a 50–50 probability) reported less anger as well as more anxiety and verbal support than other mothers (Wagner, Aiken, Mullaley, and Tobin, 2000).

Since new drugs appear on the market so frequently, the LSARS drug table grew increasingly obsolete over the years. The need for an updated version led to the publication of the *LSARS-II* (Berman, Shepherd, and Silverman, 2003). The authors provide an updated table of drugs and other ingested substances, with revised categories of toxicity of the substances. Toxicities of drug interactions were not included in the table, and no revisions were made to the LSARS scale itself.

Measure of Suicidal Ideation, Intent, Behaviors, and Lethality

The Columbia Suicide Severity Rating Scale (C-SSRS: Posner et al., 2006, 2007) is a comprehensive, semistructured interview measure that uniquely assesses the full spectrum of suicidality: suicidal ideation (both passive and active), suicidal intent, suicidal behaviors, and medical lethality. Three alternate versions of the C-SSRS—a self-report version, an interactive voice response (IVR) version, and a Risk Assessment version that includes empirically validated risk and protective factors—have also been developed but are not reviewed here. The C-SSRS's standardized questions and research-based definitions (Oquendo, Halberstam, and Mann, 2003) have been adopted by the Food and Drug Administration (FDA) and the Centers for Disease Control and Prevention (CDC) and are sufficiently thorough to provide a comprehensive assessment of suicide risk in clinical practice and changing levels of suicidality in clinical outcome trials; yet the measure is brief enough (it can be completed in less than 5 minutes) to be useful in surveillance work as well. Mental health training is not required to administer the C-SSRS, as hundreds of nonpsychiatric health professionals, including nurses and physicians, have been successfully trained and are currently using the scale. Because of its strengths, the C-SSRS has quickly become a standard suicidality assessment tool and has been extensively incorporated in clinical research and clinical practice settings worldwide.

The existing data on the reliability and convergent and discriminant validity of this new measure are very promising. For example, various indices of the C-SSRS have been shown to be moderately to strongly correlated with corresponding scales on Beck and colleagues' Scale for Suicide Ideation (SSI; Beck et al., 1979), including severity of suicidal ideation, intensity of ideation (correlated with SSI total score), and the specific items assessing intensity (that is, frequency, duration, controllability, deterrents to an active attempt, and reasons for suicidal ideation). Additional evidence of strong convergent and discriminant validity has been found in comparisons of C-SSRS scores to scores on the SIQ-JR (Reynolds, 1987), Children's Depression Rating Scale (Poznanski, Cook, and Carroll, 1979), and Beck Lethality Scale

(Beck, Beck, and Kovacs, 1975). C-SSRS items that assess specific suicidal behaviors have shown evidence of strong concurrent validity. In particular, the items that assess the presence or absence of a recent or lifetime suicide attempt had nearly perfect sensitivity and specificity when compared with independent classifications of self-injurious behavior. Although data supporting the predictive validity of the C-SSRS (that is, its ability to predict future suicidal symptoms) are not yet available, the measure contains items from the SSI that have been shown to be predictive of completed suicide (Beck, Brown, Steer, Dahlsgaard, and Grisham, 1999; Brown, Beck, Steer, and Grisham, 2000). Finally, the internal consistency reliability of the suicidal ideation score has been shown to be good (alpha = 0.73).

Measures of Hopelessness

Beck's *Hopelessness Scale* (Beck, Weissman, Lester, and Trexler, 1974) is a 20-item true-false measure that was developed with adults but has seen frequent use with samples of adolescents, showing good internal consistency, good concurrent and discriminant validity, and some evidence of predictive validity for future suicidal ideation and attempts (Goldston et al., 2001; Huth-Bocks et al., 2007; Steer, Kumar, and Beck, 1993). The *Hopelessness Scale for Children* (Kazdin, Rogers, and Colbus, 1986), a 17-item true-false scale, is widely used with school-age children and adolescents. Researchers have found excellent internal consistency and moderate test-retest reliability over 6 to 10 weeks. There is extensive support for concurrent validity with measures of psychopathology and suicidal symptoms, and evidence of discriminant validity for suicidal versus nonsuicidal children and adolescents (e.g., Cole, 1989a; Kazdin et al., 1986; Spirito, Williams, Stark, and Hart, 1988).

Measures of Reasons for Living

The *Reasons for Living Inventory* (Linehan, Goodstein, Nielsen, and Chiles, 1983), which assesses adaptive reasons for not taking one's life, consists of Likert-type ratings on 48 items that yield six scales, including survival and coping beliefs, responsibility to family, child-related

concerns, fear of suicide, fear of social disapproval, and moral objections. Although the inventory was developed for research with adults, studies of adolescents have shown evidence of concurrent validity with such measures as current and past suicidal ideation and behavior, depression, and hopelessness, particularly for the survival/coping beliefs and responsibility to family scales (Cole, 1989b). The survival/coping beliefs scale was also predictive of future suicide attempts in the first year following inpatient discharge (Goldston et al., 2001).

The *Reasons for Living Inventory for Adolescents* (RFL-A) is a 32-item adaptation of the original measure that includes 5 factors: future optimism, suicide-related concerns, alliance with family, peer acceptance and support, and self-acceptance (Osman et al., 1998). Developed with a mixed adolescent sample of high school students, adolescent psychiatric inpatients, and college students, the inventory was subjected to a second study with adolescent psychiatric inpatients that replicated the factor structure. This study provided evidence of concurrent validity with measures of suicidality and showed that the RFL-A can be used to discriminate between suicidal and nonsuicidal groups (Gutierrez, Osman, Kopper, and Barrios, 2000). Indeed, the RFL-A performed better than the Beck Hopelessness Scale (Beck, Weissman et al., 1974) in discriminating the two groups.

Clinical Interventions for Suicidal Youth

I begin this section with a discussion of developmental issues of relevance to treatment of children and adolescents. While the interest and focus in this chapter are on treatment of suicidal symptoms, we must remember that we are treating not just a set of symptoms but a whole child or adolescent who is likely struggling with certain developmental challenges, especially family, peer, and academic issues. The more adequate our understanding of the relevant developmental challenges, the better equipped we will be to tailor our treatment to the needs of the child. That discussion provides a backdrop for a review of the existing empirical literature on randomized, controlled clinical interventions for suicidal youths, beginning with nonpsychotherapy interventions, followed by individual, group, and family therapies. I also include discussion of a few promising psychotherapy treatments

that have yet to be tested in randomized trials with children or adolescents but that have been used with adults. In the last section, I explore the literature on pharmaceutical interventions, including the controversial use of antidepressants.

Developmental Considerations

Among the available therapies that have been empirically evaluated for use with suicidal adolescents, almost none were actually developed with adolescents. In that regard, the research literature on suicidal adolescents is no different from the larger field of adolescent treatment research. Almost all of the available empirically supported treatments for adolescent disorders of any kind were either downward extensions of treatments developed for adults, or upward extensions of therapies developed with children (Weisz and Hawley, 2002). Thus, when selecting from the various available treatments for a particular youngster or a certain population, it is important to first consider whether these treatments are developmentally appropriate.

What does it mean for a treatment to be developmentally appropriate? Holmbeck and colleagues have provided some thoughtful discussion on that question, and several of their points are worth highlighting here (Holmbeck et al., 2000; Holmbeck, Greenley, and Franks, 2003). First, it is important to take into account the developmental tasks faced by any given youngster, that is, the various challenges in biological, social, cognitive, and emotional arenas that are especially salient to growth at that point in development. Precisely which ones are applicable is a function of both biological maturation and the particular social demands and expectations of a given culture (Havighurst, 1972; Kellam, 1990). The very same developmental tasks that are faced by most all adolescents in a given culture can provide the impetus for suicidal behavior in those with the greatest vulnerabilities in areas of functioning that are essential to those tasks. At the same time, the developmental tasks may represent key leverage points for intervention and growth. Optimal treatments are sufficiently flexible to allow the clinician to address the most salient developmental tasks for a given child. By way of review and integration of material from previous chapters, in the following paragraphs I summarize a

number of those tasks as they might apply to youngsters with suicidal symptoms. Since the developmental tasks shift across different ages, I focus in particular on early to mid-adolescence, which is when the frequency of suicidal behavior reaches its peak.

Cognitive developmental tasks. Possible issues in adolescence include (a) grappling with the isolating cognitions that often accompany adolescent "egocentrism" (for example, "No one can understand the way I feel"), (b) extreme self-consciousness and the "imaginary audience" (Elkind, 1967) that can lead one to feel that everyone else is attending to one's behavior, flaws, and problems, (c) fascination with and absorption by one's own thoughts, which for suicidal youth may include anxiety-ridden hypothetical and future scenarios and an enduring negative self-image.

In developing or selecting interventions for adolescents, it also is important to consider whether the intervention is set at an appropriate cognitive developmental level. A number of the empirically supported treatments use cognitive-behavioral approaches that require a degree of cognitive sophistication that may be beyond the grasp of many younger adolescents. Holmbeck et al. (2000) provided a discussion of some of the requisite cognitive skills for comprehending and implementing most cognitive therapies that were initially developed for adults. Among these are abstraction, which is necessary for observing one's own beliefs and cognitions and fully taking the perspective of others; consequential thinking, that is, the ability to consider the consequences of one's thoughts or actions; and hypothetical reasoning, which is required for envisioning alternate possible interpretations and courses of actions. Unfortunately, there is no straightforward method for assessing the cognitive developmental level of a given child to determine whether a particular intervention is appropriate (Holmbeck et al., 2003), and in most cases it is up to the clinician to make a reasonable judgment.

Peer relationship tasks. The importance of acceptance by peers and the potential for pain in the wake of negative judgment by peers is never higher than during early to mid-adolescence. It is vitally important to meet the standards of one's peers—to have the right hair and clothes, to be pretty and thin if a female, to be fearless and funny if a male, and so forth. Managing one's initial romantic interests and

relationships can be intensely stressful, particularly for those whose early attachment histories did not provide a sense of basic trust in others and in their own worthiness as a romantic partner. In general, those adolescents who are least confident in their own self-worth are most likely to conform to peer influences of any sort, including those that can result in risky behaviors such as drug use, violence, and early sexual activity.

Family relationship tasks. Early adolescence is a major transition point not just for the teenagers but also for their parents. Many of the conflicts that arise for families center around adolescents' bids for greater autonomy and choice in all aspects of their world—choice of friends, romantic partners, curfew, dress, how to spend money, when (or if) to do homework, and so forth. At the same time, they begin to view their parents as more fallible and less powerful and so begin to challenge their knowledge and authority. It can be tricky for any parent to know how to respond to these changes and how to gauge the optimal level of freedom to grant at each point in development— enough freedom so that adolescents can explore their worlds and learn to make responsible choices but not so much that they frequently find themselves in risky situations they are too inexperienced to manage. The challenge for the parent-adolescent dyad is to achieve gradual and appropriate increases in adolescent autonomy while maintaining warm, open communication.

The differences between families of suicidal adolescents and other families seem to center less on the types of issues that arise and more on the ways in which they interact around those issues. Adolescents who have the greatest difficulties regulating their emotions and behaviors present multiple challenges to parents: they may require more external regulation and limit setting from parents than other adolescents, but they may also find it more difficult than most to tolerate negotiations with their parents and to accept the restrictions that they impose. Of course, parents also differ in their capacities for managing their own emotional reactions to their children, setting limits while keeping their cool and being emotionally available and supportive when their children are upset. Avoiding each other can often seem like the expedient solution to dyadic struggles in problem solving and communication. Yet, the same adolescents who pose the

greatest challenges may privately fear that they are a burden to their parents and may need reassurance to the contrary. Because of the critical role of family relationships, family therapy has long been viewed as an important treatment modality for suicidal youths. In addition, in recent years a number of individual therapy treatment protocols for depressed adolescents have incorporated a parent education component focused on topics such as adolescent development or depressive illness and their implications for parenting, although the evidence for whether those components necessarily enhance the treatment remains mixed (Weisz and Hawley, 2002).

Academic tasks. School is a key setting for developmental adaptation during adolescence. Transitions to middle school and to high school present exciting opportunities along with substantial challenges. In addition to managing the increased intellectual demands of the academic workload, adolescents must master such tasks as regulating classroom behavior, controlling attention, improving organizational skills, harnessing the motivation necessary for achievement, regulating emotion in the service of both academics and social relationships, developing social skills for relating to peers and teachers, and becoming involved in various school and extracurricular activities if they are to make a successful adaptation. Academic pressures can place a heavy burden on adolescents, particularly in this era of intense academic competition, sometimes augmented by driven parents and highly intensive school curricula. Various aspects of school adaptation, particularly school failure and disengagement from school, have been linked to emotional functioning and a range of psychopathologies in research studies (e.g., Roeser, Eccles, and Freedman-Doan, 1999), including suicidal behavior (Lewis, Johnson, Cohen, Garcia, and Velez, 1988). Assessing and addressing any difficulties in the school context should be an important part of comprehensive intervention.

Emotion regulation tasks. Issues regarding emotion regulation overlap with each of the preceding developmental tasks, since effortful control of emotions and behaviors is vital to successful adaptation in those arenas. In addition to the points I have already raised, a developmentally attuned intervention takes into account that the capacity for emotion regulation is not entirely developed until the young adult years. There is an unfortunate time lag between the heightened

emotional arousal and intensity that accompany the beginning of the pubertal transition and the full development of the brain systems that are necessary for regulation of emotion and behavior (Steinberg et al., 2006). Adolescents must cope with powerful emotions and novel situations while still somewhat immature both neuroanatomically and experientially.

While adolescents may have an adult-level cognitive capacity for making reasoned decisions when removed from emotionally charged situations, their choices in the "heat of the moment" are particularly prone to being influenced by their gut-level emotional systems, which may not be well regulated. Many adolescents crave the "rush" of risky behavior and dangerous situations, which instantly diverts their attention from their everyday self-conscious preoccupations. They cannot be trusted to carefully consider the risks to themselves or to others and may perceive themselves as immune from harm. Of course, the challenges are amplified for those entering adolescence with emotion regulation difficulties. As we have seen in previous chapters, those who resort to suicidal behavior are more prone than others to avoid experiencing negative emotions, in part because they fear being overwhelmed by them and in part because they believe them to be uncontrollable and unchangeable. Avoidance works over the short term. Impulsive aggression and self-destructive behavior can temporarily relieve distressing emotion and push away a stressful problem. No wonder it can be so challenging for the clinician to persuade adolescents of the benefits of facing their painful situations. It may be very important for clinicians to begin by teaching adolescents effective methods of soothing their painful emotions (relaxation, constructive distraction, acceptance, turning to supportive others) before directing their attention to the painful spots and before experimenting with more active methods of coping.

Additional developmental considerations. Knowledge of normative levels of functioning is very important when setting targets for intervention. For example, the clinician who is well informed about the normative changes of early adolescence and the frequency with which sad or depressed mood, parent-adolescent conflict, adolescents' penchant for spending time alone in their rooms, and similar behaviors occur is in a better position to determine whether a particular

adolescent's experience and behavior warrant intervention and whether worried parents have any genuine cause for concern.

A final consideration when treating adolescents is their motivation for treatment. Many adolescents feel that they would rather be anywhere else than your office. They may feel pushed into treatment by parents, they may see the therapist as another adult who is not to be trusted, they may feel uncomfortable sharing feelings (particularly boys), and so forth. A skillful clinician learns some ways of engaging the adolescent and minimizing defensiveness. At a broader level, it is very helpful when developing interventions to incorporate techniques and exercises that are as engaging and meaningful as possible for adolescents.

Individual, Group, and Family Therapies Evaluated in Clinical Trials

I begin this section with a sobering observation: At present, we do not have any standard psychosocial treatments for suicidal behavior in children and adolescents that have been demonstrated to be reliably effective in randomized, controlled trials. As the earlier chapters of this book attest, our understanding of relevant mechanisms and processes is probably solid enough to form the foundation of effective treatments for suicidal youngsters. Yet, as a field, we have not made an adequate investment in the development of such treatments. Until fairly recently, most intervention trials for treatment of mental disorders—whether evaluating a new psychotherapy or medication—deliberately excluded suicidal participants, with the justification that the risks of treatment outweighed the potential benefits. Very few investigators have been willing to undertake the responsibility for ensuring the safety of a large sample of high-risk suicidal participants. The status of available treatments for adults, while somewhat better, is still surprisingly thin (Fortune and Hawton, 2005). Thus, the National Institute of Mental Health recently generated an initiative to prioritize intervention research with people at high risk of suicidal symptoms. Given the legitimate safety concerns, they crafted a set of guidelines for conducting research with suicidal participants that covers such issues as safety monitoring, developing and implementing

risk management protocols, and appropriate informed consent procedures (Pearson, Stanley, King, and Fisher, 2001). Investigators considering undertaking any sort of research with people at risk of suicidal behavior (not just intervention research) might benefit from consulting that document.

Nonpsychotherapy interventions. Two groups of researchers have examined whether relatively modest adjustments in mental health care delivery systems could reduce the rates of recurrent suicidal behavior. Cotgrove and associates (Cotgrove, Zirinsky, Black, and Weston, 1995) compared two groups of adolescents who received outpatient psychotherapy-as-usual following discharge from inpatient treatment for an overdose: an experimental group that was provided with a token enabling immediate, automatic inpatient readmission should the adolescent experience a relapse of suicidal symptoms and a control group that was not provided with tokens. Roughly 10 percent of the 47 adolescents in the experimental group made use of the readmission token. However, it afforded no significant advantage in terms of suicidal behavior at follow-up. The authors noted fewer reattempts in the token group, but the numbers were too small for statistical significance.

Rotheram-Borus and colleagues (1996) tested whether enhanced care during an emergency room (ER) visit could improve later compliance with outpatient treatment. Sixty-five predominantly Latina female adolescents who had attempted suicide and their families were provided with specialized ER care consisting of (a) a family meeting with a crisis therapist in which the suicide attempt was conceptualized as an ineffective problem-solving strategy that could be addressed in a highly recommended six-session outpatient family therapy program; (b) showing a videotape to the adolescent and family that highlights the risks of ignoring adolescent suicidal behavior and the potential benefits of treatment; and (c) training emergency department staff to refrain from blaming the family. Comparisons of families who received this specialized care and 75 control families that visited the ER prior to program implementation revealed that the special-care families were more likely to attend at least minimal outpatient treatment and were less likely to drop out of treatment in the first couple of sessions. In a follow-up study, participants were reassessed at 3, 6, 12, and 18

months after both groups completed the family therapy intervention (Rotheram-Borus, Piacentini, Cantwell, Belin, and Song, 2000). The family treatment used reframing and structured exercises to reduce blame and strengthen positive connections, identify family problems, and improve coping and family negotiation skills (Rotheram-Borus, Piacentini, Miller, Graae, and Castro-Blanco, 1994). Those who had received the specialized ER care were no different from the standard ER group on measures of suicidal ideation or on rates of suicide reattempts. However, adolescents in the specialized ER group had lower depression scores across the follow-up, as did the mothers of the most highly distressed girls.

Stanley and colleagues recently developed a very brief, targeted intervention for use in emergency departments (as well as in other acute-care settings) that is aimed at helping adolescents or adults to cope with suicidal ideation and to avert suicidal crises (Stanley and Brown, 2008; Stanley and Nafisi, 2008). The core of the intervention is the development of a hierarchically arranged list of steps the person can take in the event of a suicidal crisis, including internal and external coping strategies to implement and key people and institutions to contact. Although it has yet to be evaluated in a controlled trial, this practical intervention is being used at a growing number of emergency departments. Similar lists are an important component of two recently developed psychotherapy interventions for suicidal youths, as described in a later section of this chapter.

Individual and group problem-solving therapies. Several problem-solving interventions have been tested, although very few have incorporated samples of adolescents under age 18. Most focus on skills such as problem identification, development of more positive attitudes about problem solving (e.g., accepting problems as a normal part of life, making more adaptive causal attributions), ways to generate clear goals and problem-solving steps, ways to generate alternative solutions, anticipation of likely outcomes of solutions, selection and implementation of solutions, and evaluation of their effectiveness.

Working with a small sample of 18 suicidal 18–24-year-olds, Lerner and Clum (1990) found problem solving to be more effective than supportive psychotherapy at bringing about clinical improvement in depression, hopelessness, and loneliness. However,

the problem-solving treatment was no better at reducing levels of suicidal ideation. A few studies of problem-solving treatments with adults have included some adolescents in the samples. In one such study, Hawton and colleagues (1987) reported that a brief problem-solving treatment was associated with a lower rate of reattempts at 12-month follow-up (7 percent) than was care by a general practice physician (15 percent), although the effect was not statistically significant. The greatest benefit was found among women and those with dyadic problems. Similarly, a brief interpersonal problem-solving treatment with a sample of 19 suicide attempters ages 15–45 resulted in lower rates of reattempts (10 percent) than was found among 20 participants in a control treatment (25 percent reattempted), but in that study too the difference failed to reach statistical significance (McLeavey, Daly, Ludgate, and Murray, 1994). One study of a small sample of older adolescents and adults (n =20) showed that a problem-solving treatment was associated with a lower rate of reattempts (0 percent) at 6-month follow-up than was treatment-as-usual (TAU; 37 percent), and greater declines in depression, hopelessness, and suicidal ideation at both 6 and 12 months were noted (Salkovskis, Atha, and Storer, 1990).

Problem-solving group treatment was the major ingredient of a brief but highly intensive intervention conducted with a predominantly male sample of 264 suicidal (ideation or attempts) older adolescents and young adults by Rudd and others (Rudd et al., 1996). The intervention was performed in an outpatient day hospital setting using 9-hour sessions across a 10-day period. In addition to the problem-solving component, the treatment included an experiential group focused on connecting past history with present experiences and a psychoeducational component targeting communication, impulsivity and anger control, and emotion regulation and stress management. The problem-solving group overall fared no better than a TAU condition (which included inpatient and outpatient treatment) on the outcome measures, including suicidal ideation, problem solving, and depression. However, for those with a diagnosis of major depression, anxiety disorder, or both, the problem-solving treatment was indeed more effective than TAU in reducing suicidal ideation (Joiner, Voelz, and Rudd, 2001).

Thus, the track record for problem-solving therapy is not terribly strong, although it shows some promise in reducing suicidal ideation and the rates of reattempts. None of the research studies has used a sample entirely composed of adolescents, and a few were hampered by very small sample sizes that did not afford sufficient statistical power. Although it may not be sufficiently potent on its own, problem solving is quite often included in cognitive-behavioral treatments packages that center primarily on identifying and shifting maladaptive beliefs, and problem solving is also a component of certain group and family treatments, as discussed in the coming paragraphs.

Dialectical Behavior Therapy (DBT) was designed by Marsha Linehan (1993) for treatment of adults diagnosed with borderline personality disorder and the self-destructive behaviors in which they frequently engage. Linehan conceptualized those behaviors as maladaptive ways of managing painful emotion that can in fact temporarily lower distress while indirectly engaging the help of others. The 12-month DBT treatment is intended to empower clients to better manage their emotional and behavioral responses. It incorporates elements of a number of different approaches: problem solving, supportive group therapy, interpersonal skills training, cognitive therapy (including increased awareness of negative beliefs associated with depression and anxiety), behavior therapy (e.g., increasing positive events), and coping skills training, particularly tolerance of distress. Participants practice new skills in the treatment groups and in homework assignments. These elements are blended coherently within a framework anchored in Buddhist traditions of *mindfulness* and *radical acceptance.* Mindfulness entails a nonjudgmental awareness of one's present experience (e.g., thoughts, emotions, body sensations) and is taught via structured meditation exercises as well as through methods for increasing present-moment awareness during daily activities. Further details on mindfulness are provided in a later section of this chapter. Radical acceptance means complete acceptance of one's present experience, including one's emotional pain, instead of resisting or fighting it. Acceptance does not imply liking one's situation and is not an excuse for passive avoidance of problem solving or other constructive action. It is central to learning to tolerate distress.

DBT has an impressive track record in treating suicidal adults. In a randomized clinical trial with adult females with borderline personality disorder, DBT was more effective than TAU in reducing suicide attempts and other "parasuicidal" behaviors (i.e., self-destructive behaviors without clear suicidal intent), minimizing the need for inpatient hospitalization, reducing levels of anger, and making improvements on indicators of social adjustment (Linehan, Armstrong, Suarez, Allmon, and Heard, 1991). Remarkably, DBT was recently shown to be more effective than nonbehavioral psychotherapy delivered by expert therapists on many of those same outcome measures (reducing suicide attempts and self-injurious behaviors; fewer psychiatric inpatient admissions and emergency department visits) across 2 years of treatment and follow-up of adults with borderline personality (Linehan et al., 2006).

DBT has been modified for use with adolescents (Miller, Rathus, and Linehan, 2007; Miller, Rathus, Linehan, Wetzler, and Leigh, 1997), and the results thus far are promising. Among the modifications in the adolescent version (DBT-A) are a shorter duration of treatment (trimmed from 12 months to 12 or 16 weeks of twice-weekly individual and multiple-family skills training sessions), inclusion of parents in the skills training groups, and coverage of fewer skills. Miller and colleagues' (2007) recent book presents the program in detail, including exercises and handouts. DBT-A was compared to TAU in a nonrandomized study of adolescent outpatients (Rathus and Miller, 2002). Adolescents were assigned to DBT-A on the basis of clinical characteristics, including a diagnosis of borderline personality and suicidal behavior or ideation in the past several months. Despite that nonrandom assignment procedure, at pretreatment the two groups were roughly equivalent on suicidal symptoms, although the DBT group had greater psychopathology as measured by several indices (more diagnoses of psychopathology, more prior hospitalizations, more borderline symptoms, more impulsivity). Following treatment, the groups did not differ significantly on suicide attempts or ideation. Given the pretreatment imbalances between the groups, that lack of differential outcomes could be viewed as a partial success story. DBT-A was associated with fewer psychiatric hospitalizations and higher rates of treatment completion. Also, those receiving

DBT-A had significant pre-to-posttreatment reductions in levels of suicidal, borderline, and overall psychiatric symptoms.

More recently, DBT-A was implemented in a psychiatric inpatient setting for adolescents with suicidal behavior or ideation (Katz, Cox, Gunasekara, and Miller, 2004). This version of the treatment consisted of 10 skills-training group sessions across a 2-week period, twice-weekly individual DBT psychotherapy, and DBT milieu therapy. Comparisons with adolescents on an inpatient unit receiving TAU revealed no significant differences on suicidal behavior, suicidal ideation, depression, or hopelessness. Both inpatient treatments resulted in significant reductions on each of those outcomes, although the reductions were somewhat greater in the DBT-A condition (small sample sizes may have contributed to the lack of significant findings). The DBT-A treatment did result in significantly fewer behavior problems, as documented by nurses' incident reports.

Integrative group therapy. A group intervention combining features of problem solving, cognitive-behavioral therapy, DBT, and psychodynamic group therapy has shown promise for lessening the risk of repeated episodes of self-harm (Wood, Trainor, Rothwell, Moore, and Harrington, 2001). Sixty-three adolescent subjects, predominantly female, who had engaged in deliberate self-harm (regardless of lethality or whether there was suicidal intent) were randomly assigned to routine care or to six sessions of "Developmental Group Therapy," which targeted relationship issues, management of problems in several realms (peers, family, school), and ways of coping with anger, depression, hopelessness, and self-harm. Following the initial six sessions, adolescents could continue in weekly group sessions for an indefinite period. The intervention reduced the odds of repeated (2 or more) self-harm incidents and resulted in significantly longer time lags until a first episode. There was a nonsignificant trend toward fewer episodes of self-harm in the group therapy condition. There were no significant effects of the intervention on depressive symptoms or suicidal ideation, however.

Family therapy interventions. Harrington and colleagues (1998) evaluated a four-session home-based family intervention delivered as an add-on to routine outpatient clinic treatment by comparing it with routine treatment alone in a sample of children and adolescents (ages

10–16, 90 percent female) who had attempted suicide by overdose. The emphases in the family intervention were family communication, family problem solving, and a psychoeducational discussion of developmental changes of adolescence. The researchers did not find any overall benefits of the family intervention on measures of suicidal ideation, family functioning, or hopelessness. However, it was associated with reduced suicidal ideation only among those youths without a major depressive disorder at intake (roughly one-third of the sample).

Multisystemic therapy (MST)—one of the only empirically supported treatments of any sort that was originally developed with adolescent populations—was established primarily as a treatment for juvenile offenders and has proven effective in reducing behavior problems and substance abuse (Henggeler, Schoenwald, Borduin, Rowland, and Cunningham, 1998). Henggeler and colleagues have become interested in exploring the expanded potential of MST for treating disorders beyond the antisocial spectrum. The intervention is a family-based one in which parents are trained to better communicate and problem-solve with, monitor, and effectively discipline their children. The treatment considers the family, peer, and school contexts in which the child lives, and bolstering family support is a key component.

In this study, Henggeler and colleagues randomly assigned approximately 150 youth ages 10–17 who presented for emergency hospitalization with a variety of psychiatric emergencies (including suicidal ideation/threats/attempt, homicidal ideation/threats/behavior, or psychosis) to either MST or inpatient hospitalization as usual (Huey et al., 2004). A majority of the sample consisted of low-income African Americans males. The results indicated overall symptom improvements for both groups, but there were greater declines in reported suicide attempts across the follow-up (assessed at 4 and 16 months) for the MST group than for the hospitalization group. Suicide attempts were self-defined by adolescents, and intent and lethality were not specified. There were no group differences on suicidal ideation, hopelessness, or depressive symptoms. It should be noted that, despite randomization, the MST group at baseline had almost twice as many suicide attempters (31 percent) as the hospitalization group (19 percent) and that the rates of attempts were equivalent for

the two groups at both 4 and 16 months. In other words, the rates of attempts dropped in both groups, and the larger drop in suicide attempts for the MST group might be attributable to "regression to the mean" rather than a true treatment effect.

Multiple modalities: Individual versus family therapy or medication. Brent and associates (Birmaher et al., 2000; Brent et al., 1997) tested a 12- to 16-session cognitive-behavioral therapy (CBT) for adolescents with major depression. Although this intervention was not developed specifically to address suicidal symptoms, the researchers paid close attention to its impact on suicidal outcomes. The CBT focused on identifying automatic thoughts associated with depression, labeling and challenging them, and teaching problem-solving skills. Emotion regulation was addressed, including identifying emotions, using behavioral activities and distraction to regulate emotion, and addressing impulsivity as it relates to suicidal and other risky behaviors. A family psychoeducational component was also included. The CBT treatment package was compared with a systemic behavioral family therapy that combined elements of functional family therapy (Alexander and Parsons, 1982) (e.g., reframing the problem as one involving the entire family system) and problem-solving family therapy (e.g., family communication, family members trying new solutions to problems). A third condition, nondirective supportive therapy, served to control for nonspecific effects of therapist support. The CBT was more effective than the other treatments at reducing depression immediately after treatment, but 2 years later the group differences no longer remained. Unfortunately, there were no differential treatment effects on suicidal symptoms. The CBT and family treatments were just as effective in reducing depression among adolescents with a history of suicidality (defined as a suicide attempt or suicidal ideation with a plan) as they were among those without a history of significant suicidality (Barbe, Bridge, Birmaher, Kolko, and Brent, 2004). Not so for the supportive treatment; suicidal adolescents receiving that treatment were more likely than their nonsuicidal counterparts to have a major depression after completing treatment, and hopelessness appeared to be the key factor mediating treatment response. Those with a suicidal history were also more likely than others to drop out of any of the treatments.

Somewhat less encouraging results for CBT were reported in the highly publicized "TADS" study (Treatment for Adolescents with Depression Study Team, 2003), the first federally funded (i.e., non-drug-company-funded) major research effort to evaluate the effectiveness of antidepressant medication for treatment of adolescent depression. A total of 439 adolescents recruited at 13 treatment sites were randomly assigned to treatment with fluoxetine (Prozac®) plus CBT (F+CBT), fluoxetine (F) alone, CBT alone, or placebo. The CBT treatment was quite similar to that provided by Brent and associates (Brent et al., 1997) and the "Adolescent Coping with Depression" course of Clarke, Lewinsohn, and colleagues, a treatment with proven effectiveness among depressed adolescents (G. N. Clarke, Rohde, Lewinsohn, Hops, and Seeley, 1999; Rohde, Clarke, Mace, Jorgensen, and Seeley, 2004). In addition to individual therapy, the CBT package included parent education about depression and family sessions addressing issues in the parent-child relationship. It was designed to allow some flexibility in tailoring the components to meet the needs of the particular adolescent. The 12-week results showed that those receiving both CBT and medication had the best outcomes on measures of depression, but those receiving only CBT fared no better than those on placebo and were more depressed than those treated with medication alone or the combined medication plus CBT. Of particular importance to our discussion are the findings for suicidal ideation. At the outset of treatment, 28 percent of adolescents across the groups had suicidal ideation, and that figure dropped to 10 percent after 12 weeks of treatment. Suicidal symptoms fell in all groups, with a significantly larger decline in those receiving medication plus CBT compared with other groups. Importantly, the CBT group and the combined CBT plus medication group had equivalent levels of suicidal ideation at 6- and 12-week follow-ups; the larger drop in the combined group was a function of somewhat higher baseline rates of suicidal ideation rather than lower suicidal ideation scores following treatment. Additional discussion of the TADS findings is found in the section on pharmacotherapy later in this chapter.

Summary of outcomes of individual, group, and family therapies. The body of research studies is perhaps most striking for its lack of

compelling results. Although some of the interventions have been more successful than comparison treatments at reducing depression or keeping adolescents out of the hospital, positive findings for suicidal behavior and ideation are less consistent. There is little solid evidence that any of the treatments can be recommended as particularly effective in reducing suicide attempts. Only Salkovskis and colleagues' (1990) problem-solving intervention, as implemented with a primarily adult sample, and Henggeler and company's MST family treatment (Huey et al., 2004) were more effective than controls in reducing the risk of suicidal behavior. However, even those studies give us some reason to pause. In the Salkovskis study, the differential benefit of the problem-solving treatment at 6 months was no longer present by the 12-month follow-up. In the MST project, we cannot rule out regression to the mean as the key explanatory factor, since the rates of suicide attempts differed across groups only at pretreatment, not posttreatment (i.e., more attempters had been assigned to the MST group by chance). The integrative group treatment of Wood and associates (2001) did reduce the risk of multiple attempts and had some (nonsignificant) impact on the overall rate of attempts. Neither Wood et al. nor Henggeler and associates specified the lethality or suicidal intent of suicide attempts, so it is not possible to know whether their findings speak to group differences in fairly superficial self-destructive behaviors or to more serious suicide attempts.

Most of the studies failed to show any differential treatment effects for suicidal ideation, with the exception of Salkovskis et al.'s problem-solving therapy and Rudd, Joiner, and colleagues' highly intensive day hospital treatment, the latter being most effective for those entering treatment with major depression or anxiety (Joiner et al., 2001). The results of the adolescent DBT trials were somewhat disappointing, but the treatment is deserving of further research attention, particularly given the impressive success of DBT with adults.

Thus, at present we cannot recommend any particular treatment as uniquely effective at reducing suicidal behavior or suicidal ideation. However, many of the interventions, including experimental treatments as well as treatments-as-usual, did produce pre-post improvements in suicidal ideation. The good news is that suicidal ideation seems to improve with any of a number of treatment modalities. Still,

we have much work to do in identifying treatments that are demonstrably potent in reducing the risk of suicidal behavior.

Promising Psychotherapy Interventions

A few recently developed treatments have promise for use with suicidal adolescents but either have yet to be evaluated with adolescents or have not yet been the subject of randomized, controlled trials with adolescents. The models share some common features. An important aim in each model is to strengthen the client's ability to manage powerful negative emotions, although the methods for achieving that vary somewhat from one treatment to the next. In each model, there also is an appreciation that, barring a completed suicide, a suicidal crisis will invariably pass within a fairly delimited time period—perhaps in a matter of hours, perhaps in a few days. That is not to deny that some adolescents appear to be chronically suicidal, their crises seemingly triggered at every turn (Joiner and Rudd, 2000); yet, they too experience fluctuations in the intensity of suicidal symptoms, with circumscribed periods of truly high risk. Once the suicidal crisis passes, many of its manifestations dissipate. The intense negative emotions, the extreme hopelessness, the active suicidal intent, the physiological activation, the angry and self-destructive behaviors—all of these tend to subside.

What often remains, though, is an underlying potential for suicidal reactivation. Recently developed treatments are concerned with identifying and modifying the core predispositions toward suicide that may be common to most suicidal people, even those who are quite disparate in their psychopathologies. The psychopathology itself must be treated, but alleviating the symptoms might not be sufficient to reduce the risk of future suicidal relapse. Thus, the chief emphasis in some newer therapies is on the predisposing factors that may cut across psychopathologies, including (a) compelling negative beliefs or "stories" about oneself and/or others that are unacknowledged, that are readily reactivated by certain triggers (stresses, emotions, cognitions), and that unleash a powerful stream of highly distressing thoughts and emotions; and (b) the automatic cognitive and behavioral coping responses to the distress that serve to perpetuate or magnify it, thus

setting the stage for suicidal behavior. While the precise beliefs and automatic responses are not the same for all suicidal people, many of them are quite common. An aim of the therapies is to teach suicidal people to become more familiar with and accepting of their tendencies (i.e., their triggers, beliefs, emotions, response tendencies), to recognize and accept them when they are reactivated, to refrain from engaging in suicidal or other self-destructive impulses, and to engage in any of a variety of adaptive techniques that loosen their grip while increasing positive emotions.

Mindfulness. Mindfulness-based cognitive therapy (MBCT) (Segal, Williams, and Teasdale, 2002) was developed to reduce the risk of recurrence of depressive episodes and may have promise for relapse prevention of suicidal episodes as well. The treatment was derived from Kabat-Zinn's (1990) Mindfulness-Based Stress Reduction (MBSR), which itself is based on venerable Buddhist meditation practices. It is delivered in eight group sessions of 2 hours each plus a single day-long session, accompanied by daily home practice. The classes primarily teach mindfulness, which has been defined as paying attention purposefully, with a focus on the present moment, and without judgment (Kabat-Zinn, 1994). Participants are taught formal mindfulness practices (e.g., sitting and focusing attention on the breath, being aware of the body, being mindful of thoughts and emotions), as well as techniques for increasing mindful awareness in the course of everyday activities. The program also encourages increasing positive activities and provides education about depression, including the role of negative thoughts, and about ways in which emotional and cognitive responses can trigger a depressive relapse. Group members assist one another in developing a crisis plan to implement in the event of increased suicidal ideation or other depressive symptoms.

In Segal, Williams, and Teasdale's model of depressive relapse, small negative changes in mood reactivate a depressive "mode" that lies dormant between episodes of depression (Segal et al., 2004). The mode includes not only negative cognitive content but also a ruminative manner of relating to that content (i.e., dwelling on the negative experiences unproductively) and related negative emotion and behavior patterns. At the first signs of negative emotion and cognition, the automatic tendency is to avoid emotional pain by turning one's

attention elsewhere. The mindfulness training is counterintuitive; one turns awareness *toward* the thoughts, feelings, and bodily sensations with a nonjudgmental and open attitude. This approach differs from most other cognitive therapies in that, instead of trying to change the content of thoughts (e.g., substituting more "rational" thoughts for depressogenic thoughts), one cultivates awareness and acceptance of thoughts as a changing stream of phenomena that arise and pass on their own. That practice often lessens the degree to which thoughts are taken to be "the truth." It also can short-circuit the habitual ruminative mode of mental processing, which tends to magnify emotions and cognitions into relapse-size proportions.

Two controlled clinical trials have demonstrated that MBCT can reduce the likelihood of depressive relapse by roughly 40 percent to 50 percent in adults who have experienced multiple episodes of depression (Ma and Teasdale, 2004; Teasdale et al., 2000). MBCT has not been evaluated for its effects on suicidal symptoms, although it is a component of some therapies for suicidal people (Linehan, 1993). Advocates of MBCT suggest that it might be equally effective with suicidal people because the suicidal mode likely operates in much the same way as the depressive mode (Williams, Duggan, Crane, and Fennell, 2006); that is, it lies dormant between episodes and is reawakened by negative mood fluctuations, including small ones that are the stuff of everyday life (Lau, Segal, and Williams, 2004). They argue that MBCT might be successful in preventing the full-blown reactivation of the suicidal mode by training adolescents to recognize the reappearance of thoughts, emotions, and bodily sensations and to pay attention to them with a benevolent attitude.

New approaches to cognitive therapy for suicidal people. The MBCT idea of reactivating a mode shares much in common with the "suicidal mode" introduced in the cognitive model of Beck (1996) and elaborated fully by Rudd (2000). As discussed in previous chapters, the suicidal mode includes cognitive (negative cognitions regarding self, others, and the future), affective, behavioral (suicide-related behaviors), and physiological components that in suicidal people are readily triggered by stressors that are either external or internal (i.e., thoughts, emotions, or bodily sensations). Whereas the MBCT treatment provides specific skills aimed at preventing or

minimizing relapse in those who are not actively suicidal, both Rudd and colleagues' (2001) 20-session treatment program and Beck and colleagues' 10-session cognitive therapy (Brown, Jeglic, Henriques, and Beck, 2006; Henriques et al., 2003) begin with a client in the midst of suicidal activation. The major emphasis of both models is cognitive restructuring of maladaptive beliefs and cognitions, but the first steps are engaging the client in treatment, alleviating the immediate symptoms of the crisis, and developing safety plans. Ensuring safety can be accomplished through doing a careful assessment, securing potential weapons, enlisting involvement of family members or friends in safety monitoring, and developing a crisis response plan with step-by-step instructions for managing a suicidal episode.

The two therapy programs share much in common. Both begin early in treatment to teach the client important skills for self-management of crises, including self-monitoring of symptoms with a "suicidal thought record," identifying the components of the client's suicidal mode (including the specific beliefs), and understanding how the mode is triggered and maintained. The techniques for treating the cognitive aspects of the suicidal mode are much the same as those used in cognitive therapies for depression. The therapist engages the client in questioning the suicidal beliefs: What is the evidence in support of them? What is the worst thing that might happen? Are there other possible explanations? Adaptive alternatives to the suicidal beliefs are discussed, and clients are encouraged to experiment with acting as if they were convinced of the "truth" of the new alternative beliefs. Both treatment programs make use of wallet-sized "coping cards" containing the client's core suicidal beliefs along with positive alternative responses, which the client carries as a reminder of how to cope when painful reactivation occurs. Both programs also teach other positive coping skills as necessary, depending on the client's needs (e.g., problem solving, emotion regulation and distress tolerance, inhibition of impulsive reactions, cultivation of social support). They both use guided imagery techniques to reactivate the experiences of the suicidal mode in the session, in order to fully explore it and practice newly learned ways of coping with it.

Along with those commonalities, each treatment package has certain unique features. For example, Rudd and colleagues (2001)

place special emphasis on identifying and exploring a situation or relationship that is the single greatest source of hopelessness for the client and generating new options for it that represent alternatives to suicide. One unique feature of Brown and colleagues' treatment is construction of a "hope kit" consisting of objects such as photographs, letters, special gifts, and so on that can serve as reminders of reasons for living when in the midst of a suicidal episode (Henriques et al., 2003).

Neither therapy has been evaluated with adolescents. Brown and colleagues tested their intervention with a sample of 120 adults who had attempted suicide, randomly assigned to either the 10-session treatment or treatment as usual (Brown, Ten Have et al., 2005). Those receiving the cognitive intervention were significantly less likely to reattempt suicide across an 18-month follow-up period, an effect that remained even after controlling for depression, suicidal ideation, and hopelessness. The treatment also was associated with lower depression across the follow-up and lower hopelessness at 6 months, although there were no significant effects on suicidal ideation.

Brown and colleagues' approach formed the nucleus of the CBT component used in the NIMH-sponsored "Treatment of Adolescent Suicide Attempters" (TASA) project, a recent clinical trial that examined the efficacy of a combined antidepressant medication and CBT intervention in the treatment of adolescents who had made a suicide attempt in the past 90 days. The CBT treatment also incorporated elements of dialectical behavior therapy and family therapy (including family psychoeducation). The medication treatment utilized a sequential algorithm in which medications were switched with or augmented by a second medication if an adequate clinical response was not achieved. The preliminary results are encouraging (Compton, Kennard, Cwik, and Posner, 2007); at 6 months, the rate of suicidal events was 18.5 percent, which is roughly one-half the rate that is typically found in comparable samples of adolescent suicide attempters. A full report of the results of this study is forthcoming.

The *Collaborative Assessment and Management of Suicidality* (CAMS) is an innovative approach designed to fully engage outpatients in their own assessment and treatment of suicidal behavior (Jobes, 2000; 2006). Like other treatments reviewed in this section, CAMS is targeted not at the psychiatric disorder but at the suicidality

itself. Unlike other treatments, CAMS can be used as an adjunct to any therapeutic modality when the assessment and management of suicidality are necessary. A core of the treatment is building a strong therapeutic alliance between therapist and client. By taking a nonjudgmental, empathic position about the client's suicidal urges, CAMS avoids the adversarial struggles that can so often pit the "anti-suicide" clinician against the client who wishes to maintain the suicide option. The clinician's role is that of an inquisitive facilitator who helps the client to fully reveal her phenomenological world (Michel et al., 2002). The therapist must appreciate through the client's eyes why and how suicide can be an appealing solution to a problem, that is, the function it serves. Assessment is conducted by collaborating with the client to complete the Suicide Status Form (SSF) described in the assessment section of this chapter. Client and therapist then collaboratively develop a treatment plan. The collaborative treatment takes a problem-solving approach to finding better solutions to the problems and emotional pain faced by the client.

A nonrandomized evaluation of treatment for adults in the U.S. Air Force showed that suicidality resolved an average of four sessions more quickly among those receiving treatment with CAMS than among those receiving treatment as usual, and the CAMS group also made significantly fewer nonmental-health medical visits, indicating a potential medical cost-savings benefit of the treatment (Jobes, Wong, Conrad, Drozd, and Neal-Walden, 2005). More recently, Jobes has developed a full-blown 12-session problem-solving treatment (CAMS-PST) based on the CAMS approach, which includes client-therapist collaboration in all phases of the work: assessment, treatment planning, examining/deconstructing the problems giving rise to the suicidal intent, problem solving, and constructing reasons for living (Jobes, 2006).

Pharmacologic Interventions for Suicidal Behavior

Pharmacologic interventions with children and adolescents have become both increasingly common and increasingly controversial in recent years. The rates of antidepressant prescriptions written in the United States for those ages 18 and under more than tripled between

1987 and 1996 (Olfson, Marcus, Weissman, and Jensen, 2002) and rose another 40 percent between 1998 and 2002 (Gualtieri and Johnson, 2006). That sharp rise was likely due to increased acceptance of the newer antidepressants, particularly the selective serotonin reuptake inhibitors (SSRIs), as more effective and safer with children than those that were previously available. However, recent warnings from the Food and Drug Administration (FDA) and its European counterparts that SSRIs and related drugs can trigger suicidal behavior in a small number of youngsters may have a chilling effect on these trends. Rates of antidepressant prescriptions for youth under age 18 in the United States dropped by approximately 20 percent across the 15 months following the FDA's public health advisory (Rosack, 2005), and by 23 months after the warning the rates of SSRI use for pediatric depression were almost 60 percent lower than would have been expected, given the upward trajectory in prescription rates prior to the warning (Brent, Morrato, Orton, Allen, and Valuck, 2007).

The focus of this chapter is, of course, on treatments for suicidal behavior. When mental health professionals encounter serious suicidal behavior in a youngster, pharmacologic intervention is frequently considered for outpatients and is always considered for hospitalized inpatients. Unless there is a diagnosis or suspicion of bipolar disorder or psychosis, an antidepressant is typically the drug of choice. Thus, it would seem appropriate for this section to feature a literature review on the effectiveness of antidepressant treatment for suicidal ideation and behavior in children and adolescents. However, the fact is there are precious few data available on that point, because youth with significant suicidal ideation almost invariably have been excluded from the clinical trials. Given their widespread use, and given the risk that depression poses for suicidal behavior, I will extend the review to include the effectiveness of antidepressant treatments not only for suicidal symptoms but for depression as well. I also carefully consider the merits and implications of the recent concerns regarding their safety.

Medications with demonstrated effectiveness. Two medications have notable track records of success in reducing the risk of suicidal behavior in adults but have not been adequately studied for that purpose in adolescents. Lithium, which is most commonly prescribed

for treatment of bipolar disorder, has been associated with a greater than eight-fold reduction in the risk of suicide and suicide attempts (Tondo, Jamison, and Baldessarini, 1997). As further evidence of its protective effects, striking increases in rates of suicidal behavior have been documented upon its discontinuation in bipolar patients. Clozapine was introduced in the United States in 1990 as the first "atypical" antipsychotic (i.e., the newer class of antipsychotics with reduced risk of Parkinson-like side effects), and in 2002 it became the first drug to receive FDA approval for reducing suicidal behavior, specifically in people with schizophrenia or schizoaffective disorder. That FDA designation came on the heels of findings of the "InterSePT" research project (Meltzer et al., 2003), in which almost 1,000 adults with schizophrenia or schizoaffective disorder were treated with either clozapine or olanzapine (Zyprexa®). Clozapine was associated with a 26 percent greater reduction in suicide attempts or hospitalizations for suicidal crisis than was olanzapine. However, clozapine is indicated for use only when schizophrenia or schizoaffective disorder does not first respond to other antipsychotic medications because of a small risk of agranulocytosis, a life-threatening reduction in white blood cells.

Clinical trials with children and adolescents. A number of randomized, placebo-controlled trials of children and adolescents have targeted major depressive disorder or depressive symptoms. As I noted, it is important to bear in mind that these excluded youth with significant suicidal symptoms. The first such study with an SSRI (fluoxetine) yielded significant positive effects, as 56 percent of those receiving the medication but 33 percent of those receiving a placebo improved after 8 weeks of medication (Emslie et al., 1997). Since the older tricyclic antidepressants had never proven to be beneficial for children and adolescents (Hazell, O'Connell, Heathcote, Robertson, and Henry, 1995), the positive finding for fluoxetine received an enthusiastic response, with physicians writing seven times as many antidepressant prescriptions for new cases of youth depression in 2002 as in 1998 (Kratochvil et al., 2006). After a second randomized trial of fluoxetine produced similar results (Emslie et al., 2002), the FDA in early 2003 approved it for treatment of depression in children and adolescents, and currently it remains the only drug so approved.

Recent results from the "TADS" study, which I first discussed in the section on cognitive behavioral therapies (CBT), provided independent corroboration of the earlier findings on the effectiveness of fluoxetine (Treatment for Adolescents with Depression Study Team, 2003). The combination of fluoxetine and CBT was the most effective treatment for depression, followed by fluoxetine alone, and both of those were significantly more effective than CBT alone or placebo. Clinicians rated 71 percent of those receiving the combined treatment as "much" or "very much" improved; 61 percent on fluoxetine alone, 43 percent of those treated with CBT alone, and 35 percent receiving the placebo were so rated. As I noted previously, adolescents receiving the combined treatment had the greatest reduction in suicidal ideation, although their posttreatment ideation scores were equivalent to those of study subjects who received CBT alone. One noteworthy point is that the 35 percent improvement rate for those receiving a placebo is lower than that found in some other antidepressant treatment studies. Variation in placebo response rates from one study to the next can greatly influence the magnitude of the obtained between-group effect for the active medication.

The research findings for other antidepressants are generally not as solidly positive. Approximately 70 percent of depressed adolescents receiving the SSRI sertraline (Zoloft®) for 10 weeks in a controlled, double-blind trial made sufficient improvements to be rated "responders"; 60 percent of those taking a placebo received that rating (K. D. Wagner et al., 2003). That 10 percent differential was statistically significant, but only when data from two different treatment studies were pooled. In an "open label" 24-week extension of that initial trial, ongoing treatment with sertraline resulted in continued reductions in depression, with almost 50 percent remission among those who had failed to remit from their depressive episode at 10 weeks (Rynn et al., 2006). The findings for the SSRI paroxetine (Paxil®) are not strong. An initial study reported positive outcomes on some but not all measures of depression (Keller et al., 2001), whereas two recently published trials, each involving more than 200 youth, failed to find positive benefits of paroxetine on depression above those afforded by a placebo (Berard, Fong, Carpenter, Thomason, and Wilkinson, 2006; Emslie et al., 2006). More encouraging results were obtained in a double-blind

trial of the SSRI citalopram (Celexa®) in which significantly greater reductions in depression were obtained with the active drug than with placebo (K. D. Wagner et al., 2004). At the conclusion of the 8-week trial, 36 percent on citalopram were rated as having responded, but only 24 percent of those on placebo were so rated. However, another study of citalopram that did not yield significant effects remains unpublished. An 8-week controlled trial of venlaxafine (Effexor®) extended release with participants ages 7 to 17 found no differences on measures of depression between the drug and placebo (Emslie, Findling, Yeung, Kunz, and Yunfeng, 2007). Studies with negative results often remain in the unpublished files of the pharmaceutical firms. Such is the case with two unpublished studies each of venlaxafine, nefazodone (formerly marketed as Serzone®), and mirtazapine (Remeron®), three antidepressants that act on norepinephrine as well as serotonin, none of which showed solid evidence of superiority to placebo in the treatment of youth depression (Kratochvil et al., 2006).

A recently published meta-analysis of 27 randomized controlled trials of antidepressants with more than 6,000 children and adolescents age 19 and younger found a significant but modest overall treatment effect for youths with major depression, with a "Number Needed to Treat" of 10 (i.e., on average, one would expect a reduction of 1 case of major depression for every 10 youngsters who are medicated) (Bridge et al., 2007). Further, there was no overall significant treatment benefit among children under age 12 with major depression. This was largely because of the strong placebo response in children under 12; 58 percent responded to placebo, whereas 65 percent responded to the active medication. The only drug showing significant benefits for children under 12 was fluoxetine.

Do antidepressants cause suicidal behavior? The benefits of any drug must be weighed against its potential for unintended harmful effects. The challenge lies in determining where to draw the line— what is an acceptable risk/benefit ratio for any given disorder? In some instances, it is not so easy to judge whether the risk of harm associated with administering a treatment, including the potential for death, is offset by the risk of harm associated with withholding the treatment. Such is the nature of the debate that troubles the field of antidepressant medications for children and adolescents.

The current debate has its roots in the early 1990s, when, in a small number of primarily adult cases, fluoxetine seemingly induced an akathisia (extreme restlessness) along with serious suicidal ideation shortly after treatment was begun (Teicher, Glod, and Cole, 1990). The pharmaceutical company that produced fluoxetine allayed concerns at that time by presenting data demonstrating that there was no greater risk of suicide with fluoxetine than with other antidepressants. Yet, continued reports of the appearance of suicidal symptoms in conjunction with antidepressant treatment in a small percentage of cases, combined with the less than compelling record of effectiveness of the drugs in treating depression among young people, ultimately led two European medical agencies to issue strong declarations against their use. The U.K. Committee on Safety of Medicines (2004) concluded that antidepressants other than fluoxetine should not be used with those under age 18, and the European Medicines Agency (2005) recommended against the use of any antidepressant for treatment of depression in youths.

In the United States, the FDA, in 2003, warned only against the use of paroxetine in children and adolescents, because of its relatively poor risk/benefit profile. However, it urged physicians to carefully monitor all pediatric patients treated with any antidepressant. A review of clinical trials of paroxetine to date has shown almost four times as many suicidal adverse events (i.e., appearance of suicidal ideation, gestures, threats, or attempts) as occur in placebo controls (Apter et al., 2006), and although the proportion of affected youth is not large (approximately 3.4 percent of the paroxetine group), the risk is relatively high in light of the drug's lack of proven effectiveness.

The FDA also conducted a review of both published and unpublished clinical trials of various antidepressants with children and adolescents using research data solicited from pharmaceutical companies. Pooling data across studies totaling approximately 2,400 youths and nine different drugs, they found that antidepressant treatment resulted in almost twice the risk of suicidal adverse events as did placebo (approximately 4 percent of those on antidepressants versus 2 percent on placebo), a significant difference (Mosholder and Willy, 2006). Importantly, there has never been a documented case of completed suicide by a child or adolescent taking an antidepressant in any of the clinical trials, published or unpublished.

Because of concerns that adverse events were not counted and categorized consistently from one study to the next, the FDA contracted with Columbia University to oversee a comprehensive recategorization of suicidal adverse events (Posner, Oquendo, Gould, Stanley, and Davies, 2007). After the data were reanalyzed, the overall results were comparable to the FDA's own analysis, with a significant risk ratio of antidepressant/placebo of 1.71 (Hammad, 2004). The Columbia analysis included data from the TADS study in which fluoxetine posed a significantly higher risk of suicidal adverse events than placebo, but the overall results for fluoxetine across studies found it to be among the safest of the drugs. In fact, the only drug with a significantly negative risk ratio when analyzed separately was venlaxafine, although the risk ratio for paroxetine closely approached significance. In general, the results indicated that antidepressant treatment of major depression in youths conveys an increased risk over placebo of 2 to 3 percent. In other words, for every 100 youngsters receiving an antidepressant drug, roughly 2 to 3 would likely experience a suicide-related adverse event that would probably not occur without the drug. On the basis of these findings, the FDA issued a "black box" warning for all antidepressants, that is, a warning, printed inside a prominent black rectangle in the drug information that accompanies the dispensed medications, stating that antidepressant use in children may increase the risk of suicidal ideation and behavior.

What are we to make of the findings and the actions of the regulatory agencies in the United States and abroad? Controversy and confusion have reigned since the decisions were made. The warnings have led to some positive outcomes with which few would take issue— an elevated awareness of the problem, as well as increased vigilance in monitoring of patients on antidepressants, particularly in the initial weeks of treatment. However, many psychiatrists believe it will be very unfortunate if the FDA warnings result in widespread fear and avoidance of antidepressants by the public and many professionals, for several reasons: (a) their clinical experience as well as some of the research data support the positive benefits, (b) although the risks are real, serious suicidal behavior is not terribly common, and most adverse events are readily managed on an outpatient basis (Gualtieri and Johnson, 2006), and (c) there is a real risk of suicidal behavior if

depression is left untreated. Regarding that last point, as I noted in chapter 2, youth suicide rates showed an upward spike in 2004, reversing a 15-year trend of declining rates; the rise was particularly striking among females. Although they declined somewhat in 2005, the suicide rates for both males and females remained higher than expected on the basis of the trends across previous years and thus continued to be cause for concern (Bridge, Greenhouse, Weldon, Campo, and Kelleher, 2008). The spike came on the heels of the FDA "black box" warning for antidepressants and a roughly 10 to 20 percent decline in the rates of antidepressant prescriptions for adolescents. Are the two events linked? That possibility was advanced in a report by Gibbons and colleagues (Gibbons, Brown, Hur, Marcus, Bhaumik, Erkens, et al., 2007), who found parallel and more dramatic trends in the Netherlands. In that country, there was a 22 percent drop in child and adolescent SSRI prescription rates between 2003 and 2005 and a 49 percent increase in suicides in that age range. Although the evidence remains only suggestive at this point, it does present cause for concern.

Some studies examining the relationship between antidepressants and suicidal behavior using alternate methods—that is, methods other than pharmaceutical trials—have yielded evidence that runs counter to the FDA warnings. Findings from large epidemiologic studies that have used insurance records or nationally representative surveys have shown that antidepressant treatment in depressed adolescents either posed no increased risk of a suicide attempt or was associated with a decline in the risk of an attempt relative to pretreatment risk, and regional increases in rates of antidepressant use are associated with slightly diminished adolescent completed suicide rates (Gibbons, Brown, Hur, Marcus, Bhaumik, and Mann, 2007; Gibbons, Hur, Bhaumik, and Mann, 2006; Olfson, Shaffer, Marcus, and Greenberg, 2003; Simon and Savarino, 2007; Valuck, Libby, Sills, Giese, and Allen, 2004). Evidence from epidemiologic as well as clinical studies indicating that any increased risk of suicidal behavior in the early days and weeks of antidepressant treatment is significantly reduced after 3 to 6 months of treatment (Jick, Kaye, and Jick, 2004; Valuck et al., 2004) has led some professionals to assert that treatment is safe as long as careful safety monitoring is performed during the initial short-term risk period.

On the other hand, other analyses of large-scale databases have been consistent with the FDA findings. One examination of a Medicaid database that used a case-control design found that children and adolescents who were treated with an antidepressant following discharge from an inpatient unit were significantly more likely than matched controls to attempt suicide as well as to complete suicide (Olfson, Marcus, and Shaffer, 2006). Even though the numbers of completed suicides were very small (eight youngsters) and although it is possible that the most severely ill youth were most likely to be treated with an antidepressant, the study adds yet another cautionary note to the body of evidence on antidepressant treatment of youth.

Indeed, the negative findings for antidepressants and the FDA ruling could be taken as a signal that it is vitally important to further develop and refine the nonpharmaceutical interventions for managing suicidal behavior. Even setting aside the question of whether the medications trigger suicidal behavior, the fact that roughly 40 percent of youths are not substantially helped by the pharmacological agents provides a strong rationale for alternative interventions. Further, the exclusion of suicidal youths from most antidepressant treatment studies means that we still know little about their effectiveness and safety in treating suicidal behavior and preventing recurrent episodes in adolescents and children. Although it is possible that antidepressant medications are more likely to trigger suicidal episodes in study participants with suicidal symptoms than in those without such symptomatology, it also is possible that suicidal adolescents might receive greater benefits from the medications than others. Clearly, we still have much to learn about these treatments, particularly with the most distressed adolescents. The TASA study, described earlier in this chapter, evaluated the use of both cognitive behavior therapy and antidepressant medication treatment for adolescents who recently attempted suicide. The forthcoming results of that study should provide some additional answers to the questions at hand.

Compliance with Treatments

Compliance with treatment is an important issue for any treatment population, since even the most effective therapies will have limited

value if adolescents do not follow through with recommended treatment regimes. Unfortunately, compliance with treatment is notoriously poor among suicidal adolescents. Researchers have found that as many as one-half or more of adolescents referred for treatment of suicidal behavior either fail entirely to follow through or drop out prematurely following a small number of sessions (Mattson, Seese, and Hawkins, 1969; Piacentini et al., 1995; E. A. Taylor and Stansfeld, 1984; Trautman et al., 1993). King and colleagues reported that, 6 to 8 months after discharge from hospital treatment for suicidal symptoms, compliance with pharmacotherapy (67 percent) was significantly better than compliance with therapies involving parental participation (family therapy or parent guidance, 33 percent), while compliance with individual therapy (51 percent) fell in between (King, Hovey, Brand, Wilson, and Ghaziuddin, 1997). A study conducted by my research team found that rates of compliance with individual therapy and pharmacotherapy were roughly equivalent to one another at one year (approximately 65 percent compliance) and 18 months (approximately 50 percent) after hospitalization for a suicide attempt (Burns, Cortell, and Wagner, 2008).

Greater understanding of the factors that affect compliance rates may point the way toward interventions to improve service utilization. King, Hovey, and associates (1997) found that various aspects of family and parental adjustment were linked with poorer treatment compliance, including maternal depression, paranoia, and hostility, as well as poorer general family functioning and father-adolescent relationships. Burns and colleagues (2008) found that parents' perceptions of the helpfulness of individual therapy were related to adolescents' greater compliance with that treatment. If parents do not view the therapy as helpful, they may make the decision to stop the treatment or may acquiesce to adolescents' wishes to terminate instead of insisting on their attendance. Clearly, several parental factors can play an important role and seem important to address as a means of improving the rates of treatment compliance. Burns et al. also found that adolescents with disruptive disorders or with a substance dependence on a hard drug (i.e., drugs other than alcohol or marijuana) were less compliant with individual therapy; poorer compliance with pharmacotherapy was found among those with greater symptoms of anxiety and/or depression.

Summary

In this chapter I have provided a summary of the state of knowledge of assessment and treatment of suicidal youths. Guidelines for conducting a clinical assessment of suicide risk were presented, along with steps for creating a crisis safety plan. A review of many of the major structured self-report and interview instruments for assessing suicidal ideation and behavior was also presented. Most of the measures have shown evidence of good reliability (internal consistency of scales and, in some cases, test-retest reliability), as well as evidence of concurrent validity with other indices of suicidal ideation or suicide risk. Few have demonstrated evidence of predictive validity of later suicide risk, however. Conducting studies to demonstrate predictive validity is both expensive and challenging, but this must be a priority, given the importance of being able to identify those who are at highest risk of posing a danger to themselves.

Psychosocial treatments. The most noteworthy aspects of the review of psychosocial treatment studies are how few studies have been conducted and how modest the results are. By and large, most studies showed no difference between control groups and experimental groups on suicidal behavior or suicidal ideation following treatment. There were a few exceptions. A group therapy treatment and a family-based treatment that addresses multiple systems (family, peer, school) resulted in reductions of recurrent suicidal behavior, although methodological issues in both studies may limit the applicability of the findings (i.e., it is unclear whether the findings apply primarily to only mild self-destructive behaviors, and the lack of posttest group differences in suicidal behavior in the family study raises the question of whether greater improvements in the experimental group were an artifact of pretest group differences).

There was almost no evidence that experimental treatments were more effective than control conditions in reducing suicidal ideation in adolescents. In general, suicidal ideation tended to decrease in all of the adolescents, regardless of the treatment they received. This may be a function of the episodic nature of suicidal ideation. It ebbs and flows. The question remains whether any treatment is effective at healing the underlying vulnerability to suicidal reactivation

among certain adolescents. Reducing passive suicidal ideation—the intense emotional pain about one's life—is quite challenging because it likely requires identifying and facing subtle yet enduring beliefs about one's self-worth and competence, the riskiness of relationships, and so forth. Learning new ways of tolerating distress is also part and parcel of becoming able to face one's beliefs and beginning to address them. These are among the most difficult emotion-regulation skills to master and are usually learned only through repetition and persistence as the youngster cycles in and out of stresses and crises. Thus, lasting change in the proclivity to passive suicidal ideation may well require intensive treatment over a period of a year or more.

Active suicidal ideation—thoughts and plans about suicidal action—may be resistant to change in some adolescents because to give it up means to relinquish an inner sense of control, the option of escape. Letting go of that option means surrendering to staying alive, pain and all. As the adolescent gradually learns to tolerate and accept strong negative emotion, the need to cling to the option of suicide as the ultimate control and escape begins to dissipate.

In contrast to the processes for addressing suicidal ideation, initial reductions in suicidal behavior may be partially accounted for by the relationship with the therapist. If the therapist and adolescent develop a positive and trusting relationship and the adolescent cares about maintaining it and receiving positive feedback from the therapist, the adolescent may be motivated to keep the commitment to refrain from suicidal behavior and to faithfully follow the steps specified in the safety plan. Over time, the role of the therapeutic relationship is likely to diminish, and sustained reductions in suicidal behavior are probably more a function of improved skills for tolerating distress and of learning and practicing constructive behavioral responses to distress that are both more effective and more rewarding than one's previously habitual impulsive, avoidant, and suicidal responses.

Some of the results of the psychosocial treatment studies suggest that treatments may vary with regard to how effectively they address particular aspects of suicidal symptoms. Thus, it may be useful to investigate whether there are particular treatments or particular treatment components that are best suited to reducing suicidal behaviors, whereas other treatments are more capable of addressing passive

suicidal ideation or active ideation. Such knowledge would be a step toward allowing clinicians to tailor the treatment more effectively to meet the specific needs of a given suicidal youngster.

Several promising treatments that have yet to be adequately examined with adolescents were reviewed in the chapter. Among these are two primarily cognitive therapy treatments (Henriques et al., 2003; Rudd et al., 2001), as well as mindfulness-based cognitive therapy (MBCT; Segal et al., 2002) and dialectical behavior therapy (DBT; Miller, 1999). Each of these approaches acknowledges the presence of an underlying proclivity for entering a crisis mode and emphasizes that the client must develop and strengthen an ability to recognize the early warning signs of impending crisis and to respond to those signs in ways that avert their progression. The approaches differ with regard to other areas of emphasis. The two primarily cognitive therapies feature the process of challenging and questioning basic beliefs of the suicidal mode and substituting more rational beliefs, using methods that are quite similar to effective cognitive therapies for depression. Neither MBCT, which was developed for relapse prevention with depressed adults, nor DBT, which arises from work with people with borderline personality disorder, emphasizes substituting more rational beliefs for dysfunctional ones. Instead, both train a radical acceptance of present experience, and DBT in particular has a concentrated focus on managing emotional lability and impulsivity.

Whether or not the historical evolution of each treatment makes it best suited to treating suicidal persons with certain psychiatric diagnoses remains an open question. Each treatment can provide important core skills for addressing suicidal crises and managing emotions, skills that are useful regardless of other issues they may face. However, it may be necessary to supplement the treatments with secondary modules that can be flexibly tailored to the particular psychopathologies that need to be addressed. This may be particularly true for youngsters with comorbid conduct or antisocial disorders and substance abuse issues. If such modules are insufficient to adequately address the psychopathology, the youngsters may need to be referred for further in-depth treatment for those issues.

Of these promising therapies, DBT is the only one that has been fully translated to a treatment for adolescents. The developmental

appropriateness of the cognitive and mindfulness treatments should be carefully considered, perhaps by pilot testing with both younger and older adolescents. Adaptation of some of the methods and techniques, as well as the language, may be necessary to make them palatable and fully understandable. The cultural sensitivity of the treatments is also important to consider. The considerations regarding culture are complex, and I raise only a few representative concerns. Are the treatments sensitive to and respectful of the norms and values of the cultural group at hand, including parents as well as adolescents? Have attitudes and meanings about seeking mental health treatment been considered? Have the assessment instruments been validated with the particular cultural group? Have issues of language been taken into consideration in designing the assessments and treatment?

Pharmaceutical interventions. The current controversy over the use of antidepressant medication with adolescents and children stems from documentation of a small (2 to 3 percent) but reliable (at least with some medications) increase in the rate of suicidal symptoms among young people receiving treatment for depression. Is the increased risk large enough to justify their nonuse with children and adolescents? In part, the answer must be based on the magnitude of the benefits of antidepressant treatment. In general, the benefits in samples of children and adolescents are modest in some studies but ambiguous or nonexistent for most of the drugs, particularly when unpublished studies are included.

Yet, the proper role of medication in the treatment of suicidal youngsters remains an open question, for a few reasons. First, we still know little about the effectiveness of medications in treating suicidal behavior in children and adolescents. Studies of the effects of antidepressants on depression have typically excluded suicidal youths, although some research to remedy that is under way. Lithium, which has been shown to reduce the risk of suicidal behavior in adults with bipolar disorder, needs further evaluation with adolescents. Also, even though the antidepressants have not shown substantially greater reductions than placebos in depressive outcomes at the group level, the treatment response is variable across individuals. That is, the medications help some youth substantially while helping others very little or not at all. In my own clinical experience, I have witnessed suicidal

youngsters who were much better able to fruitfully engage in psychotherapy after starting treatment with an antidepressant, their willingness to talk and their motivation to explore their cognitions and behaviors having improved notably. For youngsters who are suffering greatly, particularly those with suicidal ideation who are not engaging well in psychotherapy, perhaps trying a course of antidepressant treatment—with very close monitoring during the initial weeks, when the risk of iatrogenic suicidal symptoms is highest—might be a better option than withholding the medication.

Administering treatments that pose some risk is clearly less than ideal. We want to minimize risk while alleviating suffering as best we can. The decision whether to consider medication is but one of several clinical decisions we might make that carry some degree of risk. Should we hospitalize, or can the adolescent be safely treated as an outpatient? Do we need to increase the frequency of sessions to multiple times per week? Should we have probed more deeply in exploring a delicate issue in the adolescent's life, or would that have caused excessive anxiety? At times we take an educated risk after considering the issues carefully, making use of clinical practice guidelines, consulting with our colleagues, with our clients, and with their families, doing our best to consider the needs of all involved.

Meanwhile, as a profession we continue to strive toward developing and testing more effective and safe treatments, both psychosocial and pharmaceutical. We have much work to do.

8

Prevention

Suicide prevention seems to be an example of an idea "whose time has come." Its history is relatively brief, but the commitment of energy and resources has surged since the mid-1990s. Prevention makes good sense. In no other arena of mental health is the potential price of waiting until the problem appears so dear. We cannot rely on treatment alone to solve the problem. That is no indictment of the quality of services. It simply is impossible for clinicians to reach all of the youngsters and families who are in need. The fact is, at least two-thirds of youngsters who die by suicide never received any mental health services (Brent, Perper, Moritz, Allman, Friend, et al., 1993; Groholt, Ekeberg, Wichstrom, and Haldorsen, 1997; Marttunen, Aro, and Lonnqvist, 1992; Shaffer et al., 1996). Prevention efforts are essential.

A Brief History of Suicide Prevention

Suicide prevention in the United States dates back at least to the late 1950s with the opening of the Los Angeles Suicide Prevention Center (Litman, Shneidman, and Farberow, 1961), followed, in 1966, by the establishment of the Center for the Study of Suicide Prevention at the National Institute of Mental Health. As the numbers of youth suicides grew dramatically beginning in the 1970s and more and more people were touched by the tragic losses, the call for prevention efforts grew louder. By the late 1980s, youth prevention programs were beginning to be more widely implemented and evaluated, and the landmark publication of reports by the U.S. Health and Human Services' (HHS) *Secretary's Task Force on Youth Suicide* included a volume devoted entirely to strategies for youth prevention efforts (Rosenberg and Baer, 1989).

The growth of the suicide prevention movement in the United States accelerated in the 1990s, propelled by a few key events. In 1996, the World Health Organization (WHO) and United Nations published "Prevention of Suicide: Guidelines for the Formulation and Implementation of National Strategies," calling for the establishment of cohesive suicide prevention programs among WHO member nations. As part of the U.S. response to that document, a landmark National Suicide Prevention conference was organized in Reno, Nevada, in 1998 by a partnership of prominent public and private experts and stakeholders. On the private side, a dynamic new partner was the Suicide Prevention Action Network (SPAN), founded in 1996 by Gerald and Elsie Weyrauch (who had lost their daughter to suicide) to facilitate public awareness, community action, and advocacy at governmental and grassroots levels. Owing in no small part to SPAN's efforts, resolutions urging the development of a national suicide prevention strategy were passed in the U.S. Senate (introduced by Senator Harry Reid, D-NV, who as a teenager lost his father to suicide) and in the U.S. House (introduced by Representative John Lewis, D-GA) in 1997–1998. The Reno conference participants produced an extensive list of recommendations that were distilled into the U.S. Surgeon General's *Call to Action to Prevent Suicide* (U.S. Public Health Service, 1999). With that document, the Surgeon General prioritized suicide as a top national public health problem and provided a

tripartite framework for prevention activities with the acronym *AIM:* Awareness (i.e., increase public awareness of suicide and its risk factors), Intervention (improve the quality and accessibility of services at all levels of care), and Methodology (further develop the science of suicide prevention). Further development and refinement of the objectives, goals, and recommendations emanating from the National Conference and the Call to Action were ultimately published by HHS in 2001 as the comprehensive *National Strategy for Suicide Prevention* (U.S. Public Health Service, 2001). The 11 goals of the National Strategy are summarized in Table 8.1.

Active efforts are under way to promote the realization of each of the goals of the National Strategy (DeMartino et al., 2003), including structures to support and promote the design and implementation of new initiatives. An example was the establishment, in 2002, of the Suicide Prevention Resource Center (SPRC), funded by a cooperative agreement from the Substance Abuse and Mental Health Services Administration (SAMHSA) and based at the Education Development Center. Its purpose is to promote the implementation of the goals of the National Strategy by providing technical assistance, information, and other resources and guidance to a broad array of public and private groups. Its services are wide ranging, including assistance in developing and implementing policies for suicide prevention; program development, implementation, and evaluation; education and training through workshops, publications, and Web content for consumers, advocates, and professionals; promotion and dissemination of best practices; and more (see www.sprc.org). The National Center for Suicide Prevention Training (http://www.ncspt.org/about.asp) is another example of a federally funded support resource. It offers online self-paced workshops on topics including analyzing and presenting data on youth suicide, planning and evaluating youth suicide prevention programs, and gatekeeper training.

In 2004, the first youth suicide prevention bill was enacted into law: the Garrett Lee Smith Memorial Act (PL 108–355), named in memory of the son of Senator Gordon Smith (R-OR), who died by suicide in 2003. It authorizes funding for grants in three areas: (a) development and implementation of early intervention and prevention strategies at the State or Tribal (i.e., American Indian, Alaska

Table 8.1: Goals and sample objectives of the U. S. National Strategy for Suicide Prevention

Awareness goals (1–3)	Sample objectives (abbreviated)
1. Promote awareness that suicide is a public health problem that is preventable	Increase the numbers of states with public information campaigns, establish regular national congresses fostering cross-disciplinary collaborations
2. Develop broad support for suicide prevention	Establish a public/private partnership(s) (e.g., a national coordinating body) to advance and coordinate implementation of the national strategy; increase the number of national professional, voluntary, and other groups that integrate suicide prevention activities into their ongoing programs and activities
3. Develop and implement strategies to reduce the stigma associated with being a consumer of mental health, substance abuse, and suicide prevention services	Increase the proportion of the public that views mental and physical health as equal and inseparable components of overall health

Intervention goals (4–9)	Sample objectives (abbreviated)
4. Develop and implement community-based suicide prevention programs	Increase the proportion of states with comprehensive suicide prevention plans; increase the proportion of school districts, colleges and universities, correctional institutions, state aging networks, and family and youth service organizations with evidence-based suicide prevention programs; develop one or more training/technical resource centers to build capacity for state and community implementation and program evaluation
5. Promote efforts to reduce access to lethal means and methods of self-harm	Increase the proportion of health providers and health and safety officials who routinely assess the presence of lethal means in the home and who educate to reduce risks; expose households to public information campaigns to reduce accessibility of lethal means, including firearms

(continued)

6. Implement training for recognition of at-risk behavior and delivery of effective treatment	Incorporate suicide risk assessment and management into curricula for training health and mental health professionals; increase the proportion of clergy, correctional workers, and attorneys receiving training on identifying and responding to suicidal people
7. Develop and promote effective clinical and professional practices	Develop and implement guidelines for assessment of suicide risk in various settings, e.g., primary health care, emergency departments, specialty mental health/substance abuse (MH/SA) clinics; incorporate suicide risk screening in primary care, hospice, and skilled nursing facilities; increase the proportion of patients with mood disorders completing treatment
8. Increase access to and community linkages with mental health and substance abuse services	Increase the number of states requiring health insurers to cover MH/SA services on par with physical health; develop guidelines for schools on linkage with MH/SA treatment services, and advocate widespread implementation; increase the proportion of school-based clinics that include mental health assessment and management; define guidelines for support programs for suicide survivors, and increase their widespread implementation
9. Improve reporting and portrayals of suicidal behavior, mental illness, and substance abuse in the entertainment and news media	Establish an association of public and private organizations to promote responsible representation of suicidal and mental health problems on television and in movies; increase the number of journalism schools including in their curricula guidance on reporting suicide and related issues
Methodology goals (10–11)	Sample objectives (abbreviated)
10. Promote and support research on suicide and suicide prevention	Develop a national suicide research agenda; increase public and private funding for suicide prevention research, translating scientific knowledge into practice, and research training
11. Improve and expand surveillance systems	Develop and implement standardized protocols for death scene investigations; implement a national violent death reporting system; increase the number of nationally representative surveys that include questions on suicidal behavior

Native) level; (b) development and implementation of campus sui-
cide prevention programs for public and private institutions of higher
education; (c) establishment of a suicide technical assistance center to
support the first two funding areas (these funds went to the SPRC,
which had already been involved in such activities).

Looking beyond the United States, suicide prevention efforts
are active across the globe. WHO has initiated suicide mortality
surveillance activities, provided technical assistance, undertaken
advocacy and awareness efforts, and developed workshops and other
resources. It has also conducted multisite preventive intervention
studies (SUPRA-MISS) featuring longitudinal evaluation of educa-
tion, risk-monitoring, and service referral components (World Health
Organization, 2002). In 2003, WHO and the International Asso-
ciation for Suicide Prevention initiated an annual World Suicide
Prevention Day on September 10 of each year, to raise awareness and
encourage prevention activities. National Suicide Prevention strate-
gies have been established in a number of countries around the globe.
Finland was the first to launch a national strategy, in 1986. New
Zealand initiated a youth suicide prevention strategy in 1998, and this
was recently expanded into a national strategy for all ages (Associ-
ate Minister of Health, 2006). Australia introduced its *LIFE* (Liv-
ing Is for Everyone) national suicide prevention strategy in 1999 and
published three volumes containing a summary of pertinent research
findings, a description of the activities of groups and agencies with
whom collaborative partnerships were encouraged, and action areas
(e.g., Commonwealth Department of Health and Aged Care, 2000).
Norway, Sweden, England, Scotland, Ireland, France, Germany,
Estonia, and Sri Lanka have also developed national strategies, and
many other nations are in the process of doing the same.

While some of the specifics of the various national strategies dif-
fer according to the unique situations of each country, the programs
tend to have much in common, including educating primary-care
health professionals and other "gatekeepers" (i.e., persons in various
settings who have routine contact with youth, such as clergy and
school personnel), restricting access to lethal methods, screening for
depression and other risk factors, increasing public awareness and
knowledge, providing adequate treatment of mental illness, providing

guidelines for media coverage of suicides, building broad coping competencies and skills, and providing access to crisis hotlines and centers (Beautrais, 2006). In this chapter, I provide a summary of the current state of knowledge about these strategies (other than treatment, which was addressed in the previous chapter). The reader seeking additional details may wish to consult some of the recently conducted literature reviews (Gould, Greenberg, Velting, and Shaffer, 2003; Gould and Kramer, 2001; Hendin and Mann, 2001; Institute of Medicine, 2002; Kosky, Eshkevari, Goldney, and Hassan, 1998; Mann et al., 2005).

Prevention: The Conceptual Framework

Although prevention of mental health problems is a relatively young field, having taken root in the 1960s, its conceptual and practical bases have begun to mature. The early framework was grounded in the public health model that partitioned prevention efforts according to the point in the progression of a disease at which an intervention is made. *Primary prevention* involves efforts aimed at preventing the emergence of any precursors of a disorder or of the disorder itself among those showing no signs of the targeted disorder. Some professionals regard "true" primary prevention as only those programs focused on persons without risk factors for the disorder, although most professionals include programs that target risk groups under the primary prevention rubric. *Secondary prevention* refers to programs intended to prevent further progression of a disorder among those showing early signs of it, and *tertiary prevention* includes programs aimed at mitigating the negative consequences for those with clear symptoms of the disorder. Implicit in this scheme is the belief that researchers can clearly map a causal progression along a disease continuum and that it is possible to prevent the emergence of early precursors of a given disorder. While that is often possible for physical illnesses, it is not necessarily the case for many mental health problems, which often are multiply determined by complex interplays of various factors, some of which may not be entirely preventable.

A more recent conceptualization sidesteps those problems by categorizing programs according to the scope of the intervention. *Universal* programs are those that are delivered to an entire population

that is not defined by any risk criteria. Examples include school-based efforts like universal screening for suicidal symptoms and coping skills classes offered to all students. The cost-effectiveness of universal programs is often a major consideration. That is, the expense of delivering an intervention to everyone must be weighed against the potential benefit it may bring, particularly when a relatively expensive program is delivered to many youngsters who are not deemed at risk of problems. *Selected interventions* are those that target known risk groups, that is, subgroups with particular risk factors for one or more disorders. Selected suicide prevention efforts might target such risk groups as Native American youths or offspring of depressed parents. *Indicated interventions* are delivered to individuals who are showing initial or subclinical signs of disorder; examples might include educating parents of suicidal youngsters on the importance of securing lethal means and programs aimed at increasing attendance in outpatient treatment following discharge from an emergency treatment facility. Comprehensive suicide prevention efforts might include programs at all three levels. This framework, much of which was originally developed by Robert Gordon (1983), has been embraced by the Institute of Medicine (1994) and has gained widespread currency. One particular advantage is that it lends itself nicely to an epidemiologic approach that identifies the proportion of a population that is exposed to particular risk factors, the relative risk posed by those factors, and thus the degree to which targeting particular risks has the potential to reduce the prevalence of a disorder. Those factors can guide the selection of particular risk subgroups for intervention.

Major Factors Influencing the Success of Prevention Programs

Cultural sensitivity and relevance. The most successful programs take into account the cultures in which they will be implemented. Ideally, various stakeholders and community representatives should be involved in building the program from the ground up. If that is not possible, they should be consulted as early in the process as is feasible. Local participation helps in various ways to ensure that the program will be relevant to the needs of the participants as well as

to the needs and concerns of mental health professionals in the community. For example, do the language and concepts of the program "speak to" participants? Is the program developed and implemented in ways that are in sync with cultural expectations and beliefs? Are the major concerns of the community understood and addressed? Are the norms and values of the community fully appreciated, respected, and reflected in the program content and process? Is the program sensitive to social and economic pressures faced in the community? Among the challenges faced by researchers is making sure that the key active ingredients of the intervention remain intact even as culturally appropriate and necessary shaping occurs.

Of course, culture is not the only reason for involving stakeholders and consumers at all stages of the project. The more that a given community feels a sense of involvement in and ownership of a program, the more engaging and effective the program is likely to be and the greater the probability that it will be embraced and incorporated into relevant systems over time.

Grounded in theory. Much of the work of prevention is concerned with risk and protective factors, and it is possible and perhaps even tempting to develop atheoretical prevention efforts in which the components are selected solely on the basis of their predictive values. Prevention programs are aimed at reducing risk and promoting protection. If a particular risk factor increases the odds of a negative outcome and a given protective factor reduces the odds of that outcome, why should we care whether the work is guided by a model that explains the processes by which the risk and protective factors function? The bottom-line reason is that a good theory keeps us from shooting in the dark. It enables us to generate and test a systematic series of questions and hypotheses, it can point the way to new avenues for intervention that go beyond previously established risk factors, and it guides the process of modifying and improving interventions on the basis of each new set of findings. It can take into account the ways in which multiple factors influence one another and suggest intervening factors (mediators) and factors that amplify or mitigate the influence of other factors (moderators). If one is ultimately interested in developing a causal framework for prevention, it is necessary to systematically rule out various alternative explanations, and theory is what guides that

process. I propose and discuss a theoretical basis for youth suicide prevention in the next section of this chapter.

Anchored in research findings. Optimal programs are developed on the basis of a solid body of research. Without a firm research foundation, we run the risk of wasting precious financial and other resources on programs that may be ineffective or even harmful and of targeting our programs at the wrong populations (e.g., missing those most in need). Some of the relevant research for suicide prevention includes (a) accurate surveillance data on the scope of suicidal problems and other relevant factors (e.g., services) in populations of interest; (b) knowledge of the important risk and protective factors for suicidal behaviors and, to the extent possible, the processes through which they influence outcomes; (c) one or more pilot projects that test whether the program is practical and workable, whether any ethical and safety concerns or other unintended consequences can be addressed, and whether the program seems to have the intended impact on the targeted factors and outcomes; (d) careful evaluation of the intervention on a larger scale, preferably in a longitudinal design that examines both process and outcome variables across time. Careful documentation of the precise ways in which the program is implemented is essential to ensuring that the program will be replicable.

Theoretical Basis for Prevention

Suicidal behavior poses a great challenge for theorists, chiefly because of an issue I first raised in the chapter on theory: *equifinality.* That is, there are any number of pathways that can lead to the common endpoint of suicidal behavior. One primary reason for that is the variety of different disorders that are associated with suicidal behavior. For some youngsters, a severe mood disorder and associated negative cognitive biases are the main issue, and programs to prevent those problems might be quite effective for them. Yet, a program based on theoretical conceptions of mood disorders is not likely to address the needs of suicidal youth predisposed to conduct disturbance, a disorder in which quite different cognitive biases reign, or those with borderline personality, for whom impulsivity is probably key.

Significant differences among suicidal youths encompass considerably more than diagnostic distinctions. For example, some struggle with conflict and rejection in their family, whereas others live in warm, supportive families but were the victims of sexual or physical abuse that left them traumatized and cut off from their emotional life and the life of their body. The point is that one could trace any number of pathways and processes, and no one causal or preventive model will adequately capture the full spectrum of suicidal youths.

Yet, perhaps an adequate model for prevention does not need to account for all the variability in causal pathways toward suicidal behavior. Instead, I propose a theory with a focus on certain elements of the suicidal crisis itself that are common across suicidal individuals. The theory focuses both on the psychological characteristics of the person in crisis and on certain aspects of the environment in which the person lives (i.e., the school, community, media, and social policies). Such a division is not an argument in favor of a dualistic conception of the child's world; the separation of the child from his surroundings is artificial and is done solely for practical and organizational purposes.

The theory is based on our knowledge of risk factors and draws heavily on many of the existing clinical theories and treatment models that have been reviewed in this book. It is also reflective of research on suicide prevention as well as of my own clinical and research experiences interviewing adolescents and their families. Some components of the theory are supported by a considerable body of empirical research; others have only modest or little support and are thus in need of further substantiation. The theory includes four elements: emotional pain, difficulties regulating and coping with that pain, disconnection, and disillusionment.

Emotional pain is inevitable for all children and adolescents. Yet, some experience more than their fair share of fear and anxiety, sadness and emptiness, anger and rage, irritability, restlessness, or impulsivity. Specifically, those born with a difficult temperament style or a biological predisposition to psychopathology are prone to more frequent and intense negative emotion. So too are youngsters who are traumatized by sexual or physical abuse, who experience a childhood loss of an attachment figure, whose early attachment relationships

are marked by critical/rejecting, unpredictable, or aloof parenting, or who grew up with other chronic stresses (e.g., chronic family conflict, neighborhood violence). Depending on the particular combination of biological and historical factors, it may take very little current stress to trigger the negative emotions. Indeed, simply remembering or anticipating a painful moment can retrigger them. In the wake of a confluence of multiple setbacks and disappointments occurring in close succession or of a single powerful stressful episode, the emotional pain may temporarily swell to become all-encompassing and persistent. For example, being ignored or unwanted by a girlfriend can leave a vulnerable adolescent feeling profoundly abandoned and terrified, with no possibility of future happiness. A family argument in which a parent verbalizes critical statements can reactivate feelings of being fundamentally bad, flawed, or unlovable. In a similar manner, teasing by peers can elicit painful feelings of unworthiness or shame. Failing to meet one's standards in an endeavor of particular importance to a youngster (possibly school or sports) may expose a raw underlying sense that one is utterly incompetent. In all instances, the emotional pain instantly results in the perception that something is terribly wrong, that something or someone (usually oneself or another person) needs to change in order to stop the pain but that the power to effect change is beyond one's control. Once triggered, there is a period of time—typically a matter of hours, sometimes a day or more—before the painful episode subsides. That *window of vulnerability* can be a period of acute risk for suicidal behavior. The next three elements of the model explain more about the process by which triggered emotion translates into vulnerability to suicidal behavior.

Emotion regulation difficulties are common to suicidal youths, although they manifest in different ways for different youngsters, according to the particular temperamental styles and histories. We have seen how several features of the adolescent developmental context conspire to make emotion regulation challenging. Adolescents lack experience and a broad sense of perspective about many of the interpersonal dilemmas they face and must manage intense emotion without the advantages of fully developed affective brain structures. When the most vulnerable adolescents are triggered in the ways I have described, the experience can feel so powerfully aversive and threatening

that their awareness narrows to a singular focus: Stop the pain. Thus, each of the various emotion regulation styles that characterize suicidal youngsters ultimately has the same function—to minimize the emotional pain via strategies aimed at either controlling the youngsters' own responses or influencing the responses of others. When suicidal adolescents experience threatening emotion, one of the most common self-regulatory reactions is to become absorbed in their cognitions. As I described in earlier chapters, the cognitions are anchored in fundamental beliefs about oneself and about others and the world. We have seen how those prone to depression generate a stream of ruminations, an obsessive chewing over the situation, as if paying attention to the persistent thoughts will somehow lead to the answers and solutions that will make it all better. On the contrary, losing oneself in ruminative thoughts tends to magnify the depression. Frustrated or hurt by how terribly wrong things seemingly are, an adolescent may punctuate the ruminations with intense self-recriminations, a violent lashing out at oneself, perhaps only inwardly ("You idiot—what is wrong with you?!") or perhaps through self-destructive actions. For some adolescents, the pain of feeling one is falling short can flip into a sense of superiority that yields some measure of temporary comfort (e.g., "Most of the kids at my school are just incredibly immature," or "He is so screwed up, forget him!").

In addition to or instead of self-recriminations, there may emerge a powerful urge to blame others for what has gone wrong. The ruminations might thus focus on how others have mistreated the youngster (which in some cases is flagrantly true), how cruel, unjust, or untrustworthy they are, and possible retaliatory steps one might take. The story of others' evil or bad behavior is often more energizing than the story of one's own unworthiness and can be remarkably compelling and persistent, often inflaming anger. There might also be a behavioral inclination to lash out verbally or physically at others for having wronged one (or to lash out at both oneself and others).

Many suicidal adolescents, regardless of whether they gravitate toward a self-punitive or to a blaming cognitive style, are drawn to one or more means of numbing the emotional pain. Addictive behaviors of all stripes often serve this function, including overuse of alcohol or drugs; cutting; engaging in eating binges, compulsive exercise and

dieting, or compulsive sexual behavior (in person or on the Internet); and excessive involvement in computer games. Excessive sleeping or television watching are also preferred modes of tuning out emotion. Some daring or highly risky behaviors can have a sort of intoxicating effect, stimulating thrills that temporarily obscure underlying negative emotions. These various numbing activities often provide instant soothing, a powerful negative reinforcement that fuels their repeated use. The relief is short lived, though, and often fades into feelings of self-contempt and shame.

The real difficulty with these various emotion regulation responses is that they not only fail to provide enduring relief or positive change but often make matters worse. With repeated use, the very coping solutions themselves only create more psychopathology and suffering. Meanwhile, more direct problem-solving responses, including taking constructive action and communicating with others who are involved in the stressful situations, are typically shunned as part of the pain-avoidance tactics and because the adolescent is convinced they would prove fruitless.

Disconnection is central to the suicidal mind-state. When youngsters feel closely connected with others or when they have the experience of belonging fully to a network of people and groups, they are not at risk of taking their own lives. Conversely, an essential aspect of the pain felt by suicidal adolescents is an experience of profound disconnection, regardless of whether or not others are physically present. The intensity of disconnectedness usually fluctuates across time, and the more separate the adolescent feels, the greater the risk of suicidal behavior.

Disconnection emerges from emotional pain in a few different ways. The powerful sense of "something is terribly wrong with me or my situation" is almost invariably linked to feeling separate or disconnected from others. If an adolescent feels deficient or unworthy, it is very difficult to trust that others will be accepting of her. Plus, many of the addictive coping habits can engender a strong sense of shame and fear of being "found out." These concerns are particularly relevant during adolescence, when not being acceptable by the prevailing standards of one's subgroup often translates into becoming the object of cruel teasing or ostracism. The solution: Keep a distance

and remain guarded. It is an unfortunate truth that most adolescents have yet to realize that emotional pain is universal and that many of those together-looking peers are hiding their own anxieties, depression, or other troubles. To stay acceptable, many vulnerable adolescents choose to keep their interactions with others superficial and happy on the surface, hiding their pain underground alongside their longing for deeper or more intimate connection. Some gravitate toward deviant peer subgroups that promote depressive, self-destructive, or aggressive lifestyles and identities but rarely provide the depth of emotional support they need. Some retreat from relationships with any peer group.

Of course, other factors can contribute to the disconnection of suicidal youths: (a) Adolescents who justify their own behavior while blaming other people as the source of their problems typically grow to feel angry and hardened against others, which serves to keep others at safe emotional distances; (b) depression frequently leads to isolation when an adolescent cannot muster the physical and mental energy to be social; (c) suicidal adolescents may feel unable to confide in their parents, because the relationship lacks a history of warmth and closeness, because of concerns that the discussion will trigger conflict and misunderstanding, or because they wish to avoid worrying them, suspecting that parents' anxieties will only magnify their own stress and reinforce their belief that something is wrong with them.

Disillusionment. To recap the essential elements of the theory thus far, five factors come together in some adolescents to raise the risk of suicide: (a) intense emotional pain; (b) immersion in beliefs about one's basic inadequacy and/or a harsh and untrustworthy world; (c) short-term coping solutions that may temporarily numb the pain but are otherwise ineffective or serve to magnify it; (d) a sense of futility, that is, the belief that there is no way to change the situation to get what one wants, even if one's sole wish is for the pain to cease; (e) a core disconnection from others. These ingredients set the stage for a mind-state of *disillusionment.* A widely used dictionary defines disillusionment as a loss of naïve faith and trust (Merriam-Webster, 2003), a definition that nicely captures my intended meaning. The disillusioned youngster is one who has lost the faith and trust in herself, others, and the future that, while perhaps naïve, is nonetheless sustaining

of positive mental health. Whatever beliefs had formerly sustained the youngster have dissolved into a pervasive and profound letdown.

Many well-adjusted adolescents famously believe in a "personal fable" in which the future holds a very special place for them (Elkind, 1967). The work of the psychologist Shelley Taylor and colleagues suggests that adolescents may not be the only ones who live in a personal fable of sorts. Indeed, mentally healthy adults tend to make positively biased self-evaluations, overestimate their personal control over events, and have overly optimistic expectations about the future (S. E. Taylor and Brown, 1988). Perhaps even more telling, research shows that the upside of the positive biases is most apparent in the presence of threatening circumstances. Those who maintain positive illusions have healthier physiological responses to stress (for example, smaller spikes in heart rate and blood pressure) and better prognoses when diagnosed with life-threatening illness (S. E. Taylor, Kemeny, Reed, Bower, and Gruenewald, 2000; S. E. Taylor, Lerner, Sherman, Sage, and McDowell, 2003). Taylor and colleagues also report that the ability to find positive meaning through grappling with major crises such as breast cancer or HIV is associated with a better disease course and overall psychological adjustment.

These positive biases are at the very core of what is missing for youth in a disillusioned mind-state. Far from evaluating themselves positively, they are at odds with themselves, often hating themselves and their lives. They are under "no illusion" that they or anyone else can change things for the better, and their emotions feel out of control. They do not trust that time will heal or holds any promise. They find no positive meaning or "silver lining" in their stresses. Regardless of whether their predominant mood is a bleak hopelessness, a disconnected numbness, or a frustrated agitation, they feel they cannot take any more and just want it to stop. Thus, they arrive at the "window of vulnerability."

What determines whether or not a disillusioned youngster will actually engage in suicidal behavior? The model cannot be precise in answering this question, but we do know that any of several factors contributes to the probability that suicidal behavior will occur during the vulnerable period. Some of these involve characteristics of the individual. Those who are more impulsive are more likely to take

abrupt action to eliminate their pain, as are those who have consumed alcohol or taken drugs during the suicidal crisis. The likelihood of suicidal behavior is strengthened among those who have engaged in it previously. Also, as Joiner (2006) suggests, those who have had repeated experiences with pain and injury may be more capable of overcoming the natural fear of taking one's own life.

Some of the contributing determinants are found not in characteristics of the individual but in the environment. The window of vulnerability is a critical point at which certain external conditions can greatly influence the likelihood of suicidal behavior one way or the other. If supportive people in the youths' environment are tuned in and reach out, it may help to get them through the crisis. If lethal means are available during the vulnerable period, the youngster is more likely to make a serious or fatal attempt, whereas, if they are unavailable, either the youngster will use methods that are likely to cause less injury or the window of vulnerability will close without the youngster's taking action. Also, suicide becomes more of a real option for youngsters who have been directly or indirectly exposed to it, whether through exposure to the suicide (or suicidal behavior) of a family member, friend, or other peer or through injudicious media reports of suicides by celebrities or others with whom the adolescent identifies.

Among those who are only partially disillusioned are adolescents whose suicidal behavior is motivated less by a wish to die than by a desire to elicit particular responses from others. Although they may not acknowledge it to themselves or others, such youngsters still perceive at least some measure of control over others' behavior and some degree of optimism that others will change. In some cases, they may feel desperate to have someone behave in desired ways (e.g., unless a specific romantic partner treats them more lovingly or unless a parent stops restricting them from seeing a certain romantic partner, they will not be able to endure their suffering). As with other suicidal behavior, the intention is to reduce emotional pain. In this instance, the suicidal behavior is an emotion regulation response aimed at controlling others' behavior to achieve that end. Suicidal behavior aimed at eliciting worry and concern in others functions in much the same way. A young person in need of emotional support or soothing may

at some level sense that self-destructive behavior will successfully elicit the help and support that seems too risky, embarrassing, or otherwise difficult to obtain through more direct requests.

Cycling in and out of emotional crises and the disillusioned state can become a sort of status quo for some adolescents. Yet, disillusionment can also be an opportunity for positive change and growth. With training and practice, adolescents can learn to more rapidly recover from that narrowed self-state by reconnecting with something or someone that is meaningful, perhaps only inwardly (i.e., remembering a loved one, recalling a place in nature one loves) or perhaps by reaching out to someone. As noted in chapter 7, some cognitive-behavioral therapies try to maximize this possibility via techniques like the "hope kit," which serve as reminders of points of reconnection.

Disillusionment can even mark a key turning point in one's life. In particular, an attempted suicide can be a wakeup call for some adolescents and their families. Coming face to face with the real possibility of death can shift their perspective, reminding them of what is most important and meaningful. That can provide an impetus for enduring change if family members quickly take advantage of it by setting a new direction and agenda for positive mental health and connecting with appropriate services and supports. Thus, suicidal behavior can be an opportunity for building a new resilience in the face of stresses for adolescents and their families.

Implications of the Proposed Theory for Prevention

Reducing the prevalence of youngsters who are easily triggered into severe emotional pain. It is unrealistic to propose eliminating all of the factors that render youth susceptible to emotional crises. Still, many prevention programs and clinical treatment programs that address a wide variety of mental health vulnerabilities that predispose youngsters to crises are in effect suicide prevention programs. These include programs aimed at preventing psychopathology of any sort (including substance abuse), programs focused on preventing physical and sexual abuse, preventive interventions targeting children at risk of depression, those aimed at minimizing peer bullying, and so forth. So too are early intervention programs that foster developing secure

parent-child attachments. Providing clinical treatment for children and adolescents whose psychopathology poses a risk for suicidal crises is critical. Consistent with this are efforts to ensure that quality affordable and culturally sensitive services are widely available for youth in rural and urban areas alike, efforts to increase service utilization (including regulations requiring that health insurers provide adequate reimbursement for mental health services), and efforts to reduce the stigma associated with seeking mental health services and with suicidal behavior. Universal screening programs for detecting risk factors for suicidal behavior such as suicidal ideation, substance abuse, and depression can play an important part in identifying adolescents in need of clinical services, which in turn might minimize the possibility of emotional crises. Training of "gatekeepers," including teachers, physicians, and parents, can contribute to identifying those with risk factors for emotional dysregulation.

Improving emotion regulation. Suicide prevention programming should include teaching skills for distress tolerance to at-risk youth. The distress tolerance skills included in Dialectical Behavior Therapy (DBT) and mindfulness training are good examples (Linehan, 1993; J. M. G. Williams, Duggan, Crane, and Fennell, 2006). Participants gradually learn to accept and stay with the experience of negative emotion as it arises, rather than reacting with automatic, habitual avoidance responses. In a somewhat paradoxical manner, accepting and allowing the negative emotions that are beyond one's control provides a greater sense of mastery over one's experience. Both DBT and mindfulness, as well as cognitive-behavior therapy, train youngsters to recognize their own negative, unhelpful cognitions and to either benevolently accept them as passing phenomena or to substitute more positive alternatives. Equally important are skills such as those found in DBT for redirecting attention when it narrowly fixates on negative cognitions and emotions in order to provide much needed relief from the emotional intensity. Over time, negative emotions come to be perceived as opportunities to learn and practice new skills. An adolescent who feels competent to handle negative emotion will probably be less drawn to addictive numbing behaviors, more open to new experiences, and less likely to avoid and withdraw from others. All of those factors contribute to positive self-evaluations and greater

optimism about the future. In addition, teaching a range of skills for effective communication, problem solving, and assertiveness, such as those covered in a variety of existing school-based prevention programs (e.g., substance abuse prevention, violence prevention, positive mental health promotion), can provide constructive alternatives for action in stressful situations that are at least partially controllable.

Countering disconnection. As noted, programs that address emotion regulation can potentially lessen the odds that youngsters will withdraw from others. Beyond that, more directly building and enhancing positive connections are valuable components of an overall suicide prevention effort. These could include interventions aimed at strengthening family communication and problem solving, as well as education to help parents more effectively support the adolescent's emotion regulation abilities. Programs for youth at risk of suicidal behavior that promote supportive school environments and positive connections with a network of caring adults in the broader community (e.g., teachers, clergy, family, friends) could aid in decreasing isolation and enhancing a sense of belonging. Group interventions for adolescents that increase their awareness that others are grappling with similar problems can also help them to feel less alone. While the specific stories may differ from one person to the next, adolescents may perceive many commonalities in the basic emotional struggles, which can not only aid in bridging the disconnection but also help them to realize that they are not to blame for their psychopathology. When other group members listen with understanding and concern to an adolescent's pain, it sends an important message that it is not necessary to hide one's true feelings in order to be acceptable to others.

Detection and intervention in the window of vulnerability. The window of vulnerability, that is, the circumscribed period of time of highest risk for suicidal behavior, is worthy of investment of preventive resources. Any measure that helps to sustain the youngster through this period can be life saving. There are several different foci for prevention: (a) Awareness that the window is open can be instrumental in averting suicidal behavior. This is the basis for programs that educate peers, teachers, parents, and others who have routine contact with youth to recognize the signs of suicidal crises, to know how to respond to adolescents in need (including how to access available resources),

and to take action when appropriate. (b) Interventions that facilitate the youth diverting or broadening their attention from the narrow focus on suffering, including remembering something or someone meaningful or stepping out of their isolation, can be vital. This is a rationale for investing in programs that publicize and educate youth about the availability of crisis hotlines and other emergency service centers, and training crisis workers to effectively connect with and assist suicidal people. Clinical interventions that use "coping cards" to systematically guide clients through a series of steps for managing the crisis can provide a much-needed structure for refocusing them and ensuring safety. (c) The presence of the vulnerable window strengthens the justification for reducing ready access to lethal means of suicide. If lethal means are not accessible during the high-risk time period, the risk of suicide will likely be minimized. Prevention in this arena includes efforts to educate parents of at-risk youth about the need to secure firearms and lethal substances and the introduction of packaging that reduces the quantities of nonprescription medications available with each purchase (described in the next section). (d) Responsible reporting and programming in the media that does not glamorize or inadvertently promote suicide may reduce the odds of youth choosing suicide as a way of managing their crises.

Review of Youth Suicide Prevention Programs

In this section I provide a review of the major suicide prevention approaches that have been implemented, including a discussion of the state of the evaluation research for each.

General coping skills and mental health promotion programs. Several preventionists have noted an overlap between the sorts of risk and protective factors that might influence suicidal behavior and those that are targeted in a variety of programs for promoting general positive mental health or preventing particular negative outcomes (e.g., Kalafat, 2003). The recently launched Global School Health Initiative of the World Health Organization (2003), with its focus on promoting healthy individuals and creating nurturing, supportive environments, is a prime example of this broad approach. A component on emotional and social well-being is but one aspect of its overall health

promotion focus aimed at reducing disease, fostering positive physical and mental health, and supporting nonviolent interactions among children and staff alike. Given limited resources, it makes sense to cast a broad net when evaluating the impact of this and other similar programs, since they may render some suicide-specific and other narrowly targeted prevention programs unnecessary or superfluous.

Unfortunately, few such programs to date have incorporated suicide-related outcome measures among their assessments. One exception is a suicide prevention effort conducted in the Dade County public schools over a 5-year period (Zenere and Lazarus, 1997). The research evaluated the effects of a broad-based coping skills program conducted in school health classes over a 5-year period, for children ranging from pre-kindergarten through grade 12. The curriculum differed somewhat for younger and for older children, but in general it focused on coping with stress, self-acceptance, decision making, communication, and conflict resolution. Results indicated a sharp decline (> 60 percent drop) in the rate of suicides across the 5 years of the intervention when compared to rates in the previous 8 years. There also was a marked decline in suicide attempts (also > 60 percent) across the intervention years, but no clear pattern of change in suicidal ideation. These results are striking for a broad-based coping program, although there are a number of aspects of the methodology that limit the usefulness of the findings. There was no control group, which makes it difficult to know whether or not the reductions in suicide rates were the result of the intervention or of other factors. For example, rates of youth suicide began to decline nationally after the 1980s, and Dade County had experienced particular spikes in suicide rates prior to the intervention (in 1984 and 1988); thus, an undetermined portion of the decline in completed suicides might have occurred even without the intervention. Second, suicide attempts and ideation were assessed on the basis of calls to a crisis hotline, which is probably not an accurate indicator of the true rates. Third, any child who was identified as having suicidal ideation or having made a suicide attempt received a crisis team evaluation, sessions with a school counselor, and possible outpatient referral. It is not possible to determine the degree to which those crisis interventions contributed to the decline in suicidal behavior apart from the coping skills intervention.

Leona Eggert and colleagues have evaluated the impact on suicidal symptoms of programs targeting adolescents at risk of high school failure or dropout, a population that is also at risk of a number of mental health problems (depression, conduct disorder, substance abuse, and suicidal behavior). Students who participated in either one semester (90 sessions) or two semesters (180 sessions) of classes (an unusually dense and extensive regimen) that focused on stress management, communication skills, decision making, self-esteem enhancement, and the building of social support were compared with a no-treatment control group (Eggert, Thompson, Herting, and Nicholas, 1995). Participants in all three groups were assessed for suicidal risk in a 2-hour interview by a trained school nurse or counselor in the school, who also briefly educated parents on providing support at home. At 5- and 10-month follow-ups, there were no differences across groups in suicidal ideation, threats, or attempts and no differences in depression or hopelessness. Participants in all three groups showed declines from baseline in these measures, leading the authors to wonder whether the brief assessment interview itself had a surprisingly potent impact, perhaps because it provided a supportive connection with a caring professional. Those who received the classroom interventions did have higher perceptions of personal control at follow-up than did the assessment-only group. This makes sense in light of the theoretical model I presented: Having more constructive coping options can contribute to a sense of personal effectiveness and mastery, even if it does not translate immediately into reductions in suicidal behavior.

In a later study, another sample of youth at risk of school dropout was randomly assigned to either (a) a brief individualized assessment of suicide risk plus a brief intervention to shore up coping resources and to foster supportive connections with parent and school (total 3–4 hours); (b) the identical assessment and brief intervention plus a 12-session small-group coping intervention focusing on building group social support, enhancing self-esteem, improving decision making, managing anger and depression, and preventing substance abuse; or (c) the control condition, a very brief suicide risk assessment followed by notification/contact with school personnel and parents (Thompson, Eggert, Randell, and Pike, 2001). Results

showed greater improvement in suicide-related attitudes and suicidal ideation at 10-week and 9-month follow-ups in the two intervention conditions than among controls. However, the coping intervention did not add any benefits in terms of suicidal outcomes beyond those provided by the brief assessment plus individualized intervention, thus raising the question of whether the investment in the coping classes is worthwhile. However, the coping intervention did indeed result in improved coping skills, which may convey a positive longer-term benefit with regard to future management of stresses and perceptions of mastery.

Screening programs. Detection of those at risk of suicidal behavior is one of the most important components of effective prevention strategies. As noted previously, the simple fact that an estimated two-thirds or more of youngsters never received mental health services prior to their suicides, coupled with the likelihood that most of them suffered from psychiatric disorders, provides a compelling rationale for screening with instruments that are sensitive to symptoms of suicidality and associated psychopathology (Brent, Perper, Moritz, Allman, Friend, et al., 1993; Groholt et al., 1997; Marttunen et al., 1992; Shaffer et al., 1996). In order for school-based screening to be effective and appropriate, it should be part of a comprehensive effort that is implemented along with (a) an effective and ethical policy and set of procedures to guide the actions of teachers, administrators, and other staff once an at-risk student is identified; (b) adequate training of school personnel in following the policies and procedures and responding to the youngsters and their families appropriately and helpfully; (c) well-coordinated links with community services to ensure that the needs of students and families are addressed as quickly and effectively as possible.

Screening has become more commonplace in recent years as programs such as *Signs of Suicide (SOS)* (Aseltine, 2002) and *Columbia Teen Screen* (Shaffer et al., 2004) have gained widespread acceptance and implementation in partnerships with schools, counties, and states. Screening has the advantage of being a relatively quick and inexpensive procedure with great potential value. Although it has most often been performed in schools, there may be real benefits to incorporating routine screening in such settings as juvenile justice

systems, pediatric practices, substance abuse treatment centers, and similar settings.

There are some challenges faced by any organization that implements universal screening, however. One important issue is that, while a number of the available screening instruments have good sensitivity—they accurately detect a large proportion of those meeting risk criteria—many also have relatively low specificity; that is, they identify a sizable number of "false positives" who are actually at low risk of suicidal behavior. There is no question that, in the case of suicidal behavior, too many false positives is preferable to too many false negatives (i.e., high-risk individuals who are overlooked). Still, minimizing false positives as much as possible is important because each identified youth should necessarily be administered a second-stage assessment involving more thorough evaluation and a determination of appropriate next steps. A high number of false positives can unnecessarily bog down staff, preventing them from using their time in the most productive ways. An illustrative example of the challenges facing developers of screening measures is provided in Box 8.1.

There are two other issues to mention with regard to screening. One is that those conducting the screening should realize that suicidal symptoms fluctuate over time, so no single assessment will capture all youngsters who are potentially at risk. Ideally, screening would be conducted every few months in order to ensure adequate detection, although in practical terms that may not be feasible. A last issue is that suicide screening can sometimes be highly controversial among school administrators, parents, or school boards that fear the possibility of iatrogenic effects—that asking about suicidal symptoms may inadvertently put the idea into a youngster's head, thereby causing suicidal ideation or behavior. Madelyn Gould and her colleagues examined this question by randomly assigning high school students to complete a screening instrument that either included or excluded suicide-related items (Gould et al., 2005). The results indicated no differences in distress emotions or depressive symptoms immediately after completing the survey or two days later, and no differences on suicidal ideation questions that were administered to all youngsters two days after the initial survey. In fact, those students classified as high risk on the basis of a previous suicide attempt or depression were

Box 8.1

Let us consider the Teen Screen, a popular 11-item measure for assessing recent suicidal ideation and lifetime suicide attempts, negative mood, and substance abuse (Shaffer et al., 2004). The authors evaluated their measure against a criterion based on responses to a diagnostic interview indicating both (a) recent suicidal ideation or a previous suicide attempt and (b) a depressive or substance abuse disorder. They then tinkered with the algorithm for screening "positive" in ways that are illustrative of the issues that arise when balancing sensitivity and specificity. When they set the algorithm for screening "positive" as an adolescent report of either suicidal ideation or a suicide attempt on the Teen Screen, the sensitivity was quite high (88 percent), but the specificity was somewhat low (72 percent). While that specificity value may seem reasonably good, one needs to consider the base rates in order to appreciate the scope of the problems it might pose. Assuming that the actual prevalence of high-risk youth in a given high school with 1,500 students is 5 percent (i.e., 75 adolescents), the screening measure would accurately detect 66 of those 75, missing only 9 youngsters at risk (false negatives). However, it would also incorrectly identify another 399 adolescents who screen positive even though they are not at risk.

Realizing this problem, the authors adjusted the algorithm in a number of different ways, some of which yielded excellent specificities but poor sensitivities. They finally settled on a compromise algorithm consisting of Teen Screen suicidal ideation or suicide attempt, plus a rating of 3 or higher (on a 5-point scale) on one or more of the mood items, that is, unhappy, withdrawn, anxious, or irritable. That algorithm yielded a sensitivity of 75 percent (which would correctly identify 56 of our 75 hypothetical youth at risk) and a specificity of 83 percent, which would yield 242 false positives. That is still quite a few false positives, but they may be an inevitable part of the bargain when performing screens of this sort with a large cross section of adolescents.

Consider an alternative measure, Eggert and colleagues' 20-item Suicide Risk Screen (SRS; Thompson and Eggert, 1999). Like the Columbia Teen Screen, the SRS includes items on suicidal behavior, depression, and substance abuse. Evaluated against criteria of two clinician ratings of suicide risk in a sample of youths at risk for high school dropout, the SRS showed excellent sensitivities (87 percent or

91 percent, depending on the rating), but the specificity was only 60 percent. In a very high risk sample, a lower specificity can translate into a reasonably acceptable number of false positives, but in our hypothetical high school the SRS would yield 570 adolescents—more than one-third of the student body—awaiting second-stage evaluation (not to mention a disgruntled school staff).

significantly less likely to report distress or suicidal ideation if they received the version of the screener with the suicide items. The bottom line is there is no evidence for iatrogenic effects, and no basis for hesitating to administer screening measures as part of comprehensive suicide prevention efforts.

Suicide awareness curricula. One of the main ideas driving the development of the first suicide awareness curricula was that the goals of suicide prevention would be furthered by increasing the knowledge and awareness of students. Research findings suggesting that warning signs for suicide often go unheeded were alarming and were factored into this reasoning. For example, Brent and colleagues (1988) found that more than 80 percent of their sample of adolescent completed suicides had verbalized suicide threats to others in the week preceding their death. Since peers may be more privy to such revelations than adults (Kalafat and Elias, 1992), many of those threats are likely made to friends and other peers, who presumably keep them quiet. Perhaps they are not aware of how serious such threats may really be; perhaps they believe that a suicidal person does not really want or need anyone to help; perhaps the stigma of suicide frightens them into silence; perhaps their confusion about what they can do leads to inertia and inaction; perhaps they would feel guilty for betraying their friend's trust—any or all of these reasons might contribute to not revealing what one has heard.

The early developers of universal school-based suicide curricula believed that knowledge and skills about suicide might counteract these restraints, thereby resulting in the saving of lives. The first generation of school-based suicide awareness programs generally included a broad scope of relevant components in a fairly compressed amount

of time, with program durations ranging from 1 to 5 hours. Most included education about suicide warning signs, provided facts about suicidal behavior and debunked myths, discussed some ways of coping with suicidal and depressive feelings, described constructive and unconstructive attitudes about suicide and about help seeking, provided information or role playing regarding how to seek help, and in some cases illustrated (e.g., in videos) some of the potential dangers and costs of not intervening. Some also included discussion of general coping skills like communication and stress management. Overall, these programs met with mixed success. Adolescents did indeed tend to learn more about suicide and its warning signs and about hotline and crisis centers, although their baseline knowledge was probably higher than most researchers would have suspected (Shaffer, Garland, Vieland, Underwood, and Busner, 1991; Shaffer et al., 1990). A few programs demonstrated reductions in unhelpful coping skills (e.g., withdrawal from support, passive coping habits), improved attitudes about notifying adults or making appropriate referrals, and diminished suicidal feelings (Orbach and Bar-Joseph, 1993; Spirito, Overholser, Ashworth, Morgan, and Benedict-Drew, 1988). However, they did not generally result in any changes in helping behaviors or reductions in the rates of suicidal behavior.

As with suicide screenings, concerns have been raised about possible iatrogenic effects of these programs, including increased suicidal behavior. Research on this issue has shown no increased suicidal ideation in response to the programs, and no overall cause for concern. Yet, the programs may have some negative impact on select participants, particularly students with a history of prior suicidal behavior. In one study, those with a suicidal history tended to believe that talking about suicide could result in it and expressed concerns about the program's impact on others, in some cases reporting that they knew someone who was in fact upset by it (Shaffer et al., 1990). Other evidence suggests that males may be somewhat more susceptible than females to any negative impact of the programs, particularly with regard to increased hopelessness, unconstructive coping, and poorer attitudes (Overholser, Hemstreet, Spirito, and Vyse, 1989). It is important to note that some of the early programs included material that was inadvisable, for example information on how to

use automobile carbon monoxide to take one's life or images of an attractive model jumping from a building (Centers for Disease Control, 1992). Although these were portrayed as unfortunate events, they might serve as models for copycat action and, at a minimum, might prove upsetting to some vulnerable youths. In some instances, youth suicide was almost normalized as an understandable reaction to difficult circumstances, which can in effect contribute to lifting a taboo against suicide (Klimes-Dougan, 2004).

Peer helper programs. After the initial wave of school-based programs raised concerns about their potential for harm, and in light of their less than resounding success, a second generation of more narrowly defined universal school-based programs has emerged. These are focused on increasing awareness about warning signs of suicide in both oneself and others and on providing specific knowledge about how to obtain help for oneself or one's peers (e.g., notifying responsive adults, contacting hotlines, seeking professional help). Most try to instill helpful attitudes about suicidal and depressive behavior, stressing that suicide is not a normal response to stress but a sign of serious mental health problems, that warning signs of depression or suicide should be taken seriously, that reaching out for help is important, and so forth. Some include training for parents so they can recognize the warning signs and offer the best possible support, and some incorporate a component for fostering positive connections and trust with the school to increase the likelihood that youngsters will feel safe confiding in teachers, counselors, or others.

Although these programs are increasingly widely implemented, very little solid evaluation research exists. One exception is the Signs of Suicide (SOS) program (Aseltine and DeMartino, 2004), a brief school-based program that includes two components, a self-administered screening instrument and a brief suicide awareness curriculum. Both components can be completed in a total of two high school class sessions. The major curricular element is a video that instructs adolescents to recognize warning signs of suicidal and depressive symptoms in themselves and others (peers, family members), and illustrates desirable ways to react. It does not normalize suicidal behavior, instead teaching that it is an outgrowth of depression, which is a treatable illness. The goal is to train an action sequence that is captured in the

acronym *ACT*: A = acknowledge that there is a problem, C = communicate that you care about the problem, and T = tell a responsive adult (because help is available). Outcome data for more than 2,000 high school students assessed at 3-month follow-up showed fewer suicide attempts, greater knowledge about depression and suicide, and more adaptive attitudes about suicide and depression (for example, more inclined to help) in the group receiving SOS than in a control group. The reduction in suicide attempts was partially explained by improved knowledge and attitudes. There were no treatment effects on suicidal ideation or on actual help seeking, however.

There is some evidence that distressed adolescents hold the most negative attitudes and thus might represent a subgroup most in need of these interventions. Gould and colleagues (2004) reported that high school students with depression, serious suicidal ideation, and substance abuse problems were significantly more likely than their peers to hold maladaptive attitudes such as believing that people should be able to handle problems on their own, that it is best to keep depressed feelings to oneself, that suicide is a possible solution to problems, and that it is best to maintain confidentiality if a peer reveals suicidal intentions. Unfortunately, those students who reported having had firsthand experience with a suicidal peer were also more likely than others to favor holding the knowledge in confidence. As the authors note, these youngsters might not respond to interventions encouraging them to seek adult helpers unless the interventions can sensitively address the issues that make them reluctant to do so.

Gatekeeper training. Like screening and school-based awareness curricula, gatekeeper training is a method of increasing awareness and identification of youngsters at elevated risk of suicidal behavior. Gatekeepers include adults in any of a broad swath of roles who come into regular or periodic contact with youths: teachers, counselors, juvenile justice system workers, physicians, police, clergy, coaches, and so forth. The idea is straightforward: Every gatekeeper-youth encounter can be an opportunity to notice warning signs and to take action to avert them from progressing to suicidal behavior. Gatekeeper training—much like school-based training for peers—typically addresses the attitudes, knowledge, awareness, and skills necessary to identify those at risk, to communicate in helpful and caring ways, and to take

appropriate actions to connect the youngster with the help and services she needs. One example is Paul Quinnett's *QPR* gatekeeper program (QPR Institute, 1999), a 1-hour curriculum that has been taught by more than 1,000 certified trainers to some 250,000 gatekeepers in the United States. The acronym QPR stands for: Q = question (i.e., learn to ask about suicidal thoughts and plans if you suspect they may be present, and listen carefully), P = persuade (i.e., get the person's permission for you to assist him in obtaining help), and R = refer (connect the person to the helper, ideally staying by his side). A second widely implemented example is the Applied Suicide Intervention Skills Training (ASIST), a 2-day training for youth gatekeepers working in a variety of school and community settings (Ramsay, Cooke, and Lang, 1990).

Does gatekeeper training work? There is some evidence that the training results in increased skills for intervening among gatekeepers in a wide range of roles (Tierney, 1994). However, the benefits for children and adolescents have not been well evaluated. Most existing research is limited to school personnel, with evidence that training can result in improved knowledge, attitudes, and referral practices (Garland and Zigler, 1993; Shaffer, Garland, Gould, Fisher, and Trautman, 1988).

Training of physicians is a topic that is worthy of special mention. Fewer than 25 percent of physicians report that they routinely screen their adolescent patients for suicidal symptoms (Frankenfield et al., 2000), and even though most pediatric and family practice physicians have prescribed antidepressants to youngsters, few of them feel sufficiently educated about childhood depression (Voelker, 1999). The good news is that fairly brief training sessions for physicians seem to make a real difference; after a sample of general practitioners in Australia attended a 1-day youth suicide prevention workshop, the rates of screening and detection of suicidal adolescents jumped significantly (Pfaff, Acres, and McKelvey, 2001).

Combination awareness programs. Some universal prevention programs provide a combination of elements for increasing awareness, detection, and referral for services. One prime example is the work of Kalafat and colleagues in New Jersey (Kalafat, 2003; Kalafat and Elias, 1994; Kalafat and Ryerson, 1999). Kalafat recognizes the

importance of laying the preliminary groundwork for interventions so that knowledge and skills gained by students and gatekeepers will translate into effective action. This includes working with administrators to develop effective policies and procedures, constructing linkages of schools with community service and crisis teams, and nurturing a supportive school atmosphere that promotes trust and disclosure. Gatekeeper training is provided to parents, teachers, and all levels of school personnel, and the program features a school-based peer helper curriculum that concentrates on attitudes, knowledge, and skills for detecting peers at risk of suicidal behaviors and connecting them with adult helpers. Evaluated over a 10-year period, the program was associated with decreases in the county youth suicide rates that were not paralleled by similar decreases elsewhere in New Jersey or nationally. While not as persuasive as if an experimental design had been used, the data are certainly suggestive of positive program effects.

Suicide hotlines. A telephone call to a suicide hotline may play a crucial role during the window of vulnerability. For an adolescent in crisis, the connection with a helper may be a reminder that one is not alone, that there is at least one caring and concerned person available. The conversation may help the caller to endure the pain long enough so that the greatest intensity passes without the adolescent having engaged in suicidal behaviors. In the course of the dialogue, the adolescent's attention may be at least partially and temporarily diverted from complete immersion in intense pain, resulting in some measure of relief. The caller may also be persuaded to seek additional help if necessary.

While all of these positive benefits are possible, we may wonder whether suicidal adolescents actually use hotlines and, if so, whether they are indeed helped by them. In fact, we know surprisingly little about hotline utilization or whether hotlines are effective in preventing suicide or suicide attempts in young people. The available information indicates that roughly 15 to 20 percent of suicidal adolescents have used a hotline at some point, with greater use among girls than boys (Beautrais, Joyce, and Mulder, 1998; Shaffer et al., 1988; Shaffer et al., 1990). One might suspect that those suicidal adolescents who pick up the phone to talk during a crisis may represent the subset that is most willing to be helped. Curiously, calls from suicidal teens make

up only a tiny proportion (< 5 percent) of hotline calls from adolescents (Boehm and Campbell, 1995). As far as their effectiveness with youth is concerned, we are still awaiting solid research evidence one way or the other. Several years ago, SAMHSA, in coordination with the American Association of Suicidology, initiated project HELP (Hotline Evaluation and Linkage Project), with the goals of assessing and certifying the quality of hotlines nationwide, linking a large network of hotlines with a common toll-free number and evaluating the effectiveness of hotline services. The initial outcome data with roughly 1,000 suicidal adult callers ages 18 and older are encouraging (Gould, Kalafat, Munfakh, and Kleinman, 2007). Callers' ratings of suicidal intent, hopelessness, and psychological pain all dropped significantly from the beginning to the completion of the telephone call, and ratings of hopelessness and pain dropped further at follow-up assessments 2 to 4 weeks later. Importantly, more than 11 percent of the callers stated that they felt the call had prevented them from harming or killing themselves. The report necessarily omits information on those callers at the highest risk of suicide because the crisis counselors deemed them too acutely suicidal to assess.

Restricting access to lethal means. As noted previously, whether or not a lethal suicide method is readily available during the window of vulnerability may make all the difference in terms of survival or serious injury. If nothing lethal is available, a young person may lose the strong urge to die before taking action or may choose a less lethal method that results in minimal injury or provides sufficient time (e.g., in the case of an overdose) for someone to discover the attempt or for the adolescent to become fearful and seek help.

Although the rates of youth suicides attributable to firearms have been falling in recent years in the United States, a firearm remains among the most prevalent methods by which adolescents take their own lives, and it is the most lethal. The evidence that the presence of firearms in the home increases the risk of adolescent suicide is striking. To review a few facts mentioned in previous chapters: (a) Adolescents who complete suicide are four to five times more likely to have a firearm in the home than are other adolescents in the community, even after controlling for psychopathology, and if the firearms are kept loaded or unlocked the differential risk is even higher; (b) almost

90 percent of adolescents who complete suicide use a firearm if one is present in the home; (c) if a firearm is not available in the home, few adolescents obtain one (and most firearms suicides take place in the home); (d) among younger adolescents, a firearm in the home is a more potent predictor of completed suicide than is psychopathology; (e) among older adolescents without psychopathology, a firearm in the home increases the risk of completed suicide 30-fold. Thus, it seems that the presence of a gun dramatically increases the odds of an impulsive suicide among those without other obvious risk factors.

Of course, the very notion of imposing any restrictions on access to firearms immediately stirs up the politically charged issue of gun control. People on both sides of the gun control debate are genuinely concerned about providing for the safety and protection of their loved ones. They start from opposite positions on how to achieve such protection, and, as in most debates involving both science and politics, finding common ground is not easy when passions run high. Brent and associates reported on a study of depressed adolescents in which those parents who owned firearms were counseled on the risks they pose for suicide and were urged to remove the firearm from the home (Brent, Baugher, Birmaher, Kolko, and Bridge, 2000). Only 27 percent of parents actually complied with that recommendation. As the authors note, the instruction to remove the firearm from the home may have been viewed as too extreme, and recommendations to improve and ensure the secure storage of the weapon might have been received more favorably. My own clinical experience leads me to the same conclusion— parents can be quite reluctant to remove the guns, particularly when they feel safer having them, and they do not believe it likely that their children will turn the weapons on themselves.

Some studies in Canada, the United States, and Australia have shown that, where legal restrictions in firearms have been implemented, reductions in the rates of suicide have followed (Leenaars and Lester, 1997; Loftin, McDowall, Wiersema, and Cottey, 1991; Ozanne-Smith, Ashby, Newstead, Stathakis, and Clapperton, 2004; Sloan, Rivara, Reay, Ferris, and Kellerman, 1990), particularly among adolescent and young adult males (Cantor and Slater, 1995). However, the passage of the Brady Bill, which requires a waiting period before

purchase of a handgun, does not seem to have produced reductions in youth suicides (Ludwig and Cook, 2000).

Besides firearms, measures restricting other lethal methods also have value. For example, reducing the maximum number of tablets of paracetamol (acetaminophen) in blister-packs available for purchase in the United Kingdom resulted in reduced morbidity and mortality associated with analgesic overdoses (Hawton, 2002). Measures such as building protective barriers and fences in locations favored by suicide jumpers can effectively eliminate the risk they pose; however, public resistance to the unpleasant aesthetics of barriers can sometimes trump the public welfare. Such is the case with the Golden Gate Bridge in San Francisco (Friend, 2003), the scene of more than 1,300 suicides since its completion in 1937. After decades of controversy, a feasibility study for constructing a barrier is finally under way.

One interesting example of a focus on the methods of suicide involved the gradual reduction and removal of carbon monoxide from the domestic gas supply in England and Wales some 40 years ago. Whereas domestic gas accounted for roughly 40 percent of suicides in those countries in 1963, by 1975 that percentage had fallen to little more than 0 percent (Clarke and Mayhew, 1988). What is particularly interesting is that there does not seem to have been a corresponding increase in suicides by alternate means (so-called method shifting). For adolescents in particular, the impulsive quality of many of their suicides may mean that eliminating readily accessible methods may avert lethal behavior rather than result in their deliberately pursuing alternative methods. Taking away the "easy" method may well not result in substitution by other methods.

Increased social support. Although social support has been a component of a number of the universal prevention programs described earlier, only one study has examined the benefits of an intervention specifically designed to increase social support in suicidal youth. In that study, suicidal inpatients nominated up to four individuals (primarily adults, including parents and other relatives, friends of the family, teachers, counselors, and clergy) who received a brief training program that explained the child's psychiatric problems and treatment and provided education about several topics including risk factors for suicidal behavior, how to best communicate with adolescents,

and how to obtain emergency help (King et al., 2006). The adults were asked to maintain weekly contact with the adolescent, including supportive discussions and encouragement of constructive activities. At 6-month follow-up, the intervention did not result in fewer suicide attempts among the study subjects than among adolescents receiving treatment-as-usual, but there were greater reductions in suicidal ide-ation and mood-related impairment among the adolescent girls only. Efforts to explore the potential usefulness of decreasing isolation and increasing supportive contacts for youth at risk of suicidal behavior is an area in great need of additional research.

Media prevention approaches. Most efforts centered on the media have one of two broad aims. The first is to encourage responsible han-dling of the topic of suicide in the media, including responsible report-ing about completed suicides, so as not to inadvertently promote or encourage more suicides. The second is to use the media as a means of increasing public awareness to further the goals of prevention.

As discussed earlier in the book, suicide "contagion" is a real effect, both in small-scale suicide "clusters" in communities or schools and in imitative behaviors following suicides that are well publicized in the media. There is evidence that the ways in which the media cov-ers suicides can in fact alter the incidence of imitative behavior. After widespread coverage of several suicides in Vienna, Austria, involving jumping in front of subway trains, a campaign was initiated to edu-cate journalists about the possible negative influences of their report-ing and to provide alternatives. In the ensuing 6 months, subway suicides and attempted suicides fell by roughly 80 percent, and the drop-off was sustained over the ensuing 5 years (Sonneck, Etzersdor-fer, and Nagel-Kuess, 1994). The overall suicide rates in Vienna also fell, suggesting that other methods were not simply substituted by those intent on killing themselves (Etzersdorfer and Sonneck, 1998). The 1994 suicide of the rock musician Kurt Cobain was not followed by an increase in suicide rates, which may in part be attributable to rapid efforts to ensure responsible coverage in the media (Jobes, Ber-man, O'Carroll, Eastgard, and Knickmeyer, 1996).

A set of guidelines for responsible media coverage of suicides has been developed and endorsed by many of the most promi-nent stakeholder organizations in the United States, including the

Annenberg Public Policy Center, the National Institute of Mental Health (NIMH), SAMHSA, the Centers for Disease Control and Prevention (CDC), the American Association of Suicidology (AAS), and the American Foundation for Suicide Prevention (AFSP). International collaborators were also involved (WHO, the National Swedish Center for Suicide Research, and the New Zealand Youth Suicide Prevention Strategy). The guidelines emphasize the importance of neither romanticizing the suicide nor idealizing the deceased individual, avoiding detailed descriptions of the methods or detailed photographs, and conveying that suicide is almost always secondary to mental health problems rather than normalizing it as a reasonable response to life stresses. They also offer recommendations for appropriate use of terms and language and best practices for interviewing relatives. The guidelines can be found on the NIMH Web site, http://www.nimh.nih.gov/suicideresearch/mediasurvivors.cfm.

Media can be used to promote public awareness of preventive measures, such as early detection of mental health problems and referral for services. For example, the organization *Suicide Awareness Voices of Education* (*SAVE*) has produced and distributed public information announcements in the print media and on radio and television and has placed billboards in 14 states with such messages as "Treat depression, see your doctor, prevent suicide" and "#1 cause of suicide: untreated depression" (see www.save.org). We do not yet know whether public service announcements or billboards can actually lower suicide rates, and there is some possibility of unintended negative effects of such messages; for example, depressed persons viewing such billboards might worry that their risk of suicide is much greater than it actually is (Klimes-Dougan, 2005). A thoughtful discussion of these and other implications of public messages for suicide prevention can be found in a paper by Chambers and others (2005).

In addition to traditional media, the Internet is a primary source of information for youth that offers tremendous potential benefits and risks. The Internet can play a variety of positive roles such as providing constructive information and screening tools, providing useful links (to mental health professionals, support groups, and hotlines), and providing opportunities for distressed people to share constructive coping strategies. However, many Web sites contain destructive

messages and images that may be particularly detrimental to vulnerable youngsters. Biddle and colleagues (Biddle, Donovan, Hawton, Kapur, and Gunnel, 2008) entered a dozen suicide-related search terms that they deemed likely to be used by distressed persons (for example, "suicide," "suicide methods," "how to commit suicide") into four popular search engines. They found that roughly 20 percent of the sites turned up by the searches either promoted, encouraged, or facilitated suicide, and many more sites provided detailed descriptions of suicide methods. As the authors point out, regulating negative material promoting suicide while maintaining the freedom and openness of the Internet is a great challenge.

Postvention programs. Postvention refers to interventions that are implemented following a completed suicide. Losing a loved one to suicide—a child, a brother or sister, a close friend—can be emotionally devastating, confusing, and traumatizing. Questions such as "Why did this happen?" "Is it my fault?" and "How could I let this happen?" may torment survivors, along with overwhelming grief. Anger and shame are common, as is an experience of utter groundlessness. The mix may feel unbearable, intolerable, more than one can take. Postvention may involve individual and family therapy work for those most deeply affected, to guide them through the grieving process and to assist them in finding meaningful ways to gradually move forward with their lives. Acceptance and healing take time, and the work is often part clinical treatment and part prevention. There are also many survivors' support groups across the nation, which can be a lifeline for people feeling alone with grief or shame. Information on locating groups in the United States as well as other survivor support information is available at the AAS and AFSP Web sites (http://www.suicidology.org or www.afsp.org), and international resources can be found at the Web site of the International Association for Suicide Prevention, www.med.uio.no/iasp/index.html.

From a preventive viewpoint, the primary goals of postvention are to (a) rapidly identify those who are negatively affected by the suicide, assess their needs, and link them with the appropriate support services; (b) quickly take steps to minimize the risk of an outbreak of a suicide cluster; and (c) help the broader community of friends and peers come to terms with the loss. In instances of youth suicides, much

of the work has centered around school systems. It is important that schools take a proactive stance, putting in place a set of postvention policies and procedures. A model plan might include such elements as developing and training a crisis response team; carefully devising plans for how best to communicate about the suicide with students, teachers and staff, and families; providing grief counselors in the schools with opportunities for group and individual discussions; and planning a memorial service (if appropriate) to help students share, accept, and come to terms with the event. Handling all communications with the media in a responsible manner that is consistent with the media guidelines discussed in the previous section of this chapter can help to minimize the risk of suicide clusters.

Unfortunately, the area of postvention remains one without a solid research base. We lack rigorous evaluation studies of school-based postvention programs, and evaluations of family survivor programs and community postvention support efforts are not available.

Social policy. In the broadest sense, most social policy decisions with implications for mental health are likely to have indirect implications for suicide prevention. For example, policy decisions to invest public resources in promoting positive mental health through good habits like regular exercise and stress management practices can have positive implications for suicide prevention. Investments in the welfare of urban youth, including expanding recreational activities, creating jobs programs, engaging youth in schools, and investing in safer, less violent communities, can make a contribution to youth suicide prevention. Policies that affect programs for early childhood education or resources for adolescent parents are policies with indirect implications for suicide rates. Efforts to ensure that the federal government is doing all it can to assist tribal governments in meeting the various needs of American Indian and Alaskan Native communities, ranging from health care, to education, to crime reduction, might contribute to reductions in their youth suicide rates.

Other policy issues have more direct implications for suicide prevention. Efforts aimed at decreasing the stigma of mental illness and breaking down the barriers that limit access to mental health services in ethnic minority communities may make important contributions to reducing suicidal behavior. Policies that address alcohol and

substance abuse, such as increased funding for substance abuse treatment and prevention, an increase in the minimum drinking age, or stricter enforcement of DUI laws, may all reduce the likelihood of the toxic mix of alcohol and drugs with depression or aggression. Budget decisions that affect the availability of research funds for evaluating new mental health treatments and prevention efforts can also have an impact on rates of youth suicidal behavior.

Summary and Future Directions

The prevention of suicide, including youth suicide, is a top public health priority with an ambitious agenda. Efforts are under way to implement many of the goals of the National Plan for Suicide Prevention at the federal, state, school, community, and grassroots levels. Resources such as the SPRC have been developed to provide support for devising, implementing, and evaluating prevention efforts. A great many advances have been made, but much more remains to be accomplished. I will use the theoretical framework presented earlier in the chapter as a guide for organizing an agenda for the future.

Emotional pain. Of the suicide-specific preventive interventions relevant to this aspect of the theory, detection and referral of youngsters through screening, gatekeeper, and peer awareness programs are the most well developed. Some screening measures have demonstrated proven effectiveness at detecting those at risk of suicidal behavior and are beginning to gain widespread use. More extensive implementation not only in schools but also in a variety of other settings would seem to be an important next step. However, we still know very little about whether screening efforts do in fact result in reductions in suicide rates. Evaluation studies using prospective research designs can fill that knowledge gap. The detection of large numbers of false positives when using screening measures is another issue worthy of research attention. Further refinement of screening measures may include the development of improved algorithms that provide optimal cut points balancing sensitivity and specificity.

Peer awareness programs such as *Signs of Suicide* have shown promise in reducing the rates of suicidal behaviors, as have programs

combining both peer awareness and gatekeeper training. However, it is still not well established that the peer awareness programs actually result in increased helping behavior or that the helping behavior—the presumed mechanism of action—does in fact result in reduced suicidal behavior. With regard to gatekeepers, programs have now trained hundreds of thousands of gatekeepers who work in a multiplicity of roles and with diverse populations across the life span. Yet, evidence on whether youth gatekeepers actually utilize the skills they have been taught is very thin, and their effectiveness in lowering the rates of youth suicidal behavior remains largely unknown. In addition, media campaigns to educate the public about the importance of obtaining treatment for depression and to reduce the stigma of mental illness and seeking mental health services remain unproven in terms of their impact on attitudes or behaviors and should be evaluated in carefully designed studies.

Ultimately, the effectiveness of screening, peer awareness, gatekeeper training, and most public education programs is dependent upon the availability of high quality crisis intervention and clinical treatment services. Detecting the risk for suicide is a very important first step. However, adolescents must then be connected with clinical services that are effective and engaging. As we saw in chapter 7, getting a child or adolescent into treatment is by no means a guarantee that the problems will be adequately addressed, because few interventions have proven effective and because adolescents often prematurely terminate their treatment. Clearly, more research on safe and effective treatments—psychosocial and pharmacological, inpatient as well as outpatient—is vital to the prevention of suicide and suicidal behaviors. Programs to increase engagement of adolescents and parents in outpatient services, such as those implemented following discharge from emergency treatment for a suicide attempt, show promise and should be further developed and tested.

As noted previously in this chapter, many existing and ongoing prevention efforts targeting reductions in psychopathology, substance abuse, maltreatment, poor parenting, and so forth may lead to reductions in suicidal behavior. Thus, assessment of suicidal behaviors and symptoms should be routinely included and analyzed as part of the outcome evaluations of those efforts.

Emotion regulation. A number of coping skills have been established as risk factors for suicidal behavior, and several suicide prevention programs have included coping skills as a component of their school curricula. In most, the design has not allowed for evaluating the distinct contribution of improved coping skills on suicidal outcomes. The evidence provided by Eggert and colleagues (Thompson et al., 2001) was that a 12-week coping program had no added value with regard to suicidal outcomes when used in conjunction with a very brief individualized assessment and support intervention. However, the coping skills of the youth who received the coping module did indeed improve. In their prior work, a more intensive and lengthy course of stress management and coping training was associated with improvements in suicidal outcomes (Eggert et al., 1995). Thus, if coping is indeed relevant for suicidal youngsters—and few professionals would dispute that it is—additional research is justified.

The theory proposed here suggests that distress tolerance should be the primary initial target. Youngsters will not likely be able to make use of problem-solving skills during stressful encounters unless they have first gained adequate skills for managing distress. Without such skills, they may be able to learn problem-solving skills under low-stress conditions, but, as soon as strong negative affect is triggered, they may revert to their preferred automatic avoidance tactics, including impulsive behaviors. Thus, one agenda for prevention research might be to test whether the distress tolerance skills that have been shown to be effective in treatments of depression and borderline disorder, such as skills from Dialectical Behavior Therapy, mindfulness interventions, and cognitive-behavioral treatments, can be fruitfully incorporated in a preventive intervention for youngsters at risk of suicidal behavior. Since maladaptive coping habits are overlearned and of long standing, the program duration must be sufficiently long to allow extensive practice of the new emotion regulation skills in daily living. Process models that examine whether the improvements in emotion regulation skills are associated with increases in perceived control, positive self-worth, and optimism (i.e., whether they can avert disillusionment), as well as with decreases in avoidance coping, would also be valuable.

Disconnection. As is the case with coping skills, a number of classroom-based interventions have included efforts to promote social

connections as part of an overall package, but the effectiveness of the support component has not been broken out for separate evaluation. In some cases, small groups have been used to teach coping skills while building supportive ties between classmates. Other programs include a component on fostering a supportive, nurturing school environment. Research designs are needed in which the unique contributions of those components to preventing suicidal behaviors are evaluated. In addition, evaluation of the possible benefits of the small-group format for increasing perceived support and reducing loneliness and negative self-evaluations would be a helpful step toward testing an overall model in which disconnection plays a primary role in the suicidal process. Additional programs to investigate the potential of supportive adult connections for youth at risk of suicidal behavior are needed. Coping interventions for adolescents could include family communication components and could evaluate their contribution to reductions in suicidal symptoms and behaviors.

Disillusionment and the window of vulnerability. Relevant prevention efforts are those that reduce the risk of disillusionment or decrease the probability of suicidal behavior once an adolescent has reached the disillusioned or vulnerable state. Research that tests the impact on positive illusions of augmenting adolescents' skills for tolerating distress would be welcome, as already mentioned. Regarding the window of vulnerability, sound evaluation research on the utilization and effectiveness of crisis hotlines is needed, including work that examines which youngsters are most likely to benefit. Developing and evaluating interventions targeting reduced access to lethal methods of suicide is of great importance. As Brent and colleagues (2000) suggested, interventions that involve greater security of firearms rather than their elimination from the household may result in better compliance and thus have greater potential for reducing suicides. Regarding the influence of media on suicides, carefully conceived and implemented research that investigates whether responsible media coverage of well-publicized suicides reduces the risk of contagion is needed. Finally, research is needed to better understand the process through which exposure to suicide and suicidal behavior in family, friends, and other peers influences the risk of youth suicide. Does exposure increase the perception that suicide is an acceptable method of coping?

Does it lift a taboo? With regard to exposure to repeated, nonlethal suicidal behavior, does it provide a model to youth for how to garner caring attention or sympathy? Developing our understanding of such processes can lead to better conceived prevention programs that specifically target those who have been exposed to suicide.

In general, then, there is a great need for systematically testing innovative, theory-based, and well-designed prevention programs for youth. The challenges of this work are immense. Demonstrating the effectiveness of any preventive intervention on youth suicide is difficult, given the low base rates. The ethical and safety concerns are substantial. The complexity of the problem itself can be daunting. But, as great as the challenges are, few goals are as worthy of our sustained efforts as that of preventing suicide and suicidal behavior and the suffering that surrounds them.

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