Antisocial and Prosocial Behavior

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Introduction
This chapter reviews recent research on antisocial and prosocial behaviors as they relate to academic outcomes. It presents an overview of conceptual issues, methodologies, measurement tools, and findings, with an emphasis on describing the empirical literature and its approaches to studying antisocial and prosocial behaviors. A selection of 41 studies from the past decade serves as the basis for discussion.

Antisocial behaviors include physical acts of violence and nonphysical behaviors such as verbal abuse or social rejection. Antisocial behaviors also include subtle forms of behavior such as withdrawal and refusal to share with or help others. Acts of aggression have commanded the most attention in the research literature, particularly through the study of bullying, which includes physical and verbal or emotional abuse. Prosocial behavior, on the other hand, represents acts that indicate positive social regard and inclusiveness. Research on prosocial behavior typically concentrates on acts of sharing and cooperation.

Research on antisocial and prosocial behavior has a fairly unified focus and few competing theoretical perspectives. There is broad implicit agreement about the ways to measure antisocial behavior (particularly aggression) and some consensus on what prosocial behavior refers to. Although some researchers approach antisocial and prosocial behavior through specific theoretical lenses, most work in this area is empirically driven, typically analyzing discrete behaviors instead of examining competing theoretical perspectives or outlining comprehensive conceptual frameworks.

Antisocial and prosocial behaviors relate in complex ways to physiological mechanisms, home and school social environments, and affective and cognitive pathways. When social behaviors veer into negative patterns of aggression and withdrawal, they have direct and powerful negative impacts on other students, parents, and teachers, in addition to the negative consequences
for the acting student. The complexity and high-stakes nature of antisocial and prosocial behaviors make them important targets of research and intervention.

**Methods**

This chapter reviews peer-reviewed literature on antisocial and prosocial behaviors published between 1997 and 2008. The works were limited to 41 journal articles that appeared in the major educational and psychological journals during the identified time frame. The basic search process is described in Chapter 1 and detailed in Appendix A. Searches were conducted by journal for articles containing the key words *aggression, antisocial, prosocial,* and *achievement.* In addition to the journal list referenced in Appendix A, we conducted a broader search within additional journals that are key sources for research in the antisocial and prosocial fields, including *Child Development, Developmental Psychology, Journal of Emotional and Behavioral Disorders,* and *Journal of School Health.* Among the approximately 100 articles returned by these searches, a number were eliminated that (1) invoked antisocial behaviors or prosocial behaviors but did not include a measure or analysis of them, (2) were not research based (e.g., discussions of conceptual issues, unstructured observations, or individual psychiatric case studies), (3) were small-scale studies outside of the United States with unique populations, or (4) were intended as research guides (such as for classroom management) and not original research reports. This yielded a group of 41 articles.

**Conceptual Definition**

Antisocial behavior is most commonly understood as consisting of both physical acts (e.g., violence to others or to objects in the environment, disruptive or purposively distracting actions) and nonphysical acts (e.g., exclusion, rejection, humiliation, any form of verbal abuse) (Bandura, 1973). These are seen as aggressive behaviors in that they are intended to be felt or noticed by the victim or onlookers. Antisocial behavior is most closely identified both with aggression (as defined above) and with a specific form of aggression—bullying (Dake et al., 2003; Olweus, 1993). Bullying has been described as a “subcategory of aggressive behavior characterized by imbalance of power and continuous intention to inflict injury or discomfort” (Andreou & Metallidou, 2004, p. 28).

In addition to aggressive acts, antisocial behavior can involve forms of dismissal or more subtle/passive forms of ignoring, refusal to cooperate or
help, hoarding, and withdrawal. Both aggressive and dismissive behavior share the common intention of inflicting emotional or physical pain on recipients. Some researchers (e.g., Cohen & Prinstein, 2006) include risky behaviors as part of the repertoire of reckless persons. The current review does not consider risk-taking behaviors to be antisocial behaviors per se and thus does not consider them further unless explicitly linked in a work of antisocial research. Antisocial behavior, therefore, is distinct from other forms of deviance, such as delinquency, truancy, or criminal acts, in that it is defined by social interaction.

Antisocial behavior, particularly in its more severe and persistent forms, is typically characterized as the product of stressful environments (such as abuse), poor internal regulation, and undeveloped relational abilities and perceptions (Dodge, 1986; Ladd, 2005). For example, one model of aggressive behavior, social information processing, defines how individuals process social cues and determine reactions to others’ behaviors (Crick & Dodge, 1994), utilizing emotional reactions and beliefs to form attributions and determine response (Lemerise & Arsenio, 2000). These beliefs, for example, are considered maladaptive if a student or child tends to view any sort of disruptive or harmful activity (even if accidental) as representing malicious intent on the part of another.

Although they may be indicators of larger problems, antisocial behaviors as defined here are distinct from diagnostic disorders, such as antisocial personality disorder or conduct disorder, and from other disorders that can relate behaviors (even excessive prosocial behaviors leading to, for example, manipulation and lying) to a broader pattern of behavioral problems (American Psychiatric Association, 2000). These disorders, their etiology and effects, are not part of the study of antisocial behavior in the research literature reviewed here, which focuses on individual behaviors or small sets of behaviors that do not collectively represent a psychiatric diagnosis. Nevertheless, antisocial behaviors expressed early in childhood can lead to increased risk of personality disorders (Schaeffer et al., 2003), and many (but not all) of the individual behaviors indicative of antisocial personality disorder or conduct disorder as defined by the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR) (e.g., destruction of property, theft) are, by definition, antisocial.

Prosocial behavior represents the opposite pole of social relating and includes active behaviors that indicate positive social feeling and inclusiveness, including cooperation, sharing, helping, providing leadership, expressing
empathy, providing verbal support or encouragement, and general friendliness or kindness. There are a variety of types of behaviors viewed as indicating prosocial activity, but the research tends to gravitate toward cooperative and helping behaviors and typically does not include general social civility or considerateness. For example, in the articles reviewed for this project, friendliness/kindness was only adopted as a measure of prosociality by two sets of authors, and both also included indicators of helpfulness in their research (Veronneau et al., 2008; Wentzel & Caldwell, 1997).

Antisocial and prosocial behaviors are distinct from behaviors that are principally reactions to the social actions of others, such as compliance (i.e., following requests or directions) (Dubow et al., 2006), and from general concepts of social competence and peer acceptance, which reflect social skills or social position rather than positively or negatively valenced behaviors (Hoglund & Leadbeater, 2004). However, some researchers treat antisocial and prosocial acts, as well as measures of social status and social self-concept, as variations on general social adjustment; this is more often the case when contextual influences on behavior are the main focus of research (Chen et al., 1997; Ryan & Shim, 2008).


Studies of antisocial and prosocial behavior have a history of several decades. This chapter focuses on recent findings about the relationship between anti/prosocial behavior and academic outcomes; variations in this relationship across major groups such as grade level, gender, and race/ethnicity; measures recently used; and directions where the research agenda is pointing. Before describing the substantive findings, this section discusses the range of methodologies employed and the types of measures used among the 41 reviewed articles.

Methodologies Employed

Recent research into aggression, other antisocial behaviors, and prosocial behaviors often employs geographically restricted samples, includes aggression as a focus, utilizes multiple measurement techniques, and focuses on the relationship between aggression or prosocial behaviors and their antecedents rather than between social behavior and academic outcomes. Table 7-1 tabulates some of the characteristics of the reviewed studies.
A majority of the reviewed research (26 articles) used samples that were smaller than 500 children or students, and only three of the studies used a national-level sample that could be reasonably generalized to a broad swath of the US population. The national samples included one based on the US Department of Education’s National Education Longitudinal Study of 1988 (Marsh et al., 2001) and two others based on multiregional independent studies (Odom et al., 2006; Stormshak et al., 1999). The vast majority of studies (including the international studies) focused on samples that were drawn from specific cities, states, or regions, and were sometimes also restricted to specific populations, such as minorities. About half of the studies (22 articles) were longitudinal, whereas 17 were cross-sectional and 2 were experimental (involving the use of short time spans).

Table 7-1. Approaches to studies of antisocial and prosocial behavior

<table>
<thead>
<tr>
<th>Study Approach</th>
<th>Count of Studies Using This Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>At what grade level is the construct measured?</td>
<td></td>
</tr>
<tr>
<td>Preschool</td>
<td>4</td>
</tr>
<tr>
<td>Elementary school</td>
<td>15</td>
</tr>
<tr>
<td>Middle school</td>
<td>8</td>
</tr>
<tr>
<td>High school</td>
<td>4</td>
</tr>
<tr>
<td>Multiple</td>
<td>10</td>
</tr>
<tr>
<td>What is the study design?</td>
<td></td>
</tr>
<tr>
<td>Cross-sectional</td>
<td>19</td>
</tr>
<tr>
<td>Longitudinal</td>
<td>22</td>
</tr>
<tr>
<td>What is the method of analysis?</td>
<td></td>
</tr>
<tr>
<td>Case study</td>
<td>2</td>
</tr>
<tr>
<td>Bivariate</td>
<td>5</td>
</tr>
<tr>
<td>Multivariate</td>
<td>32</td>
</tr>
<tr>
<td>Multilevel</td>
<td>2</td>
</tr>
<tr>
<td>Is the sample generalizable?</td>
<td></td>
</tr>
<tr>
<td>Sample of convenience (an existing intervention program)</td>
<td>1</td>
</tr>
<tr>
<td>Students identified as at-risk</td>
<td>1</td>
</tr>
<tr>
<td>Within school</td>
<td>6</td>
</tr>
<tr>
<td>Within district or region</td>
<td>32</td>
</tr>
<tr>
<td>Nationally representative</td>
<td>3</td>
</tr>
<tr>
<td>Can the study be replicated?</td>
<td></td>
</tr>
<tr>
<td>Data and survey are available</td>
<td>1</td>
</tr>
<tr>
<td>Questionnaire is available</td>
<td>34</td>
</tr>
<tr>
<td>No, neither data nor survey are available</td>
<td>6</td>
</tr>
</tbody>
</table>

a The first two rows in this category refer to characteristics that overlap with the last three categories (i.e., are not exclusive).
The large majority of articles (38 articles) included an examination of antisocial behavior or attitudes, regardless of whether prosocial behaviors or attitudes were included. Twenty-four studies focused exclusively on aggression or other antisocial tendencies, whereas 13 studies included both antisocial and prosocial behaviors or attitudes as part of their analysis. Three studies focused exclusively on prosocial behaviors.

**Measures of Antisocial and Prosocial Behavior**

Table 7-2 presents characteristics of the most common scales/questionnaires used in the reviewed studies, including instrument name, data sources, subscales, sources, and reported psychometric properties from given studies. Table 7-2 also lists observational and experimental research protocols employed in the reviewed studies.

The majority of studies (34) used questionnaire-based methods (of students, teachers, or parents) to measure social behaviors. The remaining studies (7) used either experimental methods or observational protocols and tended to focus on preschool students. The experimental studies included two that used story-based scenarios: Thornberg (2006) used puppetry to elicit student

<table>
<thead>
<tr>
<th>Measure Name</th>
<th>Data Source</th>
<th>Subscales or Components</th>
<th>No. of Studies Using This Measure</th>
<th>Intended Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revised Class Play Instrument</td>
<td>Student (peers)</td>
<td>Physical aggression, verbal aggression, prosocial cooperation/helpfulness</td>
<td>3</td>
<td>Elementary to middle school</td>
</tr>
<tr>
<td>Interpersonal Competence Scale</td>
<td>Teacher or student</td>
<td>Physical aggression, verbal aggression, cooperation, withdrawal, other noncognitive (e.g., social anxiety)</td>
<td>3</td>
<td>Elementary to middle school</td>
</tr>
</tbody>
</table>
reactions to aggressive behavior, and Giles and Heyman (2005) used fictional stories to do the same. A third experimental study used a computer-based interactive program (involving fake peers) for identifying high school student responses to proposed aggressive and risky behaviors (Cohen & Prinstein, 2006). Studies using researcher observations included one using a preexisting structured observational protocol (Odom et al., 2006) and three using study-specific protocols with various time-sampling methods (Goldstein et al., 2001; McComas et al., 2005; Pellegrini & Bartini, 2000).

However, a substantial proportion of studies used multiple sources or methods to measure student behavior. For example, one of the studies employing researcher observations also included standardized questionnaires (Pellegrini & Bartini, 2000); one of the questionnaire-based studies also used juvenile police and court records (Schaeffer et al., 2003). Among studies that were entirely questionnaire based, 12 used information from two or more of the following sources: the student, peers, teachers, or parents. Close to half of all studies used information from the teacher or information from peers (20 and 16 studies, respectively, nonexclusive with other sources). Ten studies used reports from the target students themselves (again, nonexclusive).

### Table 7-2. Measures of antisocial and prosocial behavior: Key features

<table>
<thead>
<tr>
<th>Measure Name</th>
<th>Data Source</th>
<th>Subscales or Components</th>
<th>No. of Studies Using this Measure</th>
<th>Intended population</th>
<th>Example articles</th>
<th>Psychometric properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>Questionnaire Revised Class Play Instrument</td>
<td>Student (peers) Physical aggression, verbal aggression, prosocial cooperation/helpfulness</td>
<td>3 Elementary to middle school</td>
<td>Becker &amp; Luthar (2007); Burgess et al. (2006); Chen et al. (1997)</td>
<td>4 items on aggression/bullying reputation scale</td>
<td>Internal reliability (α): .88 (urban sample), .87 (suburban sample) (Source: Becker &amp; Luthar, 2007)</td>
<td></td>
</tr>
<tr>
<td>Interpersonal Competence Scale</td>
<td>Teacher or student Physical aggression, verbal aggression, cooperation, withdrawal, other noncognitive (e.g., social anxiety)</td>
<td>3 Elementary to middle school</td>
<td>Farmer et al. (2002); Lord &amp; Mahoney (2007); Ryan &amp; Shim (2008)</td>
<td>3 items on aggression subscale</td>
<td>Internal reliability (α): .88 (teacher reported), .73 (student reported) Correlation among teacher ratings: .71, p &lt; .05 (Source: Ryan &amp; Shim, 2008)</td>
<td></td>
</tr>
</tbody>
</table>

(continued)
<table>
<thead>
<tr>
<th>Measure Name</th>
<th>Data Source</th>
<th>Subscales or Components</th>
<th>No. of Studies Using This Measure</th>
<th>Intended Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher Observation of Classroom Adaptation–Revised Scale (TOCA-R)</td>
<td>Teacher</td>
<td>Physical aggression, verbal aggression, prosocial cooperation/helpfulness</td>
<td>2</td>
<td>Elementary school</td>
</tr>
<tr>
<td>Teacher-Child Rating Scale (T-CRS)</td>
<td>Teacher</td>
<td>Acting out/disruptive behavior, helpfulness, other noncognitive skills (e.g., self-concept)</td>
<td>2</td>
<td>Elementary school</td>
</tr>
<tr>
<td>Safe Communities-Safe Schools Survey</td>
<td>Student (self), teacher</td>
<td>Physical aggression, relational aggression, victimization</td>
<td>2</td>
<td>Middle and high school</td>
</tr>
<tr>
<td>Child Behavior Checklist and Youth Self-Report</td>
<td>Parent, child</td>
<td>Aggression, anxiety, depression, hyperactivity, noncompliance, overcontrol, and undercontrol</td>
<td>2</td>
<td>Elementary to high school</td>
</tr>
<tr>
<td>Child Behavior Scale</td>
<td>Teacher</td>
<td>Aggression, prosocial behavior, asocial behavior, exclusion, hyperactivity, and anxiety</td>
<td>2</td>
<td>Elementary school</td>
</tr>
<tr>
<td>Early School Behavioral Rating Scale</td>
<td>Teacher</td>
<td>Social competence, emotional problems, and behavioral problems</td>
<td>1</td>
<td>Elementary school</td>
</tr>
<tr>
<td>Example Articles</td>
<td>Psychometric Properties</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Schaeffer et al. (2003); Stormshak et al. (1999) | **Measure Name**: Teacher Observation of Classroom Adaptation–Revised Scale (TOCA-R)  
  **Subscales or Components**: Teacher Physical aggression, verbal aggression, prosocial cooperation/helpfulness  
  **No. of Studies Using this Measure**: 2 Elementary school  
  **Intended population example articles**: Schaeffer et al. (2003); Stormshak et al. (1999)  
  **Internal reliability (α)**: 0.92 to 0.94, depending on grade pair  
  **Test-retest intraclass reliability**: 0.65 to 0.79, depending on grade pair (Source: Schaeffer et al., 2003) |
| Coley (1998); Morrison et al. (1998) | **Measure Name**: Teacher-Child Rating Scale (T-CRS)  
  **Subscales or Components**: Teacher Acting out/disruptive behavior, helpfulness, other noncognitive skills (e.g., self-concept)  
  **No. of Studies Using this Measure**: 2 Elementary school  
  **Intended population example articles**: Coley (1998); Morrison et al. (1998)  
  **Internal reliability (α)**: Not reported in either study (Source: Morrison et al., 1998) |
| Brockenbrough et al. (2002); Wilson (2004) | **Measure Name**: Safe Communities-Safe Schools Survey  
  **Subscales or Components**: Physical aggression, relational aggression, victimization  
  **No. of Studies Using this Measure**: 2 Middle and high school  
  **Intended population example articles**: Brockenbrough et al. (2002); Wilson (2004)  
  **Internal reliability (α)**: Not reported in either study |
| Lansford et al. (2005); Morales & Guerra (2006) | **Measure Name**: Child Behavior Checklist and Youth Self-Report  
  **Subscales or Components**: Aggression, anxiety, depression, hyperactivity, noncompliance, overcontrol, and undercontrol  
  **No. of Studies Using this Measure**: 2 Elementary to high school  
  **Intended population example articles**: Lansford et al. (2005); Morales & Guerra (2006)  
  **Number of items not reported** |
| Ladd & Burgess (1999); Miles & Stipek (2006) | **Measure Name**: Child Behavior Scale Teacher  
  **Subscales or Components**: Aggression, prosocial behavior, asocial behavior, exclusion, hyperactivity, and anxiety  
  **No. of Studies Using this Measure**: 2 Elementary school  
  **Intended population example articles**: Ladd & Burgess (1999); Miles & Stipek (2006)  
  **Internal reliability (α)**: ≥ 0.88 across multiple time points (Source: Miles & Stipek, 2006) |
| Hoglund & Leadbeater (2004) | **Measure Name**: Early School Behavioral Rating Scale  
  **Subscales or Components**: Teacher Social competence, emotional problems, and behavioral problems  
  **No. of Studies Using this Measure**: 1 Elementary school  
  **Intended population example articles**: Hoglund & Leadbeater (2004)  
  **Internal reliability (α)**: 0.88 (Source: Hoglund & Leadbeater, 2004) |

(continued)
### Table 7-2. Measures of antisocial and prosocial behavior: Key features (continued)

<table>
<thead>
<tr>
<th>Measure Name</th>
<th>Data Source</th>
<th>Subscales or Components</th>
<th>No. of Studies Using This Measure</th>
<th>Intended Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preschool Behavior Questionnaire</td>
<td>Teacher</td>
<td>Social reward dependence (prosocial orientation)</td>
<td>1</td>
<td>Elementary school</td>
</tr>
<tr>
<td>Prosocial Goal Pursuit Questionnaire</td>
<td>Student (self)</td>
<td>Academic behavior and social behavior</td>
<td>1</td>
<td>High school</td>
</tr>
<tr>
<td>Social Behavior Questionnaire</td>
<td>Teacher</td>
<td>Aggression-disruptiveness, prosocial behavior</td>
<td>1</td>
<td>Elementary school</td>
</tr>
<tr>
<td>Observation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Code for Active Student Participation and Engagement (CASPER-II)</td>
<td>Researcher</td>
<td>Social behavior (physical aggression, verbal aggression, and prosocial sharing)</td>
<td>1</td>
<td>Preschool</td>
</tr>
<tr>
<td>Study-specific: video-based coding</td>
<td>Researcher</td>
<td>Physical aggression</td>
<td>1</td>
<td>Preschool</td>
</tr>
<tr>
<td>Study-specific: direct observation</td>
<td>Researcher</td>
<td>Physical and verbal aggression, verbal prosocial behavior</td>
<td>2</td>
<td>Preschool, middle school</td>
</tr>
<tr>
<td>Experiment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Story-based scenarios and solicited responses</td>
<td>Student</td>
<td>Physical aggression, social exclusion</td>
<td>2</td>
<td>Preschool, elementary school</td>
</tr>
<tr>
<td>Computer interactions with faux peers</td>
<td>Student</td>
<td>Physical aggression, verbal aggression, health risk behaviors</td>
<td>1</td>
<td>High school</td>
</tr>
<tr>
<td>Example Articles</td>
<td>Psychometric Properties</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>------------------</td>
<td>------------------------</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
| Vitaro et al. (2005) | 10 items on prosocial scale  
*Internal reliability (α): .91*  
(Source: Vitaro et al., 2005) |
| Barry & Wentzel (2006) | Number of items not reported  
*Internal reliability (α): .75*  
(Source: Barry & Wentzel, 2006) |
| Veronneau et al. (2008) | 13 items on aggression-disruptiveness scale  
*Internal reliability (α): .93 (kindergarten), .92 (grade 4)*  
*Correlation over two grades: .47, p < .001*  
10 items on prosocial scale  
*Internal reliability (α): .92 (kindergarten), .91 (grade 4)*  
*Correlation over two grades: .23, p < .001*  
(Source: Veronneau et al., 2008) |
| Odom et al. (2006) | *Inter-rater reliability (κ): .79*  
*Average inter-rater agreement: 94%*  
(Source: Odom et al., 2006) |
| Goldstein et al. (2001) | *Inter-rater reliability (intraclass correlation coefficient): .75*  
(Source: Goldstein et al., 2001) |
| McComas et al. (2005); Pellegrini & Bartini (2000) | *Average inter-rater agreement: aggression (98%), prosocial behavior (96%)*  
(Source: McComas et al., 2005) |
| Giles & Heyman (2005); Thornberg (2006) | *Inter-rater reliability (κ): (solicited responses coded by observers):*  
Physical aggression (1.00), verbal aggression (.90), relational aggression (.93)  
(Source: Giles & Heyman, 2005) |
| Cohen & Prinstein (2006) | 9 items on study-specific aggression instrument  
*Internal reliability (α): .72*  
(Source: Cohen & Prinstein, 2006) |
The teacher and students questionnaires (and the rarer parent questionnaires) were typically drawn from existing batteries, particularly the Teacher Observation of Classroom Adaptation–Revised Scale or teacher ratings on the Interpersonal Competence Scale. For student self-ratings, scales included the Interpersonal Competence Scale, the Child Behavior Scale, the Child Behavior Checklist, the Social Behavior Questionnaire, and the Prosocial Goal Pursuit Questionnaire.

In terms of specific items, questionnaires ask about a number of individual acts. For physically oriented aggression, questionnaires ask about the frequency of hitting, kicking, fighting, yelling, swearing, disrupting lessons, threatening, and stealing. For nonphysical aggression, studies ask about excluding others, spreading rumors, or abandoning plans with others. Dismissive behaviors such as ignoring, hoarding, and refusing to help are also asked about directly. For prosocial behavior, questions ask about the frequency or likelihood of helpfulness, sharing, cooperation in scholastic or nonacademic tasks, and providing leadership.

Peer-nomination procedures were a unique methodology employed (compared with studies of other noncognitive skills), and nearly as common as teacher reports. In a peer-nomination procedure, students or classmates are provided with a roster of names and rate their peers on various aspects of behavior, how the respondent feels about the peer, and other perceptions about the target student. One of these instruments was the Revised Class Play Instrument (Masten et al., 1985), which provided students with a list of behavioral descriptors (such as “someone who gets mad” or “someone who spreads rumors”) and a roster of class names and then asked the students to nominate up to three students who could best play a role corresponding to that description in a hypothetical class play (Chen et al., 1997). This procedure serves as a nonthreatening and subtle way to solicit peer judgments, especially for elementary-aged children who may have difficulty thinking directly about the social behaviors typically exhibited by classmates. Peer nomination is also useful for generating rich data about the overall classroom climate related to antisocial and prosocial behavior and as perceived by students themselves (this perception often being a critical component of the purported influence of anti/prosocial behaviors). Peer-nomination procedures are also easily extended to include measures of peer acceptance, peer admiration (i.e., popularity), friendships, and networks (see, e.g., Wentzel et al., 2004).
In sum, the measurement of antisocial and prosocial behaviors is generally straightforward and relatively direct, except for the use of peer-nomination procedures. The major issue for the measurement of antisocial behaviors has to do with visibility. Aggressive actions often take place away from parents, teachers, and other authorities (Hyman et al., 2006). Teacher reports, although widely used, may miss many aggressive actions because of this fact. Pellegrini and Bartini (2000), for example, noted that researcher observations and teacher reports had low correlations on some aggression measures with direct student or peer reports of the same group of students (Pellegrini and Bartini also noted problems with student diaries). Teacher reports may be most useful when the in-classroom environment and teacher-student interactions are key to the study. Researcher observations may be most useful in environments where all or nearly all social interactions can be captured or sampled (for example, in videotaping a preschool class both indoors and at playgrounds). However, self-report and peer-nomination procedures are likely valid for most research.

**Substantive Focus and Findings**

The variety of reviewed studies indicates a set of complex relationships among antisocial and prosocial behaviors; academic achievement and attainment; and other behaviors, attitudes, and social roles. Twenty-four studies examined anti/prosocial behaviors as predictors of either educational outcomes or of other social factors, such as peer acceptance and victimization. An overlapping set of 25 studies examined anti/prosocial behaviors as outcomes of either educational success itself or of other social factors. As indicated, a number of studies (10) examined multiple relationships and causal pathways simultaneously—for example, the 10 studies that examined anti/prosocial behaviors as predictors of educational outcomes included 2 studies that also examined academic achievement itself as a predictor of anti/prosocial behavior and 4 studies that also examined anti/prosocial behaviors as a predictor of other social outcomes. This coverage of interrelated issues illustrates the recognition that the study of antisocial and prosocial behaviors involves bidirectional relationships with academic and social experiences.

The focus of the studies examining anti/prosocial behavior as a predictor of educational outcomes was broadly distributed in examining achievement test scores, grades (from school transcripts), school completion, educational attainment, teacher-rated academic skills, and academic self-regulation. Of the studies that included an examination of anti/prosocial behavior as outcomes, the predictors included academic variables, such as achievement,
communication skills, and grade retention; and other noncognitive skills, such as neighborhood stressors, social goals, parental supervision, religious involvement, and initial aggressive actions.

Because of the variety of studies reviewed and the extent of overlap among them, the discussion below is organized by behavior (antisocial and prosocial), with each section discussing the behavior’s role as a predictor or an outcome with respect to educational outcomes and other social outcomes.

**Antisocial Behaviors.** We found that in 33 of the 38 studies involving antisocial measures, antisocial behavior had negative associations with academic achievement; social behaviors; or family, school, or classroom/teacher experiences (whether antisocial behavior was deemed a predictor, outcome itself, or correlated in an indeterminate way). Two studies showed no associations between antisocial behavior and other experiences or characteristics (Gest et al., 2005; Wentzel & Caldwell, 1997), and another three studies showed positive relationships between antisocial behavior and positive characteristics or experiences—in the latter case, this usually involved a relationship between aggression and popularity (discussed further below).

The small number of studies (10) that directly addressed the relationship between antisocial behaviors and achievement or attainment as an outcome makes consistent conclusions difficult, although the majority (7) reported expected negative relationships between antisocial behavior and academic outcomes. The best studies were longitudinal and suggested that the relationship between antisocial behavior and educational outcomes was more complicated than a straightforward causal impact of behavior on achievement or attainment.

For example, Chen and colleagues (1997) found that aggressive and disruptive behavior in 4th grade predicted poor math achievement among 6th graders in China. Schwartz and colleagues (2006) found that aggression was strongly and negatively related to GPA and strongly and positively related to class absences over 2 years in high school, both directly and through enhanced popularity (aggression was associated with increased popularity, which in turn positively predicted class absences and negatively influenced grades). Dubow et al. (2006) found that, having followed 3rd graders from Columbia County, New York, for nearly 30 years, aggression at age 8 predicted educational status at age 30, which in turn affected occupational status at age 40. Likewise, another longitudinal study showed that high school completion was lower among students who were high aggressors-disruptors in elementary school.
and that this effect operated through lowered academic achievement and lower school commitment in high school (Veronneau et al., 2008).

In contrast, Miles and Stipek (2006) did not find any association between earlier aggression and later achievement; however, they did find that poor academic achievement in early grades predicted aggression itself, consistent with the hypothesis that school failure may increase feelings of disengagement, frustration, and compensating behaviors. This suggests that there is a bidirectional relationship between aggression (and perhaps other types of antisocial behavior) and achievement (i.e., that academic difficulties lead to behavioral problems which in turn reinforce and extend academic problems). Therefore, supporting struggling students both academically and socially may interrupt this feedback loop and be more effective than addressing just one side of the equation (McEvoy & Welker, 2000). Such a possibility is suggested in Vitaro et al. (2005), who saw the statistical relationship between their elementary-age aggression measures and high school completion disappear after accounting for parental practices.

Cognitive deficits or learning problems can contribute to poor academic effort and disinterest in classroom activities, spurring both poor achievement and low-level antisocial behavior (e.g., disrupting class) and leading to a feedback pattern of negative outcomes. Jimerson and Ferguson's (2007) longitudinal study showed that, for example, grade retention in early grades was associated with an increase in aggressive behaviors by grade 8. Chen and colleagues (1997) found that initial math achievement positively contributed to a variety of social adjustment indices (including, negatively, aggression) and that aggression-disruption and positive social adjustment subsequently contributed to later math achievement.

Poor social outcomes may also feed this spiral of low achievement and antisocial behavior by removing mediating sources of support. Antisocial behavior, and particularly aggression, often alienates friends and peers, reduces overall social competence, and is a risk factor for other emotional problems and delinquency (Schaeffer et al., 2003). For example, Ladd and Burgess (1999) found that aggressive elementary school children were more likely than nonaggressive children to report poor teacher and peer relationships, including being lonely, disliked, and victimized. Aggressive students who were also withdrawn (e.g., shy) reported even more severe problems than aggressive students who were not withdrawn (although just being withdrawn was not consistently associated with relationship problems). Similarly, Hoglund
and Leadbeater (2004) reported that physical aggression and disruption were related to declines in social competence and an increase in emotional problems. Each of these negative outcomes can contribute to lowered motivation and interest in schooling and academics (Hyman et al., 2006).

Paradoxically, however, aggression is sometimes associated with positive social outcomes like popularity and self-esteem, particularly for boys (Becker & Luthar, 2007). For example, Marsh et al. (2001) noted that self-identities of troublemaker were associated with slight increases in self-esteem for high school boys. The previously mentioned Schwartz et al. (2006) study found that popularity and aggression interacted to increase the effect of aggression in leading to poor grades; likewise Farmer and colleagues (2002) noted that popularity played a role in whether boys joined aggressive groups. Other suggestive evidence comes from an experimental study showing that high-status peers often sway children to support aggressive or risky behaviors (Cohen & Prinstein, 2006). However, popularity may not provide protective social support: Becker and Luthar (2007) noted that rebellious behaviors increased peer admiration (distant liking) but lowered peer preference (wanting to associate socially). Popularity is therefore not an unalloyed good, but rather can involve admiration that fails to lead to close and helpful friendships.

Even given the positive association between antisocial behaviors and peer admiration, antisocial behavior can and does coexist with isolation and withdrawal. Indeed, antisocial behavior among isolated or withdrawn children represents a double jeopardy of sorts: various researchers report that more problems arise when aggressive bullies simultaneously occupy the role of aggressor and victim or alienated student (Andreou & Metallidou, 2004; Brockenbrough et al., 2002; Ladd & Burgess, 1999; Troop-Gorden & Asher, 2005). These bullies/victims or aggressive-withdrawn students are more likely to have maladaptive social behaviors and low self-esteem than bullies who were more accepted by and engaged with their peers (Hyman et al., 2006). In addition, aggressive and unpopular boys were more likely to join aggressive groups than nonaggressive or aggressive and popular boys (Farmer et al., 2002).

Thus, the weight of findings on antisocial behavior effects indicates that aggression and other negative social behaviors operate through altering social relationships and social supports, both in positive and negative ways depending on the social context and the social group (e.g., boys versus girls).
Indeed, aggression is negatively associated with a host of contextual and social antecedents, such as parental involvement (but positively associated with parental discipline), religious involvement, nonaggressive classroom peers, and participation in after-school activities (Coley, 1998; French et al., 2008; Goldstein et al., 2001; Lansford et al., 2005; Lord & Mahoney, 2007; McEvoy & Welker, 2000; Morales & Guerra, 2006; Morrison et al., 1998), although influences related to family and personal friendships may matter more than broader contexts, such as the whole school environment (Joussemet et al., 2008; Wilson, 2004). In this scenario, further work that theorizes and develops methods to study the integrated relationships among causes of antisocial behavior, the behavior itself, social consequences, and academic consequences will be required to continue to advance research beyond the simple antisocial behavior–education outcome connection.

Prosocial Behaviors. The prosocial behavior findings are much clearer than the findings on antisocial behaviors: All studies involving prosocial behaviors as an outcome or predictor showed positive associations with desired academic and social outcomes such as literacy comprehension, school completion, friendships, peer acceptance, and occupational status. No studies reported negative or nonexistent relationships for prosocial behaviors.

The case for positive relationships between prosocial behaviors and other experiences and outcomes is strengthened by the fact that much of the prosocial behavior research was conducted as part of the studies also examining antisocial behaviors. In nearly every one of these cases, prosocial behaviors had an inverse relationship to causes or outcomes compared with antisocial behaviors. For example, the Miles and Stipek (2006) study cited earlier found that prosocial behavior (offering help, showing empathy) in 1st grade positively influenced literacy skills in 3rd grade, in concert with negative associations between aggression and literacy. Although Wentzel and Caldwell (1997) found that antisocial behavior had inconsistent links with cumulative GPA among sixth graders, prosocial behavior (helping, considerateness, and rule-following) was consistently and strongly related to GPA. Likewise, as described in the antisocial behavior studies, achievement itself can affect prosociality: Chen and colleagues (1997) show that academic achievement in math predicts social competence and peer acceptance.

The reviewed studies also show that prosocial behaviors relate to social supports: prosocial actions are bolstered by teacher positive regard,
reciprocated friendships, religious involvement, and paternal involvement (Barry & Wentzel, 2006; Chang et al., 2004; Chen et al., 1997; French et al., 2008; Wentzel et al., 2004). The prosocial literature, however, has focused more clearly on the ways that prosocial intentions (goals) help produce prosocial behaviors. For example, Wentzel and colleagues (2007) noted that having prosocial goals (e.g., how often a student tried to share with others) positively predicted prosocial behaviors like cooperation and sharing, even when controlling for other variables like peer expectations that were stronger influences on behavior. Ryan and Shim (2008) noted that social goals predicted both prosocial behaviors and declines in aggressive behaviors, but that the type of social goal could matter—indeed, social demonstration approach goals (striving to be popular, liked, or respected) were positively associated with aggressive acts. This last finding supports the conclusions of the antisocial behavior analyses: social behavior has clear antecedents in background experiences and situational factors, and it is linked to academic outcomes through other interpersonal relationships, which themselves can both help and hinder school success.

Links Between Antisocial/Prosocial Behavior and Other Noncognitive Skills
As indicated, antisocial and prosocial behaviors possess numerous links to other noncognitive skills and behaviors, including self-efficacy, self-esteem, coping (particularly for victims), and self-regulation. The relationships between these skills and behaviors and social behaviors are complex and reciprocating. Most often, studies examining antisocial or prosocial behaviors have also looked at social competence; peer acceptance or rejection; stressors; and psychological problems, such as depression, anxiety, hyperactivity, and attention problems. Theoretical and empirical work has linked social competence generally to the process of social information processing, in which children assign reasons to the acts of others, consider how those reasons relate to their own internal self-judgments, and act accordingly (Andreou & Metallidou, 2004; Ang & Yusof, 2006; Burgess et al., 2006; Crick & Dodge, 1994; Dodge, 1986). This perspective accords with ideas developed in the self-regulation and motivation research literature.

Nevertheless, we rarely found research analyzing the links between antisocial or prosocial behaviors and key noncognitive skills like motivation, engagement, and effort in the current review. Researchers were far more likely to examine anti/prosocial behavior as part of a process of friendship...
formation, social development, and social and academic self-concept construction. Further research could profitably explore how specific antisocial and prosocial behaviors relate to academic outcomes through measures of student relationships and social integration. This research may be more analytically and data demanding, which would explain its relative paucity in the past 10 years.

Discussion

Hyman et al. (2006) noted that true school violence is a rare occurrence, but harassment, exclusion, and milder physical abuse are common experiences in schools. They are most likely to take on urgency when accumulated forces produce particularly severe or even pathological problems within students or schools, but milder forms repeated over time can contribute to stable and negative identities and thought patterns that have long-term consequences (Wilson, 2004). Therefore, common antisocial and prosocial behaviors assume a greater importance than they might be granted otherwise.

In terms of measurement challenges, the anti/prosocial literature generally coalesces around the same understanding of what counts as aggression or prosocial activity and strongly leans toward both peer-nomination and teacher reports of behaviors as appropriate ways to measure them. The relatively equal weight given to these measures in the recent literature, the still prevalent use of student self-reports, and the not uncommon use of multiple measures in the same study suggest that one best method may not be appropriate for research in this area. Teacher reports may be most salient in classroom-oriented studies, whereas student self-reports may be appropriate when the focus includes other components of internal psychological processes. Peer-nomination procedures certainly provide both individually specific and contextually broad data, but they may be limited by the numbers of peers that any individual student can report on—there is an inherent likelihood that significant social interactions occur among students who are not naturally grouped in classrooms (or even schools) that are the base for peer-nomination methods. Direct observation by researchers may be most appropriate for preschool children and very early elementary grades.

The literature on antisocial and prosocial behavior starts from a position of having consistently demonstrated that these behaviors matter in the achievement of educational outcomes. The conceptual and theoretical challenges of this research are partially grounded in measurement issues,
because comprehensive understanding of the links between antisocial and prosocial behavior, background experiences, social relationships, and academic results requires significant data collection efforts across a range of constructs.

References
(References marked with an asterisk indicate studies included in the review.)


Links to later criminal involvement, conduct disorder, and antisocial personality disorder. *Developmental Psychology, 39*(6), 1020–1035.


