Update on bullying at school: Science forgotten?

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Abstract

Research on bullying has increased dramatically worldwide, from only 62 citations in PsycINFO from 1900–1990, to 289 in the 1990s, to 562 from 2000–2004. Much has been learned, including that bullying takes many forms (physical, verbal, relational), is prevalent in every school, with long-lasting consequences. It is not known how genes, parents, peers, cultural values, and school practices interact to affect bullying and victimization nor why some schools fail to reduce the harm. This paper reviews past findings on school bullying, notes a slowing of publication, reminds readers of the need for the scientific process, and highlights the reasons for additional research, especially in data collection, evaluation, developmental understanding, and prevention.

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Much is now known about bullies and victims, including some surprises: bullies have friends and admirers; victims look like other children; bullying occurs everywhere; victimization is a social event. Discoveries on prevalence, consequences, causes, and prevention often contradict popular assumptions, which is one reason bullying among children has become a productive topic for scientists of many disciplines. Although not reviewed here, bullying among adults has also captured attention. Yet much remains to be discovered, especially from a developmental perspective. A summary of publication history helps explain the current state of knowledge and the urgent need for more scientific research.

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Research and publication history

Researchers in human development have long been interested in peer relationships and in aggression. The current understanding of peer groups emphasizes the importance of friendship at every point of the lifespan, and notes the many reasons that children are accepted or rejected by their classmates, further exploring children’s status as popular, well-liked, controversial, aggressive-rejected, withdrawn-rejected, and neglected (see reviews: Kupersmidt & Dodge, 2004; Ladd, 2005). Similarly, scientists studying violence have recognized a seemingly omnipresent impulse to attack, and have described many causes, forms, and consequences of aggression, varying by species, gender, stage, and context (see Tremblay, Hartup, & Archer, 2005).

Research on bullying among children has benefited from findings in both of these areas, but bullying has not yet received the decades of scientific attention required for a comprehensive understanding. Ironically, one reason for gaps in research is that interest typically arises from practical and urgent concerns, when a sudden death in school brings public attention and research funding. This immediacy sometimes clashes with the patient, cumulative process of developmental science, as emotions allow science to be forgotten.

Within the past 15 years, scholars have shifted from indifference to fascination regarding bullies. PsycINFO includes only 27 citations of bully* or bulli* (peer-reviewed, not counting proper names) from 1900 to 1979 and only 35 in the next decade. In the 1990s, PsycINFO lists 289 cites, and the first listing of bull* appeared in the index of Abstracts in Child Development. Those 351 PsycINFO publications for the entire 20th century were surpassed in the first five years of the 21st. Between January 1st 2000 and December 31, 2004, 592 peer-reviewed articles, editorials, or book reviews were published, 158 of them in 2004. Other data bases (e.g., Academic Search Premier, ERIC) or related search terms (e.g., victim*, harass*) reveal a similar increase, although less explosive. [More psychological research overall has been published recently, but few topics unrelated to bullying show dramatic increase.]

Why the explosion? It began with one scientist and three suicides. Dan Olweus studied bullying (mobbing) in his native Sweden (1973) and wrote the first scholarly book in English (1978). When three bullied Norwegian boys committed suicide in 1982, their government commissioned Olweus. He reported (1986, translated and updated in English, 1993) what was thought to be extraordinarily high prevalence (20% of Norwegian school children were either bullies or victims) and notable success (school bullying was reduced by half in two years).

Olweus inspired researchers world-wide, undertaking major studies in Australia, Canada, England, Finland, Ireland, Israel, Italy, Japan, Netherlands, New Zealand, Spain, Sweden, and, more recently, the United States. They defined and explored terminology, assessed prevalence, searched for consequences and causes, and attempted prevention in thousands of schools, making major progress on the first two of these five, definitions and prevalence, over the past 15 years.

Much scholarly work remains on the other three, consequences, causes, and prevention. Unfortunately, the pace of publication is slowing. Only 136 peer-reviewed articles on bullying were published in 2005, about 15% less than in 2004 (PsycINFO again). Only 53 of those 2005 publications (listed on Table 1) included new data on bullying in school, and only 11 were primarily concerned with intervention. Has this slowdown occurred because all is known? By no means. Does the clash between public and scientific perspectives (see
Table 1
PsychINFO, peer-reviewed, 2005 articles that include new data about school bullying

<table>
<thead>
<tr>
<th>First author</th>
<th>Primary focus</th>
<th>Nation</th>
<th>Age or school level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adelmann</td>
<td>Health behaviors</td>
<td>United States</td>
<td>6th grade</td>
</tr>
<tr>
<td>Ando</td>
<td>Psychosocial correlates</td>
<td>Japan</td>
<td>7th–9th grade</td>
</tr>
<tr>
<td>Andreau</td>
<td>Self-efficacy</td>
<td>Greece</td>
<td>4th–6th grade</td>
</tr>
<tr>
<td>Avilés</td>
<td>Incidence</td>
<td>Spain</td>
<td>Secondary</td>
</tr>
<tr>
<td>Baldry</td>
<td>Protective factors</td>
<td>Italy</td>
<td>Secondary</td>
</tr>
<tr>
<td>Berg</td>
<td>Obesity</td>
<td>Sweden</td>
<td>Secondary, boys</td>
</tr>
<tr>
<td>Bollmer</td>
<td>Friendship</td>
<td>United States</td>
<td>10–13-year olds</td>
</tr>
<tr>
<td>Camodeca</td>
<td>Coping</td>
<td>Italy</td>
<td>11 years (average)</td>
</tr>
<tr>
<td>Cassidy</td>
<td>Coping</td>
<td>England</td>
<td>12–15-year olds</td>
</tr>
<tr>
<td>Cerezo</td>
<td>Questionnaire</td>
<td>England and Spain</td>
<td>All ages</td>
</tr>
<tr>
<td>Chan</td>
<td>Non-anonymity</td>
<td>Canada</td>
<td>1st–8th grade</td>
</tr>
<tr>
<td>Cullerton-Sen</td>
<td>Socio-emotional</td>
<td>United States</td>
<td>4th grade</td>
</tr>
<tr>
<td>de Rosier</td>
<td>Prevention</td>
<td>United States</td>
<td>Primary</td>
</tr>
<tr>
<td>de la Villa Moral</td>
<td>Attitudes</td>
<td>Spain</td>
<td>Secondary</td>
</tr>
<tr>
<td>DeSouza</td>
<td>Incidence</td>
<td>Brazil</td>
<td>Secondary</td>
</tr>
<tr>
<td>Dhami</td>
<td>Socio-economic status</td>
<td>Canada</td>
<td>1st grade</td>
</tr>
<tr>
<td>Fekkes</td>
<td>Telling Adults</td>
<td>The Netherlands</td>
<td>9–11-year olds</td>
</tr>
<tr>
<td>Finkelhor</td>
<td>Poly-victimization</td>
<td>United States</td>
<td>2–17-year olds</td>
</tr>
<tr>
<td>Fox</td>
<td>Social skills</td>
<td>England</td>
<td>9–11-year olds</td>
</tr>
<tr>
<td>Frey</td>
<td>Prevention</td>
<td>United States</td>
<td>3rd–6th grade</td>
</tr>
<tr>
<td>Haavet,</td>
<td>Health</td>
<td>Norway</td>
<td>10th grade</td>
</tr>
<tr>
<td>Ivarsson</td>
<td>Mental Health</td>
<td>Sweden</td>
<td>Junior High</td>
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<tr>
<td>Jalón</td>
<td>Prevention</td>
<td>Spain</td>
<td>Adolescents</td>
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<tr>
<td>Jennifer</td>
<td>Prevention</td>
<td>England</td>
<td>Primary and Secondary</td>
</tr>
<tr>
<td>Luiselli</td>
<td>Prevention</td>
<td>United States</td>
<td>Primary</td>
</tr>
<tr>
<td>Martin</td>
<td>Prevention</td>
<td>Spain</td>
<td>Primary</td>
</tr>
<tr>
<td>Monks</td>
<td>Psychological skills</td>
<td>England</td>
<td>4–6-year olds</td>
</tr>
<tr>
<td>Mooij</td>
<td>Prevention</td>
<td>The Netherlands</td>
<td>Secondary</td>
</tr>
<tr>
<td>Newman</td>
<td>Victims</td>
<td>United States</td>
<td>Adolescents</td>
</tr>
<tr>
<td>Nordhagen</td>
<td>Incidence</td>
<td>Scandinavia</td>
<td>Age 2–17</td>
</tr>
<tr>
<td>O’Moore</td>
<td>Prevention</td>
<td>Ireland</td>
<td>Primary</td>
</tr>
<tr>
<td>Olweus</td>
<td>Prevention</td>
<td>Norway</td>
<td>Primary</td>
</tr>
<tr>
<td>Ortega</td>
<td>Incidence</td>
<td>Spain</td>
<td>Preschool</td>
</tr>
<tr>
<td>Pekel-Uludagli</td>
<td>Psychosocial</td>
<td>Turkey</td>
<td>5th and 6th grade</td>
</tr>
<tr>
<td>Perren</td>
<td>Delinquency</td>
<td>Switzerland</td>
<td>7th and 9th grade</td>
</tr>
<tr>
<td>Pick</td>
<td>Movement disorder</td>
<td>Australia</td>
<td>7–11-year olds</td>
</tr>
<tr>
<td>Poteat</td>
<td>Homophobia</td>
<td>United States</td>
<td>Middle school</td>
</tr>
<tr>
<td>Poyning</td>
<td>Boarding Schools</td>
<td>Australia</td>
<td>boys, all ages</td>
</tr>
<tr>
<td>Rigby</td>
<td>Attitudes</td>
<td>Australia</td>
<td>Primary and Secondary</td>
</tr>
<tr>
<td>Salmivalli</td>
<td>Prevention</td>
<td>Finland</td>
<td>4th, 5th, 6th grades</td>
</tr>
<tr>
<td>Savage</td>
<td>Speech problems</td>
<td>Canada</td>
<td>All ages</td>
</tr>
<tr>
<td>Schäfer</td>
<td>Stable roles</td>
<td>Germany</td>
<td>Primary and secondary</td>
</tr>
<tr>
<td>Skues</td>
<td>Bonding</td>
<td>Australia</td>
<td>7th–12th grades</td>
</tr>
<tr>
<td>Sorensen</td>
<td>Counseling</td>
<td>Italy</td>
<td>Primary and secondary</td>
</tr>
<tr>
<td>Storch</td>
<td>Obsessive–Compulsive</td>
<td>United States</td>
<td>One boy, age 14</td>
</tr>
<tr>
<td>Theriot</td>
<td>Self-identification</td>
<td>United States</td>
<td>Primary and middle</td>
</tr>
<tr>
<td>Toblin</td>
<td>Psychosocial</td>
<td>United States</td>
<td>Primary</td>
</tr>
<tr>
<td>Twemlow</td>
<td>Prevention</td>
<td>United States</td>
<td>Primary</td>
</tr>
<tr>
<td>Unnever</td>
<td>Bully-victims</td>
<td>United States</td>
<td>Middle</td>
</tr>
<tr>
<td>Veenstra</td>
<td>Bully-victims</td>
<td>The Netherlands</td>
<td>Adolescents</td>
</tr>
<tr>
<td>Williams</td>
<td>Sexual minority</td>
<td>Canada</td>
<td>Adolescents</td>
</tr>
<tr>
<td>Woods</td>
<td>Arousal</td>
<td>England</td>
<td>Secondary</td>
</tr>
<tr>
<td>Xiao-Qi</td>
<td>Psychosocial</td>
<td>China</td>
<td>3rd, 4th, 5th grades</td>
</tr>
</tbody>
</table>

[Adult retrospective accounts, and reviews of already published data, are not included.] Full references are in the bibliography, preceded by an asterisk.
Table 2
Divergent views of bullying: public assumptions versus research findings

<table>
<thead>
<tr>
<th>Questions to answer</th>
<th>Public perception and media attention</th>
<th>Scientific method and developmental research</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is the Problem?</td>
<td>Violence in schools</td>
<td>All forms of bullying, especially social forms</td>
</tr>
<tr>
<td>Evidence of the Problem?</td>
<td>School shootings, suicide</td>
<td>Rejection, isolation, low achievement</td>
</tr>
<tr>
<td>Who are the culprits?</td>
<td>A few mean and bad students</td>
<td>The entire peer group and school staff</td>
</tr>
<tr>
<td>How common is bullying?</td>
<td>Rare, not in my neighborhood</td>
<td>In every school, some more than others</td>
</tr>
<tr>
<td>Origin of the Problem?</td>
<td>Probably in parents</td>
<td>Multivariate, including genes, peers, policies</td>
</tr>
<tr>
<td>How problem is solved?</td>
<td>School-wide policies, e.g., zero tolerance</td>
<td>Whole school effort, teachers within each class</td>
</tr>
<tr>
<td>How does change occur?</td>
<td>Linear, dose-related</td>
<td>Sometimes zig-zag, threshold needed</td>
</tr>
<tr>
<td>Time until solution?</td>
<td>A few weeks</td>
<td>Years of study, intervention, evaluation</td>
</tr>
<tr>
<td>Measure of success?</td>
<td>Bullying eliminated</td>
<td>Fewer victims, better understanding</td>
</tr>
<tr>
<td>Relation to Academics?</td>
<td>Conflicts, choose one or other</td>
<td>Connected, choose both</td>
</tr>
</tbody>
</table>

Table 2) discourage researchers and editors? Or have people hoped and promised too much, forgetting that science is usually slow and methodical. More evidence-based research is needed for many reasons.

One reason is that, when science leaves a vacuum, superstition rushes in—sometimes with cruel consequences. Thousands of popular books and guides for parents, children, and teachers promulgate untested and sometimes destructive suggestions. For example, Amazon.com in July 2006 featured three books about bullies. In one, titled *How to handle bullies, teasers, and other meanies*, the author writes: “Bullies are not born that way. They are turned into young bullies by big bullies. Whenever you meet a bully, you can be sure there was a big bully lurking somewhere in his life” (Cohen-Posey, 1995, p. 10), all untrue. Then the author advocates bolstering the bully’s self-esteem, a strategy that, according to one bullied reader, is “not connected to the real world kids today are stuck with.” He fears that children who take this advice will suffer because “weak chickens get pecked to death” (Amazon.com review, first posted November 29, 2005).

The other two featured books are no better. One suggests that children avoid bullies by taking the long way home (Romain & Verick, 1997); the other advocates a “foolproof” plan to deal with bullies and tyrants by being nice (Shapiro & Jankowski, 2005). As with this third book, lessons half-understood from research on childhood bullying are misapplied to adult bullying in offices, hospitals, and prisons, with potentially dangerous consequences.

Another reason more research is needed is that bullying is surprisingly common, affecting almost every child worldwide, harming them not only at the moment but sometimes for years to come. Fortunately scholars are beginning to understand how to intervene, but often it seems as if the scientific method has been forgotten. Much more work needs to be done. This article offers an update that may lead to appreciation of what has been accomplished, realistic expectations about what remains to be done, and thus, it is hoped, renewed effort.

Definitions

Science depends on clear, operational definitions, yet a major problem with popular advice as well as with early research on victimization has been lack of clarity. The term
“bully” was not understood, nor were the distinct characteristics of bullies, victims, and bystanders. On these, scientists have made commendable progress.

**Bullying defined**

Olweus wrote: “A student is being bullied or victimized when he or she is exposed, repeatedly and over time, to negative actions on the part of one or more other students” (2001, p. 5–6). Other experts phrase it differently, with bullying as “a systematic abuse of power” (Smith & Sharp, 1994, p. 2). Note three crucial elements: repetition, harm, and unequal power. These three characteristics of bullying are accepted by the scientists worldwide (Nansel & Overpeck, 2003; Rigby, 2002b).

The research definition carefully excludes playful fighting, a one-time attack, or good-natured teasing between friends, but includes indirect attacks, especially social or relational bullying. Not all aggression is bullying, but bullying is always aggression, defined as harmful and hostile behavior (Gendreau & Archer, 2005) (The scientist’s definition of bullying as harmful and unfair differs from one slang meaning, a positive one, as in ‘bully for you’).

**Types of bullying**

Bullying is manifest in many ways, often called physical, verbal, and relational. As the following explains, each of these is distinct, but all may be perpetuated by the same bully and aimed at the same target (Benbenishty & Astor, 2005; Nishina, 2004; Rigby, 2002b).

**Physical bullying.**—hitting, kicking, beating and so on—is most obvious, recognized not only by adults but also by children of all ages, everywhere (Smith, Cowie, Olafsson, & Liefoogle, 2002). Adults typically think of physical bullying when they advocate a “zero tolerance policy with swift and serious consequences” (e.g., Smokowski & Kopasz, 2005, p. 108), but unless many attackers beat one victim (rare on school grounds), no school disciplinarian can reliably differentiate physical bullying from self-defense, friendly quarrels, and good-natured rough-housing—none of which require serious punishment.

A related form of attack is behavioral bullying—doing something mean, perhaps stealing lunch, scribbling on a homework paper, holding one’s nose. Behavioral bullying can be very harmful. One boy in Chicago killed himself after a classmate poured chocolate milk on his favorite sweatshirt, among the worst of a series of attacks (Greene, 1993, cited in Ladd, 2005).

**Verbal bullying**—repeated derogatory remarks or names—is more common than physical bullying, especially as children mature. This is illustrated by the following examples. A British team outfitted 7- to 11-year-olds with wireless microphones and video cameras to monitor their every move. Verbal aggression directed at another child was recorded twice as often as physical aggression (Tapper & Boulton, 2005). Likewise, surveys of children in Israel and Los Angeles found that, at least once in the previous month, far more children were “mocked, insulted, or humiliated” than “kicked or punched” (60–32% in Israel; 54–16% in California). In this study, as in many others, physical bullying decreased with maturation much more than verbal bullying did (Benbenishty & Astor, 2005).

Many bullying episodes are called relational bullying (Crick & Grotaper, 1995), because they disrupt the social relationships between victims and their peers. Although even preschoolers (especially girls) engage in relational bullying (Crick et al., 2006), this form of bullying becomes more prevalent and harmful at puberty because children become more
socially skilled and peer approval is paramount (Underwood, 2003; Xie, Swift, Cairns, & Cairns, 2002). Relational bullying occurs when children deliberately ignore a classmate’s attempt to make conversation or join a game, or when they move away when the target comes near, or when they repeat humiliating gossip. Relational bullying is also called social bullying, although every form of bullying could be called social. Children often disapprove of physical attacks but engage in other forms of social bullying.

Bullying also occurs electronically, called cyberbullying, which has become increasingly common (Li, 2006). Among the cyberbullying incidents in one nation (Canada) were a digital photo of an overweight girl showering after gym, sent instantly to cell phones throughout her school (Media Awareness, n.d.), and a website dedicated to lewd comments about a classmate. He said “Rather than just some people, say 30 in a cafeteria, hearing them all yell insults at you, it’s up there for 6 billion people to see” (Canadian Broadcasting Company, March 2005).

*Modes of attack*

Another way to classify bullying is to distinguish direct and indirect attacks, which children call “to my face” (direct) or “behind my back” (indirect). In a direct attack the victim sees the bully; in an indirect attack, the victim is hurt (by gossip, shunning, and so on) but does not know whom to blame. Indirect bullying makes attacks easy, detection hard, and self-defense nigh impossible (Vaillancourt, 2005). Adults almost never intervene.

For example, if no one sits near a particular child in the school cafeteria, all the classmates are bullies yet the victim cannot confront the ringleader. This is relational and indirect bullying. If one child tells another that a third child stinks, that is verbal and indirect bullying. In the cyberbullying incident above, the victim never knew who created, posted, or logged onto the hate-filled website. He stopped going to school and eventually moved away, his only way to avoid new attacks. Cyberbullying is similar to other bullying, with one crucial difference: the technology separates bully and victim, and that allows weak and frightened children to do it, sometimes in retaliation, always indirect. A US survey found cyber bullies outnumbering cyber victims three to one (Ybarra & Mitchell, 2004).

Adults sometimes tell children to ignore attacks that cannot cause bodily injury (“words can never hurt me”) but children find that all bullying, direct or indirect, can be devastating. A book titled *And words can hurt forever* (Garbarino & deLara, 2002) is accurate. Teachers also are more likely to stop direct physical bullying than indirect relational attacks, even though the later probably is more harmful in the long run (Bauman & Del Rio, 2006).

*Gender and age differences*

The first wave of research reported that bullying decreased steadily with age, and that more boys were bullies and victims than girls. Later research confirmed that physical bullying declines with age (Brame, Nagin, & Tremblay, 2001) but found that other forms increase, with a sizable bump between ages 11 and 15 when children experience puberty and change schools (Archer & Cote, 2005; Eslea & Rees, 2001; Espelage, Meban, & Swearer, 2004; Pellegrini & Long, 2002).

As gender discrimination became apparent to social scientists, surveys began to include indirect and relational bullying, which girls tend to do at younger ages than boys do.
(Archer & Cote, 2005; Crick et al., 2001). The popular media seized on female bullying, with a 2004 movie titled *Mean Girls* that grossed more than a hundred million dollars, and with dozens of books, broadcasts, and news stories about “the discovery of female aggression” (Tavris, 2002, p. B7).

How accurate is this portrayal? Girls are sometimes bullies, especially relational bullies, but this is not news to scholars (Owens, Slee, & Shute, 2001; Putallaz & Bierman, 2004; Tavris, 2002). Despite the media coverage, most research still finds that boys bully more than girls, and that both sexes are crueler to those of the same sex than of the other sex (Ladd, 2005). When childhood bullying crosses the gender barrier, boys bully girls more than vice-versa (although this may change in adulthood) (Moffitt, Caspi, Rutter, & Silva, 2001).

Gender differences are intriguing, but gender similarities are more significant for a scientific understanding of bullying (Hyde, 2005). Most children avoid bullying, especially as their social and cognitive skills improve. But some become chronic bullies or victims, with their interactions imbedded in their peer group as well as tied to each other. Whether they are male or female, attackers or targets, these are troubled youth (Espelage et al., 2004).

**Bullies and victims defined**

What is a bully? Someone who repeatedly attacks another individual who does not fight back. Adults sometimes believe that bullies are deeply insecure or mentally deficient. Not so. For children, it is normal to act like a bully. Toddlers typically hit or kick their mothers and pinch or bite other toddlers; physical aggression probably peaks at about age 2 (Tremblay & Nagin, 2005). Older children call each other fatso, nigger, or bitch; they criticize other children’s hair, shoes and everything in between; they curse at their friends. Young teenagers respond to their peers’ inept sexual advances with abrupt rejection. These actions seem to be bullying, but no single act defines a bully. To be bullying, harmful actions are repeated and victims are defenseless, which is unlikely if normal attacks (e.g., the biting toddler) are discouraged.

Most bullies feel powerful, not insecure. Their only evident vulnerability is that they are less attached to their teachers and schools than most children, a generality found in Japan and Korea where academics are prized as well in Europe and North America (Ando, Asakura, & Simons-Morton, 2005; Doll et al., 2004; Schwartz et al., 2002). This distance from teachers does not make a child unpopular, especially in middle school.

Indeed, although aggressive young children are rejected, early adolescent bullies may be respected, feared, and even liked (Bukowski & Sippola, 2001; Cillessen & Mayeux, 2004; Estell, Cairns, Farmer, & Cairns, 2002; Hawley & Vaughn, 2003). They enjoy “high social status” (Juvenile, Graham, & Schuster, 2003, p. 1233) with friends who encourage them, onlookers who relish a fight, classmates who laugh at their remarks, peers who pass on a rumor.

What is a victim? Someone defenseless who repeatedly suffers, not someone who is occasionally hurt. Almost every child is hurt on occasion—hit by a peer, stung by a remark, sad at being rebuffed. Most shrug off insults or reciprocate (the response to “your mother” is “your mother”) or find protective friends or tactics. But if a child is unusually anxious, hostile, unskilled or sensitive, that may trigger repetition, then rejection, and finally victimization.
Many studies have found that victims are of two kinds (e.g., Schwartz, Proctor, & Chien, 2001; Unnever, 2005). Most are passive victims, weak, defenseless, submissive. They have few friends, they show pain (reinforcing the bully), they blame themselves. They may feel close to their parents or teachers, but they doubt that anyone can help them.

The second kind are bully-victims (also called aggressive victims or provocative victims) because they attack other children as well as being attacked by them. They are disruptive and impulsive, with poor social and problem-solving skills. Their parents punish them, their teachers dislike them, and their peers do not want to play with them. They insult bullies or retaliate (ineffectively), goading their attackers and alienating other children (Mahady Wilton, Craig, & Pepler, 2000; Salmivalli & Nieminen, 2002).

All three of these—bullies, bully-victims, and passive victims—differ particularly in aggression (Camodeca & Goossens, 2005; Craig, 1998). Passive victims turn their anger inward, developing internalizing problems (Prinstein, Cheah, & Guyer, 2005). Bullies express aggression outwardly, proactively or reactively (Dodge & Coie, 1987; Salmivalli & Nieminen, 2002; Vitaro & Brendgen, 2005). Therein lays a crucial distinction between bullies and bully-victims.

Proactive aggression is calculated; it precedes provocation. Bullies specialize in proactive aggression, done to display dominance, to bolster power, to win admiration. Reactive aggression is an impulsive response to a real or imagined attack. Reactive aggression is typical of bully-victims, who react to innocent, accidental, or ambiguous affronts. Unlike socially competent bullies who switch to less direct and less physical modes as they mature, bully-victims stay with physical aggression, both as perpetrators and as targets, throughout childhood (Unnever, 2005).

Although there are distinctions, just explained, between bullies and victims, there are similarities as well, including pro-bully and anti-victim attitudes, as found in empirical research (Marsh, Parada, Craven, & Finger, 2004). Bullying and victimization are thought to be reciprocal, not “opposing behaviors” but instead a social interaction supported by the social context (Haynie et al., 2001, p. 44; Sanders, 2004). Bullies do not act alone; they seek victims and an audience.

Observers

Most children become prosocial: they “cooperate, share materials, invite others to play” (Bierman, 2004, p. 18). They are not rejected for their aggression or withdrawal because these behaviors occur infrequently and selectively. Even as preschoolers, they have friends, and by adolescence, some are well-liked and friendly. Although teenage bullies may be popular, and although adolescents feel pressure to reject victims (Rose, Swenson, & Waller, 2004), most of the best-liked (not necessarily the most popular) students are neither bullies nor victims; they are appreciated for their friendliness (Ladd, 2005).

However, observers are not neutral (Salmivalli, 2001). Some encourage bullies, as friends or assistants, admiring aggression and disliking school. They circle around a fight; they laugh at insults; they boycott a victim’s party. This group becomes more numerous as children grow older. A few children are defenders, who try to stick up for the victim. Among young children, defenders are well liked (Ortega & Monks, 2005). Later in childhood, defenders are generally ineffective, sometimes escalating an attack. Fewer children are defenders by middle school (Menesini et al., 1997; Pellegrini & Long, 2004). Most observers are bystanders, not henchmen or defenders. One intervention strategy is to turn bystanders into effective defenders.
In any case, observers are part of “a group process in which bully, supporter, assistant of bullies, victims, defenders of victims, all take part” (Menesini, Melan, & Pignatti, 2000, p. 262). For example, a playground study found that 85% of bullying episodes involved several observing children—on average four others (Pepler, Craig, & Roberts, 1998). By their non-intervention, observers become part of a permissive social context (Jeffrey, Miller, & Linn, 2001). One scholar concludes that bullies rely “on their network of supporters, subordinates, and scapegoats to establish and exercise influence” and that they consider non-aggressive bystanders as supportive (Rodkin, 2004, p. 95). Bystanders often justify their lack of empathy, blaming the victim, as one child did, explaining that a new classmate “packs his own lunch, and he eats things others don’t like. When he eats, he takes big bites” (Bierman, 2004, p. 42).

Recognition that bullying is a social event highlights the importance of friendship. Beginning in preschool years, mutual teasing, wrestling, threatening, apologizing, jostling, hugging, laughing, and so on teach children about themselves and their peers, helping them avoid bullying or victimization even if their family life puts them at risk (Hay, Payne, & Chadwick, 2004; Hodges, Boiven, Vitaro, & Bukowski, 1999; Salmivalli & Issacs, 2005; Schwartz, Dodge, Pettit, & Bates, 2000).

Research confirms the value of friendship. One longitudinal study of 208 victims, age 13–16, found that 72% were no longer victims two years later. According to these children, the main reason was that they found better friends (Smith, Talamelli, Cowie, Naylor, & Chauhan, 2004). Friends not only protect victims, they also help bullies change their ways by decreasing their reliance on dominance, power, and defiance (Bollmer, Milich, Harris, & Maras, 2005).

Prevalence

The introduction to this article stated that researchers have made major progress assessing the prevalence of bullying. Hundreds of scientists questioning thousands of children in dozens of nations have found that virtually every child has experience as bully, victim, and/or observer. Research has disproven the idea that bullying is uncommon: it is far more prevalent than most people, including school leaders, imagine (Benbenishty & Astor, 2005; Dake, Price, Telljohann, & Funk, 2004). Intervention often begins with a survey, the results convincing educators to act.

Olweus (1993) originally found that, among primary school students, about 8% were self-acknowledged bullies and about 12% were victims, rates thought to be high. Once researchers elsewhere became aware of Olweus’ findings, they assessed prevalence in their own nations and often found rates above those in Norway, as evident in some large studies listed in Table 3. Smaller studies show more variation, such as 82% of the children in three rural US schools reporting victimization (Dulmus, Theriot, Sowers, & Blackburn, 2004).

But “major progress” may be an overstatement. A valid meta-analysis that combines and compares prevalence from one place to another is not yet possible. Differences in students’ age, sex, ethnicity, and social class; in school size and class size; in educational funding, policy, and practice; in data source and methodology; in reporter bias and statistical analysis; in national values and history; and even in the month and circumstances of data collection—make it impossible to find a universal, expected level of bullying.
Variations by place

One strength of research on bullying, evident in Tables 1 and 3, is that scholars from many nations study it. This complicates comparisons but aids our critical analysis (see Berry, Poortinga, Segall, & Dasen, 2002). For example, in Portugal the bullying rate is comparatively high. Portuguese culture or history may encourage bullies, but consider one detail of education policy: Portuguese school children must repeat 6th grade unless they pass a rigorous test. Consequently, at least 10% of all 6th graders (more often boys) have been held back two years or more, and these older, bigger children are almost twice as likely (odds ratio 1.78) to be bullies as the class average (Pereira, Mendonca, Neto, Valente, & Smith, 2004). A higher proportion of them are immigrants, from low-income families. Does retention, academic failure, family background, socioeconomic status, or gender make them more likely to bully, thus increasing the Portuguese percentages? Or perhaps inadequate school funding or poor playground design is partly to blame, as the researchers suggest (Pereira et al., 2004). Without more data and analysis, no scientist could conclude that Portuguese culture promotes bullying.

Every comprehensive review reports large variations in frequency and type of bullying between nations, regions within nations, and schools within regions. Examples abound. In Flemish Belgium, twice as many 15-year-olds say they are bullies as say they are victims, unlike in French-speaking Belgium where more 15-year-olds say that they are victims than bullies (Craig & Harel, 2004). Japanese bullying—called ijime—usually is relational, not physical (Ando et al., 2005), which may be why Japanese girls are more often bullies than Japanese boys (Morita, Soeda, Soeda, & Taki, 1999). Bullying in Italy tends to be more physical than in other nations (Baldry, 1998; Fonzi et al., 1999).

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**Table 3**

Prevalence: major, multi-school surveys of Bullies and Victims

<table>
<thead>
<tr>
<th>Source</th>
<th>Nation</th>
<th>Number in sample</th>
<th>Age/grade</th>
<th>Frequency</th>
<th>Bullies (%)</th>
<th>Victims (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Olweus (1993)</td>
<td>Norway</td>
<td>130,000</td>
<td>Grades 2–6</td>
<td>Now and then</td>
<td>8</td>
<td>12</td>
</tr>
<tr>
<td>Whitney and Smith (1993)</td>
<td>England</td>
<td>2623</td>
<td>Ages 8–11</td>
<td>Once a week or more</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>Fonzi et al. (1999)</td>
<td>Italy</td>
<td>1018</td>
<td>Primary school</td>
<td>Once a week or more</td>
<td>11</td>
<td>18</td>
</tr>
<tr>
<td>Rigby and Slee (1999)</td>
<td>Australia</td>
<td>25,399</td>
<td>8–13-year olds</td>
<td>Once a week or more</td>
<td>7</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>14–18-year olds</td>
<td></td>
<td>3</td>
<td>14</td>
</tr>
<tr>
<td>Morita et al. (1999)</td>
<td>Japan</td>
<td>9429</td>
<td>All grades</td>
<td>Twice last term or more</td>
<td>17</td>
<td>14</td>
</tr>
<tr>
<td>Borg (1999)</td>
<td>Malta</td>
<td>6282</td>
<td>9–14-year olds</td>
<td>Once a week or more</td>
<td>27</td>
<td>32</td>
</tr>
<tr>
<td>Nansel et al. (2001)</td>
<td>United States</td>
<td>15,686</td>
<td>Grades 6–10</td>
<td>Once a week or more</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>Craig and Pepler (2003)</td>
<td>Canada</td>
<td>c.7000</td>
<td>Grades 6–10</td>
<td>Twice or more last week</td>
<td>9</td>
<td>18</td>
</tr>
<tr>
<td>Alikasifoglu et al. (2002)</td>
<td>Turkey</td>
<td>4153</td>
<td>Grades 9–11</td>
<td>During last term</td>
<td>19</td>
<td>30</td>
</tr>
<tr>
<td>Hanewinkel (2004)</td>
<td>Germany</td>
<td>6433</td>
<td>Grades 5–8</td>
<td>Once a week or more</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td>Pereira et al. (2004)</td>
<td>Portugal</td>
<td>4092</td>
<td>Grades 5–6</td>
<td>At least three times this term</td>
<td>16</td>
<td>20</td>
</tr>
<tr>
<td>Fekkes et al. (2005)</td>
<td>The Netherlands</td>
<td>2766</td>
<td>Ages 9–11</td>
<td>Weekly or more</td>
<td>4</td>
<td>9</td>
</tr>
</tbody>
</table>

Complete sources on reference list, marked by a double asterisk (**) . Different methods make these not comparable among nations. Each of these percentages refer to a particular population.
Culture may underlie such variations. But another possibility is that children behave similarly the world over but language obscures that commonality, because “the meanings and connotations of the word bully vary widely across countries” (Benbenishty & Astor, 2003, p. 319). For instance, Italian children are asked about “prepotenze” or “violenze” (Fonzi et al., 1999; Menesini & Modiano, 2003), terms that evoke physical harm. Language is only one of the complications impeding comparisons from one place to another. Another complication is the lack of a common operational definition. The triad cited earlier—harmful, repeated, unequal—is generally accepted but specifics are not. For example, how often, within what time period, must incidents be repeated to cross the line from occasional unpleasantness to bona fide bullying? Olweus originally asked Norwegian children about bullying “now and then,” a phrase that each child could interpret differently. Olweus has replaced “now and then” with specific frequencies: “two or more times in the past month” or “once a week or more” are common thresholds (Solberg & Olweus, 2003).

Nevertheless, definitions and questions still vary from study to study. For instance, only two studies on bullies were published in 2005 in Developmental Psychology, an influential journal published by the American Psychological Association. In one, Dutch researchers asked children about bullying (e.g., “Who do you bully?” and “By whom are you bullied”) without defining the term (Veenstra et al., 2005). In the other US researchers avoided the word “bully” but asked children 22 yes/no questions (e.g., “I called kids names at school”) (Frey et al., 2005). This latter study was a model of research, with multiple measures and a control group (more details soon). Yet without a common definition, a valid comparison of bullying frequency between even these two studies is impossible.

Researchers are trying to overcome differences in language and definition. A United Nations’ (UN) survey of Young People’s Health in Context (Currie et al., 2004), defined bullying before asking questions. The definition was carefully crafted and then translated into the local language, with words chosen to help children interpret bullying in the same way no matter what their linguistic background. In English, the children read:

We say that a student is being bullied when another student, or a group of students, says or does nasty and unpleasant things to him or her. It is also bullying when a student is teased repeatedly in a way he or she doesn’t like, or when he or she is deliberately left out of things. But is it not bullying when two students of about the same strength quarrel or fight. It is also not bullying when the teasing is done in a friendly or playful way (Craig & Harel, 2004, p. 133. Emphasis in original.)

After reading this, about 50,000 students from 34 European nations answered two questions about the past few months: “How often have you been bullied?” and “How often have you taken part in bullying another student?” with five choices, from “never” to “several times a week.”

As already explained, no international comparison is precise. However, this study confirmed other surveys: high prevalence and wide variation. Almost a third of all children said they are bullies, victims, or both “two or three times or more in the past months.” Among 13-year-olds, the range of victims was from 6% (Sweden) to 36% (Lithuania), the range of bullies from 4% to 37% (Sweden and Lithuania again). The same survey questions put the United States and Canada about midway, with 30% of US 13-year-olds either a bully or a victim, as were 31% of Canadian 13-year-olds. A curious finding from the UN study was that bullying several times in the past month generally increased (by 4%)
between ages 11 and 15 as victimization decreased (by 6%) (see Fig. 1). It could be that older bullies pick on younger victims, or that many high school bullies target fewer victims, or that older bullies boast while victims deny.

Sources of data

This highlights another problem. Most studies (two-thirds in 2005) rely on anonymous self-reports to identify bullies and victims. Yet some bullies do not admit or even realize that their actions are harmful, partly because they interpret accidental affronts as hostile (Castro, Veerman, Koops, Bosch, & Monshouwer, 2002). They may overreport, with pride, their quickness to retaliate, or underreport if they realize others might blame them. One study found that, compared to self-reports, peers nominated far more children as bullies. Surprisingly, this study found no correlation between self and peer-reported bullies (Cole, Cornell, & Sheras, 2006).

Victims also misperceive or misreport, perhaps to justify, or deny, their situation. Another study found that, as they age, children are less likely to say that they are victims, but the number of victims reported by peers and teachers stays the same (Salmivalli, 2002). Many investigators have found that both bullies and victims suffer from distorted information processing; neither may accurately perceive their status (Camodeca & Goossens, 2005; Coie & Dodge, 1998).

Added to misreporting and misperceiving are the ambiguities of teasing and indirect bullying, especially in adolescence when cross-sex bullying increases (Craig, Pepler, Connolly, & Henderson, 2001; Espelage & Holt, 2001). Unwelcome sexual comments are typically uttered by someone of the other sex but sexual rumors are usually started by boy against boy, or girl against girl, perhaps because comments are a clumsy attempt to secure sexual attention (not bullying) but rumors are designed to humiliate (bullying) (Benbenishty & Astor, 2005).

As an alternative to self-reports, some researchers ask classmates to identify bullies or victims, often with specific questions (e.g., “who is likely to call kids names?”). Students readily comply. However, analysis of this “labor intensive peer nomination methodology” is complex (Juvonen et al., 2003, p. 1232). A additional problem is that peers may reflect

Fig. 1. More bullies but fewer victims as children grow older. Average percentage of bullies (B) or victims (V) in 34 nations; Frequency “twice or more in the past few months.”
reputation and interpretation more than emotional reality. For example, one study of 7th and 8th graders found that 14% were victims according to both classmates and themselves. A larger group (23%) thought they were victims (picked on, ridiculed, called names, physically hurt, and so on) but their classmates did not agree. Another, smaller group (7%) did not consider themselves victims but their classmates did. Both sources had concurrent validity: the 37% (14 + 23) self-identified victims tended to have low self-esteem and the 21% (14 + 7) whom classmates designated as victims were socially rejected (Juvonen, Nis- ina, & Graham, 2001). Peer-reports are not necessarily superior to self-reports (Solberg & Olweus, 2003).

Adults also report data. Unfortunately, outsiders miss many incidents, perhaps because “the observers were not as unobtrusive as assumed” (Pellegrini, 2001b, p. 139). Teachers identify some victims who do not identify themselves (Cullerton-Sen & Crick, 2005) but bullying often occurs outside the classroom, in bathrooms, lunchrooms, playgrounds. School leaders seem oblivious. In Japan, self-reports revealed about five times as much bullying as school administrators reported to the government (Ando et al., 2005). The children’s code forbids being a tattletale, snitch, or rat, which prevents parents from knowing. Probably for this reason, parents report their young children (age 2–6) bullied twice as much as their older children (age 13–17), an age discrepancy not found in peer or self reports (Nordhagen, Neisen, Stigum, & Kohler, 2005).

Researchers have assessed prevalence covertly. One group outfitted 7- to 11-year-olds with wireless microphones and video cameras (Tapper & Boulton, 2005). The equipment was not usually activated (so the children became used to it), but each child was monitored in turn (except one girl, who refused). Incidents classified as direct bullying occurred 7.1 times per hour, an amazingly high rate, especially since every child (most of whom were not considered bullies) was included. Another study videotaped children on a school playground and again found rates much higher than in self-reports, with boys bullying about 5 times per hour and girls, about 3 times (Pepler et al., 1998). In these studies, either the adult definitions were too broad, or electronic data finds bullying that the children themselves do not report.

Another way to measure victimization is through public records, such as school absences, official assaults, injuries treated at hospitals, police crime logs, and premature deaths. Each increases with victimization, but they reflect only severe problems. Moreover, some absences, assaults and so on are unrelated to bullying, so, again, these measurements are imprecise.

What then, are scientists to do? The best approach is a “multi-method, multi-informant research strategy” (Pellegrini, 2001a, p. 67), using self-reports, peer reports, adult observers, and public records, with a variety of questionnaires, interviews, and observations. An analysis by Ladd found that “by middle childhood, a range of informants, including self, peers, and teachers (but less so parents) … together produced better estimates” (2005, p. 266). However, every social scientist realizes that obtaining data for large, representative samples, from multiple sources, with parental, school and child consent, is an arduous task, almost as hard as it is to combine, discount, and multiply various sources (Cillessen & Bukowski, 2000) and then to compare the results from one study to another, or even within one study with multiple longitudinal measures.

Remember the project in which children answered 22 yes/no questions? Those researchers also asked teachers and deployed playground observers, who found that almost all (77%) children were bullies or encouraged bullying. After initial assessment, 3rd to 6th
grade teachers in 36 classrooms delivered an intense, anti-bullying curriculum while a control group had no such intervention. Follow-up assessments found both successes (in observations) and failures (in self-reported bullying) (Frey et al., 2005).

This illustrates another problem: when results are mixed (as they usually are), what is most accurate? Since perception is crucial, an identical shove, insult, or brush-off can be inconsequential or devastating; bullies, victims, peers, and adults do not agree. Each brings his or her hopes: perhaps the playground observers above wanted successful intervention and misinterpreted some incidents, or perhaps the bullies did not want to admit that they changed.

One measure often used is how often students tell teachers about bullying, based on the assumption that, after intervention, students will have more confidence in their teachers’ ability to help. However, this may be a misleading. For example, in a major intervention in Texas, both telling and bullying increased (Rosenbluth, Whitaker, Sanchez, & Valle, 2004) and in another intervention in Ireland both bullying and willingness to tell decreased (O’Moore & Minton, 2005).

We are back to self-reports, still the primary source to distinguish bullies and victims. Perhaps children know best after all. The most devastating aspect of victimization is in self-perception, and the threshold for psychic pain varies from child to child (Boivin, Hymel, & Hodges, 2001; Graham & Juvonen, 2001; Hawker & Boulton, 2000). This may explain another study in which students reported what classmates did to them as well as whether or not they were victims. Only half of the victimized children (according to their experiences) considered themselves victims. That half tended to be most frequently hurt, although individual differences in self-perception were apparent (Theriot, Dulmus, Sowers, & Johnson, 2005). Similar results came from a study in which victimized students were asked if they told someone else. The 71% who told adults usually had experienced bullying for a longer time (Unnever & Cornell, 2004).

Perhaps victims know something that eludes outsiders, the difference between occasional unpleasantness and hurtful bullying. The next step in prevalence research may be to include a question regarding impact, intended (for bullies) or experienced (for victims).

Consequences

Problems remain in determining consequences as well. A developmental approach is sorely needed. Calling another child fat, for instance, is much more harmful at age 13 than at age 3. Long-term consequences are affected by numerous factors, not only developmental stage but also culture, sex, chronicity, and personality. Retrospective accounts are biased, although it is not known precisely how much, in what direction, and when (Brainard & Reyna, 2005).

Misperceptions

Regarding consequences, the clash between popular understanding and scientific research is blatant. Many adults use their rosy memories of childhood to obscure the crushing rejection and loneliness that some chronic victims feel. Before delving into specifics, let us destroy the notion that the consequences of bullying may be beneficial, a myth that was common among some scientists as well as non-scientists before the past two decades of research. For instance, the ethologist Konrad Lorenz (1969) suggested that
bullying benefits many animal species by insuring that the strongest will mate, and therefore that the next generation will be more fit than the past one. This ethological hypothesis still lingers, as found in a review of theories about bullying (Nishina, 2004). One group suggests that: “social conflict can be a productive forum” (Gottheil & Dubow, 2001, p. 26), teaching negotiation.

Children and teachers have made the same mistake. One early US study of junior high students in the midwest (mostly European-American, native-born, middle class) found that 61% thought “bullying helps a person by making them tougher” (Hoover, Oliver, & Hazler, 1992), and another study, this one in Wisconsin, found that 27% of a group of 797 teachers believed that teasing was harmless (Holt & Keyes, 2004).

Scientists have tested this theory, and the data refutes it. Although some forms of aggression may aid social coherence, sexual bonding, group loyalty, and even mating, and although behaviors that look like aggression to adults (e.g., rough-and-tumble play) benefit children, bullying is always harmful. Far from an interaction that teaches negotiation, bullying is a one-sided, repeated attack with negative consequences for victims and probably for bullies and observers as well (discussed soon).

At first when it was discovered that humans are similar to other animals, some people believed that humans must follow the same animal patterns. A developmental perspective reveals why this conclusion is false. All animals share many innate impulses—aggression, fear, attachment, curiosity, sex and so on—and all species teach their young how, when, and with whom to express those impulses. For this reason, parents teach children to control their aggression (Hawley, 1999; Tremblay & Nagin, 2005). Humans have developed laws and prisons to reinforce that lesson; societies depend on modification and limitation of angry impulses.

Usually, families and cultures teach control of aggression. With parents and then with peers, children develop prosocial skills, learning to distinguish a fair fight from an unfair one. Only a few (4% in one study) are victims year after year (Kochenderfer-Ladd & Wardrop, 2001) or are steadily aggressive throughout childhood (7% in six longitudinal studies) (Broidy et al., 2003). Victimization is less stable than bullying over the years of childhood, probably because victims want to change their status more than bullies do. With time and friendship, not only do victimized children become more accepted but also many aggressive children become less hostile (Haselager, Cillessen, Van Lier, Riksen-Walraven, & Hartup, 2002). Most older adolescents learn to avoid bullying if they have not already done so (Hawley & Vaughn, 2003). Thus the data does not support any theory that bullying is inevitable or beneficial. Now consider specific developmental consequences.

Consequences for victims

Chronic bullying can be fatal. Examples include the three suicides already mentioned in Norway; 15 more who captured headlines in Japan in 1994–1995 (including one victim whose suicide note named his four tormenters); the carnage at Port Arthur, Australia, 1996 (where a chronically bullied young man shot and killed 35 strangers); or three recent examples from the United States: Columbine, Colorado, 1999 (where two bullied boys killed 15 including themselves), El Cajon, California, 2001 (one victim killed 2 and wounded 13), and Red Lake, Minnesota, 2005 (10 dead). There are many more less dramatic examples: bully-victim relationships underlie most childhood assaults, suicides, and homicides. The US Secret Service analyzed school shootings; 71% of the shooters had been victims
(Vossekuiil, Fein, Reddy, Borum, & Modzeleski, 2002). This was confirmed by a medical team (Anderson et al., 2001).

Moreover “non-fatally aggression occurs routinely” (Leinhardt & Willert, 2002, p. 39). A review of cross-sectional studies finds that victims experience anxiety, fear, and depression, not only when they are victimized but for years afterwards (Hawker & Boulton, 2000). A study of close to 50,000 children in two Asian and five European countries found that everywhere victimization has “serious negative social and emotional correlates” (Eslea et al., 2003, p. 80).

The word “correlates” raises a question. Might victims be troubled before their abuse, and thus “negative social and emotional” consequences would occur without bullying? Yes and no. Yes, many victims are troubled, but no, that does not account for the outcomes. Longitudinal research repeatedly finds that chronic victimization increases loneliness and depression, making any problems worse (e.g., Bond, Carlin, Thomas, Rubin, & Patton, 2001; Dill, Vernberg, Fonagy, Twemlow, & Gamm, 2004; Kochenderfer-Ladd & Ladd, 2001; Lopez & DuBois, 2005). The likely reason, according to several scholars, is that victims come to dislike themselves, distrust their peers, and fear school—and those feelings lead to more isolation, deeper depression, and further abuse (Prinstein et al., 2005; Troop-Gordon & Ladd, 2005).

Troubled children are not only more likely to become victims or bullies, they are also more likely to suffer because of it. So are children who are unusual in some way. Those with disabilities are particularly vulnerable (de Monchy, Pijl, & Zandberg, 2004; Flynt & Morton, 2004), as are boys thought to be homosexual, who often are severely bullied and who remember the details for years afterwards, adding to their trauma (Rivers, 2001, 2004). A study of multiple types of victimization (33 types in all) found, as expected, that children who experienced “poly-victimization” were more likely to be depressed and anxious than children who experienced only one type. In fact, “it is infrequent that a single victimization, even a serious one, by itself, has a large traumatic influence” (Finkelhor, Ormrod, Turner, & Hamby, 2005, 1309). But of all 33 types of victimization, emotional bullying was the one type most likely to harm a child’s mental health. Thus, time and time again, scientists discover that the very students who most need to learn from peers and friends are the ones whom bullies prevent from such learning.

Consequences for bullies

Bullies cut themselves off from important learning as well. The negative consequences for bullies are not immediately obvious, since bullies seem unscathed in primary and middle school. Their social standing and self-concept are similar to that of observers, and markedly better than victims (Juvonen et al., 2001). In primary school, bullies do well academically (Woods & Wolke, 2004) and in middle school, bullying may increase popularity (Cillessen & Mayeux, 2004; Keisner & Pastore, 2005; Rose et al., 2004).

A developmental view tells another story. Bullies, like victims, have more psychological and physical illnesses than other children, which becomes increasingly problematic (Kumpulainen, Räsänen, & Puura, 2001; Nishina, Juvonen, & Witkow, 2005). In addition, by high school, bullying becomes maladaptive and victims find friends. Whereas young children solve conflicts by fighting (ideal for a bully), adolescents and adults prefer negotiation and disengagement (which bullies never learn) (Laursen, Finkelstein, & Betts, 2001; Smith, Shu, & Madsen, 2001). As one team explains: “In the short term, bullying might
allow children to achieve their immediate goals without learning socially appropriate ways to negotiate with others ...[this results in] persistent maladaptive patterns” (Haynie et al., 2001, p. 31).

These maladaptive patterns become self-destructive. Bullies risk injury, addiction, and prison. A 12-nation study found more serious injuries among adolescent bullies than the average adolescent, with an odds ratio of about 1.5 (Picket et al., 2002). A 25-nation study found that adolescent bullies are more likely than victims or observers to drink alcohol and get into fights (Nansel, Overpeck, Saluja, & Ruan, 2004). Olweus (1999) reported that a third of all boys who were bullies in early primary school have three or more criminal convictions by age 24, far higher than former victims (less than 10%) or non-bullies (about 10%). A survey of 16,410 high school students in Finland found that male bullies were over four times as likely to think about killing themselves as other boys (Kaltiala-Heino, Rimpela, Marttunen, Rimpela, & Rantanen, 1999). Female bullies suffer as much, or more, when they mature. They tend to choose violent partners, give birth as teenagers to children who are sick, disruptive, and aggressive, and become both perpetrators and victims of domestic abuse (Putallaz & Bierman, 2004).

Thus, unless they change their ways and their associations, childhood bullies are on a developmental path that turns ugly. As two scientists specializing in peer relations explain “we hypothesize that for perceived-popular youth [who tend to be relationally aggressive], short term advantages may be combined with long-term disadvantages. Establishing whether this is true will require long-term follow-up” (Cillessen & Rose, 2005, p. 104). This plea for more prospective studies of school bullying, controlling for genetic and familial influences, is heard from many other researchers as well (e.g., Rigby, 2003). All signs now point to a difficult adulthood for childhood bullies; confirmation is needed.

No doubt bully-victims suffer most of all, according to every comparative study (e.g., Haynie et al., 2001; Schwartz et al., 2001; Unnever, 2005). Not only are they rejected, they are most troubled by anger and depression. The disproven bromide that childhood bullies are lonely and unhappy may have arisen because of bully-victims, who are “reactive, impulsive, and dysregulated” (Unnever, 2005, p. 154). Many bully-victims have a diagnosed psychopathology: ADHD, developmental delay, oppositional defiant disorder, conduct disorder (Nordhagen et al., 2005; Perry et al., 2001). Their behavior leads to rejection even if they try to improve (Bierman, 2004), which makes prevention crucial. Compared to either bullies or passive victims, bully-victims are more physically aggressive (both reactively and proactively), more harshly victimized, and least likely to experience parental support, peer friendships, or school success (Kumpulainen et al., 2001; Salmivalli & Nieminen, 2002).

**Consequences for the peer group**

Everyone’s academic achievement is reduced when bullying is frequent. As already reviewed, victims are the first to suffer, although some young victims are good students (bullied because of it) as are some bullies. Among the signs of victimization are underachievement, school alienation, stomach and head aches, unexplained reluctance to go to school, and excessive absences. If childhood victimization becomes chronic, social relationships, academic success, and employment in adulthood are affected, at least according to retrospective reports (Macmillan & Hagan, 2004; Schäfer et al., 2004). Bullies probably suffer as well, with lower marks and a higher risk of leaving school without a diploma.
Both victimization and bullying predict (not merely correlate with) aggression, anxiety, depression, underachievement, and delinquency (Hanish & Guerra, 2002; Lopez & DuBois, 2005; Nishina et al., 2005).

However, when classmates who are bullies or victims are affected, then everyone’s education suffers. Disruptions and distractions reduce learning. On days when uninvolved students observe bullying, they dislike school more (Nishina & Juvonen, 2005).

Neuroscientists have recently discovered “mirror neurons” that respond to a witnessed event as if observers experienced it themselves. As one reviewer explains, “researchers have turned to the human brain and found neural activity that mirrors not only the movement but also the intentions, sensations, and emotions of those around us” (Miller, 2005, p. 945). Observers who feel victimized may try to distance themselves, or to identify with the bully, both strategies leading to negative consequences. Neurological activation when witnessing bullying has not been proven with brain scans of children, but research has found that adults have similar physiological reactions (e.g., heart rate) when they recall observed bullying as when recalling their own victimization (Janson & Hazler, 2004). Children may as well.

Whether children are participants or witnesses, whether learning occurs neurologically or only through observation and experience, for bystanders “a valuable opportunity for learning personal efficacy and social empowerment is lost” (Jeffrey et al., 2001, p. 153). Children who see bullying, day after day, absorb harmful lessons: bystanders should not intervene; victims deserve their fate; power beats fairness; adults do not care about children.

Once again, scientists are presented with a challenge. To discover the true impact of bullying for everyone, a prospective developmental approach is required. Humans are prone to denial, forgetfulness, and bias. Many developmental events—premature births, divorce, sexual abuse, and employed mothers among them—have been portrayed as far more destructive, or sometimes far more benign, than developmental research now finds them to be. The consequences of bullying have been exaggerated and dismissed, victimization has been remembered with fondness and terror, observers may be unscathed or damaged. Only scientific research can disprove the alarmist or the apologist. No doubt some are harmed; longitudinal data will reveal how widespread, inevitable, and enduring that harm is.

Causes

Efforts to find causes have also been hampered by the lack of prospective research. The life-span perspective stresses that human behavior has multiple causes and contexts, changing in many directions at once, with culture and cohort always influential (Baltes, Lindenberger, & Staudinger, 1998). Many factors, from the genes set at conception to a teacher’s momentary reaction, within cultural and historical systems, cause every episode of bullying. As explained, low self-esteem, social withdrawal, and personal anxiety often predate victimization, but bullying worsens those very attributes (Dill et al., 2004; Egan & Perry, 1998). Exactly what fuels this destructive spiral? We now examine some possible causes, among them the child’s appearance, ethnicity, culture, family, and genes. All have some effect; none stands alone.

Appearance

Does a child’s appearance make other children pick on him or her? Are victims fat, or short, or weird? Yes, but so are many other children. Indeed, almost every child is odd—
ears stick out, feet too big, hair styled wrong, pants too loose, and so on. A child’s reaction to teasing—laughter or anger—usually halts the bully. Thus, most aspects of appearance do not cause bullying, although they accompany it.

Among primary school boys, one physical characteristic is crucial—size. Big bullies harass small victims (Olweus, 1993). Appearing powerless is also a problem. In Japan, college students examined photographs of children they had never seen. Many (70%) chose one as a likely victim; he looked weak. They were right, he was chronically bullied (Ono & Hasegawa, 2001).

**Ethnicity and culture**

Ethnic bullying is a particular worry in multi-racial communities or in nations with increasing numbers of immigrants (Smith, 2003). Ethnic gangs and racist remarks are prevalent, and a national US study finds immigrant children more at risk of bullying (Yu, Huang, & Schwalberg, 2003). However, bullying may be more likely within ethnic/racial groups than between them. A survey in Australia found no ethnic differences in incidence of bullying (Nguy & Hunt, 2004); a British study of South Asian students found more victimization by other Asian students than by students of traditional English heritage (Eslea & Mukhtar, 2000). In the United States, one large survey of bullied adolescents found that only one in 12 (8%) thought that their race or religion was the reason (Nansel et al., 2001) and a small study in Mississippi found no significant black/white differences (Seals & Young, 2003). Contrary data comes from several US studies that report more victims and fewer bullies among children of Asian descent (Juvonen et al., 2003; Mouttapa, Valenta, Gallaher, Rohrbach, & Unger, 2004; Zhou, Peverly, Xin, Huang, & Wang, 2003). For these children, it is not known if size, language, or ethnicity is the key variable.

A gap in the research precludes definitive conclusions. Although bullying is not merely a problem of individuals, anonymous self-reports are still the mainstay of data collection. Victims are almost never asked to identify themselves and their bullies. Thus no one knows how much bullying is intra-racial or inter-racial. There are two hopeful signs that bullying does not usually exacerbate ethnic tensions: bullies usually victimize others of their same sex, grade, and ethnicity; a study of 77 California classrooms found that, with greater ethnic diversity, children of all ethnic backgrounds (African, Asian, European, and Latino) were less victimized and less lonely (Bellmore, Witkow, Graham, & Juvonen, 2004). These authors find “positive effects of ethnic diversity on social adjustment” when ethnicity is studied in context (p. 1171).

Might some cultures encourage bullying? Large international variations in rates of homicide and capital punishment indicate cultural differences in attitudes regarding violence (Bergeron & Schneider, 2005). However, these differences are hard to quantify regarding bullying. For example, Asians and Anglos within England share attitudes about aggression (Thanzami & Archer, 2005). Japanese and Australian students, expected to differ because of their collectivist versus individualistic cultures, were found to be quite similar in their attitudes about bullying. In this study, gender differences were apparent, with Japanese females more similar to Australian females than to Japanese males (Nesdale & Naito, 2005).

A related hypothesis is that socioeconomic status creates bullies or victims. Again, the data is mixed. Some wealthier nations report more bullying than nearby poorer ones (e.g., Japan over China, England over Ireland), some poor nations have more bullying than
nearby richer ones (Lithuania over Poland; Greenland over Canada) (Craig & Harel, 2004). Economic patterns also vary within nations. A study of Dutch 11-year-olds found no economic differences (Veenstra et al., 2005) but a study in Portugal found that lower income students were more often bullies and victims (Pereira et al., 2004). Likewise in Malta, lower income children were likely to be both bullies and victims, but academic tracking seemed to be the reason (Borg, 1999). Overall, culture, ethnicity, and income are sometimes relevant, but none inevitably creates bullies.

Families

Many researchers have investigated family origins of victims and bullies. Specifics depend partly on gender and role (Duncan, 2004; Finnegan, Hodges, & Perry, 1998; Holmes & Holmes-Lonergan, 2004; Maccoby, 2000; Shields & Cicchetti, 2001). Generally, harsh, neglecting, or rejecting parents are more likely to rear aggressive victims, unable to control their impulses, particularly if their mothers are angry and powerless. Bullies often report less attachment to their parents than the average child, and their families may be abusive and cold, at least according to some of the reviews. Boy victims often are unusually close their mothers, although their fathers may be more distant. The mothers of girl victims, however, are more hostile than overprotective.

Correlations between parents and children are bi-directional. Since parents and children react to each other, mothers may be harsh because their children are aggressive and may be protective because their children are victims, as well as vice-versa. Again prospective research is needed. Ongoing work in Oregon suggests that parent training prevents some of this vicious cycle (Reid, Patterson, & Snyder, 2002). In the Oregon studies as well as in other work, siblings are sometimes crucial. Siblings may be protective (Tisak & Tisak, 1996) but children bullied by older siblings are likely to become bullies or victims (Wolke & Samara, 2004).

Although many studies find family influences as correlates, and some find plausible causes, a developmental perspective no longer looks to the family as the determinant of antisocial or prosocial behavior (Baldry & Farrington, 2000; Bierman, 2004; Dishion & Bullock, 2002; O’Connor, 2002). Many studies on resilience, for instance, find that some children with inadequate families develop good social skills (Luthar, 2003). Inherited temperament, intelligence, talent, and sex may be the explanation.

Genes

Genetic influences are now recognized as pervasive, affecting every behavior. Some children are genetically predisposed to be unusually aggressive, impulsive, or submissive. Could becoming a bully or victim be the result? Reviews of genetic influences on aggression find that some emotional aspects of aggression are genetic (e.g., anger, temper) but expression of aggression (e.g., delinquency) is strongly influenced by other factors (DiLalla, 2003; Raine, 2002; Ree & Waldman, 2002). A genetic tendency to be aggressive combined with coercive parents and antisocial friends often produces a bully; being weak and submissive by nature and being bullied by older brothers but protected by one’s mother is likely to produce a victim.

Especially when a child’s inherited tendencies are extreme, early parenting and other environmental influences may be crucial, helping aggressive children to develop empathy
and fearful children to become assertive. The 15% or so of infants who are temperamentally difficult cannot erase their genes, but they need not become insensitive bullies or anxious victims; they can become the brave leaders or thoughtful followers that every social group needs (Bukowski & Sippola, 2001; Kagan & Snidman, 2004).

The most obvious interaction of nature and nurture come from the genes on the Y chromosome, affecting hormones and body structure. According to a careful review, the hypothesis that testosterone makes boys aggressive is only partly valid, because “environment and culture add their influence by rewarding, punishing, and/or ignoring behaviors, thereby exaggerating, diminishing, distorting, or permitting the expression of biologically based behaviors” (Van Goozen, 2005, p. 298). This statement applies to every genetic tendency.

Throughout the lifespan, gender differences in aggression wax and wane, guided by social forces. One meta-analysis find boys are more aggressive than girls by age 4 (Archer, 2004); another does not (Keenan & Shaw, 1997). As already explained, some reports suggest that girls are bullies as often as boys, with relational and indirect bullying that is unlikely to surface in surveys. Other reports suggest that boys outnumber girls in every kind of bullying. On self-reports, boys are bullies twice as often as girls. However, the ratio varies much more than the Y chromosome would predict. For example, for 11-year-olds in the UN study, the XY:XX ratio is three to one in Poland, Greece, and Ireland, but almost even in Macedonia and Greenland (Craig & Harel, 2004). Looking at all the research, male/female ratios depend on how and when bullying is assessed as well as on the children’s culture, because of a “complicated interplay between genes and the social context” (DiLalla, 2003, p. 615; Johnston & Edwards, 2002).

This complicated interplay is illustrated by a well-known and much admired study that began with virtually all infants born between April 1972 and March 1973 in Dunedin, New Zealand. A genetic allele that reduced the expression of MAOA (monoamine oxidase A, which affects various neurotransmitters) was inherited by 37% of them. During childhood, about 34% of this New Zealand cohort were probably, or definitely, mistreated. There was no correlation between MAOA and nurturance, which meant that more than a third were high in MAOA and well-nurtured, and about half had a mixed background (either low in MAOA but well treated or high in MAOA but low in nurturance).

That left 12% with the worst combination, low MAOA and low nurturance. By current definitions (this study began before the explosion of bully research) most of the boys with this double risk were bullies or aggressive-victims, as they often antagonized their parents, peers, teachers, and the police. By age 26, almost 60% of these doubly impaired boys had been convicted of a violent offense. By contrast, only 4% of the boys with low MAOA but good parental care were arrested and convicted, a rate even lower that the opposite mixture, high MAOA and poor care (Caspi et al., 2002). Thus the child-rearing environment determined whether this allele would be destructive or not.

Research on rhesus monkeys confirms this gene–environment interaction (Suomi, 2005). Another particular allele predisposes a monkey to aggression. If that monkey is male, chances are he will be rejected by adulthood, more likely to die than to mate. If that monkey is female, she is likely to become an inadequate mother, raising antisocial offspring. However, if a newborn with the aggressive allele is removed at birth from its biological mother (who also has that allele) and is raised by a nurturant mother, he or she develops adequate social skills.
These conclusions are echoed for human behaviors that have benefited from decades of prospective, longitudinal research, such as depression, intelligence, and schizophrenia. Genes are influential, but their expression depends on many particulars of the environment. To find what causes a child to become a bully or a victim, researchers need to do what they have not yet done, look at interactions between all the factors just explored.

This is especially apparent when children have some kind of disability, such as a speech impairment, movement handicap, behavioral disorder, or learning disability. Children with these problems may be more likely to be victims, or bully-victims. Yet probably the disability plus the school cause the problem. If the child is in an inclusion program, and the teacher does not recognize special vulnerability, victimization is likely (de Monchy et al., 2004; Norwich & Kelly, 2004). One study found that movement disordered children were not more often victims, but, when victimization did occur, the child’s self-esteem was particularly likely to be affected (Piek, Barrett, Allen, Jones, & Louise, 2005).

To sum up, many factors cause bullying, but none works alone. Size, behavior, culture, family, and genes place children at risk, but risk does not mean that a particular child will become either a bully or a victim. As found regarding many aspects of development, although background and genes almost always have some effect, the immediate context is pivotal.

Prevention at school

The power of the immediate context is evident when comparing schools in one nation, at the same time, using the same measures. Olweus (1993) reported bullying four times more frequent in some Norwegian schools than others. A fourfold difference was also found in Australia (Rigby, 2002b) and a sixfold difference among schools in Scotland (Mellor, 1999).

Schools differ in severity as well, not because of size, urban/rural status, or ethnicity but on other variables that seem particular to one school or even one classroom (Augustine, Wilcox, Ousey, & Clayton, 2002; Galloway & Roland, 2004; Kasen, Berenson, Cohen, & Johnson, 2004; Reinke & Herman, 2002). Many Americans were surprised that the dramatic school shootings were not in big city schools. Many scholars expected Israeli geopolitical factors (i.e., the escalating Arab-Jewish conflict) to spill over into schools, but that made surprisingly little difference in bullying compared to each school’s culture (Benbenishty & Astor, 2005).

Disappointing?

Since schools have a major impact, some adults may conclude that schools can eliminate bullying. Not so. Many have tried. The outcome has been called “disappointing,” a word used frequently, including in reports from Scandinavia (Salmivalli, Kaukiainen, Voeten, & Sinisammal, 2004), Europe (Alsaker, 2004), Japan (Okayasu & Takayama, 2004), and the United States (Juvonen & Graham, 2004; Limber, Nation, Tracy, Melton, & Vlerx, 2004).

One reason may be that the bar is set too high. Many seek to replicate the 50% reduction that Olweus achieved in his first national effort, forgetting that such results are rare in any application of science to the real world. Even in Norway, Olweus’ success was not universal (Roland, 2000). Changing a behavior pattern (of bullying or of anything else) is a long, gradual process, guided by intense effort and careful evaluation.
Unfortunately, few school interventions have been scientifically evaluated. Some popular policies (e.g., zero tolerance, metal detectors, separating bullies from other children) seem antithetical to best developmental practice, but schools with these policies rarely evaluate the results. At the Center for the Study and Prevention of Violence at the University of Colorado, Elliot (1999) analyzed 450 anti-bully programs used in North American schools. He deplored the scarcity of evaluation, and recommended only one (the Olweus model) that met evidence-based standards of success. Similarly “lack of evaluation” is a “recurring theme” of efforts to reduce school violence in Europe (Smith, 2003, p. 9). Another review finds that, although “a plethora of programs to prevent or reduce bully-victim problems have been marketed … few... have been empirically evaluated” (Ladd, 2005, p. 284) and a nationwide campaign from 1995 to 2000 to eliminate bullying in the Netherlands found “mixed results” but “no timely and precise multilevel measurement of behavior within a longitudinal research design” (Mooij, 2005).

Lack of evaluation is particularly problematic, because of the difficulty of accurate assessment, as previously described. Children themselves do not put much faith in adult intervention. A study of 9–11-year olds in the Netherlands found that only 53 percent of bullied children told their teachers. When they were told, teachers usually tried to intervene, with half of them helping, a third making no difference, and a third making things worse (Fekkes, Pijper, & Verloove-Vanhorick, 2005). A US study of elementary school children found that, particularly for boys, telling a teacher sometimes backfired (Kochenderfer-Ladd & Skinner, 2002), and a British study of adolescents found that telling peers was much more helpful than telling adults (Smith & Shu, 2000). An Australian study found that almost half the 14-year-olds thought teachers did not care about bullying and that telling them was a bad idea. Further, 23% thought that most teachers made matters worse when they intervened (Rigby & Bagshaw, 2003).

The wave of untested programs in the United States following Columbine did not slow down bullying. The U.S. Department of Justice reports an increase in bullying from 1999 to 2001 and no change from 2001 through 2003 (DeVoe, Peter, Noonan, Snyder, & Baum, 2005). Nor have efforts in Europe necessarily succeeded. In separate prevention programs in Germany, England, and Belgium, bullying was reduced in primary schools but not in secondary schools (Hanewinkel, 2004; Smith, Sharp, Eslea, & Thompson, 2004; Stevens, Van Öost, & De Bourdeaudhuij, 2004). Indeed, in the German high schools, bullying increased significantly after intervention. In Brazil, high school students who thought their teachers would punish them for bullying were more likely to bully others than those who thought they would not be punished (DeSouza & Ribeiro, 2005).

Some failures should be expected, especially since some success has occurred, including much less bullying in Ireland and Spain (O’Moore & Minton, 2005; Ortega, Del Rey, & Mora-Merchán, 2004). Olweus led another effort in Norway, a “whole school” approach designed to include entire schools, from educational leaders who set priorities, teachers who were intensely trained, to students who all discussed the need to stop bullies and protect victims. That effort involved 450 schools, and reduced bully-victim problems by 32–49 percent. Olweus reported, as other have, that intensity and thoroughness of effort within each school is significant, and that older children are less amenable to change than younger ones (Olweus, 2005).

Olweus’ success is not easy to replicate. One reason is thought to be “tepid” support from teachers (Smith, Schneider, Smith, & Ananiadou, 2004, p. 66) and piecemeal efforts from principals (Roland, 2000; Smith, Pepler, & Rigby, 2004). In general, summaries of bully
prevention efforts report small successes and some failures (e.g. Rigby, 2002a; Smith et al., 2004; Smith & Pepler et al., 2004). Well-intentioned efforts backfire “if they are interpreted by stakeholders in unanticipated ways” (Juvonen & Graham, 2004, p. 250). A program to prevent bullying among 5th grade students in Austin, Texas, improved awareness but increased bullying (Rosenbluth et al., 2004). A series of Canadian interventions found that “teachers frequently complained that the very act of completing the questionnaires had increased the frequency of bullying” (Pepler, Craig, O’Connell, Atlas, & Charach, 2004, p. 136). Some failures have been interpreted as the early signs of success, in that students may become sensitized and therefore report more bullying. However, the sensitization hypothesis has been criticized as an “easy” explanation of failure, especially when projects that do not show sensitization are heralded as success (Salmivalli, Kaukiainen, & Voeten, 2005).

**Crucial aspects of effective intervention**

Research on intervention has discovered some aspects that seem pivotal. One is the recognition that bullying is a social interaction, part of peer culture, a fact stressed by most European experts (Smith, 2003). This leads to a strategy of turning bystanders into defenders, an effort that seems successful before puberty (Salmivalli et al., 2005). This social perspective may be one reason European interventions seem more successful than those in North America, where “bullying and victimization are often considered as personal problems of individual youth rather than problems requiring a collective response” (Juvonen et al., 2003, p. 1236). A bully-prevention team who tried to implement Olweus method in South Carolina are particularly critical of schools that grouped children who bullied in therapeutic groups that focused on anger management, skill-building, empathy-building, or the enhancement of bullies’ self-esteem. Although well-intentioned, such efforts are likely to be counter-productive…. Improving their self-esteem may help to create more confident bullies but likely will not decrease their bullying behavior. Anger management training is likely to be equally ineffective, as anger is not a common motivation for children who bully (Limber et al., 2004, pp. 68–69).

Another lesson from developmental research is that change is not usually linear, but occurs in fits and starts, gains and losses, cascades and zigzags, over a long time period. For bullying, a lengthy massive campaign, involving all the stakeholders, may be necessary. Rather than gradual, dose-related improvement, resistance may collapse and bullying decline only after a certain threshold is crossed (Limber et al., 2004; Olweus, 2004; Smith & Sharp et al., 2004).

For example, the Sheffield project in England began with 23 schools, each choosing which anti-bullying measures best suited them. Some did only a few (new landscaping of playgrounds was a common choice) and some involved all the students and teachers in multiple ways. Among the 23 schools, 14 reduced bullying but nine did not, with intensity of effort correlated to improvement. On follow-up four years later, the only secondary school that continued to improve had a new principal who had been a teacher–leader of an earlier whole school effort, and was committed to halting bullies (Smith & Sharp et al., 2004). A renewed British effort with schools that had earlier been involved again found disappointing results in half of them, with the school management and culture said to be the likely culprit (Jennifer & Shaughnessy, 2005).
A positive example of the need for sustained effort comes from Kempele, Finland, where a multi-faceted intervention reduced the percentage of children victimized “fairly often” about 1 percent a year over 8 years (from 9% to 3%). Success was not immediate, and yearly data found an unexpected increase midway in the project (from 4% to 5%) before three more years of decline (Koivisto, 2004).

Sustained effort may be particularly elusive in certain nations. One expert suggests that some US teachers are currently “overwhelmed” by the demand for academic achievement. They have no energy for anti-bullying (Limber et al., 2004, p. 67). Scientists have not convinced them, or their superiors, that socio-emotional and cognitive development are closely linked and that bullying is reduced when teachers are trained in structured pedagogy, with clear disciplinary rules. This is known to researchers in education and child development. Many studies find that high-achieving schools have less bullying and more prosocial behavior (e.g., Caprara et al., 2000; Galloway and Roland, 2004; Luiselli, Putnam, Handler, & Feinberg, 2005; McEvoy and Welker, 2000). If teachers and policy makers do not know this research, they may ignore bully prevention in favor of academic achievement.

In the US, some success at reducing bullying (measured scientifically, with control groups, blind assessments, repeated measures) has been attained with a structured curriculum, delivered by well-trained teachers to heterogeneous groups of elementary school students via discussions, stories, role-plays and other active learning methods. Among these successes are the Peacemakers’ Program (all 4–6th graders in several schools) (Shapiro, Burgoon, Welker, & Clough, 2002), S.S. Grin (all rejected or anxious children, about a fourth of whom were highly aggressive) (DeRosier & Marcus, 2005), Steps to Respect (all 3rd to 6th graders) (Frey et al., 2005), and Resolving Conflict Creatively (many classes in inner-city elementary schools) (Aber, Jones, Brown, Chaudry, & Samples, 1998).

Since developmental understanding has produced the successes just mentioned, and since researchers from many nations have discovered clues as to why one program succeeds and another fails, why do reports often include words such as disappointing, discouraging, and insignificant? The answer may explain why publications have exploded and now may be contracting. One expert notes: “Americans were shocked but fascinated …. Sensationalist media coverage of high profile acts soon gave way to a sort of acceptance, perhaps even apathy” (Allen-Mears, 2005, p. vii). Consider again the clash between public understanding and scientific research. Researchers may have been energized and then discouraged by public sentiment, or inspired by Olweus and then disheartened that quick replication seems impossible.

Yet scientists cannot forget that developmental change comes gradually and that multi-causal behaviors do not disappear with any single effort, no matter how well intentioned. Evaluation that compares rates of bullying before and after a few months of activity is foolhardy, reminiscent of laboratory experiments or political campaigns, rather than ecologically valid interventions. Could expectations for quick success erode scientific energy and wisdom? Let us look at one more example.

The team who led the Texas project began their work a few weeks before Columbine occurred. The researchers proudly reported that “local media covered project activities on 6 occasions (3 television, 1 radio, 2 print) and 6 state and national pieces were produced (1 television, 4 satellite broadcasts, 1 print)… with interviews of students, teachers, principals, and project staff” (Rosenbluth et al., 2004, p. 230). To their surprise, evaluation after 3 months and follow-up 5 months later found twice as many self-reported bullies as before the intervention began. In retrospect, the researchers noted that, because they wanted to
please the school leadership, they chose a curriculum that “was designed to integrate easily into existing classroom lessons” even though it had not been evaluated with students (Whitaker, Rosenbluth, Valle, & Sanchez, 2004, p. 330). Beyond choosing a curriculum for the wrong reasons, they now realize “the importance of selecting well-designed and valid assessment tools” (Rosenbluth et al., 2004, p. 232). These lessons are a poignant reminder for every scientist.

Conclusion

This last example illustrates a crucial point. The discovery that bullying is widespread and harmful has motivated many researchers and educators to describe, predict, and prevent it. Punctuating that research has been gunfire. Unfortunately, many school systems have avoided evaluation; many proponents of intervention have exaggerated prevalence (by reporting how many children have ever been victimized) or dramatized consequences (by highlighting homicides and suicides). Many legislatures and school systems throughout the world have vowed to eliminate bullying, but few understand the complexity of the problem. Since school shootings and adolescent suicides have declined (the US suicide rate for 11–17-year olds decreased from 5.0 to 3.3 per 100,000 from 1992 to 2002), since many adults remember childhood conflicts that strengthened them, since few researchers have educated the public about the definitions, consequences, or causes of bullying, and since many have forgotten the slow progress of science, public attention has shifted. Many scientists believe that popular culture, particularly in the US, has become hostile, turning away from “confidence in science and in rational methods of thought” as Donald Kennedy, editor-in-chief of Science, laments (2005, p. 165).

Scientists need to redouble their efforts. No need to be disappointed, or to apologize that success is not guaranteed. The ebb and flow of popular attention, or the reality that some efforts will fail, should not halt research. Given that nothing was known about bullying a few decades ago, remarkable progress has already occurred.

As scientists proceed, they must educate non-scientists. When another shocking death occurs, a wave of media attention will arouse the public. Researchers must then ride that wave, as Olweus did twenty-four years ago, using the momentum to support sustained and comprehensive intervention with scientific evaluation. As a detailed account of many anti-bullying efforts explains, there is “work to be done to convince educators, parents, policymakers, and children themselves” (Pepler, Smith, & Rigby, 2004, p. 321). Much has been accomplished; much remains.

References


