

Risky Business

The Paradoxical Meaning of Problem Behavior for Young Adolescents

Jennifer L. Maggs

University of Michigan and Universität Bielefeld

David M. Almeida

University of Michigan

Nancy L. Galambos

University of Victoria

Concurrent and longitudinal relations among Canadian adolescents' problem behavior (PB), self-image, and peer relations were examined. The relationship of adolescents' perceptions of fun and risk with their PB also were explored. A total of 96 young adolescents (mean age at Time 1 = 11.6 years) completed questionnaires on four occasions spanning 3 1/2 years. Measures were PB (disobeying parents, school misconduct, substance use, antisocial behavior), self-image, peer relations (involvement, acceptance), and beliefs about the fun and risk of PBs. Mean-level analyses showed increases with age in disobedience, school misconduct, substance use, and peer involvement. Longitudinal increases in PB were associated with decreases in positive self-image and increases in peer acceptance and involvement. Beliefs about fun and risk predicted up to 56% of the variance in PB, with fun more consistently the significant predictor. Discussion focuses on the paradox that PB may have constructive and destructive functions.

Problem behavior may be defined as behavior that departs from familial or social standards and that poses some risk to the well-being of the individual or to society; it also may involve an element of fun, adventure, or other positive rewards (Maggs & Galambos, 1993). Among adolescents, problem behavior includes such actions as disobedience to parents or school authorities (e.g., missing curfew), status offenses (e.g., drinking alcohol), and

The preparation of this article was supported by Social Sciences and Humanities Research Council of Canada (SSHRC) doctoral and postdoctoral fellowships to Jennifer L. Maggs. The Two-Earner Family Study was supported by SSHRC and University of Victoria faculty grants to Nancy L. Galambos.

Journal of Early Adolescence, Vol. 15 No. 3, August 1995 344-362

© 1995 Sage Publications, Inc.

344

explicitly illegal acts (e.g., shoplifting). Because problem behavior violates conventional standards for behavior and poses risks to individuals and to society, it has become a major source of societal concern and scientific interest (Bell & Bell, 1993; Friedman, 1989; Millstein, Petersen, & Nightingale, 1993; Newcomb & Bentler, 1989).

Despite the significant risks of problem behavior, it may serve important constructive functions in adolescent development, such as fostering ties with friends, letting off steam, indicating a transition to a more mature status, or exploring personal identity (Chassin, Presson, & Sherman, 1989; Galambos, Kolaric, & Maggs, 1995; Hurrelmann, 1990; Jessor, 1987; Newcomb & Bentler, 1989; Silbereisen & Eyferth, 1986). Prevalence studies indicate that it is more normative to engage in a certain level of problem behavior than it is not to do so (Moffitt, 1993; Shedler & Block, 1990). In fact, some scientists (e.g., Baumrind, 1985; Jessor, 1987) have argued that experimenting with problem behaviors such as drinking alcohol has become one of the developmental tasks of adolescence in Western societies. Thus, when researchers aim to understand adolescent problem behavior and ultimately to minimize its harm for individual adolescents, they are faced with a paradox: Although problem behaviors pose significant risks to well-being, the majority of competent, healthy adolescents engage in some level of problem behavior, and most of them will grow up to be competent, healthy adults (Baumrind, 1985, 1987; Jessor, 1987; Kandel & Yamaguchi, 1985; Shedler & Block, 1990).

Several models of adolescent risk behaviors refer to positive antecedents or consequences of so-called problem behaviors. For example, the Jessor (1987; Jessor, Donovan, & Costa, 1991; Jessor & Jessor, 1977) Problem Behavior Theory asserts that behaviors such as alcohol and drug use serve important developmental functions for adolescents. Although most research on this topic has focused much more extensively on negative personality and environmental antecedents of problem behavior (e.g., high alienation, low parental support), several longitudinal studies have provided empirical support for positive correlates of risk taking. For example, psychosocial competence in childhood and adolescence (rather than pathology) is predictive of experimental drug use in adolescence (Baumrind, 1985, 1987; Chassin et al., 1989; Shedler & Block, 1990). Another theoretical approach to understanding adolescent risk taking is a decision-making perspective, which draws attention to the costs and benefits of engaging or not engaging in any behavior (e.g., Beyth-Marom & Fischhoff, in press; Furby & Beyth-Marom, 1992; Gardner, 1993). According to these models, the decision regarding whether to smoke marijuana at a party, for example, involves the considera-

tion of possible losses and gains both for smoking and for not smoking. This perspective points to the paradox of risk taking: Doing the risky act has the potential for positive outcomes, and not doing it has the potential for loss.

To better understand the potential costs and benefits of engaging in problem behavior, the present study (a) examined developmental trends in problem behavior across early adolescence, focusing on multiple dimensions of risk taking; (b) explored the ways in which problem behavior enhances or detracts from a healthy self-image and peer relations; and (c) evaluated the adolescent's perspective on the relative costs and benefits of engaging in particular types of problem behavior. This study was based on a developmental action perspective, in which the adolescents' beliefs and goals are assumed to shape their behavior, including their risk-taking behavior (e.g., Brandtstädter, 1984; Chapman & Skinner, 1985). It was informed also by a life span perspective on human development, which emphasizes the multidimensionality and multidirectionality of developmental phenomena (e.g., Baltes, 1987; Lerner & Busch-Rossnagel, 1981).

Studies examining developmental trends have documented increases in the prevalence of problem behavior across adolescence (e.g., Barnes, Welte, & Dintcheff, 1992; Elliott, Huizinga, & Menard, 1989; Jessor et al., 1991; Kandel & Yamaguchi, 1985). However, this research has been limited in two ways. First, much research has focused on middle (15 to 18 years) and late (18 years and older) adolescence, rather than on early (11 through 14 years) adolescence. Although rates of problem behavior may reach their peak during and after the high school years, they typically begin to emerge earlier (Brown, Clasen, & Eicher, 1986; Galambos & Silbereisen, 1987; Osgood, Elliott, & Huizinga, 1992). It is important, then, to study the development of problem behavior longitudinally when it begins to occur in early adolescence. Second, although problem behavior is known to increase during adolescence, less is known about the relative frequency with which normal samples of young adolescents engage in differing types of problem behavior. Problem behavior is sometimes described as a unidimensional phenomenon (e.g., Donovan & Jessor, 1985), because adolescents who engage in one type of problem behavior (e.g., marijuana use) tend to engage in others (e.g., shoplifting). However, because different domains of problem behaviors are intercorrelated only moderately, it is also useful to distinguish between those domains (Osgood, Johnston, O'Malley, & Bachman, 1988). Thus problem behavior aptly may be described and studied as a multidimensional phenomenon that may evidence multidirectionality. The first goal of the present study was to document mean-level changes in multiple dimensions of problem behavior across early adolescence.

Discriminating among domains of problem behavior may be particularly important to the study of the consequences rather than the antecedents of risk taking. For example, problem behaviors such as shoplifting or breaking and entering may have much more dire consequences than disobeying a curfew set by parents. Although there is a plethora of research on problem behavior (see e.g., reviews by Hurrelmann, 1990; McCord, 1990), most studies have focused on its antecedents rather than its consequences (Newcomb & Bentler, 1989). It is timely, then, to consider the psychological and social consequences of multiple problem behaviors. The present study addressed this issue by examining the extent to which differing types and levels of problem behavior were predictive of short-term changes in adolescents' peer relations (peer involvement and peer acceptance) and self-image (impulse control, mastery, and emotional tone) across two time lags. Self-image and peer relations were chosen because they are central to adolescents' development and subjective well-being (Hartup, 1989; Petersen, Schulenberg, Abramowitz, Offer, & Jarcho, 1984) and because they are likely to be related to risk-taking activities (Jessor, 1987; Silbereisen & Noack, 1988). In this way, the meaning of engaging in problem behavior in terms of adolescent self-image and peer relations were examined.

Finally, the present study addressed the meaning of problem behavior from the perspective of the adolescent. Behaviors seen as problematic by adults also may be interpreted as reasonable acts, particularly from the perspective of the adolescent. For instance, Grade 12 students participating in the annual Monitoring the Future surveys (Johnston, O'Malley, & Bachman, 1993) indicated that they used alcohol and other substances to have a good time with friends, to feel good, to experiment, to relax, and because it tastes good (Johnston & O'Malley, 1986). In other words, substances often are consumed because it is pleasurable to do so. Similarly, Bauman and colleagues (e.g., Bauman & Bryan, 1980; Bauman, Fisher, Bryan, & Chenoweth, 1985) demonstrated that young adolescents who believed that using alcohol would lead to desirable consequences were more likely to plan to drink than those who believed it would lead to undesirable consequences. Taken together, these studies demonstrated that adolescents use substances when they believe it will be rewarding and avoid them when they will not be rewarding. Thus from the adolescents' point of view, some problem behaviors can be reasonable, rational acts (Beyth-Marom & Fischhoff, in press; Furby & Beyth-Marom, 1992; Gardner, 1993; Silbereisen & Eyferth, 1986). In the present article, young adolescents' opinions about the fun and the risk associated with four domains of problem behavior were assessed. The extent to which these evaluations predicted levels of risk taking was examined.

The following research questions were addressed: (a) Are developmental changes in problem behavior similar across domains, or do differing domains have distinct developmental trajectories? (b) Are changes in levels of problem behavior accompanied by changes in aspects of peer relations and self-image? (c) Which domains of problem behaviors do adolescents view as more fun, and which as more risky, and are those beliefs about fun and risk predictive of levels of risk taking?

METHOD

Participants

The participants were adolescents participating in a 3 1/2-year longitudinal study of young adolescents in two-parent families in which both parents were employed (Galambos & Maggs, 1991). Data used in the present study were collected on four occasions: winter 1988 (Time 1), winter 1989 (Time 2), summer 1990 (Time 3), and summer 1991 (Time 4). Of the original 112 participants at Time 1, complete data were available for 96 adolescents across the four waves. Comparisons of participants who remained in the study with those who dropped out between Times 1 and 4 revealed no differences in demographic background or any of the other measured variables. Thus attrition did not appear to be selective.

At Time 1, the adolescents were in Grade 6 and their mean age was 11 years, 7 months ($SD = 5$ months). At Time 4, they had completed Grade 9 and were on average 15.1 years old. The mean number of children per family was 2.4 ($SD = .9$), and the mean number of years the parents had been married at Time 1 was 14.7 ($SD = 4.5$). Of the fathers, 25% were employed in professional/technical occupations; 35% were in managerial, sales, or clerical occupations; and 39% were in service, skilled, or unskilled labor occupations. The corresponding figures for mothers were 18%, 73%, and 10%, respectively.

Procedure

The sample was obtained by recruiting participants through letters sent home from school with students in Grade 6. Criteria for participation were that the households contained two employed parents and all three family members (both parents and the adolescent) wanted to participate. At each time of measurement, questionnaires were mailed individually to each family

member to complete and return by mail. Participants were asked not to discuss the questionnaires with one another and were given separate envelopes in which to seal and return their questionnaires by mail. As an additional reassurance of confidentiality, questions pertaining to adolescents' problem behavior were printed and collated separately, and an extra envelope was provided in which to seal these questions on completion. Each participant received a token payment after participating in each occasion of measurement: \$5 at Time 1, \$10 at Time 2, and \$15 at Times 3 and 4.

Measures

Problem behavior. At Times 1, 2, and 3, the frequency of problem behavior was measured with 8 items from the Brown et al. (1986) misconduct scale and an additional 16 items from the Kaplan (1978) deviant response scale. Participants rated "How many times in the past month" they had engaged in the 24 behaviors on a 5-point scale ranging from 1 = *never* through 5 = *almost every day*. Definitions of 4 domains of problem behavior were given to 10 expert raters, who coded 18 of the 24 items with an average of 94% agreement. The four domains included the following: disobeying parents (3 items; e.g., missed curfew); school misconduct (3 items; e.g., cheated on a test); substance use (4 items; e.g., smoked a cigarette); and antisocial behavior (8 items; e.g., stole something worth less than \$2). The mean on each subscale was computed for each individual at each time of measurement, with higher scores indicating more frequent problem behavior. At Time 3, the Cronbach coefficient alpha was .68 (disobeying parents), .74 (school misconduct), .56 (substance use), and .82 (antisocial behavior).

At Time 4, 15 additional items were added to more adequately assess the four domains. The Cronbach coefficient alpha for the expanded scales was .85 (5 items; disobeying parents), .87 (8 items; school misconduct), .86 (7 items; substance use), and .84 (13 items; antisocial behavior). These higher alphas are reflective of the greater number of items measuring each domain and the greater variance in problem behavior at this older age (see Anastasi, 1988). The validity of subject self-reports of problem behavior has been documented (Brown et al., 1986; Johnston, O'Malley, & Bachman, 1984). Moreover, because parents, teachers, or other authorities are unlikely to be present when adolescents engage in problem behavior, adolescents are the single best reporters of their own risk taking.

Self-image. Three subscales from the Self-Image Questionnaire for Young Adolescents (SIQYA; Petersen et al., 1984) assessed adolescents' feelings

about themselves. These measures were available at the first three times of measurement. For all three subscales, subjects rated items on a 6-point scale ranging from 1 = *does not describe me at all* through 6 = *describes me very well*. Mean subscale scores were computed, with higher scores indicating more of each attribute. Petersen et al. (1984) demonstrated the psychometric adequacy of these measures for research with young adolescents.

The Impulse Control subscale measured adolescents' resistance to impulsive, violent, or angry behavior. This subscale has eight items (e.g., "Even under pressure I manage to remain calm"). The Cronbach coefficient alpha was .66 (Time 1), .70 (Time 2), and .79 (Time 3). The Mastery and Coping subscale assessed adolescents' confidence in coping. This measure comprises 10 items (e.g., "When I decide to do something, I do it"). Alpha was .73 (Time 1), .81 (Time 2), and .83 (Time 3). The Emotional Tone subscale measured adolescents' positive affect. It consisted of 11 items (e.g., "Most of the time I am happy"). Alpha was .81 (Time 1), .84 (Time 2), and .86 (Time 3). The three self-image subscales were closely interrelated. Principle components analyses were conducted on the three scale scores to reduce the number of necessary analyses. At each time of measurement, a strong one-component solution accounted for a median 67% of the variance in self-image (factor loadings ranged from .55 through .74). Thus component scores were computed at each time of measurement and used in all subsequent correlational analyses.

Peer relations. Adolescents' peer involvement was assessed as the mean monthly frequency of engaging in social activities with friends, using a six-item scale developed by Brown et al. (1986). Participants indicated "How many times in the past month" they had engaged in six activities with friends (e.g., went to a movie or concert, or out to eat; talked on the phone for half an hour or more). Responses were rated on a 5-point scale ranging from 1 = *never* through 5 = *almost every day*. The mean of the six items was computed, with higher scores indicating more frequent involvement in social activities with peers. This measure was available for the first three times of measurement. The Cronbach coefficient alpha was .75 (Time 1), .75 (Time 2), and .74 (Time 3). Feelings of peer acceptance were measured at Times 2, 3, and 4 using the 10-item Petersen et al. (1984) peer acceptance scale from the SIQYA. Mean scale scores were computed with higher scores indicating that adolescents felt more accepted. The Cronbach alpha was .71 (Time 2), .70 (Time 3), and .82 (Time 4).

Fun and risk. At Time 4, adolescents' beliefs about the fun and the risk associated with the four domains of problem behavior were assessed. For

each of the 33 Time 4 problem behaviors, participants were asked to "imagine doing each of the following activities." First, they rated how fun or appealing they believed each problem behavior to be on a 4-point scale ranging from 1 = *not at all fun* through 4 = *very fun*. The Cronbach coefficient alpha was .76 (disobeying parents), .87 (school misconduct), .78 (substance use), and .92 (antisocial behavior). Second, adolescents rated how risky they believed the 33 problem behaviors to be. A 4-point scale was used, ranging from 1 = *not at all risky* through 4 = *very risky*. The Cronbach coefficient alpha was .72 (disobeying parents), .84 (school misconduct), .82 (substance use), and .85 (antisocial behavior). Mean scale scores were computed for the fun and risk of each of the four domains with higher scores indicating they believed the acts to be more fun or more risky.

RESULTS

Descriptive Statistics

The means and standard deviations for disobeying parents, school misconduct, substance use, and antisocial behavior at the four times of measurement are presented in Table 1. Levels of misconduct were similar to other samples of normal young adolescents (e.g., Brown et al., 1986; Montemayor, 1983). For example, 80% of participants engaged in at least one act of problem behavior in the previous month; 32% engaged in 5 or more acts. Table 1 also presents the means and standard deviations for the measures of self-image and peer relations at all available times of measurement. On average, the adolescents held a generally positive image of their own impulse control, mastery, and emotional tone, and of their peer acceptance. The peer involvement measures showed that the average adolescent was engaging in multiple social activities several times a month.

Mean-Level Analyses

The first research question addressed whether different domains of problem behavior evidenced distinct developmental trajectories across early adolescence. To address that question, a $2 \times 4 \times 4$ (Gender \times Domain \times Time) ANOVA was performed. Gender was included as a between-subjects factor to examine whether the observed pattern of relationships differed for girls and boys. Domain was a within-subjects factor contrasting the four domains of problem behavior. Time was also a within-subjects factor. The results showed a significant main effect of Domain, $F(3, 210) = 110.88, p < .001$, a

TABLE 1: Means and Standard Deviations (In parentheses): Measures of Problem Behavior, Self-image, and Peer Relations

| | Time 1 | | Time 2 | | Time 3 | | Time 4 | |
|-------------------------------|----------------|-------|-----------|-------|-----------|-------|----------------|-------|
| | \bar{X} | SD | \bar{X} | SD | \bar{X} | SD | \bar{X} | SD |
| Problem behavior ^a | | | | | | | | |
| Disobey parents | 1.67 | (.67) | 1.74 | (.70) | 1.85 | (.62) | 2.01 | (.76) |
| School misconduct | 1.15 | (.27) | 1.16 | (.26) | 1.42 | (.55) | 1.49 | (.59) |
| Substance use | 1.06 | (.28) | 1.11 | (.27) | 1.37 | (.57) | 1.46 | (.60) |
| Antisocial behavior | 1.13 | (.19) | 1.14 | (.28) | 1.15 | (.31) | 1.16 | (.30) |
| Self-image ^b | | | | | | | | |
| Impulse control | 4.36 | (.73) | 4.52 | (.69) | 4.31 | (.76) | — ^c | |
| Mastery | 4.77 | (.66) | 4.85 | (.69) | 4.78 | (.67) | — ^c | |
| Emotional tone | 4.56 | (.84) | 4.57 | (.87) | 4.61 | (.79) | — ^c | |
| Peer relations | | | | | | | | |
| Peer involvement ^d | 2.43 | (.75) | 2.72 | (.69) | 2.86 | (.72) | — ^c | |
| Peer acceptance ^e | — ^c | | 4.53 | (.75) | 4.44 | (.68) | 4.52 | (.75) |

NOTE: $n = 96$ at Time 1 (11.6 years of age), 2 (12.6 years), and 3 (14 years); $n = 72$ at Time 4 (15 years). Higher scores indicate higher levels of each variable.

a. Possible range: 1 = *never* through 5 = *almost every day*.

b. Possible range: 1 = *does not describe me at all* through 6 = *describes me very well*.

c. Variable not available.

d. Possible range: 1 = *never* through 5 = *almost every day*.

e. Possible range: 1 = *does not describe me at all* through 6 = *describes me very well*.

significant main effect of Time, $F(3, 210) = 15.14, p < .001$, and a significant Domain \times Time interaction, $F(9, 630) = 4.92, p < .001$. Specifically, disobeying parents, school misconduct, and substance use increased, and antisocial behavior did not. The main effect of Gender was not significant, but there was a significant Gender \times Domain \times Time interaction, $F(9, 630) = 2.66, p < .05$. Post hoc tests showed that, among females, there were significant increases over time in disobeying parents, school misconduct, and substance use, and, among males, there were significant increases over time only in school misconduct. (These analyses were rerun using only the problem behavior items that were common between Times 1 to 3 and Time 4, with the same results.)

Although the focus of investigation was not on mean-level change in peer relations or self-image, a series of analyses examined this issue for descriptive purposes. The sole significant finding was for peer involvement. Over time, there was a significant increase in frequency of activities with peers, $F(2, 188) = 13.90, p < .001$, with a significant linear component, $F(1, 94) = 29.67, p < .001$.

TABLE 2: Within-Time Correlations: Problem Behavior With Self-Image, Peer Involvement, and Peer Acceptance

| | <i>Time 1</i> | <i>Time 2</i> | <i>Time 3</i> |
|-------------------------|---------------|---------------|---------------|
| Self-Image | | | |
| Disobey parents | -.37** | -.14 | -.26* |
| School misconduct | -.31* | -.17 | -.31* |
| Substance use | -.06 | -.12 | -.23* |
| Antisocial behavior | -.30** | -.11 | -.30** |
| Peer Involvement | | | |
| Disobey parents | .37** | .56** | .50** |
| School misconduct | .42** | .27* | .46** |
| Substance use | .33** | .40** | .50** |
| Antisocial behavior | .33** | .41** | .38** |
| Peer Acceptance | | | |
| Disobey parents | .05 | -.00 | .33** |
| School misconduct | -.03 | -.12 | .26* |
| Substance use | .02 | -.03 | .24* |
| Antisocial behavior | .05 | -.05 | .24* |

NOTE: $n = 96$ at Time 1 (11.6 years of age), Time 2 (12.6 years), and Time 3 (14 years); $n = 72$ at Time 4 (15 years).

* $p < .05$; ** $p < .001$.

Relationship of Problem Behavior With Self-Image and Peer Relations

The second research question addressed links of the four domains of problem behavior with self-image and peer relations. Within-time correlations were computed at each time of measurement, as were correlations between change in problem behavior and change in self-image and peer relations. Change was measured using residual change scores (Bereiter, 1963; Lord, 1963). Residual scores were computed by first regressing each variable on its respective previous score, then saving the residual. For example, to compute change in substance use between Times 1 and 2, the Time 2 substance use scores were regressed on the Time 1 substance use scores and the residual score was saved. This residual represents the variance in Time 2 substance use that is not predictable from Time 1 substance use, in other words, *change* in substance use. Correlations were computed between these two sets of change scores to determine the extent to which change in the four domains of problem behavior covaried with change in self-image and peer relations.

Table 2 presents the within-time correlations. The four domains of problem behavior were negatively related to self-image at Times 1 and 3. That is,

TABLE 3: Correlations of Change in Problem Behavior With Change in Self-Image and in Peer Relations

| | Time 1-2 | Time 2-3 | Time 1-3 |
|-------------------------|----------------|----------|----------------|
| Self-Image | | | |
| Disobey parents | -.12 | -.16 | -.31* |
| School misconduct | -.23* | -.18 | -.17 |
| Substance use | -.12 | -.13 | -.24* |
| Antisocial behavior | -.09 | -.18 | -.23* |
| Peer Involvement | | | |
| Disobey parents | .41** | .51** | .52** |
| School misconduct | .15 | .42** | .45** |
| Substance use | .28* | .45** | .40** |
| Antisocial behavior | .33** | .42** | .39** |
| Peer Acceptance | | | |
| Disobey parents | — ^a | .19 | — ^a |
| School misconduct | — | .29* | — |
| Substance use | — | .14 | — |
| Antisocial behavior | — | .21* | — |

NOTE: $n = 96$. Time 1-Time 2 = 11.6 to 12.6 years of age; Time 2-Time 3 = 12.6 to 14 years of age; Time 1-3 = 11.6 to 14 years of age. A positive correlation indicates that an increase in one variable was associated with an increase in the other. A negative correlation indicates that an increase in one variable was associated with a decrease in the other.

a. Variable not available at Time 1.

* $p < .05$; ** $p < .001$.

individuals who engaged in more frequent problem behavior felt less positively about themselves. Although the Time 2 correlations were in the same direction, they were not significant. With respect to the relationship of problem behavior and peer involvement, the correlations consistently were positive. That is, individuals who engaged in the four domains of problem behavior more frequently also reported more activities with peers. At Time 4, significant positive correlations were found between problem behavior and peer acceptance, indicating that risk takers felt more accepted by their peers.

Table 3 presents the correlations of change in the four domains of problem behavior with change in self-image and peer relations between Times 1 and 2, Times 2 and 3, and Times 1 and 3. Change in school misconduct was related negatively to change in self-image between Times 1 and 2. Similarly, changes in disobeying parents, substance use, and antisocial behavior were related negatively to changes in self-image between Times 1 and 3. That is, individuals who increased their levels of these types of problem behavior evidenced change toward a *less* positive self-image.

TABLE 4: Means and Standard Deviations (In parentheses): Perceptions of Fun and Risk of Four Domains of Problem Behavior at Fifteen Years of Age

| | <i>Fun^a</i> | | <i>Risk^b</i> | |
|---------------------|------------------------|-------|-------------------------|-------|
| | \bar{X} | SD | \bar{X} | SD |
| Disobey parents | 1.98 | (.53) | 2.64 | (.64) |
| School misconduct | 1.58 | (.49) | 2.86 | (.66) |
| Substance use | 1.75 | (.69) | 3.18 | (.67) |
| Antisocial behavior | 1.25 | (.41) | 3.35 | (.55) |

NOTE: $n = 72$.a. Possible range: 1 = *not at all fun* through 4 = *very fun*.b. Possible range: 1 = *not at all risky* through 4 = *very risky*.

The results for the two measures of peer relations were in the opposite direction. That is, change in the four domains of problem behavior was associated positively with changes in peer involvement. In other words, individuals who increased their level of problem behavior also increased their frequency of sharing in activities with peers. The relationship of change in problem behavior with change in peer acceptance was in the same direction, although less consistent: Individuals who increased their school misconduct and antisocial behavior between Times 2 and 3 increasingly felt accepted by their peers.

The previous set of analyses examined concurrent and longitudinal relations between adolescents' problem behavior and their adjustment and peer relations, documenting both positive and negative correlates of risk taking. Thus the meaning of problem behavior for adolescent development was somewhat paradoxical. The final set of analyses examined this paradox from the perspective of the adolescent. That is, adolescents' perceptions of the fun and risk of the four domains of problem behavior were compared, and the extent to which these beliefs predicted levels of risk taking was assessed.

Perceptions of Fun and Risk

Mean-level differences. Table 4 presents the means and standard deviations of adolescents' perceptions of the fun and the risk associated with disobeying parents, school misconduct, substance use, and antisocial behavior. These ratings were available at Time 4 only. On average, the four domains of misconduct were rated as a little bit fun and of medium risk.

Gender and domain differences in perceptions of the fun and risk associated with the four domains of problem behavior were examined using two

TABLE 5: Multiple Regressions Predicting Problem Behavior From Perceptions of Fun and Risk at Fifteen Years of Age: Standardized Regression Coefficients and F^2

| <i>Step and Predictors</i> | <i>Disobey Parents</i> | <i>School Misconduct</i> | <i>Substance Use</i> | <i>Antisocial Behavior</i> |
|----------------------------|------------------------|--------------------------|----------------------|----------------------------|
| 1. Fun | .45** | .29* | .59** | .44** |
| Risk | -.15 | -.25* | -.17 | -.30* |
| Step F^2 | .28** | .22** | .48** | .39** |
| 2. Fun \times Risk | -.01 | -.36* | -.24* | -.45** |
| Step F^2 | .00 | .11* | .05* | .17** |
| Total F^2 | .28** | .33** | .53** | .56** |

NOTE: $n = 72$.* $p < .05$; ** $p < .001$.

2 \times 4 (Gender \times Domain) ANOVAs. Domain was a within-subjects factor, and the dependent variables were participants' ratings of fun and risk. The results for perceptions of fun yielded a significant main effect of Domain, $F(3, 210) = 47.54, p < .001$, and a significant Gender \times Domain interaction, $F(3, 210) = 6.47, p < .001$. There was no main effect of Gender. Post hoc tests showed that males rated antisocial behavior as more fun than did females and that the fun ratings of the four problem behaviors differed significantly: Disobeying parents was more fun than substance use, which was more fun than school misconduct, which was more fun than antisocial behavior. The results for perceptions of risk yielded a significant effect for Domain, $F(3, 210) = 53.77, p < .001$. The main effect of Gender and the Gender \times Domain interactions were not significant. Post hoc tests showed that all four risk ratings differed significantly: Antisocial behavior was perceived as more risky than substance use, which was more risky than school misconduct, which was more risky than disobeying parents.

Prediction of problem behavior by perceptions of fun and risk. To assess the extent to which adolescents' beliefs about fun and risk predicted the frequency with which they engaged in problem behavior, four multiple regressions were performed. The criterion variables were levels of the four domains of problem behavior. The predictors were entered in two steps. Participants' ratings of the fun and risk of the corresponding problem behavior were entered on the first step. The Fun \times Risk interaction was added on the second step. (Deviation scores were used to reduce multicollinearity; see Aiken & West, 1991). The results are presented in Table 5. Fun was a positive predictor of all four domains of problem behavior. That is, individuals who

rated each domain as being more fun engaged more frequently in risk behaviors. Risk was a negative predictor of school misconduct and antisocial behavior. That is, participants who rated these two domains as being more risky were less likely to engage in these acts. Finally, significant Fun \times Risk interactions for school misconduct, substance use, and antisocial behavior indicated that individuals who viewed these acts as more fun and less risky misbehaved more frequently than other adolescents. Between 28% and 56% of the variance in adolescents' problem behavior was explained by their ratings of fun and risk.

DISCUSSION

The paradoxical nature of adolescent risk taking was supported by the present results. That is, these data were consistent with the argument that engaging in problem behaviors can have both constructive and destructive consequences for adolescent development. Although considerable evidence already exists for negative effects of risk taking, empirical support for positive correlates is more rare. With respect to negative correlates and sequelae of risk taking, adolescents who engaged in four domains of problem behavior had less positive self-images concurrently, and changes in levels of problem behavior covaried with changes in self-image. Thus adolescents who misbehaved more frequently saw themselves as having less mastery, lower impulse control, and more negative emotional tone.

The relationship between problem behavior and peer relations was more provocative. Adolescents who engaged in more frequent risk-taking activities consistently reported more peer involvement concurrently, and changes in levels of risk taking covaried with changes in the frequency of activities with peers. Moreover, at the age of 14 years, risk takers also felt more accepted by their peers, and those who increased their risk taking between 12.6 and 14 years of age experienced increases in peer acceptance. The demonstration of a relationship between risk taking and having more positive and frequent relations with peers was consistent with the argument that problem or risk behaviors may have some constructive functions in adolescent development (Jessor, 1987; Silbereisen & Noack, 1988). The fact that the positive relationship of risk taking and peer acceptance only emerged as the participants reached middle adolescence indicated that positive functions of some problem behaviors may be most apparent when these acts are developmentally normative (Shedler & Block, 1990). For example, the meaning and psychoso-

cial correlates of alcohol use are likely to be very different at age 17 than at age 10 (Galambos & Silbereisen, 1987; Newcomb & Bentler, 1989).

Finally, the relationship was examined between beliefs about the fun and risk of the four domains of problem behavior with levels of risk taking in those domains. These analyses showed that adolescents' perceptions of fun and risk explained up to 56% of the variance in these behaviors. In other words, to a significant extent, adolescents coordinated their risk-taking activity in line with their beliefs about the costs and benefits of problem behavior. The magnitude of this relationship supports the importance of considering the factors adolescents consider as they make decisions about rewarding and dangerous behaviors such as alcohol and drug use, sexual behavior, and school misbehavior (Bauman et al., 1985; Furby & Beyth-Marom, 1992; Gardner, 1993).

It is noteworthy that antisocial behavior (e.g., theft, fighting), arguably the most destructive and least constructive of the four types of problem behaviors measured, was the only problem behavior measured that did not evidence an increase over time. Other longitudinal studies have shown that the prevalence of antisocial behavior peaks in adolescence (Moffitt, 1993; Osgood et al., 1992). It is likely that the present sample was too small and that the adolescents were too young (15 years and younger) and too low risk (suburban Canadian youth from two-parent/two-earner homes) to observe these previously established age increases. The incidence of behaviors such as shoplifting and violence was low at all measured ages, however there were significant increases over time in disobeying parents, school misconduct, and substance use. Moreover, antisocial behavior was evaluated by these adolescents as very low in fun and very high in risk. It seems, then, that the adolescent participants evaluated antisocial acts as more serious or deviant, a finding that is consistent with the violent nature and/or illegal nature of these behaviors.

A limitation of this study was the small sample size. Although the collection of four occasions of measurement was a definite strength, and the attrition in the longitudinal study was not selective, the results would have been bolstered by a larger and more representative sample. It is important also to note that the levels of risk taking engaged in by the present sample were clearly within a low-normative range. It is not believed that the present results argue for positive functions of high levels of law-breaking, violent behavior, or substance addiction. For example, the Shedler and Block (1990) longitudinal analyses indicated that experimentation with marijuana was associated with slightly higher psychological adjustment relative to abstain-

ing, but frequent drug use was associated with much poorer adjustment than abstaining or experimenting.

Why would problem behaviors have positive sequelae in the domain of peer relations when they also pose threats to health, make parents and teachers angry, and are evaluated by adolescents as more risky than fun? One possibility is that taking risks, in itself, is appealing. However, the negative relationship of risk ratings and levels of problem behavior would appear to refute this argument. Another possibility is that behaviors such as drinking alcohol, missing curfew, or skipping class have other intrinsically appealing qualities (e.g., having a good time, sharing an experience with friends) that render the associated risks subjectively worthwhile. The consistent relationship of fun ratings and of the peer relations variables with the four types of problem behavior supports this idea.

Even though each domain of problem behavior was rated as being more risky than fun, it was the perceptions of fun rather than risk that were the most consistent and most salient predictors of risk taking. This result would indicate that adolescents are more motivated by the desire to experience positive consequences than by the fear of experiencing negative ones (for an exception see Small, Silverberg, & Kerns, 1993). Clearly, researchers need to consider positive functions of problem behavior when attempting to understand why adolescents take risks. Future research should examine adolescents' beliefs about multiple dimensions of positive consequences (e.g., facilitating social interaction, relaxation) as well as negative consequences (e.g., accidents, getting caught) of risk taking, and how these beliefs influence adolescent behavior. In addition, planners of health-promoting prevention and intervention programs need to take into account the positive functions served by various types of risky behaviors, as programs that fail to acknowledge the importance of positive motivations for risk taking or the positive functions they serve may be less likely to succeed.

REFERENCES

- Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: Sage.
- Anastasi, A. (1988). *Psychological testing* (6th ed.). New York: Macmillan.
- Baltes, P. B. (1987). Theoretical propositions of life-span developmental psychology: On the dynamics between growth and decline. *Developmental Psychology*, 23, 611-626.
- Barnes, G. M., Welte, J. W., & Dintcheff, B. (1992). Alcohol misuse among college students and other young adults: Findings from a general population study in New York State. *International Journal of the Addictions*, 27, 917-934.

- Bauman, K. E., & Bryan, E. S. (1980). Adolescent beer drinking: Subjective expected utility and gender differences. *Youth & Society, 15*, 157-170.
- Bauman, K. E., Fisher, L. A., Bryan, E. S., & Chenoweth, R. L. (1985). Relationship between subjective expected utility and behavior: A longitudinal study of adolescent drinking behavior. *Journal of Studies on Alcohol, 46*, 32-38.
- Baumrind, D. (1985). Familial antecedents of adolescent drug use: A developmental perspective. In C. LaRue Jones & R. J. Battjes (Eds.), *Etiology of drug abuse: Implications for prevention. NIDA Research Monograph 56: A RAUS Review Report* (pp. 13-44). Rockville, MD: National Institute on Drug Abuse.
- Baumrind, D. (1987). A developmental perspective on adolescent risk taking in contemporary America. In C. E. Irwin (Ed.), *Adolescent social behavior and health* (pp. 93-125). San Francisco: Jossey-Bass.
- Bell, N. J., & Bell, R. W. (Eds.) (1993). *Adolescent risk taking*. Newbury Park, CA: Sage.
- Bereiter, C. (1963). Some persisting dilemmas in the measurement of change. In C. W. Harris (Ed.), *Problems in measuring change* (pp. 3-20). Madison: University of Wisconsin Press.
- Beyth-Marom, R., & Fischhoff, B. (in press). Adolescents' decisions about risks: A cognitive perspective. In J. E. Schulenberg, J. L. Maggs, & K. Hurrelmann (Eds.), *Health risks and developmental transitions during adolescence*. New York: Cambridge University Press.
- Brandstädter, J. (1984). Personal and social control over development: Some implications of an action perspective in life-span developmental psychology. In P. B. Baltes & O. G. Brim Jr. (Eds.), *Life-span development and behavior*, (Vol. 6, pp. 2-28). New York: Academic Press.
- Brown, B. B., Clasen, D. R., & Eicher, S. A. (1986). Perceptions of peer pressure, peer conformity dispositions, and self-reported behavior among adolescents. *Developmental Psychology, 22*, 521-530.
- Chapman, M., & Skinner, E. A. (1985). Action in development: Development in action. In M. Frese & J. Sabini (Eds.), *Goal-directed behavior: The concept of action in psychology* (pp. 200-213). Hillsdale, NJ: Lawrence Erlbaum.
- Chassin, L., Presson, C. C., & Sherman, S. J. (1989). "Constructive" vs. "destructive" deviance in adolescent health-related behaviors. *Journal of Youth and Adolescence, 18*, 245-262.
- Donovan, J. E., & Jessor, R. (1985). Structure of problem behavior in adolescence and young adulthood. *Journal of Consulting and Clinical Psychology, 53*, 890-904.
- Elliott, D. S., Huizinga, D., & Menard, S. (1989). *Multiple problem youth: Delinquency, substance use, and mental health problems*. New York: Springer-Verlag.
- Friedman, H. L. (1989). The health of adolescents: Beliefs and behavior. *Social Science and Medicine, 29*, 308-315.
- Furby, L., & Beyth-Marom, R. (1992). Risk-taking in adolescence: A decision-making perspective. *Developmental Review, 12*, 1-44.
- Galambos, N. L., Kolaric, G. C., & Maggs, J. L. (1995). *Adolescents' subjective age as an indicator of phenomenological maturity*. Manuscript submitted for publication.
- Galambos, N. L., & Maggs, J. L. (1991). Out-of-school care of young adolescents and self-reported behavior. *Developmental Psychology, 27*, 644-655.
- Galambos, N. L., & Silbereisen, R. K. (1987). Substance use in West German youth: A longitudinal study of adolescents' use of alcohol and tobacco. *Journal of Adolescent Research, 2*, 161-174.
- Gardner, W. (1993). A life-span rational-choice theory of risk taking. In N. J. Bell & R. W. Bell (Eds.), *Adolescent risk taking* (pp. 66-83). Newbury Park, CA: Sage.
- Hartup, W. W. (1989). Social relationships and their developmental significance. *American Psychologist, 44*, 120-126.

- Hurrelmann, K. (1990). Health promotion for adolescents: Preventive and corrective strategies against problem behavior. *Journal of Adolescence, 13*, 231-250.
- Jessor, R. (1987). Problem-behavior theory, psychosocial development, and adolescent problem drinking. *British Journal of Addiction, 82*, 331-342.
- Jessor, R., Donovan, J. E., & Costa, F. M. (1991). *Beyond adolescence: Problem behavior and young adult development*. New York: Cambridge University Press.
- Jessor, R., & Jessor, S. L. (1977). *Problem behavior and psychosocial development: A longitudinal study of youth*. New York: Academic Press.
- Johnston, L. D., & O'Malley, P. M. (1986). Why do the nation's students use drugs and alcohol? Self-reported reasons from nine national surveys. *Journal of Drug Issues, 16*, 29-66.
- Johnston, L. D., O'Malley, P. M., & Bachman, J. G. (1984). *Highlights from Drugs and American High School Students 1975-1983*. Washington, DC: U.S. Government Printing Office.
- Johnston, L. D., O'Malley, P. M., & Bachman, J. G. (1993). *National survey results on drug use from Monitoring the Future Study, 1975-1992*. Rockville, MD: National Institute on Drug Abuse.
- Kandel, D. B., & Yamaguchi, K. (1985). Developmental patterns of the use of legal, illegal, and medically prescribed psychotropic drugs from adolescence to adulthood. In C. L. Jones & R. J. Battjes (Eds.), *Etiology of drug abuse: Implications for prevention. NIDA Research Monograph 56: A RAUS Report* (pp. 193-235). Rockville, MD: National Institute on Drug Abuse.
- Kaplan, H. B. (1978). Deviant behavior and self-enhancement in adolescence. *Journal of Youth and Adolescence, 7*, 253-277.
- Lerner, R. M., & Busch-Rossnagel, N. A. (1981). *Individuals as producers of their own development: A life-span perspective*. New York: Academic Press.
- Lord, F. M. (1963). Elementary models for measuring change. In C. W. Harris (Ed.), *Problems in measuring change* (pp. 21-38). Madison: University of Wisconsin Press.
- Maggs, J. L., & Galambos, N. L. (1993). Alternative structural models for understanding adolescent problem behavior in two-earner families. *Journal of Early Adolescence, 13*, 79-101.
- McCord, J. (1990). Problem behaviors. In S. S. Feldman & G. R. Elliott (Eds.), *At the threshold: The developing adolescent* (pp. 414-430; 602-614). Cambridge: Harvard University Press.
- Millstein, S. G., Petersen, A. C., & Nightingale, E. O. (Eds.) (1993). *Promoting the health of adolescents: New directions for the twenty-first century*. New York: Oxford University Press.
- Moffitt, T. E. (1993). Adolescence-limited and life-course-persistent antisocial behavior: A developmental taxonomy. *Psychological Review, 100*, 674-701.
- Montemayor, R. (1983). Parents and adolescents in conflict: All families some of the time and some families all of the time. *Journal of Early Adolescence, 3*, 83-103.
- Newcomb, M. D., & Bentler, P. M. (1989). Substance use and abuse among children and teenagers. *American Psychologist, 44*, 242-248.
- Osgood, D. W., Elliott, D. S., & Huizinga, D. (1992, November). *Describing and explaining age trends in deviance from adolescence through early adulthood*. Paper presented at the meetings of the American Society of Criminology, New Orleans, LA.
- Osgood, D. W., Johnston, L. D., O'Malley, P. M., & Bachman, J. G. (1988). The generality of deviance in late adolescence and early adulthood. *American Sociological Review, 53*, 81-93.
- Petersen, A. C., Schulenberg, J. E., Abramowitz, R. A., Offer, D., & Jarcho, H. D. (1984). A self-image questionnaire for young adolescents (SIQYA): Reliability and validity studies. *Journal of Youth and Adolescence, 13*, 93-111.
- Shedler, J., & Block, J. (1990). Adolescent drug use and psychological health: A longitudinal inquiry. *American Psychologist, 45*, 612-630.

- Silbereisen, R. K., & Eyferth, K. (1986). Development as action in context. In R. K. Silbereisen, K. Eyferth, & G. Rudinger (Eds.), *Development as action in context: Problem behavior and normal youth development* (pp. 3-16). Berlin: Springer-Verlag.
- Silbereisen, R. K., & Noack, P. (1988). On the constructive role of problem behavior in adolescence. In N. Bolger, A. Caspi, G. Downey, & E. M. Moorehouse (Eds.), *Persons in context: Developmental processes* (pp. 152-180). Cambridge, MA: Cambridge University Press.
- Small, S. A., Silverberg, S. B., & Kerns, D. (1993). Adolescents' perceptions of the costs and benefits of engaging in health-compromising behaviors. *Journal of Youth and Adolescence*, 22, 73-87.

Requests for reprints should be addressed to Jennifer L. Maggs, Institute for Social Research 5201, University of Michigan, Box 1248, Ann Arbor, MI, 48106-1248.