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Author(s): Amy F. Feldman and Jennifer L. Matjasko

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The Role of School-Based Extracurricular Activities in Adolescent Development: A Comprehensive Review and Future Directions

Amy F. Feldman
Public/Private Ventures
Jennifer L. Matjasko
University of Texas at Austin

This article reviews the contemporary literature on school-based activity participation, focusing on patterns of participation, academic achievement, substance use, sexual activity, psychological adjustment, delinquency, and young adult outcomes. Also, the authors discuss possible mediators and moderators of extracurricular activity participation in regard to adolescent development. The review indicates that the associations between school-based activity participation and these outcomes are mostly positive but that the picture becomes mixed once moderator variables are included. The authors suggest areas for future research that include using new methods for measuring activities and applying an overarching theoretical framework to investigations of extracurricular activities and adolescent development. Finally, to move toward a causal model of activities and adolescent functioning, future research must consider the mechanisms through which activities exert their influence on development. The authors propose several possible mechanisms of participation in terms of adjustment during adolescence and young adulthood.

KEYWORDS: academic achievement, adolescents, ecological systems theory, extracurricular activities, selection, substance use, well-being.

Researchers investigating extracurricular activities have long been interested in the relationships between participation in these activities and the social outcomes, academic achievement, and educational attainment of adolescents. Stemming from decades of investigation by sociologists, this line of inquiry has uncovered positive associations between participation and adolescent functioning. More recent literature from psychologists has focused on the developmental aspects of activity participation and their impact on individual functioning over time. In this review, we integrate findings from across these disciplines to provide a comprehensive picture of rates of school-based extracurricular activity participation, the consequences of such participation, and the current understanding of mediators and moderators of the effects of participation and to develop a more complete understanding of the link between activity participation and adolescent development. We argue that the field is in need of an overarching theory that pinpoints the mechanisms behind the effects of these activities, that is, a more holistic perspective that highlights (a) general profiles of adolescents participating in different activities and

the configurations of these activities and (b) the causal relationship between participation and adolescent functioning.

Ecological systems theory, used in concert with the person-environment fit perspective, serves as a valuable framework for integrating the sociological and psychological literatures on activity participation and influencing researchers to consider both direct and indirect effects of participation on adolescent development and well-being. Several recent studies have used ecological systems theory to examine the link between extracurricular activity participation and adolescent functioning (Gilman, Meyers, & Perez, 2004; Huebner & Mancini, 2003; Zaff, Moore, Papillo, & Williams, 2003). The theory, characterized by Urie Bronfenbrenner (1979, 1986, 1998) as a bioecological model, views an individual's heredity as joining with multiple levels of the surrounding environment to shape development. Extracurricular activities are not isolated from other developmental contexts; rather, they are embedded in schools and communities and influenced by families and peers. Exploring this overlap, such as the degree to which any benefits or costs of these activities vary in different types of families, peers, schools, or neighborhoods, would better capture the idea of social ecology, a web of intersecting developmental contexts. In addition, such a model should consider how well adolescents fit with the extracurricular activity context and whether it compensates for a suboptimal fit in another context. Also, by controlling for the influence of salient contexts on adolescent development, we can better isolate the true relation between participation and adolescent outcomes. Such research could better demonstrate how adolescents influence their own activity participation and how their participation is influenced by larger social contexts.

Throughout this review, activity participation refers to school-based extracurricular activities engaged in by adolescents, primarily high school students. These activities are organized and supported by schools and primarily occur on school grounds. Because they warrant a review of their own, community-based activities and activities organized by community youth or religious centers are not the focus of the current review; they are included only in cases in which there are not comparable school-based activity studies for the outcome being discussed. Although we occasionally mention earlier work in an effort to point out where lines of research have either progressed or gone stagnant, the goal of the current review is to focus on the work of researchers since the publication of Holland and Andre's (1987) activity review, drawing on the psychological, sociological, behavioral sciences, education, and sport psychology literatures.

Methodology

First, we conducted a broad literature search on adolescent extracurricular participation using several databases, including Academic Search Premier, Psychology and Behavioral Sciences Collection, Sociological Collection, PsycINFO, and PsycARTICLES. To this end, we used keywords and phrases such as "adolescent," "extracurricular activities," "after-school activities," "high school," and "participation." We also conducted broad searches of the work of leading researchers in the activity field, for example, Jacquelynne Eccles, Reed Larson, Joseph Mahoney, Herbert Marsh, Merrill Melnick, Ralph McNeal, and Lawrence Steinberg. Next, by reading these pieces, we narrowed the pool down to those involving school-based activities only, after which we further narrowed studies to those conducted

in the United States, those of a quantitative nature, and those in which participation was used as an independent variable predicting adolescent functioning. Readers will see slight violations of these rules throughout the review in places we deemed appropriate. For example, the Fredericks et al. (2002) study was qualitative, yet we included their findings because they are related to and further substantiate the results of another study we discuss in the accompanying section. Similarly, the Mahoney, Schweder, and Stattin (2002) study involved a Swedish sample, but it was included as a result of its unique contribution to a particular section of the review. In addition, we did not include unpublished dissertations or publications. Finally, although such instances were rare, we excluded reports in which methods were not provided or methods or results were unclear.

In the first section, we survey the general state of research on adolescent school-based activity participation, with a focus on the contemporary work of sociologists and psychologists. We then offer a methodological description of the studies and highlight current gaps in the research. We conclude the article with our suggestions for accomplishing the goals of achieving a broader understanding of and a causal model for extracurricular activity participation.

Extracurricular Activity as a Key Setting in Understanding Adolescent Development

Despite the large amount of literature focusing on the contexts of adolescent development, surprisingly little attention has been paid to the role of extracurricular activities, which are central developmental settings for adolescents. Mahoney et al. (2002) reported that 75% of 14-year-olds participate in structured extracurricular activities. According to the National Center for Education Statistics (2002), 25% of all high school seniors participate in academic clubs; 43% participate in athletics; 8% are members of a cheerleading or drill team; 19% are involved with the school newspaper or yearbook; 28% participate in music, drama, or debate; and 18% are members of vocational clubs. Moreover, our own investigation revealed that 70% of the adolescents interviewed in the National Longitudinal Study of Adolescent Health reported participating in at least one school-based extracurricular activity. Given that such a large number of adolescents are engaged in at least one type of school-based extracurricular activity, it is crucial to account for these activities in order to better understand the contextual influences on adolescent development. Also, considering the wealth of studies that point to the importance of examining adolescent development in context (Allen, Hauser, Bell, & O'Connor, 1994; Brody, Stoneman, & McCoy, 1994; B. B. Brown, 1990; Buchanan & Waizenhofer, 2001; Coleman, 1961; Dornbusch, Glasgow, & Lin, 1996; Duncan & Raudenbush, 2001; Elliott et al., 1996; Grotevant, 1997; Leventhal & Brooks-Gunn, 2000; McNelles & Connolly, 1999; Roeser, Eccles, & Freedman-Doan, 1999; Roeser, Midgley, & Urda, 1996; Rutter, 1983; Steinberg, 2001), the role of extracurricular activities in adolescent development must be examined in addition to the family, peer, school, and neighborhood contexts in which they are embedded.

The settings of extracurricular activities serve as a place to act out the developmental tasks of adolescence. It is believed that extracurricular activities offer a means to express and explore one's identity, generate social and human capital, and offer a challenging setting outside of academics. Adolescents form their identity by developing skills, discovering preferences, and associating themselves with

others (Eccles & Barber, 1999; Youniss et al., 2002). Being a member of a particular group structures what individuals do with their time and the kinds of values and norms to which they are exposed (Eckert, 1989). Participating in extracurricular activities helps adolescents come to understand themselves by observing and interpreting their own behavior when they are engaged in these activities (Valentine, Cooper, Bettencourt, & DuBois, 2002). Thus, adolescents' identity and peer group influence subsequent activity choices, shaping the nature of their developmental pathway. Later in adolescence, they may even select an activity according to its ability to affirm the valued aspects of their identity (Haggard & Williams, 1992).

In addition to the developmental tasks that are fulfilled, researchers have posited that participation in extracurricular activities affords adolescents the opportunity to develop social capital in the form of extended supportive networks of friends and adults (Carnegie Corporation of New York, 1992; Kahne et al., 2001; McNeal, 1999; Newmann, Wehlage, & Lamborn, 1992; Patrick et al., 1999). The time adolescents spend in after-school extracurricular activities stands in contrast to the quick-paced schedule of the school day. During extracurricular activities, students are better able to get to know other peers and adults through personal bonding and mutual trust and commitment. Students involved in extracurricular activities have the opportunity to develop mentoring or coaching relationships, develop personal relationships with peers who share similar interests, and possibly interact with other adults from the school or community who provide support for the activity (Dworkin, Larson, & Hansen, 2003; Gould, Feltz, & Weiss, 1985; Smith, 2003). This is hypothesized to promote student engagement in school and to bolster academic achievement (Lamborn, Brown, Mounts, & Steinberg, 1992). In case studies of nine high-achieving female high school students, Reis and Diaz (1999) reported that these young women identified extracurricular activities, among other factors, as being extremely influential to their success by enabling them to develop supportive networks of high-achieving peers and adults.

Finally, extracurricular activities may provide a challenging setting for students outside of academics that helps them maintain contact with the school environment (Finn, 1989). For some students, activities offer a place to develop additional skills and recognition that extend beyond academic achievement. However, for others, activities may be the only place to obtain success tied to the school context, in that such success would not be obtained through academics (B. B. Brown & Theobald, 1998). While support for this notion is largely theoretical, one study comparing students who were athlete-scholars, athletes only, scholars only, and neither athletes nor scholars showed that members of the "athletes-only" group had more friendship nominations and were more likely to part of the "leading crowd" than members of the "scholars-only" group (Coleman, 1961). Students who were more successful in sports than in academics were still able to command the recognition and respect of their peers, which was associated with more positive psychosocial outcomes. Of course, the issue of self-selection into activity participation must always be considered. It is possible that students who are more likely to be in the "leading crowd" regardless of participation are those who also choose to participate in sports. Selection issues, while difficult to account for in most research on extracurricular activity participation, must at least be acknowledged as a factor. We discuss the issue of selection later in the review.

Research on the Links Between Extracurricular Involvement and Functioning During Adolescence and Young Adulthood

In 1987, Holland and Andre published a comprehensive review of the literature on extracurricular activity participation and adolescent development. Covering almost 20 years of literature, Holland and Andre outlined what was known about adolescent activity participation, including personal/social characteristics, academic achievement, educational aspirations and attainment, degree of activity involvement, and environmental social context. They also discussed the methodological limitations of the literature such as sample structures, study designs, and analyses, as well as the roles of selection and the moderators of participation in adolescent functioning. Many of the gaps that Holland and Andre (1987) identified have been attended to over the ensuing years. However, some remain unaddressed, prompting researchers to call for a more contemporary review of this research (Gilman et al., 2004).

In general, studies published before 1987 revealed positive relationships between activity participation and positive adolescent development. At this time, almost all studies on extracurricular activity participation focused on athletics. During the past 15 years, many studies have replicated earlier findings while refining sampling and analysis techniques. A few studies have expanded the literature by examining areas beyond athletics to include a wide range of activities. As a result, the associated effects of extracurricular activity participation are mixed, and in a few cases activity participation has been linked to negative adolescent personality outcomes and more risky social behavior. Therefore, it is impossible to generally state that extracurricular activities are beneficial. General findings of the extracurricular activity literature, a review of developments and advancements in the field, and highlights of the existing gaps are presented in the sections to follow. Table 1 provides a detailed account of the relations between extracurricular activities and the outcomes discussed here.

Patterns of Activity

To date, descriptions of adolescent activity participation patterns that include a full range of possible activities are rare. Only a few articles have provided participation patterns, usually static descriptions during a particular school grade (Antshel & Anderman, 2000; Mahoney, Cairns, & Farmer, 2003; Zill, Nord, & Loomis, 1995). These studies show that sports are the most popular activities. Zill et al. (1995) analyzed four large-scale, representative data sets and reported on the time-use patterns of 10th-grade adolescents from the late 1980s to the early 1990s. Forty-six percent of the 10th graders taking part in the National Education Longitudinal Study (NELS:88) reported participating in at least one interscholastic sport at the varsity, junior varsity, or freshman team level, and 14% participated in intramural sports. Approximately 30% of these 10th graders reported involvement in an athletic club, and more than 25% were involved in a musical or dramatic activity or a school play or musical. About 12% reported service club participation; 12% were members of vocational education or professional clubs; 9% worked on the school yearbook, newspaper, or literary magazine; 7% served in the student government; and 7% were involved in a hobby club. A similar pattern of participation was reported among high school seniors taking part in the 1992 Monitoring the Future Survey (Zill et al., 1995).

(text continues on page 178)

TABLE 1
 Key Characteristics of the Studies Reviewed, by Outcome Measure

Study	Sample	Dependent variable(s)	Independent variable(s)	Other variables	Direction of influence
<i>Academic achievement</i>					
Broh (2002)	NELS:88 Longitudinal Nationally representative N = 12,578	Math & English grades, time spent on homework	Intramural sports, interscholastic sports, cheerleading, music, yearbook, vocational clubs, continued participation	Mediators: self-esteem, locus of control, time on homework, peers' academic orientation, social capital Controls: gender, race, family income, parents' education, parent structure, school classification, school geographic location, school size	Increase for interscholastic sports & music, decline for intramural sports
Crosnoe (2001)	Mostly White, female, higher academic achievement, higher school orientation, lower alcohol use, from California & Wisconsin Longitudinal N = 3,237	Academic achievement at Year 2	Sports participation & academically successful peers, sports participation & social peers	Mediators: friends' academic achievement, friends' social activity, school orientation Controls: parents' education, family structure, age, race, geographic location, Year 1 academic achievement	Sports/academically successful peers: increase for both boys & girls Sports/socially active peers: decrease for boys, unrelated for girls
Davalos et al. (1999)	White non-Hispanics & Mexican Americans Cross sectional Control group N = 2,621	High school dropout	Sports, band, other activity participation	Mediators: ethnic identity, perception/liking of school Controls: gender, race	Band: unrelated Sports and other activities related to more dropout for both ethnicities & genders

Eccles & Barber (1999)	MSALT Longitudinal Mostly White from southeastern Michigan <i>N</i> = 1,259	Full-time college at 21 years of age, attachment to school, cumulative GPA	Prosocial (church, community service, volunteer activities), team sports, performing arts, school involvement (cheerleading, student government, pep club), academic clubs	Controls: mother's education, gender, verbal & numerical ability	Increase
Gerber (1996)	NELS:88 Cross sectional Representative <i>N</i> = 10,822 8th grade	Math, reading, science cognitive tests	Total extracurricular activity, school extracurricular activity, outside extracurricular activity	Controls: gender, SES	Participation related to achievement for both Blacks & Whites, strongest for math School activities more strongly associated with achievement than outside activities
Hanson & Kraus (1998)	HSB Longitudinal Nationally representative (10th graders) <i>N</i> = 11,683	Science achievement, access, & attitudes	Varsity sports, other sports, cheerleading, pep club	Controls: region, race, family SES, family involvement in student's school & personal life, school type, school program, teacher's interest in students, educational behavior & attitudes of friends at school, self-concept, locus of control, work orientation, popularity & dating, interest in school grades, standardized math & science scores, time spent	10th-grade sports positively related to access to science but negative effect on attitude toward science Sports participation had negative effect on young men's achievement in science 12th-grade sports participation positively affected access & attitude for females, no effect for males (continued)

TABLE 1 (Continued)
Key Characteristics of the Studies Reviewed, by Outcome Measure

Study	Sample	Dependent variable(s)	Independent variable(s)	Other variables	Direction of influence
<i>Academic achievement</i>					
Jordan & Nettles (2000)	NELS:88 Longitudinal Nationally representative N = 10,000–14,000	Preparation for class, participation in clubs & groups, perception of life chances, math & science achievement	School context: locale, racial composition, size, poverty	on homework, educational aspirations & expectations, occupational aspirations, factor scores for science achievement, access, & attitudes	Other sports positively related to females' attitude toward science Cheer & pep club negative related to females' attitude, cheer negatively related to males' attitude Sports not related for African Americans Time spent hanging out with peers negatively related, working for pay negatively related to math & science achievement, unrelated to other dependent variables, time spent alone positively related particularly to math & science, all others positively related

Mahoney & Cairns (2000)	CLS Longitudinal Southeastern U.S. Representative for African Americans <i>N</i> = 695	Early school dropout	Participation in at least 1 activity	Cluster variables: interpersonal competence, physical maturation, parents' occupational class, age, gender, race, social network, criminal offending	Decrease
Mahoney & Cairns (1997)	Longitudinal 25% African American <i>N</i> = 392	Dropout	Fine arts, athletics, academics, student government, vocational, school service, royalty, press activities, school assistants	Cluster variables: SES, grades retained, aggressive behavior, academic performance, popularity with peers	Decrease (except for fine arts: unrelated) Strongest for academically at-risk students
Marsh & Kleitman (2003)	NELS:88 Longitudinal Representative <i>N</i> = 12,084	School grades, coursework selection, time on homework, educational & occupational aspirations, university applications	Total sports participation, sports participation (intra vs. extra; team vs. individual)	Controls: gender, SES, race, type of school, repeated grade, school size, urbanicity, mother works, parent education, standardized test scores	More sports related to higher grades, self-esteem, educational aspirations, more time on homework, more university applications, higher parental expectations, particularly for students with low test scores & initially low aspirations Extramural/team sports stronger effect than intramural/individual (continued)

TABLE 1 (Continued)
Key Characteristics of the Studies Reviewed, by Outcome Measure

Study	Sample	Dependent variable(s)	Independent variable(s)	Other variables	Direction of influence
<i>Academic achievement</i>					
McHale et al. (2001)	Longitudinal White N = 198 preteens	School grades, depression, conduct problems	Supervised activities (with mother, father, adults), unsupervised activities (with peers)	Controls: parent education, interview month, gender	Sports related to higher grades & less depression Time with peers & outdoor play negatively related to grades and positively related to conduct problems Sports unrelated to grades, test scores, educational expectations Related to lower dropout rates for rural Black males, suburban Hispanic males, & rural Hispanic females Related to higher grades and test scores for Hispanic females, lower dropout rates for Hispanic males in suburban and females in rural schools, negative relation to aspirations for males in rural schools
Melnick et al. (1992a)	HSB Longitudinal N = 3,686 minority youth	Grades, achievement test performance, dropout rates, educational expectations	High school athletic participation	Controls: SES, school location, 10th-grade measures of outcome variables	Related to lower dropout rates for rural Black males, suburban Hispanic males, & rural Hispanic females Related to higher grades and test scores for Hispanic females, lower dropout rates for Hispanic males in suburban and females in rural schools, negative relation to aspirations for males in rural schools
Melnick et al. (1992b)	HSB Longitudinal N = 3,336 Hispanics	Grades, achievement test performance, dropout rates, educational aspirations	High school athletic participation	Controls: SES, school location, initial measures of dependent variables	Related to lower dropout rates for rural Black males, suburban Hispanic males, & rural Hispanic females Related to higher grades and test scores for Hispanic females, lower dropout rates for Hispanic males in suburban and females in rural schools, negative relation to aspirations for males in rural schools
Melnick et al. (1988)	HSB Longitudinal Nationally	Reading, vocabulary, math scores,	Girls' sports participation	Controls: SES, 10th-grade participation	Unrelated to achievement scores, slight positive relationship to

	representative <i>N</i> = 6,521 females	educational aspirations GPA, desire to attend college	Girls' competitive team sports	Descriptive data	educational aspirations Positive
Perry-Burney & Takyi (2002)	Cross sectional Northeastern Ohio Mostly White, planning to attend college, married parents <i>N</i> = 144 girls	Attitudes toward school, complexity & status of occupational goals, academic achievement	Varsity sports, football, basketball, baseball	Controls: race, father's education, mother's education, father's occupational status, family income, IQ	Sports increased positive attitudes toward school & occupational goals
Rees & Howell (1990)	YIT Longitudinal Nationally representative for males <i>N</i> = 1,628 males	Scores for geography/history, math, reading, science	In or out of school, academic or nonacademic, organized or nonorganized activities	Controls: ethnicity, gender, SES	In & out of school, organized & nonorganized nonacademic activities not related to achievement after other factors accounted for
Schreiber & Chambers (2002)	NELS:88 Longitudinal <i>N</i> = 8,305	School dropout, among many others	General activity participation, varsity sports, band, orchestra, chorus, play/musical, among others	Descriptive data Controls: related family, school, & student characteristics, depending on analysis	Academic, in-school activities (clubs) related to higher achievement Participation in extracurricular activities related to reduced risky behaviors, with the exception of underage and binge drinking, to which it was positively related
Zill et al. (1995)	MTF <i>N</i> = approximately 15,000 LSAY <i>N</i> = 2,800–3,100 NELS:88 <i>N</i> = 20,900–23,000 Longitudinal Nationally representative				

(continued)

TABLE 1 (Continued)
 Key Characteristics of the Studies Reviewed, by Outcome Measure

Study	Sample	Dependent variable(s)	Independent variable(s)	Other variables	Direction of influence
<i>Substance use</i>					
Borden et al. (2001)	Cross sectional Midwestern 11th graders N = 3,189	Alcohol & marijuana use, intoxication	Peer influence, school-based activities, non-school-based activities	Controls: race, gender, school-based/non-school-based activities, urbanicity	More alcohol use associated with school-based activities
Cooley et al. (1995)	Cross sectional 4 midwestern schools Mostly White N = 5,639	Tobacco, alcohol, marijuana use: total experimentation & use	Athletics, government clubs, music/drama, multiple activities, no activities		Generally lower for all participants relative to nonparticipants Substance use varied by group
Crosnoe (2002)	California & Wisconsin sample Longitudinal N = 2,651	Substance use, academic achievement	Athletic participation, friends' behaviors	Controls: parent education, intact family structure, race	Athletes did not differ from nonathletes in regard to substance use as a whole Female athletes had an upward drinking trajectory similar to boys, but it did not negatively affect their achievement Nonathletic girls engaged in the least risky behaviors during high school
Eccles & Barber (1999)	See above	Drinking, becoming intoxicated, using drugs	Prosocial (church, community service, volunteer activities), team sports,	Controls: mother's education, gender, verbal & numerical ability	Prosocial & performing arts related to drinking alcohol in 10th grade, prosocial related to using drugs

Elder et al. (2000)	Cross sectional Mostly White N = 3,556	Cigarette smoking, alcohol use, marijuana use	performing arts, school involvement (cheerleading, student government, pep club), academic clubs No activity, moderate participation (1-2 organized activities), high participation (more than 2 activities)	Descriptive data	Moderate participation related to less substance use than nonparticipation High participation not significantly different from nonparticipation for cigarette & alcohol use Less
Perry-Burney & Takyi (2002)	See above	Drug use, alcohol use	Girls' competitive team sports	Descriptive data	Less
Shilts (1991)	Southwestern Virginia Cross sectional N = 237 7th & 8th graders	Extracurricular activity involvement: teams, clubs, other group activities	Drugs, alcohol: nonusers, users, abusers	Descriptive data	Nonusing group significantly higher extracurricular activity than users and abusers
Youniss et al. (1997)	MTF Cross sectional Nationally representative (12th graders) N = 3,119	Marijuana use	4 dimensions of social integration, orientation toward school	Cluster variables: religion, political participation, unconventional political behaviors, SES	Lowest for school-adult-oriented students
Zill et al. (1995)	See above	Smoking, drug use, binge drinking,	General activity participation, varsity sports, band, orchestra, chorus, play/musical among others	Descriptive data Controls: related family, school, & student characteristics, depending on analysis	Positively related to underage & binge drinking, negatively related to substance use (continued)

TABLE 1 (Continued)
Key Characteristics of the Studies Reviewed, by Outcome Measure

Study	Sample	Dependent variable(s)	Independent variable(s)	Other variables	Direction of influence
<i>Sexual activity</i>					
Miller et al. (1998)	Cross sectional Western New York Representative N = 611	Sexual activity (partners, frequency of intercourse, age at first intercourse)	Arts, academics, sports participation	Controls: race, gender, age, family income, family cohesion	Music & drama related to less sexual activity Female athletes less partners, less frequent, later age at onset Male athletes more partners, more activity overall, earlier onset Female athletes had lower rates of sexual experience, fewer partners, later age at first intercourse, higher rates of contraceptive use, lower rates of past pregnancy Male athletes had higher rates of sexual experience, more partners, more likely to use birth control than nonathlete counterparts Reduced
Miller et al. (1999)	1995 YRBS Nationally representative Cross sectional N = 8,979	Had sexual intercourse, had intercourse in past 3 months, age at first intercourse, total number of partners, total number of partners in past 3 months, use of birth control	Participation on athletic team	Controls: race, age, mother's education	
Zill et al. (1995)	See above	Teen parenthood	General activity participation, varsity sports,	Descriptive data Controls: related family, school, & student	

band, orchestra,
chorus, play/
musical, among
others

characteristics, depending
on analysis

Psychological adjustment

Gore et al. (2001)	Boston area sample Mostly White Longitudinal N = 1,036	Depressed mood at Time 2	Negative family events, parent relationship problems, friend relationship problems, GPA, parental support, peer support, team sports	Controls: Time 1 depressed mood, parents' education level, family structure, body mass index, age Moderator: gender	Team sports not directly related to depressed mood after accounting for other factors Team sports related to a reduction in depressed mood for girls with low GPAs
Mahoney et al. (2002)	Cross sectional 14-year-olds from Orebro, Sweden N = 537	Depressed mood	Level of parent- adolescent detachment	Moderator: extracurricular activity participation Controls: gender, perception of support from activity leader	Activity participation related to less depressed mood in "highly detached" group
Melnick et al. (1988)	See above	Perceived popularity, sex role attitudes, psychological well-being, sociability	Girls' sports participation	Controls: SES, 10th-grade participation	Related to increase in perceived popularity, unrelated to sex role attitudes, well-being, & sociability
Perry-Burney & Takyi (2002)	See above	Self-confidence	Girls' competitive team sports	Descriptive data	Positive

(continued)

TABLE 1 (Continued)
Key Characteristics of the Studies Reviewed, by Outcome Measure

Study	Sample	Dependent variable(s)	Independent variable(s)	Other variables	Direction of influence
<i>Psychological adjustment</i>					
Rees & Howell (1990)	See above	Irritability, aggressiveness, self-actualization, self-concept, degree of resentment & flexibility, anomie, kindness, honesty, social responsibility, reciprocity, social skills, self-control, independence	Varsity sports, football, basketball, baseball	Controls: race, father's education, mother's education, father's occupational status, family income, IQ	Sports increased irritability & aggressiveness Interscholastic sports caused a decrease in the value of self-control & independence
Tracy & Erkut (2002)	AddHealth Cross sectional Representative N = 43,832	Self-esteem	School-based sports	Controls: grade in school, non-sport extracurricular activities, mother's education, first year in present school, academic success Mediators: school attachment, physical well-being	Sports positively related to self-esteem for Blacks & Whites, both mediators significant: physical well-being stronger, relationship between sports and self-esteem highest for Black males

Delinquency

Mahoney & Stattin (2000)	Cross sectional 14-year-olds from Orebro, Sweden N = 703	Antisocial behaviors	Structured & unstructured activities	Other independent variables: peer characteristics, activity leader support, parental monitoring, parental trust, parental activity support Control: parents' education Controls: SES, 10th-grade participation Controls: adversity, gender, race	Structured related to low antisocial behavior, unstructured related to high antisocial behavior
Melnick et al. (1988)	See above	Delinquency	Girls' sports participation		Slightly related to increased delinquency
Schmidt (2003)	Alfred P. Sloan Study of Youth & Social Development Cross sectional & longitudinal N = 495	Misconduct	Parent's education, extracurricular activities, grades, time in challenging activities, perceived success in challenging activities	Controls: adversity, gender, race	Extracurricular activities associated with less misconduct among high- but not low-adversity adolescents
Zill et al. (1995)	See above	Student arrest, risky behavior	General activity participation, varsity sports, band, orchestra, chorus, play/musical, among others	Descriptive data Controls: related family, school, & student characteristics, depending on analysis	Reduced
<i>Young adulthood</i>					
Barber et al. (2001)	MSALT Longitudinal N = 900	Substance use, number of years of education completed,	Prosocial, performance, team sports, school involvement activities, academic	Controls: mother's education, verbal & numerical ability	Prosocial related to lower substance use, higher self-esteem, increased likelihood of college graduation (continued)

TABLE 1 (Continued)
Key Characteristics of the Studies Reviewed, by Outcome Measure

Study	Sample	Dependent variable(s)	Independent variable(s)	Other variables	Direction of influence
<i>Young adulthood</i>					
Eccles et al. (2003)	MSALT Longitudinal N = 1,259	job with a future, job autonomy, depressed mood, worry, social isolation, self-esteem, suicide attempts, psychological treatment, rehabilitation	clubs, identity group	Controls: mother's education, gender, intellectual aptitude	Performance predicted more years of education, more drinking, higher rates of suicide attempts & psychological treatment Sports predicted positive educational & occupational outcomes, less social isolation, more drinking Identity categories predicted substance use, education & work outcomes, & psychological adjustment All activities related to better educational outcomes, prosocial & performance related to less risky behavior, academic clubs & sports positively related to occupational status, sports associated with more risky behaviors Consistent activity participation associated
Mahoney et al. (2003)	CLS Longitudinal	Educational status	Interpersonal competence,	Mediators Grades 9-10: activity participation,	

	<i>N</i> = 695	family SES, extracurricular activity participation	interpersonal competence	with high educational status, including college attendance at 20 years of age
Marsh & Kleitman (2003)	See above	University enrollment, months in university, highest level postsecondary education	Mediator Grade 12: educational aspirations	Sports participation related to more college enrollment more months in college, higher levels of postsecondary education, particularly for students with low test scores & initially low aspirations
Spreitzer (1994)	HSB Longitudinal Representative <i>N</i> = 10,536	Sports	Controls: gender, SES, race, type of school, repeated grade, school size, urbanicity, mother works, parent education, standardized test scores	Extramural/team sports stronger effect than intramural/individual Athletics weak predictor of alcohol use & self-esteem, athletes' educational attainment higher than nonathletes, weaker for minorities
Zaff et al. (2003)	NELS:88 Longitudinal Representative <i>N</i> = 8,599	Family formation, alcohol use, educational attainment	Controls: SES, cognitive aptitude, GPA, self-esteem, race	Consistent activity participation during 8th–12th grades predicted academic achievement & prosocial behaviors 2 years after 12th grade
		Academic achievement, voting behavior, volunteering	Controls: SES, ethnicity, gender, family composition, number of siblings, reading & math test scores, held back, locus of control, religiosity, turbulence, private school attendance, emotional disability, student disability	

Note. AddHealth = National Longitudinal Study of Adolescent Health; CLS = Carolina Longitudinal Study; HSB = High School and Beyond; LSAY = Longitudinal Study of American Youth; MSALT = Michigan Study of Adolescent Life Transitions; MTF = Monitoring the Future; NELS:88 = National Education Longitudinal Study of 1988; YIT = Youth in Transition; YRBS = Youth Risk Behavior Survey.

Findings have indicated that, overall, girls participate in more extracurricular activities than boys, but boys are more likely to participate in athletics (Antshel & Anderman, 2000; Eccles & Barber, 1999; Mahoney & Cairns, 1997; Mahoney et al., 2003; McNeal, 1998; Posner & Vandell, 1999). African Americans have been found to be as likely as or more likely than White students to participate in all extracurricular activities other than vocational clubs, in which White students are more likely to participate (Mahoney & Cairns, 1997; McNeal, 1998). Patterns of extracurricular participation over time and at various grade levels are still unaccounted for in recent research. For example, what does the pattern of extracurricular activity participation look like across age, gender, and race? In addition, how many different activities do adolescents participate in at one point in time? How does this differ according to gender, race, and age? Despite these gaps in terms of gaining a holistic understanding of activity participation, other studies have investigated the relationships between activity participation and academic, behavioral, psychological, and young adult outcomes, and we discuss these studies subsequently.

Academic Performance and Attainment

In considering the link between school-based activity participation and academic performance, researchers have hypothesized that extracurricular activities might boost the adolescents' connectedness with their schools, which might in turn bolster their achievement and attainment (R. Brown & Evans, 2002; Calabrese & Poe, 1990; Hendrix, Sederberg, & Miller, 1990; Jenkins, 1997). Early research reported mixed results as to the association between extracurricular activity participation and grade-point average (GPA) (Holland & Andre, 1987). Generally, the relation was positive for male athletes relative to male nonathletes, while female athletes did not differ significantly from female nonathletes in regard to GPA (Hanks & Eckland, 1976). In the area of educational aspirations and attainment, early literature also demonstrated a generally positive relation between extracurricular activity participation and increased educational aspirations and attainment (Holland & Andre, 1987). In the case of both male and female students, athletic participation was positively related to plans to attend college. Among male students, the relation between activity participation and educational attainment was found to be independent of moderator variables such as socioeconomic status (SES) and academic ability (Hanks & Eckland, 1976; Otto, 1975, 1976; Otto & Alwin, 1977). However, other early literature showed the opposite pattern, demonstrating that educational attainment among male students was related more to SES, intellectual ability, and social relationships and that attainment among female students was related more to grade performance and teacher and peer contacts, which were also directly associated with activity participation (Holland & Andre, 1987).

Currently, the literature generally supports the original findings that there is a positive relationship between extracurricular activity participation and academic achievement (Broh, 2002; Crosnoe, 2001; Eccles & Barber, 1999; Gerber, 1996; Hanson & Kraus, 1998; Mahoney & Cairns, 1997; Mahoney et al., 2003; Marsh, 1992; Marsh & Kleitman, 2003; McHale, Crouter, & Tucker, 2001; McNeal, 1998; Melnick, Vanfossen, & Sabo, 1992b; Spreitzer, 1994). Studies focusing on gender differences have reported similar findings for male and female students. Among girls, sports participation has been associated with a higher GPA and desire to

attend college (Eccles & Barber, 1999; Feltz & Weiss, 1984; Melnick et al., 1992b; Perry-Burney & Takyi, 2002). Among boys, sports have been related to positive academic outcomes (Broh, 2002; Crosnoe, 2001). Specifically, football participation has been related to valuing academic achievement, and football or basketball participation has been related to higher educational aspirations (Rees & Howell, 1990). One possible explanation for the different outcomes observed by type of sport is that different “types” of boys play different sports.

These possible differences in individual characteristics that go unaccounted for in research represent an example of selection, or the extent to which preexisting differences are driving the relation between participation and achievement. In the example just described, preexisting differences were driving the adolescents’ educational aspirations, not the fact that they happened to be a member of a certain athletic team. Broh (2002) attempted to control for these preexisting differences and found that sports participation was linked to improved math and English grades and increased time spent on homework net of key background, family, and school characteristics. Similar findings have been reported by other researchers (Marsh & Kleitman, 2003; Zill et al., 1995). However, these results are not conclusive. Focusing on another nationally representative sample, Melnick, Vanfossen, and Sabo (1988) found that sports participation was unrelated to girls’ academic achievement and was positively related to their educational aspirations.

While numerous studies, including those in the education and sports literature, have documented the positive association between sports and academic achievement, other studies have expanded on the prior literature by reporting on the relation between additional activity types—such as whether activities occurred in or outside of the school setting and whether they were structured or unstructured—and educational achievement. Out-of-school activities, including structured activities (in this study, private lessons and classes and religious activities) and time spent alone have been positively associated with student achievement, while spending nonconstructive time with peers, working for pay, and spending time with adults have been negatively associated with achievement (Jordan & Nettles, 2000). Another study (Schreiber & Chambers, 2002), involving NELS:88, showed that nonacademic activities, regardless of in- or out-of-school status and whether they were organized or not organized, were not related to academic achievement after other factors had been taken into account. Separating extracurricular activities into structured (supervised by an adult) and unstructured (not supervised by an adult) categories, McHale et al. (2001) reported a positive relation between structured activity participation (namely, sports) and school grades, while unstructured activity participation was negatively related to school grades. In a study focusing on school-based activities, intramural sports and vocational clubs were found not to afford students the benefits associated with interscholastic sports (Broh, 2002). Specifically, students in intramural sports experienced a decline in math and English scores.

In one of only a few studies to examine extracurricular activity participation into young adulthood, Barber, Eccles, and Stone (2001) examined the association between activity types and educational and occupational outcomes. Participation in any type of activity was related to completing more years of education. However, these authors found that activity participation was no longer influential in determining young adult outcomes once controls for maternal education and prior

math and verbal ability scores were included in their models. Rates of college graduation were positively related to participation in all activity types, and sports participation was related to feelings of “having a job with a future” and having more job autonomy. In a similar analysis, all types of activity participation were related to better educational outcomes (college enrollment and years of education), but only sports and academic club participation were related to better occupational status (having a career path job and job autonomy) at 25–26 years of age (Eccles, Barber, Stone, & Hunt, 2003). Spreitzer (1994) conducted a similar study, but his sample allowed him to examine race more closely. He found, in a similar manner, that student athletes’ educational attainment was higher than that of nonathletes; however, he found that this relation was weaker among minority group students and concluded that such students do not draw particular educational benefits from high school athletics.

In addition, Marsh and Kleitman (2003) used the NELS:88 data set and found that high school sports participation was related to college enrollment, more months attending college, and higher levels of postsecondary education even after controlling for many of the factors that are also related to educational outcomes. Their findings were particularly strong among students with initially low test scores and low educational aspirations, indicating that participation might alter educational attitudes and values in positive ways. Also, extramural/team sports had stronger effects than intramural/individual sports. Readers should note Marsh and Kleitman substituted missing data for almost two thirds of their sample. Nonetheless, this study makes an important contribution to the literature by lending support to the notion that there are distinct educational benefits of activity participation for at-risk individuals (Mahoney & Cairns, 1997; Mahoney et al., 2002; Schmidt, 2003). This stands in contrast to other studies concluding that participation had no particular effect among at-risk populations (Davalos, Chavez, & Guardiola, 1999; Spreitzer, 1994). The definition of “risk” used in future activity research will be particularly important, and we discuss this issue later in the review.

Finally, the studies just discussed also convey the importance of a more nuanced definition of activity types. For example, the research contrasting extramural and intramural sports illustrates this point: Interscholastic sports are more selective, have more formalized rules, require a greater commitment by students, and are more competitive than intramural sports (Broh, 2002). Therefore, not all seemingly similar activities should be automatically grouped together. Most of these studies (Broh, 2002; Jordan & Nettles, 2000; Schreiber & Chambers, 2002) have involved the same large, nationally representative data set, NELS:88, and replication with other representative data sets would be useful in clarifying their findings. Furthermore, several of the studies cited uncovered important gender and racial differences in the link between participation and educational outcomes. In the following, we discuss these moderators and also highlight potential mediators of activity participation.

Peer Group Association as a Mediator/Moderator

The current literature has expanded previous findings to account for the peer group as mediating the positive relation between sports participation and better academic/educational performance. In other words, the real link between activity and achievement is the association with a peer group as opposed to something inherent about the activity itself. Using the Michigan Study of Adolescent Life

Transitions (MSALT), a longitudinal study consisting of mostly Caucasian children from southeastern Michigan, Eccles and Barber (1999) initially reported a positive association between participation and academic and educational associations. Generally, all types of activities, ranging from church groups to student government and cheerleading, were associated with a higher likelihood of full-time college enrollment at 21 years of age.

Upon further examination, Eccles and Barber (1999) suggested that peer group associations mediated this relation between activity participation and positive academic outcomes. They found that participants' peer groups were characterized by a higher proportion of students who planned to attend college and were also doing well in school (with the exception of sports participants). In another study investigating adolescents' own reasoning for why they participated in extracurricular activities, adolescents reported, for example, that they did so "for the enjoyment of it," a perception that was derived from their "being good at it" and "having the opportunity to see friends" (Fredericks et al., 2002). This finding lends additional support to the need to account for peer networks in determining the effects of activity participation on achievement.

To build on the Eccles and Barber (1999) work, another study explored the actual behavioral characteristics of the peer group (Crosnoe, 2001). This study showed that sports participation predicted friendships with two types of groups: academically successful students and socially active students (measured via time spent "partying" each week). Athletes with academically successful friends had subsequently higher academic achievement themselves. Athletes with socially active friends had lower subsequent academic achievement. While initial achievement was the strongest predictor of friendship characteristics and later achievement, there is little doubt that the characteristics of these adolescents' peer groups influenced their participation experiences. Again, preexisting differences, in this case peer group characteristics, might explain these results in that even after the participants' own ability had been controlled, their peers' ability significantly predicted their academic achievement. Peer group characteristics are important variables to consider in activity research with educational outcomes given their direct relation to educational outcomes. For example, in a longitudinal study of African Americans, peer support was related to higher math achievement test scores among adolescents facing multiple risks (Gutman, Sameroff, & Eccles, 2002). Also, other studies with younger children have shown that those who rate their friendships as of higher quality exhibit better psychosocial adjustment and academic achievement (Berndt, Hawkins, & Jiao, 1999; Ladd, Kochenderfer, & Coleman, 1996).

Race and Gender as Moderators

Several longitudinal studies have revealed racial differences in the relationship between activity participation and academic achievement. In the High School and Beyond (HSB) study, sports participation has not been shown to be associated with improved grades or test scores among African American or Hispanic students (Hanson & Kraus, 1998; Melnick, Sabo, & Vanfossen, 1992a; Melnick et al., 1992b; Sabo, Vanfossen & Melnick, 1993). In a study involving NELS:88 data, Gerber (1996) examined the influence of general activity participation on math, reading, and science cognitive test scores among African Americans and Whites and found that school-based activities were related to achievement for both groups.

However, out-of-school activities, such as religious and neighborhood clubs, were not related to achievement among African Americans (Gerber, 1996). Therefore, the picture is complex, and a more nuanced consideration of participation in extracurricular activities is necessary in order to understand the salience of such experiences within and between different racial/ethnic groups.

As does race/ethnicity, gender also moderates the relation between activity participation and educational outcomes. For example, in their study, Hanson and Kraus (1998) found that sports participation led to better math and science achievement among girls but not boys. In addition, Crosnoe (2001) reported that, depending on type of peer network, a male athlete's academic performance could predictably increase or decrease over time. Also, as mentioned earlier, boys' friendships with academically successful students predicted increases in their own academic achievement, and friendships with socially active students predicted decreases in their achievement. Female athletes' sports participation predicted friendships with higher-achieving students and, to a lesser extent, friendships with more socially active students. Unlike male athletes, their friendships with socially active students did not predict decreases in their own academic performance. Crosnoe's (2001) study revealed that peer group affiliations are more influential in regard to male students' academic achievement. This is an intriguing finding given that girls are seen as more interpersonally driven than males. Although these studies are important, there are still few empirical investigations of the relation between participation and the educational outcomes of adolescents of different race and gender groups. There is a gap in research considering activities other than sports. Further investigations that consider a wide range of activities in attempting to determine how adolescents' characteristics moderate their experiences would also be an important contribution to the field.

Dropout

At one extreme end of the academic performance spectrum are those individuals who drop out of school. While students drop out for any number of reasons, better grades and greater school engagement may reduce a student's propensity to leave. Examination of extracurricular activity participation's association with student dropout began with Zill et al.'s (1995) comprehensive report on adolescents' time use patterns. They found that participation in 1 to 4 hours of extracurricular activities per week was related to a reduced likelihood of dropping out. On the other hand, McNeal (1995) found that only sports participation was related to a lower probability of school dropout.

Since then, several studies have demonstrated a positive relation between extracurricular activity and staying in school, particularly among at-risk adolescents (Mahoney, 2000; Mahoney & Cairns, 1997; Melnick et al., 1992a, 1992b). Mahoney and Cairns (1997) reported that school dropout rates among at-risk students were markedly lower for those who had participated in extracurricular activities than for those who had not. Among at-risk but academically and socially "competent" students, higher dropout rates were found only in cases in which students did not participate in any extracurricular activities. Mahoney and Cairns determined that linear increases in activity participation were accompanied by large reductions in dropout rates. In addition, Mahoney (2000) reported that participation in at least one extracurricular activity was associated with reduced

rates of early dropout among high-risk boys and girls. On the basis of previous work, Mahoney (2000) asserted that it was not the activity that led to lower dropout rates. Rather, it was the social networks that adolescents acquired through participation that kept them engaged with their schools and prevented them from dropping out. Mahoney (2000) acknowledged possible selection factors that might also be driving this relation, such as skill level, grades, SES, and social status in the school. Whenever possible, such factors must be included in considerations of extracurricular activity participation and school dropout.

Studies investigating high school dropouts usually involve an explicit consideration of youth who are at risk of leaving school. Researchers often have some degree of latitude in defining which adolescents are at risk. However, different definitions of risk can lead to different results in terms of the positive relation between extracurricular activities and dropout rates among at-risk adolescents. One study examined the role of extracurricular activity involvement in dropout by specifically comparing Mexican American and White non-Hispanic adolescents (Davalos et al., 1999). Mexican American ethnicity was considered a risk factor for dropout. The authors divided activity involvement into three categories: band, athletic, and other activities. Band involvement did not significantly influence retention rates. However, involvement in activities other than band was associated with staying in school in the case of both ethnic groups and both genders. In contrast to Mahoney, Davalos et al. (1999) concluded that their results did not provide support for the argument that extracurricular activity involvement provides a distinct advantage for minority and high-risk individuals, possibly because students involved in these activities have a better perception of school even before joining an activity, which might be the real cause of the lower dropout rate. Such students rated their perceptions of their teachers, classes, and educational experiences more positively than did nonparticipants. Another study (Melnick et al., 1992a) showed that sports participation was associated with a lower likelihood of dropping out among several groups, particularly rural Black boys, suburban Hispanic boys, and rural Hispanic girls.

Clearly, one has to carefully consider one's definition of "at risk" when comparing groups. It may be that factors other than race and SES are important causes of school dropout. For example, rather than ethnicity, the Davalos et al. (1999) study may suggest "perception of school" as the risk factor. Research on extracurricular activity participation's relation to school dropout is still at a relatively early stage, and further investigation is needed to parcel out the associations among risk status, participation, and educational success. In other words, are certain extracurricular activities more or less beneficial to some groups of adolescents relative to other groups?

Substance Use and Sexual Activity

Moving from academic to behavioral outcomes, adolescent research in general has focused a great deal of attention on substance use and sexual activity. Research on substance use includes pathways into, and family and peer influences on, substance use (Petraitis, Flay, & Miller, 1995; Windle, 2000). Research on sexual activity has focused on timing of first sexual intercourse and social influences on adolescent sexual activity (Capaldi, Crosby, & Stoolmiller, 1996; Romer, Black, Ricardo, & Feigelman, 1994). However, only recently have studies investigated the association between extracurricular activity participation and drug use, alcohol

or tobacco use, and sexual activity. It is hypothesized that participation exerts its influence on substance use and sexual activity in two possible ways: (a) Extracurricular activities might promote developmentally appropriate prosocial behavior and reduce the likelihood that individuals will engage in risky behavior, or (b) extracurricular activities might link adolescents to peer groups who do engage in substance use and sexual activity, increasing the probability that they will engage in risky behavior. Unfortunately, a clear picture has not yet emerged. The mixed results observed may be a function of unidentified mediators and moderators, such as gender, in some studies. For example, studies focusing on only one gender have sometimes reported different outcomes than studies aggregating both genders. We first discuss the relation between extracurricular activities and substance use/sexual activity. We then described the important mediators and moderators of this relation.

Alcohol, Tobacco, and Drug Use

The findings regarding activity involvement and substance use have been mixed. Several studies have revealed a link between extracurricular activity participation and lower rates of substance use, even well into young adulthood (Barber et al., 2001; Cooley, Henriksen, Van Nelson, & Thompson, 1995; Eccles & Barber, 1999; Eccles et al., 2003; C. Elder, Leaver-Dunn, Wang, Nagy, & Green, 2000; Perry-Burney & Takyi, 2002; Shilts, 1991; Youniss, Yates, & Su, 1997; Zill et al., 1995). Specifically, Zill et al. (1995) found that the substance use effect depended on the amount of time that youth spent in activities. When adolescents participated in 1 to 4 hours of activities per week, they were significantly less likely to use drugs or smoke cigarettes. The effect of activity participation on drug use prevention was even stronger when adolescents spent 5 to 19 hours per week in extracurricular activities. In another study, adolescents who participated in one or two extracurricular activities were half as likely to smoke cigarettes and use alcohol as other adolescents and less than half as likely to smoke marijuana (C. Elder et al., 2000).

A number of studies have investigated the impact that specific activities, including athletics, have on the likelihood that adolescents smoke and use drugs. Most studies have examined whether sports participation lowers the probability that adolescents use drugs. This research has produced mixed results. In some studies, sports participation has been associated with less drug or alcohol use (Perry-Burney & Takyi, 2002), while other studies have shown that sports participation is related to higher levels of alcohol use (Borden, Donnermeyer, & Scheer, 2001; Crosnoe, 2002; Eccles & Barber, 1999; Zill et al., 1995). Eccles and Barber (1999) found that boys (but not girls) involved in the performing arts reported a lower likelihood of drinking alcohol. Moreover, participation in out-of-school activities (church, community-service, and volunteer activities) has been linked to reduced use of alcohol, marijuana, and hard drugs. Although both school-based and non-school-based extracurricular activities are generally related to reduced levels of alcohol and marijuana use, one study showed that peers are the strongest predictor of substance use (Borden et al., 2001). These findings serve as yet another reminder that peer characteristics should be considered as a potential mediator in analyses of the effects of extracurricular activities on substance use.

Cooley et al. (1995) explored the relationship between extracurricular activities and drug experimentation among adolescents. They found that rates of tobacco,

alcohol, and drug experimentation were lower among students who engaged in extracurricular activities than among those who did not. However, they argued that extracurricular activity participation should not be heralded as a guarantee against experimentation, and they further noted that participants in different groups experiment with different substances. Therefore, depending on the activity in question, different kinds of substance use are at issue. Cooley et al.'s findings reemphasize Eccles's work indicating that not all activities have the same effects and highlight the importance of examining different types of activities. The majority of these studies have involved small, nonrepresentative samples, and further examination is needed with nationally representative samples of adolescents and young adults.

Gender as a Moderator

In an effort to tease out the influence of sports participation on substance use, Crosnoe (2002) examined the moderating role of gender; that is, he assessed whether the relation between extracurricular activities and substance use differed among boys and girls. He found that gender did not moderate tobacco use. Alcohol use, however, did differ according to gender: Its use increased over time among boys in general (both athletes and nonathletes) and among female athletes. Crosnoe suggested that boys may engage in such behaviors to maintain their social standing. In the case of girls, participating in sports is thought to draw them closer to their peers and to break down prior protective mechanisms such as adult orientations. Furthermore, Crosnoe found that, relative to boys, alcohol use was more detrimental in regard to girls' academic performance.

Gender differences also have been found in the relation between participation in extracurricular activities and illegal drug use among adolescents. In an investigation of illicit drug use over time, Crosnoe (2002) found that participation was related to a lower likelihood of initial illicit drug use among boys and to a lower likelihood of illegal drug use over time among girls. Specifically, male athletes, while initially engaging in drug use less frequently, increased to levels similar to those exhibited by male nonathletes over the course of the study. In contrast, girls did not increase their drug use over time or did so at lower rates than boys. Crosnoe concluded that athletic participation may be initially protective in regard to substance use among both boys and girls but that, over time, male athletes increasingly engage in such risky behaviors, similar to the pattern of findings observed with alcohol use among girls.

Similar moderating effects have been found in young adult samples. Using the same activity groups from their previous study (Eccles & Barber, 1999), Barber et al. (2001) examined high school activity involvement and alcohol and marijuana use in young adulthood. The quantity of alcohol individuals consumed in young adulthood was shown to depend on the type of activity in which they participated during high school. Young adults who participated in certain activities in the 10th grade consumed less alcohol, while other activity types were linked to higher rates of alcohol use among young adults. Specifically, male athletes and those who participated in prosocial activities consumed less alcohol in young adulthood. Conversely, female athletes and male performing artists were the most likely groups to consume alcohol in young adulthood. In addition, participation in prosocial activities was protective against later marijuana use. Male and female performing artists and female students involved in school activities were more likely to use marijuana

in young adulthood. However, female performing artists appeared to stabilize their use earlier, while male performing artists continued to increase their marijuana use. Employing a broader definition of "risky behavior," including consuming alcohol, becoming intoxicated, using drugs, and skipping school, Eccles et al. (2003) obtained similar results using the same MSALT data and a slightly larger subsample. Here, too, performance and prosocial activity participation were related to less risky behavior in young adulthood, while sports participation was related to more risky behavior.

In contrast, Spreitzer (1994), using a longitudinal, nationally representative data set and measuring four time points, found that athletic participation was weak relative to demographic controls in predicting alcohol use in young adulthood (6 years after 10th or 12th grade). In addition, he found that athletic participation was an even weaker predictor of alcohol use among members of minority groups, again supporting his conclusion that such individuals do not draw any special benefits from high school athletics. On the basis of Spreitzer's work, it could be argued that the influence that activities exert during adolescence may diminish by the time individuals reach young adulthood.

Given the mixed results regarding extracurricular activity participation and alcohol use, as well as the narrow concentration on the role of athletic participation, additional research is needed on the associations between activity participation and substance use. For example, what role does gender play in alcohol use among female students involved in academic clubs? Because, unlike sports (Crosnoe, 2001), academic clubs are not typically associated with more socially active friendships, and because it has been suggested that female athletes are pulled more into the social world of males, initial rates of substance use and changes over time among girls involved in academic clubs might appear to be quite different from those observed among female athletes (and they may be much lower in magnitude). In addition, the issue of self-selection into activities must be acknowledged. The question arises as to whether adolescents who would be more likely to use substances, even in the absence of extracurricular activities, choose to participate in activities that will afford them an opportunity to engage in drug use, such as sports, or whether students who participate in these activities end up using substances as a result of participation. Such questions are important ones to consider in seeking to understand whether extracurricular activities play a causal role in adolescent substance use patterns.

Sexual Activity

Few studies have examined the role played by extracurricular activity participation in the decisions adolescents make about their sexual activity. Using three large, nationally representative data sets, Zill et al. (1995) reported that rates of teenage childbearing were lower when adolescents participated in 1 to 4 hours of activities per week. In addition, K. E. Miller, Sabo, Farrell, Barnes, and Melnick (1998), using a nonrepresentative sample and a cross-sectional analysis design, found that music and drama participation were related to less sexual activity on the part of adolescents. The relation between athletic participation and sexual activity did vary by gender. Female athletes reported significantly lower rates of sexual activity than female nonathletes, while male athletes reported slightly (although not significantly) higher rates of sexual activity than nonathletes. In a study focusing solely on athletic

participation, K. E. Miller, Sabo, Farrell, Barnes, and Melnick (1999) found that a nationally representative sample of female athletes reported fewer sexual experiences, fewer partners, later onset of first intercourse, higher rates of contraceptive use, and lower rates of past pregnancy than female nonathletes. In contrast, male athletes reported higher rates of sexual experience and more partners than nonathletes, but they were more likely to use birth control.

K. E. Miller and his colleagues (1999) used cultural resource theory to interpret their findings. According to this theory, athletics may reduce adolescent girls' adherence to conventional cultural scripts and provide them with social and personal resources to draw on while working through their sexual development. Athletics may provide boys with similar resources but increase their commitment to traditional masculine scripts. While cultural resource theory serves as a useful framework to study the relationships among gender, activity participation, and sexual activity, the research in this area is still in its infancy. There is room for further exploration of this topic, particularly research in which longitudinal data sets and different types of activities are employed to investigate age of entry into sexual activity, sexual activity over time, engagement in safe sexual activity, and the possible roles of increased levels of parent and peer involvement (associated with both activity participation and sexual activity) as mediators of any associations.

Psychological Adjustment

Extracurricular activities are not only believed to influence adolescent behaviors, but they are also thought to have an impact on psychological well-being. As is the case with studies investigating substance use and sexual activity, research indicates that activity participation can have two possible effects on psychological well-being: either as a deterrent or as a promoter of mental health. In accordance with flow theory (Csikszentmihalyi, 1990), activity participation has been thought to provide adolescents with challenges commensurate with their abilities. Such experiences have been linked to enhanced psychological well-being (Csikszentmihalyi, 1990). Early research on the relation between extracurricular activity participation and an individual's self-concept and self-esteem reported relatively mixed results. A majority of the findings revealed a positive relation between most extracurricular activities and self-esteem among boys and between specific activities and self-esteem among girls.

In terms of psychological adjustment, it has been hypothesized that if activities fit with an individual's talents, thus validating the adolescent's sense of self, there will be a positive relation between participation and psychological well-being. There is some indirect evidence for this hypothesis in that the better male athletes' position on a sports team, the higher their self-esteem (Holland & Andre, 1987). Holland and Andre concluded that, in the case of male students, participation in activities that bring them publicity is likely to increase self-esteem. Other early studies reviewed by Holland and Andre (1987) showed that the self-esteem link was related to school size and to the pressure to participate and be successful. Participation was more predictive of self-esteem in small schools and especially among successful male students. Unsuccessful male students in small schools suffered the largest reduction in self-esteem as well as alienation. Clearly, one must account for the structural characteristics of the school in assessing the effects of extracurricular activities. The findings just described also beg the question as to

whether performance and the fit between skill and activity (i.e., “flow”) are possible moderators of the activity effect on self-esteem, at least among boys.

In a more recent qualitative study (Fredericks et al., 2002), adolescents appropriately skilled in their activity felt an increased level of confidence that kept them participating, while those students who felt too little or too much challenge in their activity were more likely to drop out. Receiving recognition from significant others strengthened adolescents’ perception of their abilities, which in turn increased their commitment to the activity. Those students who received awards also received additional recognition by teachers and peers, which further bolstered their perceived skills. In another study involving a small sample of soccer players, swimmers, and track and field athletes, Graham, Kowalski, and Crocker (2002) found that desired performance goals and causes attributed to meeting (or not meeting) those goals directly predicted emotional experiences in youth sports. The more important the goal and the lower the subjective ratings of performance, the stronger the negative emotions (sadness, anger, guilt, shame). These findings and other discussions of the role of performance (see Larson & Kleiber, 1993) may lend support to performance being an important mediator or to performance interacting with school characteristics.

Recent literature linking extracurricular involvement to adolescent well-being is still quite sparse, and findings have been mixed. One study involving the NELS:88 database revealed that sports participation between 10th and 12th grade increased self-esteem and internal locus of control (Broh, 2002). This study also showed that sports participation increased the amount that students talked to their parents about school issues as well as students’ contact with teachers outside of school. Another study involving HSB data showed that sports participation was not related to psychological well-being among girls (Melnick et al., 1988). Using a relatively recent (1994), longitudinal, nationally representative data set (AddHealth), Tracy and Erkut (2002) found that sports participation was positively related to self-esteem among both White and African American adolescents; however, the relation was mediated by school attachment and physical health, and physical health was the stronger mediator. To establish more clear-cut results, there is a need for further research that incorporates possible mediating variables in the links between extracurricular activity participation and psychological adjustment.

As was the case for academic achievement and substance use/sexual activity, gender differences have been shown in the relation between activity participation and psychological adjustment. Gore, Farrell, and Gordon (2001), using a mostly homogeneous (Caucasian), longitudinal sample, found that while team sports participation was not directly related to depressed mood after controlling for other protective factors, it was related to reductions in depressed mood among girls (but not boys) with low GPAs. These authors concluded that sports involvement is a positive instrumental activity for at-risk girls.

Furthermore, activity participation can protect adolescents from suboptimal family environments. Mahoney and colleagues (2002) found that extracurricular activity involvement mediated the relation between detached parent-adolescent relationships and depressed mood. Among adolescents who had detached relationships with their parents, those who participated in structured extracurricular activities reported lower levels of depressed mood than nonparticipants, and this was particularly the case for those who perceived high levels of support from their

activity leader. Such support from after-school activity leaders was particularly important for youth characterized by highly detached relations with their parents. While girls reported higher levels of depressed mood than boys, and boys reported closer relationships with their activity leaders than girls, results were consistent across genders. Although important, studies such as those just described have not addressed whether it is this mentoring relationship, the activity in and of itself, or both that bolster the functioning of at-risk adolescents. Further research with large, nationally representative samples may help solidify the findings in this area.

Type of Activity as a Moderator

Research has shown that not every type of activity operates in the same manner to influence adolescent psychological adjustment. Therefore, the relation between participation and adjustment depends on the activity under consideration. To illustrate this, Rees and Howell (1990) examined the relation between male sports participation and self-esteem. Football was related to higher self-esteem. However, boys who participated in a greater number of sports reported feeling more irritable, while they also reported less of an emphasis on self-control and personal independence. Basketball players placed less of an emphasis on honesty as well as on social responsibilities. The authors concluded that sports participation was not beneficial for adolescent boys' social and value orientations.

Research focusing on the relation between extracurricular activity participation and psychological adjustment in young adulthood has shown that there are some long-term benefits to involvement in activities during the adolescent years (Barber et al., 2001). Barber et al. found that while activity involvement was unrelated to level of or changes in depressed mood during young adulthood, participation was somewhat protective against feelings of worry in regard to family finances, finding a job in the future, and feeling discouraged about the future. Participation was particularly protective against feelings of social isolation, was positively related to self-esteem, and seemed to be driving the association between participation and depressed mood. Feelings of social isolation decreased over time and self-esteem increased over time in the case of all activity types. However, some of the long-term benefits of participation depended on the particular type of activity individuals reported during adolescence. For example, Barber et al. found that the only negative association with activity participation involved performing arts participants, who reported more suicide attempts and visits to psychologists at 24 years of age. Nevertheless, extracurricular activity participation was related to more positive psychological adjustment in young adulthood. Future qualitative studies could offer a nuanced understanding of the mechanisms that might explain the types of extracurricular activities that influence or mediate adolescents' and young adults' emotional and societal value development. Such qualitative work, coupled with quantitative studies considering school and parent-adolescent relationship factors as potential moderators, could uncover important insights into exactly how extracurricular activities exert both short- and long-term effects on psychological adjustment.

Delinquency

The relation between participation in extracurricular activities and adolescent delinquency has been a topic of great interest among researchers. It could be hypothesized that activity participation might deter adolescents from engaging in

delinquent acts because extracurricular activities are prosocial in nature, encouraging adherence to constructive behavioral norms (Eccles & Gootman, 2002; Mahoney & Cairns, 1997; Mahoney et al., 2003). Two early studies showed that participation in athletic or service activities was related to a lower frequency of delinquent acts, particularly among low-achieving and blue-collar male students (Holland & Andre, 1987; Landers & Landers, 1978; Schafer, 1969). More recent research has shown that participation in other highly structured activities, including band, orchestra, chorus, plays, and musicals, is associated with lower levels of delinquency (Mahoney, 2000; Mahoney & Stattin, 2000; Zill et al., 1995). These researchers suggest that the benefits to an adolescent of taking part in an activity depend on the attitudes of other activity participants about engaging in certain high-risk behaviors, such that if the group encourages certain forms of risky behavior, participation in that activity may be detrimental.

These recent studies suggest that peers may be mediating the relation between participation and delinquency, similar to the relation between friendship characteristics and academic performance described earlier (Crosnoe, 2001). Mahoney's studies (2000; Mahoney & Stattin, 2000) specifically examined the influence of social networks and activity context on possible benefits of activity participation in regard to delinquency. Mahoney reported an interaction effect between participation and social network whereby reductions in criminal arrest rates among high-risk boys and girls depended on whether at least 50% of their social network also participated in school extracurricular activities. Mahoney also reported an interaction between number of structured (music, sports, theater) and unstructured (youth recreation center activities with no regular schedules and little adult supervision) activities. Among boys, involvement in unstructured activities and absence of involvement in structured activities were particularly problematic in terms of their antisocial behavior. Mahoney also reported that participants in unstructured activities were characterized by deviant peer relationships, poor parent-child relationships, and low levels of support from their activity leaders. These findings point to close relationships with adults as important influences on delinquent activities among adolescents.

Another study involving a small, longitudinal sample (Schmidt, 2003) revealed that extracurricular activities were associated with less school misconduct among at-risk adolescents. At-risk status, or adversity, was a composite measure that included exposure to stressful events within the family context, chronic family discord or disorganization, and low levels level of safety and support within the school. Time spent in "daily challenges" such as school work, extracurricular activities, hobbies, and paid work (as opposed to watching television and socializing with friends) and perceived success in these challenges were also directly related to less misconduct.

Many of these researchers have noted that the role selection plays in determining the relation between activity participation and delinquency is still unclear. Even with longitudinal samples, the true causal mechanism will be difficult to uncover: Is it self-selection, or does the activity change the individual in certain ways? When we are unable to measure individuals' functioning before they participate in activities, it is crucial that we control for as many factors as possible that have also been linked to delinquency, including poverty, delinquent peers, older peers, and poor school performance (Mahoney & Stattin, 2000). Only then will we be able to make

reasonable assumptions about the influence of extracurricular activity participation in regard to curbing or encouraging adolescent delinquency. In addition, participants' social values, whether or not their peer group participates in activities or supports them in their activities, and the ratio of structured to unstructured activities could be particularly influential as to how participants experience their activities. Furthermore, we have little insight into the long-term effects of activity participation on delinquency. Do these activity experiences matter as individuals make the transition to young adulthood? Or are these potential benefits of activity participation limited to adolescence?

A Developmental Approach to Activity Research

Consistent/Continuing Participation

Longitudinal data sets that track individuals into young adulthood have provided a unique opportunity to examine the extent and effects of extracurricular activity participation across the life course. The adolescent years represent a critical period in human development during which young people work toward establishing independence and during which contexts outside of the family become more important. The choices adolescents make and the opportunities made available to them during this critical period may have lifelong implications for their emotional and physical well-being. Researchers have documented that patterns of behaviors initiated in adolescence often carry through into adulthood (Maggs, Schulenberg, & Hurrelmann, 1997). Thus, the environments adolescents experience are critical in that they provide opportunities for maintaining or changing behaviors that may influence their development, either for better or for worse. Thus, it is important to consider continuity in developmental contexts over time. The number of years that adolescents spend in extracurricular activities might determine whether such participation exerts an influence on their adjustment into young adulthood.

Although limited, studies considering continuity in participation have begun to paint a picture of participation across the life span. The work of Scott and Willits (1989, 1998) provides some important information regarding the stability of participation over time. Using a longitudinal sample of individuals who attended rural high schools in Pennsylvania, the authors followed the participants for more than 45 years. They found continuity in activity participation across life stages and found that adolescent participation was a significant predictor of later participation. In addition, Raymore, Barber, and Eccles (2001) lent support to and expanded the Scott and Willets findings using the MSALT sample to examine young adult leisure patterns. They also found that stability in leisure patterns, or kinds of activities, was the most common pathway into young adulthood but that female leisure patterns were more dependent on the contextual variables that accompany the transition from adolescence to adulthood. Young women entering into romantic partnerships or becoming parents were more likely to change their leisure patterns, becoming less active outside the home.

Mahoney et al. (2003) used an 8-year longitudinal study to investigate the role of consistent participation in school extracurricular activities as a contributor to long-term educational success. They found that girls showed more consistent participation in early adolescence than boys, but boys' early participation was more strongly associated with their educational aspirations (desire to attend college or

job training programs) in late adolescence. However, once other features of the educational attainment process were taken into account, the gender difference no longer remained. Consistent activity participation was also associated with higher educational status (level of education completed) at 20 years of age, particularly for the low interpersonal competence (as opposed to high interpersonal competence) subgroup. Interpersonal competence was measured through teacher ratings of aggression and popularity with fellow students.

Similar results have been observed in a nationally representative, longitudinal data set. Using NELS:88, Zaff et al. (2003) examined consistent extracurricular activity participation across the 8th through 12th grades in relation to academic achievement, voting behavior, and volunteering 2 years after the 12th grade. Consistent participation in at least one activity each year was related to academic achievement (measured as college attendance) and prosocial behaviors even after extensive control variables had been included in the model. Large, nationally representative data sets that capture participation at each wave of data collection are rare, but such data are needed to generalize the effects of consistent participation over time to the broader population of adolescents and young adults. Longitudinal data sets can also answer such questions as whether there are critical periods during adolescence when participation in certain activities is particularly beneficial in regard to functioning, an issue that has yet to be addressed in research.

Number of Activities

The total number of extracurricular activities in which an adolescent engages has also been shown to be an important determinant of adolescent functioning. In early research, it appeared that the more activities, the better the outcomes. These studies demonstrated that girls who engaged in five or more activities had higher levels of educational achievement than those participating in four or fewer activities (Feltz & Weiss, 1984). A similar pattern was observed for boys: Those who participated in more than one athletic or service activity had higher educational aspirations and achievement than those who participated in only one activity (Spady, 1970).

Several studies have indicated a similarly positive relation between increased activity participation and attitudes toward school. Higher levels of school satisfaction and more positive attitudes toward the high school experience have been linked to the total number of structured extracurricular activities in which an adolescent participates (Gilman, 2001) as well as, among boys, the total number of sports activities engaged in (Rees & Howell, 1990). Total extracurricular activity participation has also been positively related to social and academic self-concept, educational aspirations, coursework selection, completion of homework, absenteeism, academic achievement, and subsequent college attendance (Gerber, 1996; Marsh, 1992). An individual's participation in at least one extracurricular activity in which members of her or his social network also participate has been linked to a decline in antisocial patterns (Mahoney, 2000), and a similar link has been shown for 1–4 hours per week of extracurricular activity (Zill et al., 1995).

However, other research suggests a curvilinear relation between number of activities and positive developmental outcomes. Zill et al.'s report indicated that there is a threshold at which the number of activities no longer exerts a positive influence on developmental outcomes. Particularly, students who spent 5–19 hours per week in activities were less likely to engage in risky behaviors than those

participating in 1–4 hours of activities per week, but participation rates of 20 hours or more per week did not have such deterrent effects. Marsh (1992; Marsh & Kleitman, 2002) found a similar curvilinear relation between participation and young adult social and academic outcomes, although the relation was found to be weak in a later study (Marsh & Kleitman, 2003). In light of Mahoney's (Mahoney & Stattin, 2000) finding that the ratio of structured to unstructured activities is particularly important, there is a need for further investigation into whether the *total* number of activities or the *types* of activities are more influential in regard to adolescent outcomes. There are yet other factors that may explain the relation between extracurricular activity participation and adolescent developmental outcomes, namely selection mechanisms, which we discuss in detail subsequently.

Summary of Central Themes

Despite the nuances, qualifications, and complexity of the research on extracurricular activity participation and adolescent development, we can draw several general conclusions. School-based, structured, extracurricular activity participation, in contrast to participation in unstructured activities (sometimes including school-based activities), is associated with positive adolescent developmental outcomes, namely (a) higher academic performance and attainment; (b) reduced rates of dropout; (c) lower (to a degree) rates of substance use; (d) less sexual activity among girls; (e) better psychological adjustment, including higher self-esteem, less worry regarding the future, and reduced feelings of social isolation; and (f) reduced rates of delinquent behavior, including criminal arrests and antisocial behavior. The majority of these positive relations have emerged from studies of sports participation and studies that group participants as a whole, regardless of gender or race.

However, the associations of extracurricular activity participation with these outcomes vary according to many factors. In fact, including mediator and moderator variables within models linking participation to adolescent functioning results in a mixed picture. Previous research has uncovered a number of gender differences, and they have been linked to each of the outcomes just mentioned. Other factors that mediate or moderate the effects of activity participation include peer associations (particularly for academic, substance use, and delinquency outcomes), race (for academic outcomes), type of activity (for psychological adjustment), and identity (for young adult outcomes). Depending on the sample and the inclusion of these additional variables, less positive and even negative results have been observed for some groups. These factors, however, do not represent an exhaustive list of identified mediators and moderators; others include continuity in participation and total number of activities. To provide a thorough understanding of its effects, future research on extracurricular activity participation should pay attention to how activities are measured, attempt to account for their impact by reducing the influence of selection bias, and model the impact of extracurricular activities within a conceptual framework that can guide analyses. In the following section, we describe these points in greater detail.

Future Research on Extracurricular Activities

As previously mentioned, several large gaps exist in the literature on extracurricular activities. First, a consensus on measurement of activities is needed. This is a case in which ecological systems theory is useful in creating different measures

describing activity involvement. For example, rather than descriptives simply being provided on gender, race, and SES, characteristics of activity participants could be developed across several levels, including individual, family, peer, school, and neighborhood contexts. Regarding identification of the effects of individual activities, in many cases "sports" has been as a blanket term used to capture individuals who are involved in athletics. Key research has shown that the effects of sport participation vary according to the sport under consideration. Therefore, "sports" participation should be "unpacked," and the effects of specific sports, such as soccer and lacrosse, should be considered. Although it may require large sample sizes or the creation of alternative sampling strategies, such a distinction might lead to more clear-cut results regarding the potential benefits of participating in a specific activity.

In addition, while increasing attention is being focused on considering total number of activities engaged in, there has not been an actual examination of "portfolios" of activities. In other words, a look at possible combinations of activities (e.g., the benefits of combining sports participation with participation in an academic club) that produce certain outcomes is needed. Perhaps a diversified portfolio promotes positive adolescent development. Few studies have tested such a hypothesis. Finally, a causal developmental perspective of activity participation is needed to supplement the largely correlational studies that currently exist on the relation between participation and adolescent and young adult functioning. An ecological systems perspective could be applied to an exploration of extracurricular activities in each of these cases.

Measuring Activities

Characterizing Extracurricular Activities

Not all extracurricular activities share the same characteristics. Activities such as sports, cheerleading, and debate involve close supervision by a coach or sponsor, take place several times a week, involve competition, and usually comprise a consistent group of students. In contrast, activities such as foreign language clubs, math and history clubs, and the National Honor Society typically comprise large student groups with higher turnover rates, take place less often (monthly as opposed to daily or weekly), and involve less contact with the sponsor. Therefore, such qualitative differences between activities should be considered. Grouping qualitatively different activities or simply totaling the number of activities in which an adolescent participates may lead to ambiguous results. Of course, activity characteristics may differ according to school and community, but it remains that activities are qualitatively different from each other as well, and this may lead to differential outcomes among their participants. If researchers are to gauge their true effects, they need to give careful thought to these processes when they are measuring activities. By examining outcomes of each activity individually and assessing whether one activity is qualitatively different from another, researchers can group activities into related types on the basis of their developmental outcomes rather than their conceptual similarities.

Comprehensive Characterization of Activity Participation

After a better understanding of the impact of individual activities has been established, it is also necessary to account for patterns of participation at the individual level. Most studies on extracurricular activity participation have examined

one activity or a conceptual group of activities such as sports or academic clubs. Adolescents' actual participation patterns, however, typically do not include only one activity or multiple activities of the same type. For example, results of the National Longitudinal Study of Adolescent Health, which involved a nationally representative sample, indicated that 47% of students who reported participating in extracurricular activities participated in activities across conceptual groups. For example, these students participated in sport as well as academic clubs or in both student council (a school involvement activity) and drama (a performance activity). While it is known that different individual activities have different effects on adolescent development, what are the effects of a combination of activities? As previously mentioned, portfolios of activities should be used to characterize the full range of interests that adolescents pursue.

Several studies have explored the impact that combinations of a few different types of activities have on adolescent development. In two studies looking at boys' activity participation, boys participating only in athletics scored lower than the national average on the SAT, while those participating in both athletics and service activities scored higher than the national average (Landers, Feltz, Obermeir, & Brouse, 1978; Rehberg & Cohen, 1975). Two studies of girls' performance on the SAT in relation to activity participation reported mixed results. One of the studies showed that girls who participated in both athletics and service activities scored higher on the verbal portion of the SAT (Landers et al., 1978), while the other study revealed no differences between girls who participated in both athletics and service activities and those who participated solely in athletics (Feltz & Weiss, 1984). In another investigation, students who took part in both athletic and music activities had higher educational expectations than those who took part in athletic-only or music-only activities (Snyder & Spreitzer, 1977). A possible explanation for these results is that participation in multiple activities had different effects for boys than for girls. Further investigation is needed to provide an understanding of the impact of portfolios on adolescent development. As always, careful attention to possible mediators and moderators will be important. One possible moderator is the extent to which adolescents identify with certain activities. Some adolescents may consider one activity over others as their primary choice, implying the need for weighting activities. Just as is the case with analyses of individual activities, motivations for participating, identification with the activity in question, and other factors may influence the impact of portfolios on adolescent functioning. Once activities have been accurately measured, they need to be included in models that follow a clear-cut theoretical framework specifying how and under what conditions activities influence adolescent development. In the following, we propose such a framework.

An Overarching Theoretical Framework

Much of the previous research has focused on adolescents in a single context, but some studies are beginning to look at the interactions among different contexts of adolescence such as family relationships and peer orientation (Fulgini & Eccles, 1993; Mounts & Steinberg, 1995). As highlighted throughout this review, extracurricular activities do not exist in a singular context. They are nested in schools and neighborhoods and are functions of the resources of those contexts. While many theories could be used to explain the mechanisms through which activities exert

their influence (e.g., social control theory or cultural resource theory), there is a need for an overarching theory with which to frame exploration of extracurricular activities. Ecological systems theory holds that both immediate and distal aspects of a child's surrounding environment interact and transact to mold development and that the child influences his or her experience of these settings as well. Furthermore, adolescents' characteristics (e.g., gender and risk status) may interact with their environment in determining developmental outcomes.

Connections between these settings foster development. For example, the emphasis parents place on extracurricular participation influences whether their adolescents will participate in activities and consequently experience the costs or benefits of such participation. Adolescents with parents who place a stronger emphasis on educational achievement than on activity participation may limit the activities in which these adolescents take part. Some adolescents may be able to participate only in academic clubs that might improve their chances of attending college, and some may not be able to participate at all as a result of the time it might take away from schoolwork. Alternatively, high-achieving adolescents, or those who are highly focused on academics, may have parents who encourage them to explore activities outside of schoolwork. In addition, adolescents' friends, teachers, and the available resources of the school and the state may influence their opportunities to participate in activities and their experience of such participation. Testing interaction effects in addition to direct effects of activity participation, including many levels of an individual's surrounding environment, would better capture the social ecology of development and guide us in new directions of activity research. Statistical techniques such as hierarchical modeling (Bryk & Raudenbush, 1992) and growth curve modeling (Rogosa, 1995; Stoolmiller, 1995) can be used to test multilevel, longitudinal, and interactive models of activity participation and adolescent and young adult functioning.

Ecological systems theory (more recently referred to as a "bioecological model") is an ideal theoretical framework from which to guide activity research because it not only includes the contextual levels surrounding a developing individual but emphasizes the bidirectional processes by which the individual and particular contexts affect each other. Thus, the perspective on person-environment fit (Eccles et al., 1993) should also be used in research on activities. Extracurricular activities may be one part of the microsystem that adolescents can actively select to fit their own dispositions and talents. Hence, participation may offset the effects of a lack of fit with other proximal contexts, and it may even enhance the positive effects of good fits in these areas. Again, researchers should consider key person-environment interactions in their investigations of the relation between extracurricular activities and adolescent development.

However, this is not to say that this theory is free of limitations, as there are with all theories. Bronfenbrenner originally suggested that contextual levels overlapped each other and that, within a society, systems tend to be consistent (P. H. Miller, 2002). However, some researchers who have expanded on ecological systems theory have noted that systems may also vary in their degree of embeddedness with one another and are sometimes even at odds with each other (B. B. Brown & Theobald, 1998; Sternberg & Grigorenko, 2001), and an individual's developmental course may be dependent on whether systems are in synchrony (Mahoney

& Bergman, 2002; Mahoney & Magnusson, 2001). These are all difficult concepts to accurately measure in empirical studies. We suggest several approaches.

Mahoney and colleagues (Mahoney & Bergman, 2002; Mahoney & Magnusson, 2001) have attempted to tackle such issues, proposing a holistic-interactionistic framework to studying individual adaptation that extends Bronfenbrenner's ecological systems theory. Just as in research regarding role confusion, examining the relations among a developing individual's contexts will reveal more information than assuming that all contexts are in synchrony. It may be that the influence of activity participation is quite different when adolescents are experiencing conflicting settings than when they are not. Therefore, adding the person-environment fit perspective to ecological systems theory provides researchers with a mechanism to consider the extent to which systems are developmentally optimal and synchronous for adolescents.

But what features of the developing adolescent's environment are critical to include in activity research? Important contextual features have been discussed throughout this review. School-based extracurricular activities are generally shown to provide opportunities for positive developmental outcomes. Thus, contextual factors that promote these positive outcomes or that could put adolescents at risk for poor developmental outcomes need to be examined to determine the influence of activities on adolescent development. Adolescents without supportive peer and adult relationships, without feelings of belongingness to social groups, without exposure to positive social norms (neighborhoods, friends), and without integration of contexts (family, school, neighborhood, peer) may be most at risk for poor developmental outcomes (Eccles & Gootman, 2002). It is in the absence of any of these factors that school-based extracurricular activities may exert their influence. Therefore, variations in the conditions that make up the social ecology of development can serve as key moderators of activity participation in models of adolescent and young adult functioning. In the same respect, through examining these factors, it may become evident that such activity participation is not influential when an adolescent is already benefiting from opportunities for positive developmental outcomes.

During adolescence, the need for social acceptance leads to decreases in time spent interacting with family members and increases in the influential power of the peer group (B. B. Brown, 1990; Eccles & Barber, 1999; Larson & Richards, 1991; Steinberg, Brown, & Dornbusch, 1996; Youniss et al., 1997). Therefore, it will be important to measure adolescents' connectedness to family, peers, and other adults; the academic, extracurricular, and social activities of their peer group; and their family's social activities. Also, these contexts need to be weighted differently according to the developmental level of the individual. In addition, adolescence is a time of school transitions, at least from middle to high school, and the school transition literature indicates that individuals do not thrive in social environments that do not meet their emotional needs. Factors that may influence these transitions include school characteristics such as size, the autonomy afforded students, contact with adults, academic emphasis, and teacher efficacy (Eccles et al., 1993; Fine, 1991). Investigations of extracurricular activity participation must include these school characteristics.

In the following discussion, we highlight many of these contextual factors and the extent to which they overlap with possible selection factors. Contextual factors

must be examined in order to determine the true influence of school-based extracurricular activity participation on adolescent development. As mentioned earlier, new data sets are needed. Ideally, the field could benefit from a data set in which data collection is initiated early, before children begin their participation. The same children should be followed over time and, importantly, into adulthood. Once participation begins, a number of factors need to be measured, including (a) position on team or in club, (b) how often the activity is held, (c) how many students are involved in the activity, (d) who the activity leader is, (e) performance in the activity, and (f) the student's perception of the personal importance of the activity. Information regarding the child's participation in activities outside of the school context is also critical. Such research may shed more light on who participates in school-based activities, whether these activities are beneficial, and the mechanisms through which they exert influence.

Selection Mechanisms

While the literature regarding the consequences of extracurricular participation is extensive, there is little research into why individual students initiate participation in extracurricular activities and why they maintain participation over time (Fredericks et al., 2002; Mahoney & Cairns, 1997). However, these reasons for initiating and maintaining participation may be linked to adolescent functioning. Generally, extracurricular activities are considered a unique aspect of adolescents' educational experiences because of the general view that these activities are non-central or nonessential to their education and relatively voluntary (McNeal, 1998). However, research supports a theory of micro- and macro-level mechanisms that determine who participates in school-based activities. These mechanisms include individual-level characteristics, high school structure, and high school context as significant determinants of student participation in school-based extracurricular activities. Table 2 includes a list of the selection factors mentioned in this article, and we discuss each of these factors in turn.

Individual-level selection mechanisms include a student's age, grades, skill level and previous experience, SES, race, and gender (Antshel & Anderman, 2000; Garton & Pratt, 1991; Larson & Kleiber, 1993; Otto & Alwin, 1977; Passmore & French, 2001; Quiroz, Gonzalez, & Frank, 1996). Such selection mechanisms are thought to influence patterns of participation (McNeal, 1998, 1999). For example, students who are older than their classmates are more likely to feel socially isolated and therefore less likely to try out for or join activities. Students with poor academic performance are less likely to participate owing to GPA minimums and "no pass/no play" rules. Students more likely to participate are those who are talented in music, athletics, and art; who previously participated in similar activities; and are of higher SES (except in the case of vocational clubs). With the exception of Hispanics, who participate at a slightly lower frequency, members of racial/ethnic minority groups participate at rates almost identical to those of Whites. Girls are more likely to be involved in all extracurricular activities other than athletics. At this micro level, certain individuals are more likely to be recruited into, try out for, or join activities; thus, researchers cannot ignore the question of causality when examining extracurricular activities. It is quite possible that those adolescents who participate in activities are qualitatively different from those who do not and that these qualitative differences may drive the asso-

TABLE 2
Multilevel Selection Bias Factors

Individual level	Contextual level			
	Family	Peer	School	Neighborhood
Gender	Parent-adolescent relationship quality	Emphasis on activities	Region of country	Availability of non-school-based activities
Age	Emphasis on activities	Emphasis on academic achievement	Urbanicity	Emphasis on activities
SES	Emphasis on academic achievement	Plans for attending college	School size	Neighborhood connectedness
Race	Parents' involvement in activities	Academic performance	School safety	
Academic performance	Parents' education	Risky behavior	Teacher involvement	
Skill level in activity	Parents' emotional well-being	Activity participation	Grade-point minimums for participation	

Note. Additional individual-level variables were school engagement, other activities, emotional well-being, self-perceived identity, and social behaviors.

ciation between participation in extracurricular activities and the outcomes discussed earlier.

Macro-level factors, including school structure and school context, also influence activity participation. Elements of school structure include teacher characteristics and school size. Teachers inadvertently serve as gatekeepers to extracurricular activities via recruitment and sponsorship. Many teachers are willing only to have a specified number of students take part in the activities, thereby ensuring a stable membership (Quiroz et al., 1996). Teachers' preconceptions of their students and activities may differentially affect their selection and recruitment of members for various activities (McNeal, 1998).

In regard to school size, students participate at lower levels in larger schools (McNeal, 1998). Many athletic teams have a maximum number of participants, or slots, regardless of the size of the school. For example, soccer requires 11 players on the field at a time, limiting the possible number of players on the team to approximately 25. In smaller schools, a greater percentage of the student body is needed to fill such spots than in larger schools, offering more students an opportunity to participate. In larger schools, the limited number of spots may lead to increased competition and increased skill requirements, reducing a student's ability to participate. Smaller schools have also been found to place higher prestige and enthusiasm on sports participation than larger schools (Holland & Andre, 1987), which may encourage more students to participate. Use of multilevel modeling techniques would explicitly take into account such person by school interactions. For

example, examination of the characteristics of girls in different types of schools would allow observation of the variability in effects associated with extracurricular activity participation.

Contextual characteristics of the school include its emphasis on academic achievement, its safety, and its social makeup. Schools placing higher value on academic achievement are more likely to restrict access to extracurricular activities for students not performing well academically (McNeal, 1999). Often, schools with a heightened emphasis on academic achievement limit access to activities by instituting minimum GPA requirements, attendance requirements, and larger course requirements for graduation. Many students who would otherwise be able to participate in activities are denied the opportunity because of their inability to maintain the minimum GPA required by their school. This would be a case in which high achievement preceded activity participation; therefore, it would be inaccurate to conclude that, in such schools, achievement is a result of participation.

Schools with lower rates of theft, vandalism, drug use, rape, and weapon possession and lower levels of student-student and student-teacher conflict foster a feeling of safety and security among students when they are at school, and as a result students are more likely to stay at school after hours to participate in activities (McNeal, 1999). Student bodies with increased concentrations of minority students and students from single-parent households exhibit reduced rates of participation in athletics and overall activities, respectively. Participation in "dangerous schools" might be risky, and the effects associated with activities in these schools might be the opposite of the effects associated with activities in "safe schools." While many studies (Lareau, 1987; Otto, 1975, 1976; Snyder, 1969; Spady 1970, 1971) have linked higher school-level SES to greater activity participation, other studies (Hanks & Eckland, 1976; McNeal, 1999) have shown that increased school-level SES is linked to lower levels of participation in school activities, because students from higher-income families engaged in more non-school-based activities such as private lessons and athletics. In this case, delinquency is a determinant rather than a consequence of participation. Hence, it is important to consider whether private or community-based lessons and activities will have an impact on school-related outcomes similar to that of school-based activities and to treat SES as a possible moderator.

Parents represent another mechanism of selection into activity participation. Parents' own involvement in community activities is a strong predictor of their adolescents' involvement in school- or community-based extracurricular activities (G. H. Elder & Conger, 2000; Fletcher & Shaw, 2000; Larson, Dworkin, & Gilman, 2001). Thus, parental values, and not the activities themselves, may be shaping prosocial behavior among adolescents. Such findings have been proposed as due to modeling effects or the fact that parental involvement makes similar opportunities more accessible to children through a better awareness of these participation opportunities (Mahoney & Magnusson, 2001).

Parental endorsement of participation has also been related to increased adolescent school extracurricular activity participation (Huebner & Mancini, 2003). Activity participation may be an opportunity for parents and adolescents to share their lives and stay connected. However, this same parental involvement in their activities may cause children to abandon these activities. According to Fredericks and Eccles (2002), parents play an important role in socializing their children's ath-

letic motivation. They suggested that when parents have high perceptions of their children's athletic ability early on, children feel better about their competencies, which in turn influences how they approach future sport situations. Likewise, Coakley (1987) suggested that parental involvement in organized sports programs can negatively affect family relationships and the psychological well-being of children when parents depend on continued involvement in sport or on the quality of children's athletic performance. In support of this statement, a small study of young children's sport participation showed that when parents focus too much on performance, children not doing well in sports are likely to lose interest in continued sports participation (Rodríguez, Wigfield, & Eccles, 2003).

Alternatively, when parents are not highly involved in community activities, authoritative parenting is predictive of adolescent activity involvement (Fletcher, Elder, & Mekos, 2000; Fletcher & Shaw, 2000). Finally, another mechanism through which parents encourage activity involvement for their children is the attachments they form with their children's friends and their friends' parents. Adolescents who perceive their parents as valuing these social relationships may themselves come to value relationships with community members and participate in activities that put them into contact with others (Coleman, 1988; Fletcher & Shaw, 2000). All of the studies focusing on this issue have been conducted with fairly small, nonrepresentative samples, and further investigation is needed.

Family connectedness has also been linked to activity involvement. One study revealed a significant difference in extracurricular activity involvement dependent on adolescents' feeling of a sense of belongingness in their family (Chubb & Fertman, 1992). Specifically, adolescents who felt a stronger sense of belonging in their families participated in more school and community activities. Chubb and Fertman proposed that the security felt by students who perceived themselves as belonging in their families encouraged them to take more risks in contexts outside of the family. However, it would be difficult to determine whether these adolescents might be better adjusted in general, which would also encourage such risk taking. In addition, adolescents who can connect with their parents around activities such as music, sports, and school activities may have a greater store of positive topics they can share with their parents than adolescents with interests more difficult for their parents to understand and feel positive about.

These studies highlight the need to account for parent-adolescent relationships when estimating the effects of extracurricular activities. For example, healthier parents tend to have healthier children. If researchers do not control for parent factors, the effects of extracurricular activities on adjustment may be upwardly biased. Also, parent factors are important to control for in activity research given their direct association with academic achievement. For example, Gutman et al. (2002) concluded that parents influence their children indirectly through involvement in their school and that parental involvement is a critical factor in children's school achievement at all grade levels. They found, in a sample of African American students, that parental school involvement was positively related to GPA and number of absences.

The results of all of these studies, mostly involving small, nonrepresentative samples, must be interpreted with caution when attempting to generalize to all adolescents. However, their findings pave the way for more careful, controlled analyses. Clearly, participation in extracurricular activities is not as voluntary as generally thought. Many factors are involved in who participates, and there are

any number of motivations for continued involvement or dropout. Because of the biased distributions of possible participation benefits through various groups' differential access to activities (McNeal, 1998), further research on causal relations, as well as factors that mediate and moderate the consequences of participation, is greatly needed. Furthermore, the potential benefits of activities vary according to contextual characteristics such as school safety and must be accounted for in research on extracurricular activities. Studies involving additional representative samples and focusing on activities beyond athletics will be particularly important.

To reduce selection bias, researchers should control for as many selection mechanisms as possible when estimating the effects of extracurricular activities on adolescent and young adult outcomes. Furthermore, if possible, they should employ regression techniques (e.g., use of instrumental variables) that aim to reduce the unobserved heterogeneity present in many of the studies on extracurricular activities. In this case, a viable measure is a variable that is correlated with participation but not correlated with the outcome under consideration. If, for example, a school-level policy were implemented that required students to participate in an activity, this policy could be used as an instrumental variable. Although determination of appropriate instruments is quite challenging, it is necessary to obtain unbiased estimates of the effects of extracurricular activity participation.

Conclusion

Throughout this article, we have presented evidence that activity participation has many positive influences on adolescent development and young adult outcomes. In the case of some of these outcomes, we have proposed other factors that might have an influence on the relation between activity participation and adolescent development, including adolescents' social networks and close, supportive relationships with adults. However, a more refined inquiry into the impact of extracurricular activities is sorely needed. It is necessary to measure activity participation in a thorough manner, to use a comprehensive theoretical framework to model the influence of participation on adolescent and young adult outcomes, and to reduce selection bias to gauge participation's true impact on the lives of adolescents and young adults. Also, it is important to examine the mechanisms through which these activities are having their impact. For example, in the Barber et al. (2001) study identity perception mediated the relationship between participation and adolescent functioning, but in other studies the activity was directly associated with adolescents' developmental outcomes.

Because of the high rate of participation in school-based extracurricular activities, examination of adolescents in such settings would provide key information on their development. Structured activity participation has been linked to many positive academic, behavioral, psychological, and young adult outcomes. Gender, peer networks, race, self-perceived identity, type of activity, degree of activity involvement, total number of activities, and interactions between these contextual factors are important facets that must be considered in future research. Such steps will move the field closer to assessing the true relation between participation and adolescent functioning and the role that extracurricular activities play in promoting successful transitions to young adulthood.

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Authors

AMY FELDMAN is a Research Associate, Public/Private Ventures, 2000 Market Street, Suite 600, Philadelphia, PA 19103; e-mail AFeldman@ppv.org. Her research focuses on implementation and evaluation of programs focused on children and communities, including maternal and child health and well-being, school readiness, and mentoring.

JENNIFER L. MATJASKO is an Assistant Professor, Department of Human Ecology, University of Texas, 1 University Station/A2700, Austin, TX 78712; e-mail matjasko@mail.utexas.edu. Her research focuses on the development of at-risk adolescents and the factors that promote their health and well-being and emphasizes the use of ecological, life-course, and person-centered approaches in understanding the relationships among individual, family, school, and community factors and adolescent functioning.