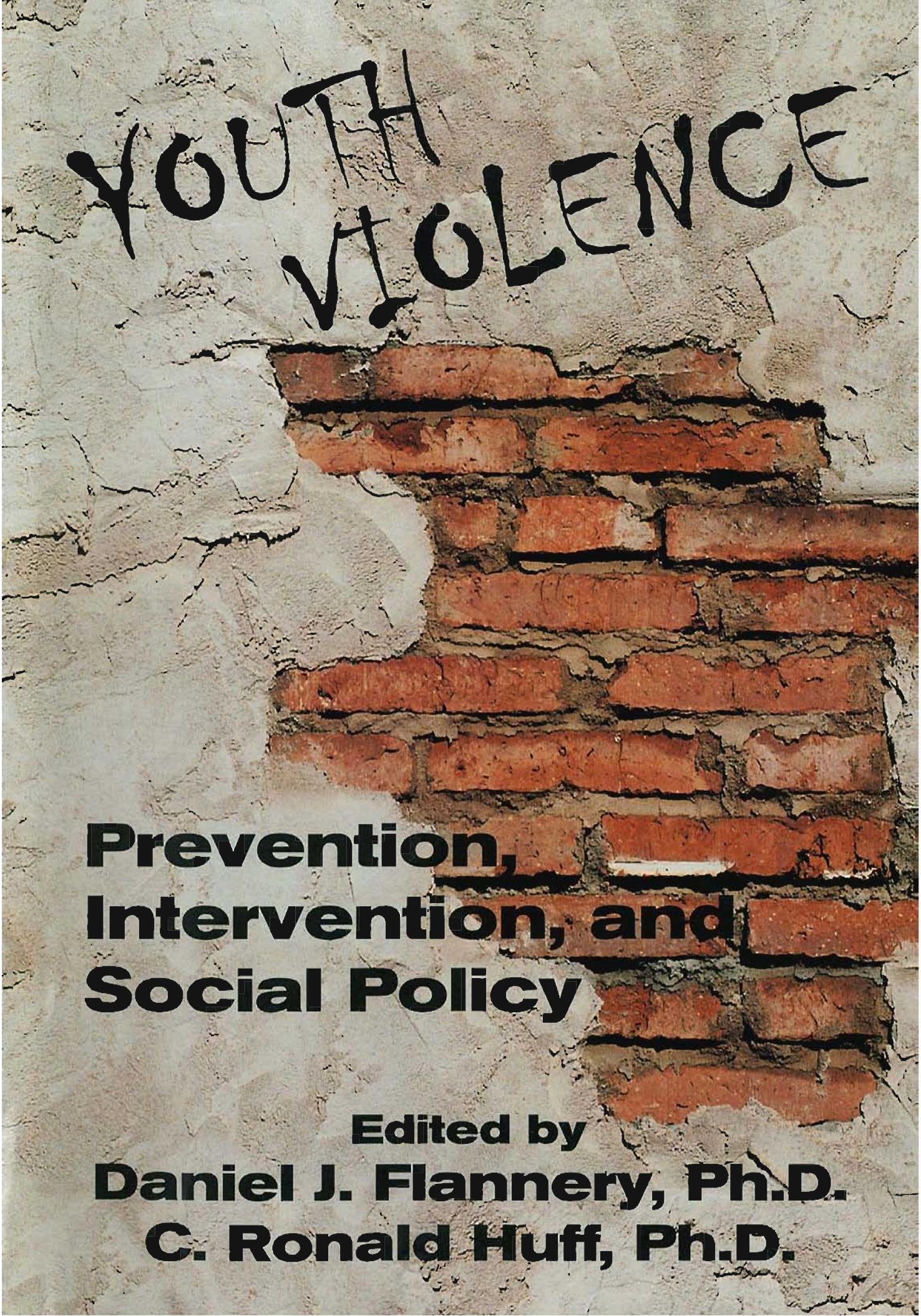

Prevention, Intervention, and Social Policy

Edited by
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Note: The authors have worked to ensure that all information in this book concerning drug dosages, schedules, and routes of administration is accurate as of the time of publication and consistent with standards set by the U.S. Food and Drug Administration and the general medical community. As medical research and practice advance, however, therapeutic standards may change. For this reason and because human and mechanical errors sometimes occur, we recommend that readers follow the advice of a physician who is directly involved in their care or the care of a member of their family.

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CHAPTER 2

Two Sides of the Coin

Multilevel Prevention and Intervention to Reduce Youth Violent Behavior

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The nightly news carried the report. The young man had been convicted of a heinous murder. He had carjacked the woman, raped her, set her on fire, and shot her. Afterward, he stole her car, credit cards, and money. Before sentencing by the judge, the young man said, "It was a simple mistake." All who saw it were incredulous.

A number of court documents show the path of this young man from a terrified preschooler to a remorseless killer. No intervention, not even the harshest of penalties, with this young man at this point will restore the life of the murdered woman, ease the suffering of her family, or reduce the likelihood that some other preschooler alive now will walk a different path. A wholly different approach will be required to restore true safety in our communities.

A new approach involves more than treatment or incarceration for children who manifest serious symptoms of antisocial behavior. It will require more than public demonstrations about the rise of violence or political speeches about the decline of civic spirit. Nothing less than creating a vision of our homes, neighborhoods, and com-

munities, using what we know to be true and with a strong commitment to testing and refining our methods, will move us forward. The work will not be easy. The approach will involve looking at both sides of the coin of prevention and intervention, carefully monitoring cost-effectiveness, and monitoring for side effects.

In medicine, one might refer to this as a public health model. In finance, one might refer to this as a good investment strategy. In marketing, one might refer to synergy. All of these ideas could be combined for social and economic profit. This chapter outlines the integrative strategy for a sound public policy toward prevention and treatment of violent behavior among youth.

Monitoring Trends

A proverb appeared in a travel guide: "Unless you change direction, you are likely to arrive at where you are going." Public policy toward issues of youth violence must be shaped by data, which unfortunately are ominous. The Federal Bureau of Investigation forecasts a doubling of homicides by youth in 2004. Consider other data: Children age 10 years and younger who commit major nonviolent offenses are certain to commit violent crime in adolescence. This fact is worrisome because increasingly younger children have been committing major offenses, and the cohort of children under age 10 years increased from 1980 to 1995 by 5 million. Our own research data show that 12% of the intermediate students in our long-term research study report having been threatened with a gun or knife on campus in the past week (D. D. Embry et al. 1996)—something unimaginable a decade ago. Monitoring early trends could help avert future tragedies.

Projects such as the Youth Risk Study by the U.S. Centers for Disease Control and Prevention provide estimates of homicide risk. For effective public policy, standardized monitoring tools such as this must be extended down to the earliest years of children's lives. Here are some examples of sound monitoring of trends that would help:

- Stratified random sampling of blood from umbilical cords for fetal exposure to substances that adversely affect the develop-

ment of a child. This would provide a better picture of morbidity data on prenatal exposure to drugs so that schools and communities could better plan early intervention and public-school programs, which might alter the trajectory of problem behaviors.

- Stratified random sampling of children's behavior in preschool settings. Patterns of behavior in the preschool years predict adjustment and success in elementary school, which forecast successful child development and reduction of juvenile problems (Zigler et al. 1992).
- Stratified random sampling of children's behavior in elementary school settings. Youth violent crime and substance abuse can be substantially predicted from elementary school student behavior (e.g., Tremblay et al. 1992).

Two Sides of the Coin: A False Dichotomy

The prevention and intervention literature on youth violence often reads as if written from different sides of a divided Germany—with the same anachronistic sense. The intervention literature speaks about psychotropic medication, family systems, diagnostic labels, genetic influence on receptor sites, and psychometric measures. The prevention literature speaks of self-esteem, neighborhoods, bad peers, resiliency, school failure, conflict resolution (or anger management), and mentoring. These approaches create an illusion of unrelated causation, yet the domains are actually closely related.

Early Prevention

Wilson and Herrnstein (1985, p. 283), after reviewing research of the early 1980s, concluded about the developmental timing of programs to reduce juvenile crime:

> This emphasis (on junior and senior high programs) is understandable, but since we know that the high rate, serious offender is likely to begin his career at an early age, we must wonder whether it might not be better to devise school programs to reduce the onset of delinquent inclinations among very young children than to or-

ganize such programs to cope with delinquent behavior among teen-age children.

A large percentage of boys come into contact with law enforcement during adolescence for what might be called "delinquent" behavior. While these legal contacts may cause angst at home, the contacts typically do not result in a life-long pattern. Children who are "early starters," however, are much more worrisome. Nevertheless, there are problems of "false positives" with early prediction. Consider this illustration. Presume that modern social science can predict future criminals with approximately 80% accuracy. Assume that approximately 2% of any cohort of children will develop serious antisocial behaviors. That is, 200 per 10,000 are likely to become violent criminals. An 80% accurate prediction will yield 160 true positives, which, subtracted from 10,000, yields 9,840. If the prediction error is 20%, then there are a total of 1,968 false positives. That there are 10 times the number of false positives underscores why an intervention must be universal. Even if the prediction were 95% correct, the number of false positives would outweigh true positives. This problem of false positives makes universal primary prevention programs appealing, especially given what we and some of our other colleagues have found in the original 13 studies on violence prevention funded by the U.S. Centers for Disease Control and Prevention.

Chemical Imbalance

The brain produces many chemicals in response to external and internal stimuli. A number of neurotransmitters are related to human aggression: serotonin, dopamine, and norepinephrine. While medications affect these neurotransmitters, there is an intriguing question for both prevention and intervention: How do those chemical changes happen in the first place?

The short answer is social interaction. Praise, touch, rewards, and lack of threat dramatically affect brain chemistry. Carlson (1994) provides an elegant overview of the physiology of behavior. A person who has just earned a primary reward, a social reward and recognition, releases dopamine in the nucleus accumbens and

ventral tegmental areas, which communicate with regions in the mesocortex, cortex, and frontal lobes, forming the basis for long-term planning. Touch, affection, and positive status release serotonin molecules, which inhibit offensive attacks by stimulating serotonergic axons in the forebrain and amygdala. Threats and aversive events (both conditioned and unconditioned) elevate norepinephrine activity from the brainstem, amygdala, and forebrain. The arousal makes the person more vigilant and defensive.

Repeated stimulation of these pathways causes physical changes in the structure of the brain, moving the behavior from a state to a trait (Perry et al. 1996). Chronic, uncontrollable exposure to the threats and aggression tend to release β-endorphins, the natural painkillers that are like morphine in the body. This "numbs" the person to the pain to self and others and especially helps young children survive in a hostile world. The chronic release of the stress hormones tends to accelerate sexual maturity in girls (pubic hair as early as age 5–6 years) and increase muscle mass in young men because of higher levels of testosterone—a mechanism that may help explain the puzzling but reliable 1930s research findings of a relationship between body shape and criminality. (See Wilson and Herrnstein 1985 for a thoughtful summary of that work.) Young women also show changes, with early sexual maturity and behavior associated with exposure to human violence (e.g., Stevens-Simon and McAnarney 1994). Sexual behavior in both males and females follows from the elevated hormones and early onset of puberty. Negative social interactions are not the only means of stimulating these pathways. Alcohol, nicotine, cocaine, and other drugs directly stimulate the dopamine (reinforcement) systems. Indeed, the longitudinal research findings on children's exposure to threats and low rates of reinforcement as predictors of both substance abuse and antisocial behavior make considerable sense as one understands the mechanics of the brain.

All of these facts also challenge the nature of our diagnostic labels. Extensive behavioral literature makes it clear that children with behavioral disorders require higher levels of reinforcement. Some behavior theorists have even suggested relabeling these symptoms as "reinforcement deficiency syndrome" (Blum et al. 1995).

Inference for prevention, intervention, and policy. A discussion of the biology of human behavior can become a false dichotomy of biology versus therapy. What is clear from the experimental literature is that the biological changes are largely in response to the environment that humans inhabit. This suggests that interventions for youth violence (biological or not) will be more successful if social environments are altered to increase social connections and status (increased serotonin), increase rewards and praise for behavior (increased dopamine), and reduce threats and aversive stimuli (reduced norepinephrine).

Genes or Jeans: Genetics Versus Environment

Neurotransmitters are created genetically and respond to the social environment. Mounting evidence shows that genetics plays a major role in the development of antisocial behavior (Plomin et al. 1990). For example, dopamine is involved in the behavioral precursors of aggression and learning. Some evidence now suggests that individuals with a certain form of a gene for dopamine-2 receptor sites have an increased risk of alcoholism and antisocial behavior (e.g., Noble 1996).

A genetic difference in no way implies something bad. To the contrary, the more common the genetic expression, the greater the chances are that the trait is likely to have emerged as a result of selective advantage. We may just not understand why or how it has been valuable over time. An excellent example is sickle cell anemia. Although sickle cell anemia is a horrible disease in contemporary times, the gene for it had powerful survival advantages for thousands of years—enabling more of the people who carried that gene to survive in an environment with a particularly virulent form of malaria. People without that gene tended to die before childbearing age.

One can likewise imagine that there are powerful adaptive advantages for needing a higher signal-to-noise ratio of dopamine in many human economies. For example, one is far more likely to take major risks for survival in marginal economies, thereby increasing

the chances that one might survive to raise the next generation. This risk taking could come in the form of more aggressive hunting of large animals such as bison and mammoths, which would have represented a considerably advantageous resource for some of our ancestors. The cognitive-behavioral profile that would be advantageous in that hunting situation could read like many symptoms of behavioral disorders today—attention to novel stimuli (distractibility), hypermobility, intense focus under threat, extroversion, and risk taking for physical challenges. These behaviors, however, would have less advantage in other economies. In agricultural economies, there would be a different interplay of cognitive-behavioral attributes conferring survival advantage. For example, the first agriculturists made significant use of preserving carbohydrate (caloric surplus) via fermentation of grain into beer. If one-third of the everyday calories came from alcohol, as was apparently so, it takes little imagination to see the adaptations that might have occurred among such people for greater alcohol tolerance, not to mention a host of other cognitive-behavioral strategies that might be adaptive for such settings. No selective advantage is apparent for hunters and gatherers to have developed a tolerance for alcohol, a dopamine mimic.

Another misapprehension needs to be clarified. Many genes are not absolute, following the inexorable math of mendelian proportions. Many genes are expressed in response to environmental events, which scientists refer to as polymorphic diversity. Such genes may switch on or off, depending on the environment the organism inhabits. This is a most clever trick of genetics and has obvious survival value. All of this makes environment even more important (Plomin et al. 1990). What seems to turn genes off or on? Steroids are most certainly involved because they have the capacity to pass through the cell membrane (because the cell wall is a lipid and steroids are fat-soluble) and lock onto receptor sites on the nucleus, now directing the machinery of DNA and RNA. External events, perceived by the brain and given interpretation by social experience if the events are the result of learning, are the artificers of steroid release. Thus, the environment matters even more, especially for events, such as violence, that directly affect survival.

Inference for prevention, intervention, and policy. Something that happens one time, or less, of a thousand times in the population is fundamentally a *disorder.* If something happens at a high frequency, such as attention-deficit/hyperactivity disorder (ADHD) (2%–5% or so of the population, according to some estimates), chances are that it is not a disease but an adaptive response in human history. Posttraumatic stress reaction is an excellent example. Diagnostic conventions make it a disorder, yet the changes in both behavior and physiology reliably occur after exposure to serious human violence. According to the anthropological literature, humans have preyed on other humans with surprising frequency—with 25%–35% of young men killed by homicide (e.g., Daly and Wilson 1988), a rate similar to that found in many of our worst areas of modern society. It is nearly impossible to imagine that over the course of thousands of years that adaptations might not have evolved to deal with such circumstances and that such adaptations might, in fact, be polymorphic, that is, "turn on," in response to events because cooperation and collaboration also have high survival value among humans. Using this perspective (evolutionary psychology), issues that covary with youth violence, such as teen pregnancy, early sexual maturity, multiple children by different fathers, high reactivity to threats and insults, make a great deal more sense. It also becomes possible to see why commonly proposed solutions are almost certainly not likely to work because their very implementation engages ancient evolutionary solutions. A major consideration for policymakers is that a given policy may actually work against the flow *or* go with the flow of nature.

A Good School

Schools often have primary, secondary, and tertiary prevention programs for violent behavior among children and youth. Generally speaking, programs at different "doses" are dichotomous and in theoretical or scientific disagreement, making the probability of generalization and maintenance dubious. An example is playground aggression, a key predictor of problem behavior. Peer mediation strategies are often used as a primary prevention strategy in which students are trained to notice incidents of bad behavior (most often

among troubled children). Similarly, playground monitors are often trained and required under their job descriptions to reprimand and "punish" bad behavior. For serious at-risk children, either strategy is iatrogenic and contraindicated. For extremely well-behaved children, such strategies cause no harm and probably do repress negative behavior. Both strategies, however, are fundamentally attention to inappropriate, antisocial behavior among at-risk children. Scientific studies suggest that such attention to inappropriate behavior will rapidly accelerate its frequency and severity (e.g., Walker 1995). This is worrisome because some evidence suggests that antisocial behavior is quite serious on playgrounds (e.g., D. D. Embry et al. 1996).

What could be done differently? A theoretically sound and consistent approach would take a different strategy: 1) set up activities that decrease the probability of antisocial behavior in the first instance; 2) ensure mastery of playground social skills that reduce risk of rejection; 3) provide frequent rewards for prosocial behavior on the playground by peers and supervising adults; 4) encourage staged levels of response-cost and time out for antisocial behavior; 5) include strategies to reduce accidental reinforcement of antisocial behavior; and 6) provide generalization of reward and activity to home and after-school settings. Fortunately, this model precisely describes the strategies inherent in promising primary prevention models (e.g., Dougherty et al. 1985; D. D. Embry et al. 1996) and well-established more intensive protocols for secondary and tertiary prevention (e.g., Walker 1995; Walker et al. 1995). This model makes it easy to increase the dose level of the interventions universally, ensuring greater probability of implementation, efficacy, and generalization by combining the procedures that are theoretically and practically continuous.

Another core issue to consider is the association among academic failure, antisocial behavior, and substance abuse. Schools often have 1) a substance abuse program, 2) a dropout prevention program, and 3) a violence prevention program. This kind of compartmentalization erases the extremely well-documented links across all domains of problem behavior. For example, Shedler and Block (1990) have shown that the pattern of parent-child interaction at age 7 that predicts substance abuse at age 18 involves fundamentally the same dynamics as the cycle of coercion articulated by

Patterson and colleagues (1989) for the etiology of antisocial behavior. Without understanding the underlying etiology of substance abuse, antisocial behavior, and school leaving, most prevention and intervention programs in school settings are likely to be *less* successful when measured rigorously.

A positive school climate can have substantial effects on reductions in substance abuse, antisocial behavior, and school leaving (Gottfredson 1988; Mayer et al. 1983; Rutter 1979). A number of characteristics of schools and school-based programs that can be manipulated in dose levels seem to be critical for both prevention and intervention success (Walker et al. 1995):

- Encouraging high levels of praise by teachers and school staff for attention to task and academic productivity, especially for high-risk children.
- Engaging in differential attention from adults to other students and other behavior (sometimes called DRO, or differential reinforcement of other behavior) when a child has minor misbehavior rather than attention to children's negative behavior.
- Using daily group activity rewards for teams or classes rather than weekly, monthly, or semester rewards based on individual points.
- Encouraging daily self-monitoring and posting of academic and behavioral competencies.
- Setting up frequent stimulus control (antecedent) tools that "channel" probability of positive behavior and reduce "down time" during transitions.
- Using everyday symbolic models to illustrate prosocial behaviors being mastered.
- Using cognitive-behavioral questions and techniques ("Socratic methods") to foster mastery of emotionally charged events.
- Sending home daily positive notes to students' families for positive behavior and achievement, linked to rewards at home.
- Creating many opportunities for students to hold positions of responsibility.
- Using quick daily response-cost, cognitive mediation, and

overcorrection procedures for acts of negative behavior instead of delayed consequences such as referrals to the office or high-intensity verbal or physical reprimands.

Inference for prevention, intervention, and policy. The findings to date about schools suggest that schools need to move away from the notion of violence prevention and intervention as a 12-week course or unit. The research also suggests that the current rush to implement various conflict and peer mediation strategies is unlikely to fulfill their promise of a dramatic reduction in youth violence. Prevention and intervention programs in school settings are most likely to be effective if the programs are deeply embedded in the daily social interactions of students, staff, and families and alter the school climate or culture.

Good Versus Bad Neighborhood

Neighborhoods make a difference in children's developmental outcome. Rates of unemployment, overcrowding, high mobility, and poor housing are certainly related to increased rates of juvenile delinquency, a topic of many reviews (Mulvey et al. 1993; Yoshikawa 1994). In neighborhoods where there is considerable violence, children and youth are highly likely to witness serious aggression at school (Singer et al. 1995). Such exposure tends to kindle the symptoms of posttraumatic stress disorder (PTSD) (Garbarino et al. 1992). Typical posttraumatic stress reactions include irritability, hypervigilance, exaggerated startle response, physiological reactivity (Burrowes et al. 1988; Piacente 1986), and elevated heart rate. It is easy to conclude that such neighborhoods will need some kind of program to reduce the prospect of youth violence. What might that be? Experimental evidence is thin, but a number of ideas make sense.

- *Minimize focus on fear and threat stimuli and increase focus on activities that create a sense of orderliness and even beauty.* In high-risk areas, overfocus on the threat increases fear and reluctance to act, furthering the perception of the community norm of violence. For example, Crime Watch–type activities

can heighten rather than lessen the symptoms of PTSD by making people highly suspicious of all residents.

- *Engage in frequent public displays of the positive community-wide norm.* Public events help create a climate of belonging and acceptable standards of behavior, helping to counteract the effects of a negative community norm. Whenever possible, the children in the neighborhood need to work alongside the adults. In Chicago, the Neighborhood Authority, a self-help group, gives weekly awards to members of the community who have helped make the neighborhood more peaceful. In Arizona, an elementary school involved with the first author's research project has adopted neighborhood businesses to display students' artwork. These businesses report significant declines in vandalism and petty crime.
- *Focus efforts on enhancing parenting competence and child monitoring.* Parenting effectiveness exists clearly in a social context, with social isolation rapidly accelerating the deviance and resistance to improvements (Wahler and Dumas 1984). Door-to-door activities, phone calls, local business promotions, and plays by youth about positive behaviors to be copied can mobilize people to begin speaking a common language and using a common set of tools, reducing social isolation and violence.
- *Remove environmental sources of repeated confrontations and insults.* Nisbett (1993) argues convincingly that insults are a core trigger for homicides and aggression. In high-density areas, there are more likely to be ongoing sources of traded insults because of environmental provocations. Code enforcement of housing violations, nuisance problems, and illegal activity can be a powerful tool to reduce these likely sources of conflict.
- *Provide effective tools for community policing.* Many of the most at-risk areas have residents who fear reprisal for informing the police. The use of police scanners by criminals heighten such fears, and Wilson and Herrnstein (1985) cite evidence to suggest that those fears of retaliation are well founded. In one community involved with the first author's work, the city government gave cell phones, beepers, and other tools to community people so they could reach police quickly and

with less risk. In this same community, the police give frequent rewards to children and youth for positive behavior. The "Boston Strategy" of having probation officers ride with police at night is another method.

Inference for prevention, intervention, and policy. Effective tools used in neighborhoods have the same underlying structure as ones used in schools. In general, an effective neighborhood program to prevent youth violence would provide extensive positive models instead of negative models, provide high rates of positive feedback for imitation, and offer many cues, prompts, and tools that facilitate generalization across time, people, behaviors, and settings. Punishing consequences work best when tightly targeted (e.g., violation of probation curfew) rather than when applied broadly (e.g., curfews for all juveniles).

A Dysfunctional Versus a Functional Family

Without doubt, family interaction styles contribute to the etiology of both substance abuse and youth crime. In general, parents who are hostile, rejecting, and unresponsive reinforce positive behavior infrequently and inadvertently reinforce "bad" behavior (Patterson et al. 1989; Shedler and Block 1990). Children in such situations mirror and show their own negative interactions by interpreting negative cues as hostile, are afraid of being deprived, have poor verbal skills, show little warmth, and lack resiliency. Describing such behaviors and changing these behaviors are not the same thing. Another body of research has profound implications for prevention, intervention, and social policy. Consider some important findings described below.

General Parent-Training Courses or Interventions

Many schools, agencies, clinics, and law-enforcement programs offer or promote parent education programs as a prevention strategy. Such programs might or might not have beneficial effects. General parent-training courses are largely ineffective in changing behavior of children and parents, especially when precise, well-designed be-

havioral measures are used in the home setting as opposed to satisfaction ratings by parents (Dembo et al. 1985; L. H. Embry 1984; Gordon et al. 1988). Parent-training groups, courses, and programs have better impact and long-term impact when they are nested in the context of a much more comprehensive intervention that involves direct child training and community or neighborhood development (Webster-Stratton 1990). Home-based feedback, based on a therapist's ability to reliably code parent-child interactions, is necessary for changing the behavior in more difficult families (Isaac et al. 1982), which is consistent with the findings that client families have difficulty applying learning other than to immediate circumstances when actually prompted (Smith 1985). Without home-based feedback and data collection, or nested interventions, at least 50% of all high-risk families drop out from parent training (Mulvey et al. 1993).

Other Parent-Training or Intervention Models

Both community psychology research and anthropology provide some insights for alternative methods of increasing effective parenting: 1) social isolation negatively affects treatment outcome, and group support increases positive outcome (Wahler and Dumas 1984); and 2) certain times, such as mealtime, and circumstances, such as getting ready for school, doing chores, going to the store, and sibling fighting (L. H. Embry 1974), are highly predictive of parent-child problems across almost all types of families.

These principles lead to some strategies that can work both for prevention and intervention: 1) community volunteers and paraprofessionals can be as effective and even more effective than professionals in delivering parenting interventions (Jester and Guinagh 1983; Levenstein et al. 1983); 2) solution-focused, specific interventions or recipes to deal with common behavior problems can be highly effective in changing parent-child interactions (Bauman et al. 1983; L. H. Embry 1984; Forgatch and Ramsey 1994); 3) such interventions may draw significantly more parent participation and achieve greater implementation if the children are instrumentally involved in the "parent training" by putting on dramatic plays for families (Roberts et al. 1983); and 4) behaviorally

focused parent training interventions have the most rigorous long-term follow-up data on effectiveness, both for more intensive interventions and more prevention-oriented interventions (D. D. Embry and Malfetti 1981; Strain et al. 1982).

Parental Academic Involvement and Monitoring

Reading success and parental monitoring are often touted as solutions for violence. Just telling parents to read more with their kids or to monitor the whereabouts of children is an insufficient practice. Teaching parents to use more behaviorally based techniques to encourage reading is more effective in helping children's language skill development than just listening to children read (Leach and Siddall 1990). The epidemiological literature shows that, in general, lax parental monitoring is related to increased delinquency risk (Patterson and Stouthamer-Loeber 1984), yet there is no apparent experimental literature on how to teach effective parental monitoring, an important concern because there is some evidence that suggests a U-shaped curve on the nature of parental supervision such that too much might increase delinquency (Weintraub and Gold 1991). Case study reports also make it clear that adults frequently do not have access to relevant information (e.g., time of after-school events, activities of friends' families, dances and other events) for supervision as a result of modern social structures, a situation that is substantially different from parents being unwilling to supervise or ineffective in supervision (Taffel 1996).

Inference for prevention, intervention, and policy. First, parents require specific, frequent prompts, praise, and rationale for engaging in effective parenting practices. These prompts can occur in many natural circumstances throughout the community such as stores, clinics, and apartment complexes. Second, symbolic models of effective parenting (television ads, stories, etc.) can facilitate acquisition of good parenting skills, more so than didactic instruction alone. Third, parenting interventions that stress that adults ought not to praise or reward children's good behavior are not likely to have positive effects, especially for the most at-risk populations.

Recommended *prevention* approaches include

- Solution-focused parenting activities (aimed at prevention and tightly tied to family needs such as getting ready for school) instead of general parenting education.
- Participation of young people as information delivery agents, because family participation rates will increase and children will be change agents.
- Increase of visible community support for positive parenting to reduce social isolation, which is a negative risk factor in behavior change.

Recommended *intervention* approaches include

- Weekly data collection schemes to assess progress and home-based coaching to ensure success, which can be combined with solution-focused interventions.
- Creation of a positive school or neighborhood climate, making the focus on parents as partners rather than parents as sources of the problem.
- Structural changes in school systems to support effective monitoring by parents.

The Whole Coin

Prevention and intervention cannot be separated on the issue of youth violence. They are the same coin. Too many issues are bound together, including therapeutic compliance, therapeutic efficacy, and therapeutic generalization.

Therapeutic Compliance

An effective prevention program can greatly enhance the probability that individuals targeted for intensive interventions comply with procedures—if the prevention and intervention programs are on a continuum of actions, rather than using totally different tactics. Think of this as modeling, or normative effect, at one level.

Prevention programs typically operate in the settings in which a client lives, learns, and plays. If the "norm" of the everyday setting

(school, neighborhood, community) is different from what is needed to make a therapeutic change, then therapeutic behaviors are much less likely to occur. Consider a simple example, which is not altogether uncommon. A child referred for conduct disorder is likely to receive family therapy that emphasizes praise and rewards for positive behavior. If the child goes to a school where such praise and rewards are viewed as "bad," then family compliance with the therapy will be compromised. The reverse is also true, but in a positive way. If a school's prevention environment is an effective model of the behaviors and the methods to be learned by a child's family, it is more likely that the normative influence of the school will impact therapeutic compliance by the family.

Therapeutic Efficacy

If a child has been referred for the treatment of PTSD, for example, then the focus of that therapy will be to teach the child to trust and to be less reactive to neutral stimuli, more accepting of praise and rewards (since they are often used as lures in predatory circumstances), and less aggressive or withdrawn. Again, a negative prevention environment (where the child or youth lives, learns, and plays) can negate nearly any treatment. For example, the school decides to emphasize "stranger danger" and the dangers of violence in an upcoming violence prevention program. Such a program feeds into the automatic arousal of PTSD, driving the child into relapse. On the other hand, a schoolwide program of intensively rewarding altruistic behavior in the school and celebrating prosocial competencies could do wonders for the child's general apprehensiveness.

Therapeutic Generalization

Prevention programs are considerably more portable than treatment programs. The more elements in the natural environment that cue the benefits of the treatment program, the more the changes in treatment or intervention are likely to be maintained across time, places, and people. By carefully crafting the integration of treatment and prevention programs, such cost-effective generalization is more likely.

Mental and Social Wealth From Common Currency

What is the purpose of prevention and intervention with respect to youth violence? To end violent crime? Certainly. Do we seek just the absence of the problem? No. Do we seek to create something more? Yes, indeed. Both staff and community members typically develop a list of things they would like to increase and things they wish to decrease. One might label this social validity. The list follows in Table 2–1. As it turns out, the list of behaviors is highly predictive of "emotional intelligence" and risk of violent behavior (Walker et al. 1995).

It makes considerable sense to make these behaviors the explicit focus of both intervention and prevention procedures. There is a practical reason, too, in terms of evaluating the long-term efficacy of any prevention or intervention efforts: it might take considerable time for rates of arrest or homicides to emerge, or it might require considerable numbers of children and youth in a study to provide a valid assessment. The behaviors listed in Table 2–1 are known to be in the causal chain of violence, and reliable tools exist to measure these behaviors. The measurement tools are sensitive to the effects of deliberate interventions. The socially desirable behaviors can be measured via the Walker-McConnell Scale of Social Competence (Walker and McConnell 1996). The aggression items can be measured with the Child Behavior Checklist (Achenbach 1991) or similar tools. Also, the behaviors listed in Table 2–1 can be counted using behavioral assessments and self-assessments, which makes simple on-site evaluations by staff, families, and even children possible; and the occurrence and nonoccurrence of the behaviors can be reinforced, a powerful tool in behavior change in both prevention of and intervention for antisocial behavior (Kazdin 1989; Mayer et al. 1983; Patterson et al. 1989).

When both prevention and intervention are united by a common set of measures, the probability of major effects is likely to improve greatly. The effectiveness of operant learning procedures is well established, especially with issues of antisocial behavior (Walker 1995). What may not be so well known is the role of neurotransmitters in learned (operant) behavior. For example, operant reinforcement clearly acts on the dopamine pathways in the brain (Carslon 1994). By strengthening the positive behaviors and

Table 2–1. Social competencies and aggressive behaviors

Social competencies to increase	Aggressive behaviors to decrease
Use free time appropriately.	Argue a lot.
Share laughter with peers.	Brag or boast.
Have good work habits.	Be cruel, bullying, or mean to others.
Compromise with peers when a situation calls for it.	Demand a lot of attention.
Respond to teasing or name calling by ignoring, changing the subject, or some other constructive means.	Destroy property belonging to others.
Accept constructive criticism from peers without becoming angry.	Keep conversations with peers going.
Talk with peers for extended periods of time appropriately.	Disobey people in responsibility.
Initiate conversations with peers in informal situations.	Disturb other people.
Listen carefully to teacher instructions and directions for assignments.	Get jealous easily.
Appropriately cope with aggression from others (e.g., try to avoid a fight, walk away, seek help).	Get in many fights.
Interact with a number of different peers.	Talk out of turn.
Accept not getting his or her own way.	Physically attack people.
Attend to assigned tasks.	Disrupt group discipline or activity.
Do assignments as directed.	Scream a lot.
Produce work of acceptable quality given her or his skill level.	Show off or clown around.
	Be explosive and unpredictable.
	React negatively if demands are not met immediately.
	Act stubborn, sullen, or irritable.
	Have sudden changes in mood.
	Talk too much.
	Tease a lot.
	Have a hot temper.
	Threaten people.
	Talk unusually loud.

decreasing the negative behaviors from the list in Table 2–1, we alter the neurotransmitters and ultimately the structure of the brain itself. More than passing evidence suggests that adults who target these and related behaviors for praise and reinforcement are not creating biological, passive robots; they are fostering the best intelli-

gence possible, including the possibilities of high levels of intrinsic motivation, giftedness, and world-class talent (Benbow and Arjmand 1990; Bloom 1982). The question is which behaviors to reinforce, because highly diffuse reinforcement tends to produce weak effects. The probability of eliciting the behavior one wishes to increase (e.g., cooperative, prosocial behavior that is incompatible with homicides) can be expressed as an elegant, simple formula. It is called the "Matching Law." Specifically, the law states that the rate of a behavior will "match" the rate of its reinforcement. The formula and a graph of its results appear in Figure 2–1, which is adapted from Mattaini (1991), who was among the first to see its application to large-scale social issues such as cocaine abuse (which involves dopamine receptors). This formula also applies to the issue of youth violence (Dishion et al. 1996).

Heads Up for Prevention

One might think of prevention as the heads side of a coin, pointing the direction of where and what we want children to move toward. To make a violence prevention program effective as indicated in the Matching Law, prevention programs need to contain nine strategic tools (D. D. Embry et al. 1996): 1) common language for "community norms," 2) frequent story and live models for positive behavior, 3) high-density environmental cues to signal desired behavior, 4) daily role plays to increase range of responses, 5) daily rehearsals of positive solution after negative events and response cost as "punishment" for negative behavior, 6) group coupled with individual rewards to strengthen positive behavior, 7) threat reduction to reduce reactivity of children and adults, 8) self- and peer-monitoring for positive behavior, and 9) generalization promotion to increase maintenance of change across time, places, and people. These strategies must be infused in everyday interactions of children, youth, families, and other adults to foster a more peaceful community.

Tails Up for Intervention

Intervention is what we need to do when prevention fails. There is a widespread belief that intervention is uniquely different from pre-

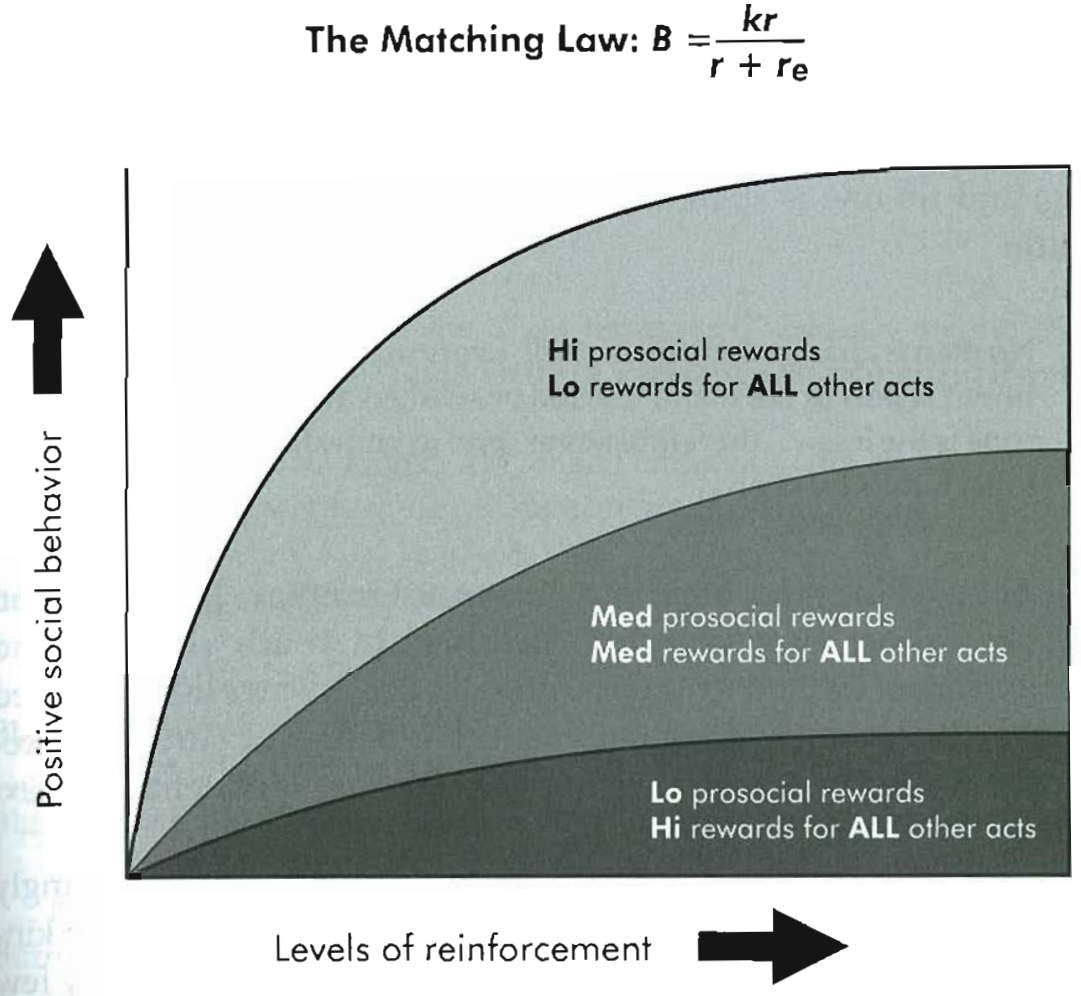

Figure 2–1. The Matching Law. B = rate of positive behavior. r = how often positive behavior is rewarded. r_e = how often all other "good and bad" behaviors are rewarded. k = a constant.
Source. Adapted from Mattaini 1991.

vention, a belief that is not sustainable. In fact, the nine strategic tools described in the previous paragraph are also the same cognitive-behavioral tools in effective treatments for children who exhibit more serious disorders related to the risk of serious violence: ADHD, oppositional defiant disorder, conduct disorders, and PTSD. The issue with intervention is largely one of dose levels. Some children and youth need higher dose levels of the effective strategies to reset their physiological zeitgerber, or "traits," as a result of chronic exposure to trauma (Carlson 1994).

Commonwealth: When the Coins Add Up

Youth crime is bankrupting the social, spiritual, and economic well-being of our society (Butterfield 1996). The harm is overwhelming, and no one is spared. John Donne's words speak an eternal truth:

> No man is an island, entire of itself, every man is a piece of the continent, a part of the main; if a clod be washed away by the sea, Europe is the less, . . . therefore never send to know for whom the bell tolls; it tolls for thee.

The well-off and middle class are not exempt. Their children are the fastest growing group involved in youth violence, and the extensive "armed response" private security measures adopted by these communities are not so much a defense against the people from the "bad neighborhoods" as against the teenagers next door.

Our old age will not save us. Aging America will increasingly depend on the talent and civic spirit of the children who are kindergartners now. There will be many elderly people and very few of today's kindergartners proportionately, perhaps as few as 1.6 working young people to each retired elderly person, such as those of us reading this chapter the year it is published. The psychosocial forces that can produce the most talented, productive, and stable young people are at present recklessly producing a record number of them who will drop out, "zone out," or shoot at each other. This record number will not contribute to the commonwealth while incarcerated.

Diverting children from a life of crime and violence is the only thing that makes any economic sense, a fact shown from a meticulous cost-effectiveness analysis from the Rand Corporation (Greenwood et al. 1996). Prevention and intervention with youth and children make sense and cents. This chapter maps why youth violence prevention and intervention might be integrated for maximum benefit. Only our children will save us, if we save them from killing each other. Twenty years from now, the youngest among us will judge our stewardship in creating a climate that fosters domes-

tic tranquillity. For the sake of these children, let us show our will to use the wisdom available for common good.

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