

Predictors of Adolescent Participation in Organized Activities: A Five-Year Longitudinal Study

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This study examined (a) growth curves of youth participation in sports, performance and fine arts, and youth clubs throughout the high school years and (b) the associations between a series of predictors and the initial participation rates and growth over time. The predictors included individual, friend, and family factors. The moderating effect of youths' gender was also examined. Study participants were 272 youths (55% girls, $M_{\text{age}} = 12.4$ years) and their parents. The predictors were assessed in Grade 6 and were based on reports by youths, parents, teachers, and classmates. Participation in organized activities was assessed annually from Grades 7 to 10. Altogether, the findings revealed that participation in sports, performance and fine arts, and youth clubs remains stable across the high school years. However, interindividual differences were found in the participation growth curves. This variation was predicted by individual, friend, and family factors, mostly with respect to sports activities.

Organized activities are characterized by the presence of an adult leader, rule-guided engagement, and regular participation schedules (Larson, 2000; Mahoney & Stattin, 2000). These activities provide youths with socialization and learning experiences, which, in turn, promote their interpersonal competence and school success over time (Larson, 2000; Mahoney, Larson, & Eccles, 2005). Studies have shown that youths' participation in organized activities is associated with lower rates of school

dropout (Mahoney & Cairns, 1997; McNeal, 1995), better educational performance and aspirations (Eccles & Barber, 1999; Mahoney, Cairns, & Farmer, 2003), and higher educational attainment (Barber, Eccles, & Stone, 2001; Mahoney et al., 2003; Zaff, Moore, Papillo, & Williams, 2003), as well as low levels of antisocial behaviors (Mahoney, 2000; Mahoney & Stattin, 2000) and depressed mood (Mahoney, Schweder, & Stattin, 2002).

Given these documented benefits and developmental assets, participation in organized activities is increasingly considered as a potential context for the promotion of positive youth development (Eccles & Gootman, 2002; Larson, 2000; Mahoney et al., 2005). However, participation is, in most cases, voluntary, and available data indicate that around 30% of adolescents do not participate in any organized activity (Eccles & Barber, 1999; Mahoney, 2000; Mahoney & Stattin, 2000; Mahoney et al., 2002). Among those who do, variation is also observed in the extent and duration of their participation. For instance, some youths participate in an activity consistently every year, whereas others participate only briefly. Still, others may stop and then start again. The relevance of this longitudinal perspective is emphasized by the work of Mahoney et al. (2003) and Zaff et al. (2003) suggesting that the positive links between activity involvement and youth adjustment may be attributable to consistent participation over time. Consequently, identifying which factors are associated with organized activity participation at one point in time *and* which factors keep youths involved over time become crucial. These are the goals of the current study.

EXAMINING PARTICIPATION OVER TIME

Participation is usually operationalized as *breadth* (i.e., the number of activities youths are involved in) or *intensity* (i.e., the number of hours youths spend in their activities). In this study, the total number of hours spent in organized activities over a school year was used. This choice was made for several reasons. First, we believe that the intensity of participation better reflects youths' level of involvement in activities. An adolescent who chooses to spend several hours per week in an activity clearly has a higher level of involvement than an adolescent who only spends 1 hour/week. Second, variation is likely to be higher in the number of hours youths spend in organized activities than in the number of activities they choose to participate in each year. Third, very few studies have documented adolescents' intensity of participation over time.

Activities can also be grouped in different types, such as sports (hockey, basketball, soccer, and karate), performance and fine arts (dance, drama,

and band), academic activities (tutoring, chess club, and debate club), faith-based and service activities (volunteering), and community and vocational clubs (scouts, 4H) (Eccles & Barber, 1999; Hansen, Larson, & Dworkin, 2003). Previous research suggests that developmental outcomes (Eccles & Barber, 1999; McNeal, 1995), learning experiences (Hansen et al., 2003; Larson, Hansen, & Moneta, 2006), as well as predictors (McNeal, 1998; Pedersen, 2005) differ depending on the type of activities investigated. In this study, three types were examined, namely sports, performance and fine arts, and youth clubs, the latter including academic activities, faith-based and service activities, and community and vocational clubs.

The longitudinal examination of youth participation intensity has received only limited attention from researchers so far. Most studies have focused on the number of activities and have yielded mixed results. For instance, McNeal (1998) found that participation in sports tended to decline over time, whereas Mahoney and Cairns (1997) found an increase in the number of school-based activities in high school. Recently, Pedersen (2005) examined the predictive power of youth demographic characteristics, such as age and gender, as well as contextual characteristics, such as parental employment and school transition timing, on urban youth trajectories of participation in team sports, school-based, and religious activities. This study revealed that participation in school-based and sports activities declined over time, whereas the number of religious activities increased. Among the significant predictors, girls were less likely to be involved in sports, greater poverty characterized low participation trajectories, and later school transitions were associated with high participation trajectories. This study was an important step in this area by highlighting the diversity and variability of youth participation over time and showing the importance of considering contextual characteristics. However, all measures were self-reported and one important context, the friendship group, was not addressed. Bronfenbrenner (1979) has put forward the importance of considering multiple contexts to better understand the environmental influences on human development. The present study focuses on individual, friend, and family factors likely to predict youth activity involvement over time.

PREDICTORS OF YOUTH ACTIVITY PARTICIPATION

Among individual-level predictors, gender, academic achievement, depressive symptoms, and problem behaviors were investigated. We examined gender because girls tend to participate in a higher number of

activities than boys, except sports (Eccles & Barber, 1999; McNeal, 1998; Pedersen, 2005). Prior research also suggests that youths who are experiencing success in school participate at higher rates in organized activities (McNeal, 1998). In addition, Mahoney et al. (2002) found that youths involved in organized activities reported lower levels of depressive symptoms compared with nonparticipating youths. Adolescents characterized by high levels of problem behaviors could also stay away from this type of environment given that organized activities represent adult-led structured environments. Youths with problem behaviors are more likely to have had negative experiences in these contexts and may choose alternative unstructured settings for their leisure time, such as youth recreation centers (Mahoney, Stattin, & Lord, 2004).

Close friends are significant sources of influence in youths' choices regarding use of free time in early adolescence. For a better understanding of their influence, Hartup (1999) recommends assessing their characteristics. Here, we examined whether or not close friends participate in organized activities. When close friends value organized activities, adolescents are more likely to participate (Huebner & Mancini, 2003). If close friends actually participate, youths may be more likely to get involved and stay involved as well.

Parents may also have a role to play in their child's choices of free-time activities in early adolescence. Based on previous studies that examined family factors directly associated with adolescent participation, we focused on family income, parent involvement in youths' free-time activities, parent beliefs about the benefits of organized activities, and parent community involvement. First, youths from affluent families are more likely to participate in organized activities, probably because they have more resources to allocate to nonschool activities (McNeal, 1998; Huebner & Mancini, 2003; Pedersen, 2005). Second, parents who get involved in their child's after-school activities, organized or not, show interest in how the child spends his or her free time. These parents may be more likely to promote activity participation by making children feel they will be supported in their participation efforts (Fletcher, Elder, & Mekos, 2000; Simpkins, Davis-Kean, & Eccles, 2005). Third, parents who believe that these activities are important for youth development will probably encourage and facilitate their child's participation, and shape his or her value beliefs (Fredricks, Simpkins, & Eccles, 2005; Huebner & Mancini, 2003). Finally, parents actively involved in their community serve as models for their child's participation, in addition to facilitating his or her access to participation opportunities (Fletcher et al., 2000; Fletcher & Shaw, 2000; Fredricks et al., 2005).

MODERATING EFFECT OF GENDER

In their literature review on the effects of school-based activities for adolescent development, Feldman and Matjasko (2005) highlighted the importance of considering gender as an important moderator. Gender has usually been included as a control in previous studies, but differences between boys and girls have recently been documented in participation outcomes (Fredricks & Eccles, 2006; Gore, Farrell, & Gordon, 2001; Mahoney et al., 2003). Gender differences in predictors of youth activity participation have mostly been examined with respect to parent variables (Fletcher & Shaw, 2000; Fredricks et al., 2005). In this study, we also explored the possibility that different factors might push boys and girls into and out of organized activities.

STUDY OBJECTIVES

The aim of this study was to identify individual, friend, and family factors associated with youth activity participation over time. The predictors were assessed when youths were in Grade 6, before the transition from elementary to high school, which occurs in Grade 6 in the school system where the current data were collected. Youth activity participation, operationalized as the total number of hours spent in sports, performance and fine arts, and youth clubs over a school year, was measured yearly from Grades 7 to 10. Using a multilevel approach, two specific goals were pursued. The first goal was to examine growth curves of participation during the high school years in the three types of activities. For this goal, no study expectations were made explicit. Indeed, the extent of involvement could decrease as a function of closing opportunities as youths progress through high school years and as a function of time management, with other activities such as part-time jobs becoming more important (McNeal, 1995, 1998). However, the extent of involvement could also increase due to specialization in specific activities. The second goal was to assess the predictive power of the individual, friend, and family factors on (a) rates of participation just after the school transition, and (b) rates of change over time, separately for sports, performance and fine arts, and youth clubs. We expected that school grades, best friends' participation, and parent income, involvement, beliefs, and community involvement would be positively associated with youths' participation. In contrast, we expected that depressive symptoms and problem behaviors would be negatively linked to their involvement. The unique effect of the predictors was tested after controlling for participation before high school because

some youths may already have been on a trajectory of participation. It should be noted that this study, in examining factors likely to predict youth activity participation over time, and especially in considering the moderating effect of gender, remains exploratory.

METHOD

Participants

The current sample was drawn from a larger sample of youths who are part of a longitudinal study investigating adolescent social development ($n = 390$). Youths were originally recruited from eight elementary schools. Approximately 75% of the available student population participated in the study. These schools were located in four distinct districts representing different socioeconomic backgrounds of a city of 350,000 residents in the province of Quebec, Canada where criminality and unemployment rates are slightly lower than the provincial mean level. In Grade 10, participants were scattered in 30 high schools. During the spring of Grade 6, a questionnaire on various aspects of family life was sent to the parents of participating youths by mail. Two hundred and seventy-two (70%) parents completed and returned the questionnaire. These families (55% girls, $M_{\text{age}} = 12.4$ years, $SD = 0.42$) are the sample used in this study. The participating youths differ from the rest of the sample on only one of the Grade 6 individual, friend, and family predictors. They had higher grades than the other youths, $t(388) = -3.47$, $p < .05$. Of these families, 68% have an income over \$45,000 (CAN) before taxes and 81% of mothers and 96% of fathers have at least a part-time job. Youths were born in Canada in 85% of the cases and 72% were from two-parent families. The sample was ethnically homogenous. Most youths were White and French speaking. Of the 272 original youths in the study, 97% were still participating at Time 2 ($n = 263$), 82% at Time 3 ($n = 222$), 77% at Time 4 ($n = 211$), and 76% at Time 5 ($n = 208$). There were no differences on Grade 6 predictors between those who stayed in the study over the years and those who had dropped by Grade 10.

Procedure and Study Design

A trained team of research assistants carried out data collection in the classrooms. In elementary school, measures were administered in classrooms. During the assessment period, teachers left the room and also filled out questionnaires. In high school, youths had to leave their classrooms to

complete the questionnaires in small groups. For parent data, research assistants contacted each family by phone and asked the parents if they would fill out a questionnaire about their relationship with their child. For those who accepted, the measures were sent home with a prepaid self-addressed return envelope. All the predictors were measured at the end of elementary school (in May of Grade 6). Participation in organized activities was assessed annually during the first 4 years of high school (in May, from Grades 7 to 10). In Grades 8, 9, and 10, part of data collection was also conducted using structured phone interviews. The phone interview questions were identical to those that appeared in the Grade 7 paper-and-pencil questionnaire.

Measures

Hours of participation in sports, performance and fine arts, and youth clubs from Grades 7 to 10. Participation was operationalized as the total number of hours spent in three different types of activities, namely sports, performance and fine arts, and youth clubs, over a full school year (10 months; from September to June). The participation variables were measured in two steps. In the first step, youths were asked to identify all the organized activities in which they were participating or had participated during the school year. This was done using a free recall procedure. To facilitate the recall, four separate questions were asked. First, youths had to identify all the school-based activities they were involved in from September to December (before Christmas). Second, they had to identify all the community-based activities they were involved in from September to December (before Christmas). The same two questions were asked for the time frame between January and June (after Christmas). In the second step, for each activity previously identified, youths had to answer a series of questions. The items targeted the following dimensions: frequency of participation, number of hours of participation, number of months of participation during the school year, presence of an adult activity leader, and presence of rules. To verify if the activities listed met the definition of an organized activity, the following criteria were applied: (a) regular frequency of participation (at least once a month; over 80% of youths participated once a week), (b) presence of an adult activity leader, and (c) rule-guided engagement. Only the activities that met those criteria were considered. Youth centers were not included given that they are usually not considered as structured settings in other studies (e.g., Mahoney & Stattin, 2000).

To compute the number of hours of participation in each type of activity, we multiplied the weekly number of hours of participation by the number of weeks of participation within a school year (approximately 10 months). For example, for a youth who played basketball 3 hour/week from September to June, we multiplied 3 hour by 40 weeks of participation, which resulted in a total of 120 hour of participation over the school year. For a youth who participated in a dance class 1 hour/week from September to December, we multiplied 1 hour by 16 weeks of participation, which resulted in a total of 16 hours of participation. We then summed the number of hours of participation within each type of activity. For example, if a youth had participated in basketball 120 hours during the school year and in football 100 hours, he or she was attributed a score of 220 for sports. Thus, three scores, one for each type of activity, were computed for each youth from Grades 7 to 10. For means, see Table 1. The most common sports were ice hockey, soccer, karate, and gymnastics; the most common performance and fine arts were dance, band, and painting class; and the most common youth clubs were scouts and volunteering.

Grade 6 predictors

Prior participation. In Grade 6, youths were asked to identify their *most important* leisure activity. Specific information (weekly hours of participation, presence of an activity leader, and presence of rules) was also gathered for this activity. Among these activities, 64% were organized according to the criteria listed above ($n = 175$). One hundred and twenty-five were sports, 44 were performance and fine arts, and six were youth clubs. Given the small number of youth clubs, we considered youths' weekly hours of participation with no specification for the type of activities ($M = 2.97$, $SD = 3.13$).

Academic achievement. Academic achievement was based on final grades in mathematics and French. In student official school records, grades were rated on a 5-point scale, ranging from 1 (*poor*) to 5 (*excellent*). The mean of these two scores was used in the analyses ($r = .61$, $M = 3.34$, $SD = 0.56$).

Depressive symptoms. Scores on the Children's Depression Inventory (CDI; Kovacs, 1981) were used to assess the level of depressive symptoms among adolescents. This 27-item questionnaire covers a range of depressive symptoms, such as sadness, irritability, sleep, guilt, worry, self-confidence, loneliness, and preoccupation. Each item consists of three choices. The item choices are coded from 0 to 2 in the direction of increasing severity. The respondent chooses the options that best describe his or her feelings over *the past 2 weeks*. The CDI has been shown to be reliable and valid in large representative samples of youths (Kovacs, 1983). In this

TABLE 1
Mean, Standard Deviations, and Correlations for the Participation and Predictor Variables

	<i>M</i>	<i>SD</i>	<i>Prior part.</i>	<i>Academic</i>	<i>Pb. beh.</i>	<i>Friends</i>	<i>SES</i>	<i>Involv.</i>	<i>Beliefs</i>	<i>Cty.</i>
G-sports G7	51.50	80.58	.40*	.05	.01	.14 [†]	.13 [†]	.24*	.22*	.22*
G-sports G8	52.17	83.27	.25*	.08	.17 [†]	.12	.25*	.07	.18 [†]	.12
G-sports G9	50.13	89.14	.19*	.10	.25*	.30*	.29*	.02	.15 [†]	.14 [†]
G-sports G10	50.50	87.94	.14 [†]	.07	.16 [†]	.23*	.20*	.10	.18*	.05
B-sports G7	79.26	91.13	.47*	.00	.27*	.45*	.16 [†]	.25*	.26*	.11
B-sports G8	75.66	90.18	.35*	.14	.13	.46*	.16 [†]	.28*	.30*	.13
B-sports G9	61.60	76.60	.36*	-.09	.08	.38*	.03	.22*	.32*	.29*
B-sports G10	65.30	98.74	.46*	-.06	.19 [†]	.54*	.04	.21 [†]	.21 [†]	.22*
G-arts G7	28.43	45.24	.14 [†]	.00	-.07	-.06	.13 [†]	-.05	-.08	-.02
G-arts G8	31.67	50.87	.06	.03	-.21*	-.02	.02	.12	-.08	.03
G-arts G9	23.53	38.10	.12	.29*	.04	-.00	.09	.05	-.12	.01
G-arts G10	24.50	41.19	.12	.22*	-.07	.05	.16 [†]	.01	-.11	-.04
B-arts G7	13.56	39.48	-.03	-.04	.01	-.15 [†]	.10	.12	-.16 [†]	-.09
B-arts G8	16.55	48.26	-.01	-.07	.05	-.14	.00	.09	-.19 [†]	-.06
B-arts G9	15.86	42.91	.01	-.11	-.01	.19 [†]	-.06	-.02	-.17 [†]	-.17 [†]
B-arts G10	18.79	50.76	-.09	-.19 [†]	.05	-.13	.01	.06	-.07	-.07
G-clubs G7	8.92	26.24	-.06	.09	-.05	.09	.13	-.14 [†]	-.07	.20*
G-clubs G8	8.89	26.55	-.12	.06	-.09	.07	.17 [†]	-.05	-.16 [†]	.24*
G-clubs G9	6.95	22.17	-.08	.00	-.06	.10	.13	-.11	-.01	.04
G-clubs G10	6.80	20.93	-.14 [†]	.26*	-.02	-.06	.10	-.04	-.17 [†]	.10
B-clubs G7	14.56	43.06	-.13	.05	.17 [†]	-.11	.07	-.10	-.19*	.12
B-clubs G8	8.56	29.84	.08	.05	.10	.12	.02	.05	.06	.04
B-clubs G9	8.89	31.07	-.04	-.07	.14	.16	.09	.08	.21 [†]	-.08
B-clubs G10	15.86	46.62	-.00	.04	.29*	-.17*	-.03	-.18 [†]	-.02	-.15

Note. G7: *n* = 260; G8: *n* = 220, G9: *n* = 209; G10: *n* = 206.

Academic = academic achievement; B = boys; Beliefs = parent beliefs about organized activities; Cty. = parent community involvement; Friends = best friends' participation; G = girls; Pb. Beh. = problem behaviors; Involv. = parent involvement in free-time activities; Prior part. = prior participation; SES = family income.

**p* < .05.

[†]*p* < .15.

study, the item tapping suicidal ideation was removed from the questionnaire, resulting in 26 items and a range of 0 to 52. The sum of scores was used in the analyses (*M* = 10.34, *SD* = 6.63) and Cronbach's α was .85.

Problem behaviors. Teachers completed a 9-item scale assessing students' problem behaviors. Three items assessed proactive aggression (e.g., "This student uses physical force to dominate others") and three items assessed reactive aggression (e.g., "This student is irritable and easily gives way to anger") (Dodge & Coie, 1987). The other three items mea-

sured delinquent activities (e.g., "This student has stolen things one or more times"). The items were rated on a 5-point Likert scale ranging from 0 (*never*) to 4 (*almost always*). The sum of scores was used in the analyses ($M = 5.60$, $SD = 7.12$) and Cronbach's α was .94.

Best friends' participation. Best friends' participation in organized activities was measured following a two-step procedure. In the first step, youths were asked to identify up to three best friends in their classroom. The reciprocity of each nomination was determined. In the second step, we specified whether each reciprocated friend was participating in organized activities or not. To do so, we used the friend's self-reported participation at the end of elementary school (see the Prior participation section). Using this information, the number of participating best friends was computed. A score of zero was assigned to youths with no reciprocal friend ($n = 52$). As a result, youths had between zero and three reciprocated participating best friends in the classroom ($M = 1.00$, $SD = 1.10$).

Family income. The total family income before taxes was used as an indication of parents' economic situation. Parents responded on a single item, "In which of these categories is your total familial income before taxes for the year 2000," ranging from 1 (<5,000) to 13 (60,000 and more) ($M = 10.82$, $SD = 2.83$, or approximately \$50,000 CAN).

Parent variables. Parents were asked to complete a questionnaire about their children's free-time activities and their own involvement in the community. Thirty-five percent of the questionnaires were both completed by mothers and fathers, 55% by mothers only, and 9% by fathers only. Four items, rated on a 5-point Likert scale ranging from 0 (*not at all*) to 4 (*very much*), assessed *parent involvement in free-time activities*. Parents were first asked to identify their child's *most important* leisure activity, organized or not. After identifying the activity, they had to rate their interest and involvement in that activity, for example, "We talk together about the activity" and "I encourage my child to pursue his or her participation." The sum of scores was used ($M = 13.33$, $SD = 3.19$) and Cronbach's α was .83. Five items, rated on a 5-point Likert scale ranging from 0 (*not at all*) to 4 (*very much*), measured *parent beliefs about organized activities*. Examples of items include "I value that my child participates in organized activities" and "Participation in organized activities helps develop my child's full potential." The sum of scores was used in the analyses ($M = 15.53$, $SD = 3.83$) and Cronbach's α was .85. *Parent community involvement* was measured by asking the parents if they were currently involved in any adult-based community activities (e.g., as hockey coach or volunteer) and to indicate the total number of hours per week of their involvement. The total number of hours per week was used in the analyses ($M = 1.27$, $SD = 2.94$, range = 0–23).

Analytical Strategy

Latent growth modeling in SAS PROC MIXED was used to assess the average intercept and slope of youth participation in the three types of activities (sports, performance and fine arts, and youth clubs), as well as interindividual variation around these growth parameters (Singer, 1998; Singer & Willett, 2003; see Appendix A for a full description of the procedure by which the growth models were tested). We first looked at the general shape of the participation growth curves in the three types of activities by running unconditional growth models (i.e., without predictors). In this preliminary step, we tested models with and without random effects for the intercept and the slope and verified if the curve was better represented by a linear or a curvilinear term.

We then introduced all the predictors in the model to test their unique contribution to the intercept and slope, as well as their interactions with gender. Because of the number of estimated parameters, we first entered the predictors and their interactions with gender on the intercept and the slope one set at a time (individual, friend, and family). A final model including only the significant predictors and the ones near the significance level ($p < .15$) across each set of predictors was then tested to achieve the most parsimonious model. The continuous predictors were centered to their grand mean and gender was coded 0 for girls and 1 for boys. Seven youths were dropped before the analyses because they had no participation data across the four waves. In addition, SAS handles missing data on predictors by listwise deletion. Fifty-one youths had one or more missing data on the nine predictors. Thus, depending on the predictors included in the final models, between 214 and 265 participants were included in the analyses. The 214 participants did not differ from the 272 original participants on any of the participation variables.

RESULTS

Descriptive Statistics and Correlations

Means and standard deviations for the participation variables from Grades 7 to 10 appear in Table 1, as well as their correlations with the individual, friend, and family factors, separately for boys and girls. Depressive symptoms were not included in the correlation matrix because no correlation was significant. Descriptive data revealed that youths participated more intensively in sports than in performance and fine arts and youth clubs. In addition, boys participated more intensively in sports than girls, whereas girls participated more intensively in performance and fine

arts than boys. With respect to correlations, overall, participation in sports was significantly related to more predictors than performance and fine arts and youth clubs. For sports participation, prior participation and family income were generally significant among girls. Among boys, the consistently significant correlations included prior participation, best friends' participation, parent involvement in free-time activities, as well as parent beliefs about organized activities.

It should also be noted that the highest correlation between the various predictors was between prior participation and best friends' participation ($r = .54, p < .001$). In addition, year-to-year stability for each type of activity from Grades 7 to 10 ranged from .41 to .65 for sports, from .32 to .63 for performance and fine arts, and from .26 to .57 for youth clubs. The number of hours spent in the three types of activities were not significantly related, except for two negative correlations in Grade 7 between the number of hours spent in sports and (a) performance and fine arts ($r = -.17, p < .01$) and (b) youth clubs ($r = -.14, p < .05$).

Finally, a look at the distributional characteristics of the variables revealed that the hours spent in performance and fine arts and youth clubs were not normally distributed across times of measurement. As a result, these variables were transformed using the natural logarithm before testing the models.

Predicting the Number of Hours Spent in Sports Over Time

The unconditional model for participation in sports revealed that the best fit to the data was a model with both fixed and random effects specified for the intercept and slope, and a linear slope. As shown in the first part of Table 2 (Model A), this preliminary model revealed that youths participated in an average of 64.27 hour in sports in Grade 7. Involvement in sports decreased by an average of 2.43 hour/year, but the estimate was not significant. Still, the estimates of the random effects revealed significant variation around the average intercept and slope for predictors to explain. The intercept and slope also covaried, revealing that the more youths participated in sports in Grade 7, the more their involvement was likely to decrease over time.

The final model including the significant predictors appears in the second part of Table 2 (Model B). Among the significant predictors of Grade 7 participation, having participated the year before was linked to more hours of participation, and boys spent more hours in sports than girls. In addition, parent beliefs about organized activities and parent community involvement were positively linked to sports at the beginning of high

TABLE 2
Linear Growth Models for Youths' Participation in Sports

	<i>Model A</i>		<i>Model B</i>	
	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>
Fixed effects				
Intercept				
Average intercept	64.27*	5.28	54.30*	6.55
Prior participation			8.14*	1.90
Gender			22.16*	9.94
Best friends' participation			-2.84	6.21
Parent beliefs about organized activities			3.45*	1.16
Parent community involvement			3.30*	1.67
Best friends' participation × Gender			19.59*	7.43
Rate of change				
Average time	-2.43	2.14	-1.63	2.86
Prior participation			-2.46*	0.84
Gender			-1.95	4.48
Problem behaviors			0.78*	0.25
Best friends' participation			5.68*	2.34
Family income			1.63 [†]	0.84
Parent community involvement			-0.77	0.87
Family income × Gender			-3.76*	1.41
Parent community involvement × Gender			1.92 [†]	1.19
Random effects				
Variability around the intercept	5,546.30*	659.85	3,967.59*	545.77
Variability around the slope	530.42*	109.21	495.03*	109.82
Covariance between the intercept and slope	-671.20*	220.99	-670.82*	207.80
Fit indices				
BIC	10,275.3		9,315.0	

[†]*p* < .10.

**p* < .05.

school. The positive interaction between gender and best friends' participation also revealed that having participating friends the year before was linked to more hours of sports participation among boys compared with girls after the school transition.

Concerning intensity of participation over time, prior participation was negatively associated with the rate of change. In contrast, problem behaviors and best friends' participation were positively linked to sports participation over time. The moderating effect of gender on family income was found to be a significant predictor of the slope. This interaction revealed that family income was positively associated with girls' participa-

tion over time ($B = 1.63$, $SE = 0.82$), and negatively associated with boys' participation ($B = -2.12$, $SE = 1.15$). After including all the predictors in the model, it should be noted that significant variation was still observed around this average trajectory, suggesting that potentially explainable residual variation remained.

Predicting the Number of Hours Spent in Performance and Fine Arts Over Time (LN)

The unconditional growth model for the number of hours spent in performance and fine arts revealed that the best fit to the data was a model with both fixed and random effects specified for the intercept and slope, and a linear slope. As shown in the first part of Table 3 (Model A), this preliminary model revealed that youths participated in an average of

TABLE 3
Linear Growth Models for Youths' Participation in Performance and Fine Arts (LN)

	Model A		Model B	
	Estimate	SE	Estimate	SE
Fixed effects				
Intercept				
Average intercept	1.32*	0.12	1.82*	0.16
Gender			-1.09*	0.24
Best friends' participation			0.02	0.11
Parent involvement in free-time activities			0.06 [†]	0.03
Best friends' participation × Gender			-0.27 [†]	0.17
Rate of change				
Average time	-0.04	0.05	-0.12 [†]	0.07
Gender			0.13	0.10
Academic achievement			0.20*	0.09
Family income			0.03*	0.02
Parent beliefs about organized activities			-0.04*	0.01
Academic achievement × Gender			-0.36*	0.15
Random effects				
Variability around the intercept	2.65*	0.33	2.20*	0.31
Variability around the slope	0.27*	0.06	0.24*	0.06
Covariance between the intercept and slope	-0.44*	0.11	-0.39*	0.11
Fit indices				
BIC	3,446.8		3,018.8	

[†] $p < .10$.

* $p < .05$.

1.32 hour (LN) in performance and fine arts in Grade 7, which remained rather stable over time. However, significant variation around the average intercept and slope was observed. The intercept and slope also covaried, revealing that the more youths participated in arts in Grade 7, the more their involvement was likely to decrease over time.

The model including the significant predictors is shown in the second part of Table 3 (Model B). Among the significant predictors of Grade 7 participation, girls participated more than boys in performance and fine arts after the school transition. Concerning participation over time, family income was positively linked to the rate of change, as opposed to parent beliefs about organized activities. The moderating effect of gender on academic achievement was also found to be a significant predictor of the slope. This interaction revealed that whereas grades were positively associated with girls' participation in performance and fine arts over time ($B = 0.20$, $SE = 0.09$), they were negatively associated with boys' participation ($B = -0.17$, $SE = 0.12$). As for sports activities, it should be noted that significant variation was still observed around this average trajectory.

Predicting the Number of Hours Spent in Youth Clubs Over Time (LN)

The unconditional growth model for the number of hours spent in youth clubs also revealed that the best fit to the data was a model with both fixed and random effects specified for the intercept and slope, and a linear slope. As shown in the first part of Table 4 (Model A), this preliminary model revealed that youths participated in an average of 0.57 hour (LN) in youth clubs in Grade 7, which remained fairly stable over time. Still, the estimates of the random effects revealed significant variation around the average intercept and slope for predictors to explain. The correlation between the intercept and slope was also negative for this type of activities.

The model including the significant predictors can be seen in the second part of Table 4 (Model B). Among the significant predictors of Grade 7 participation, parent community involvement was linked to a higher number of hours of participation at the beginning of high school. Concerning youth clubs participation over time, parent community involvement was also negatively linked to the rate of change. Finally, as for the other types of activities, significant variation was still observed around this average trajectory.

DISCUSSION

The aim of this study was twofold. The first goal was to examine growth curves of participation over the high school years in sports, performance

TABLE 4
 Linear Growth Models for Youths' Participation in Youth Clubs (LN)

	<i>Model A</i>		<i>Model B</i>	
	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>
Fixed effects				
Intercept				
Average intercept	0.57*	0.09	0.60*	0.12
Prior participation			-0.04 [†]	0.02
Gender			-0.06	0.18
Parent community involvement			0.08*	0.03
Rate of change				
Average time	-0.02	0.04	-0.06	0.04
Gender			0.06	0.07
Parent beliefs about organized activities			-0.01	0.01
Parent community involvement			-0.03*	0.01
Parent beliefs × Gender			0.03 [†]	0.01
Random effects				
Variability around the intercept	1.41*	0.18	1.39*	0.18
Variability around the slope	0.15*	0.03	0.13*	0.03
Covariance between the intercept and slope	-0.28*	0.07	-0.26*	0.06
Fit indices				
BIC	2,944.0		2,926.2	

[†] $p < .10$,

* $p < .05$.

and fine arts, and youth clubs. The second goal was to identify individual, friend, and family factors likely to be associated with these growth curves. Results revealed that the hours spent in sports, performance and fine arts, and youth clubs were rather stable over time. Moreover, individual, friend, and family factors all contributed to explain youth activity participation, mostly with respect to sports activities. Some of these effects were also moderated by youths' gender. These findings are summarized and discussed in the following sections.

Growth Curves of Adolescent Participation in Sports, Performance and Fine Arts, and Youth Clubs

Multilevel growth modeling was used to describe the average growth curves underlying the hours spent in sports, performance and fine arts, and youth clubs over the high school years. The unconditional models

revealed that participation in sports was higher after the school transition than in performance and fine arts and youth clubs. However, over time, each trajectory was rather stable and linear. The stability observed in our findings is inconsistent with prior studies. Indeed, Pedersen (2005) found that the number of sports and school-based activities, the latter including what we refer to as performance and fine arts and youth clubs, tended to decline. McNeal (1998) also found a decline in the number of sports activities, whereas Mahoney and Cairns (1997) found an increase in the total number of school-based activities during high school. The inconsistency of our results compared with prior research may stem from the operationalization of participation as *intensity* rather than *breadth*. In this study, the number of hours spent in activities was considered, as opposed to the number of activities. For instance, McNeal (1998) and Pedersen (2005) explained the decline in youth activity participation by noting that the opportunities for involvement in school-based and sports activities may close as youths age because of the requirement of greater skills and commitment. The stability found in our findings might reflect a specialization effect. Youths may have dropped some of their activities over the years but may have continued to invest the same amount of time in a smaller number of activities in which they had more experience and skills. For example, a youth involved both in a basketball and soccer team may have dropped his or her soccer activity because he or she had the opportunity to compete at a higher level of competition on his or her basketball team.

Nonetheless, the models revealed significant variation around the average growth curve in the three types of activities. The estimates of the variance suggested that some youths started very high and very low at the beginning of high school in each type of activities, and that some youths increased and decreased their participation considerably over time. The negative relation between the intercept and slope in the three types of activities also suggested that the higher youths started, the more they decreased over time. It was this interindividual variation that we tried to predict with a series of individual, friend, and family factors.

Individual, Friend, and Family Factors Associated With Youth Participation

In order to verify if some youths were already on a trajectory of participation before high school, participation at the end of elementary school was first included among the predictors. This variable was indeed positively associated with Grade 7 participation in sports, but not with the other types of activities. This last result is not surprising because most

Grade 6 activities were sports. McNeal (1998) also found that the access to extracurricular activities is easier in high school for youths already on a trajectory of participation, particularly for sports and arts. On the contrary, youth clubs remain more open for new student access over the high school years. Surprisingly, however, prior participation was negatively linked to involvement in sports over time. This may be explained by the high participation rates of these youths in Grade 7. Their decline might be steeper because they started higher, which reflects a regression to the mean effect. Even after controlling for Grade 6 participation, however, other predictors explained significant variation in youth activity participation. Results for the individual predictors will be first presented and discussed, followed by friend and family factors.

In line with previous research, we found that boys participated more intensively in sports (Eccles & Barber, 1999; Fredricks et al., 2005; McNeal, 1998; Pedersen, 2005), whereas girls participated more intensively in performance and fine arts (Fredricks et al., 2005; McNeal, 1998). As proposed by Fredricks et al. (2005), boys and girls may feel more comfortable when participating in sports and arts, respectively, because they may have greater competence beliefs in these activities, and be more prone to gender-typed socialization toward these activities.

With respect to school grades, we only found one significant interaction with gender in predicting performance and fine arts over time. A closer look at this interaction revealed that grades were positively associated with girls' participation in performance and fine arts over time, as opposed to boys. Perhaps participating in arts becomes increasingly valued among high-achieving girls during the high school years. In contrast, boys might drop these activities to explore other interests. Given that grades have been previously linked to sports participation (McNeal, 1998) and that academics are an important outcome of youth activity involvement, we were expecting more links between school grades and participation. It should be noted, however, that many of the activities in our study were community-based, which may explain this discrepancy (Gerber, 1996). In addition, the links between activity participation and school grades have usually been found fairly late in adolescence (Barber et al., 2001; Mahoney et al., 2003; McNeal, 1995; Zaff et al., 2003).

No significant links were found between depressive symptoms and participation in the three types of activities. In contrast, problem behaviors were significantly and positively related to participation in sports over time. Mahoney et al. (2004) found that youths with problem behaviors were more likely to be attracted by less structured activities, which is inconsistent with our findings. However, sports participation has also been associated with risky behaviors, such as drinking alcohol and skip-

ping school (Eccles & Barber, 1999). Our results might reveal a small, but still significant, selection process in these activities for youths with problem behaviors.

Best friends' participation was positively linked to hours spent in sports among boys in Grade 7, as well as to sports participation over time, regardless of gender. The opportunity to spend time with friends while participating was found as an important motivation for youths to persist in their activity (Fredricks et al., 2002). Concerning the gender differences, given the way best friends' participation was measured (i.e., mainly representing best friends' participation in sports because over 70% of the activities identified in Grade 6 were sports), this finding might reflect the general tendency for boys to participate more intensively in sports than girls.

Finally, our findings highlighted the importance of parents for youths' intensity of participation. As underlined by Simpkins et al. (2005) and Fredricks et al. (2005), parents do use multiple strategies to enhance their child's participation and their contribution is indeed a strong predictor of youth involvement in organized activities. However, our findings suggested that parents' behavior and beliefs can sometimes have mixed contributions. First, we found that family income was positively associated with girls' participation in sports over time, as opposed to boys. In addition, family income was positively linked to participation in performance and fine arts over time, regardless of gender. Both cross-sectional and longitudinal associations between family income and youth activity participation have been found in previous studies (Huebner & Mancini, 2003; McNeal, 1998; Pedersen, 2005). However, the differential relation of family income to boys' and girls' sport participation remains difficult to explain. Knowing more about which specific sports activities boys and girls are involved in over the years might be needed to account for this surprising finding. For example, we can think about ice hockey, which was the most common sport in this study and usually more played by boys than girls. As youths grow older, this activity involves financial resources for equipment that not all families may want to provide anymore. As a result, boys from these families might stop their participation or play another sport that involves less expense and time commitment.

Yet parent contribution went beyond economic resources. Parents' beliefs about the benefits of organized activities predicted higher rates of participation in sports in Grade 7. However, these beliefs were negatively linked to youths' rate of change in participation in performance and fine arts over the years. The mixed contribution of parental beliefs was unexpected. This may stem from our measure, which assessed parents' general beliefs about organized activities, without any specification about the

type of activities. When thinking about the general benefits of activity participation, parents may focus more on physical activities, because these activities have an implication on youths' health. Nevertheless, this explanation does not fully capture why parental beliefs were negatively linked to the rate of change in participation for some activities, and as a result, this finding will need to be replicated in future studies.

At last, parents' involvement in adult-based community activities predicted higher rates of participation both in sports and in youth clubs at the beginning of high school. Previous research has found that parents could enhance their child's participation through examples set by their personal involvement in the community and by access to more participation opportunities (Fletcher et al., 2000; Fletcher & Shaw, 2000; Fredricks et al., 2005). However, parent community involvement was also negatively associated with change in youth clubs participation over time. Here again, this might reflect a regression to the mean effect. Another explanation is that perhaps the participation rates of youths from families where parents were highly involved in the community become more normative over time, as they gain more autonomy in their choices of leisure time activities.

Predicting Intensity of Participation Over Time

Even after including a wide range of conceptually relevant predictors, overall, few predictors were associated with the number of hours spent in organized activities during the high school years. Among the possible explanations, youths' decision to persist or not in their activities might become more situational and based on a year-to-year reevaluation of their time management over the years. In addition, more proximal activity experience may contribute to stability and change in participation. For instance, Pearce and Larson (2006) examined adolescents' motivation to persist in their activity and identified different steps going from extrinsic to intrinsic motivation. Eccles and Barber (1999), Eccles, Barber, Stone, and Hunt (2003), and Fredricks and Eccles (2006) also underlined the importance of identity formation in activity choices over time. Another explanation concerns the interpersonal relationships youths develop with the activity peers and leaders, which could be important to examine in order to better understand participation persistence (Fredricks et al., 2002). Finally, other contextual factors that have nothing to do with the characteristics of the youths, their friends, or their family may have an impact on changes in participation. Some activities can be interrupted because of financial cuts or changes in social policies. Organized activities are taking place in a larger social context that clearly needs further attention.

Differences Between Sports, Performance and Fine Arts, and Youth Clubs

The number of hours youths spent participating in sports, performance and fine arts, and youth clubs were correlated with each other only in Grade 7, with sports being negatively linked to arts and clubs. These results suggest that participation in these three types of activities is fairly independent. In addition, as found in McNeal's (1998) and Pedersen's (2005) studies, quite different patterns of predictors were found for each type of activity. Taken together, these findings support the importance of differentiating between types of activities when studying youth activity participation.

Limitations of the Study

Understanding from a longitudinal perspective the individual and contextual factors that could explain why youths stay involved or not in organized activities remains a relatively recent concern in research. Clearly, more studies are needed. For instance, in this study, variability remained significant around growth parameters and this suggests that some growth curves differ from the average curves described in our findings. Other types of analyses should be considered in order to fully capture the diversity of youth activity involvement. For instance, Pedersen (2005) used a person-oriented approach and found 10 unique profiles of decreasing and increasing growth curves across activity domains. Research design issues can also be mentioned as limitations. First, participation was measured using free recall, which is likely to underestimate the amount of activity participation. The recall of activities was also estimated by youths over a long time frame (months), which can introduce memory biases. Other methods to measure intensity of participation, especially experience sampling or time diaries, would be useful in reducing these potential biases. Second, only in-school friends were considered in this study, even though youths are likely to have significant friendships outside of the school setting. Third, youths were largely White and from two-parent and middle-income families, which clearly limits the generalizability of the results. Finally, albeit our 5-year longitudinal design was an improvement compared with previous studies, the design remains correlational. For instance, an alternative explanation for the parent findings could be that, in reaction to their child's participation during elementary school, they became more involved in their activities or in the

community, as coaches or volunteers. These bidirectional effects should be considered in future studies.

Nevertheless, this study extends previous literature by the operationalization of youth activity participation as *intensity* rather than *breadth* of participation. In addition, a broad range of predictors was examined with a robust design. Data were longitudinal and activities measured with operationalized criteria. The predictors were also assessed using the relevant source of information. Parents reported on their own beliefs and behaviors, as friends' variables were based on their own self-report, which limits the measurement biases usually associated with a single source of information. Finally, by examining the moderating effect of gender, this study revealed different contributions of some predictors to boys' and girls' participation over time. Although interesting, these results remain exploratory, and more studies will be needed to account for these emerging gender differences.

CONCLUSIONS AND IMPLICATIONS

In this study, we tested the hypothesis that youths' participation in sports, performance and fine arts, and youth clubs across the high school years could be predicted by a series of individual, friend, and family factors measured before the transition to high school. This hypothesis was based on the assumption that youth activity participation is not a random phenomenon, but usually based on a voluntary decision. As a result, a better understanding of the individual and contextual factors that could impact youths' decision to participate in such activities could yield useful information for promoting youth activity participation. Overall, our findings suggest that school administrations and community-based organizations seeking to involve youths in positive activities after school should target individual, friend, and especially family characteristics in the adolescents' environment.

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Appendix A

Full Description of the Procedure by Which the Linear Growth Models Were Tested

In growth curve analyses, the level 1 submodel reflects the hypothesized shape of each person’s trajectory of change over time,

$$Y_{ij} = \pi_{0j} + \pi_{1j}\text{Time}_{ij} + r_{ij}, \quad \text{where } r_{ij}, \sim N(0, \sigma^2),$$

where Y_{ij} is the observed level of participation for the j th person at wave i , π_{0j} is the intercept for person j , π_{1j} is the linear slope in participation for person j , and r_{ij} is the measurement error for that person at wave i . The level 2 submodel reflects the systematic interindividual differences in change. The parameters in level 1 are specified as random effects with a given mean,

$$\begin{aligned} \pi_{0j} &= \beta_{00} + u_{0j} \\ \pi_{1j} &= \beta_{10} + u_{1j}, \quad \text{where } \begin{pmatrix} u_{0j} \\ u_{1j} \end{pmatrix} \sim N \left[\begin{pmatrix} 0 \\ 0 \end{pmatrix} \begin{pmatrix} \tau_{00} & \tau_{01} \\ \tau_{10} & \tau_{11} \end{pmatrix} \right] \end{aligned}$$

where β_{00} and β_{10} are the population average intercept and slope and u_{0j} and u_{1j} represent the deviations of the individual growth parameters from their population means. The deviations are distributed normally with means of zero, variance τ_{00} and τ_{11} , respectively, and covariance τ_{10} . Substituting level 2 in level 1 yields the composite form of the model or the multilevel model,

$$Y_{ij} = \beta_{00} + \beta_{10}\text{Time}_{ij} + (u_{0j} + u_{1j}\text{Time}_{ij} + r_{ij}).$$

When adding predictors to the model, for example, youth’s gender, the multilevel model for change is expressed by

$$Y_{ij} = \beta_{00} + \beta_{01}\text{Gender}_i + \beta_{10}\text{Time}_{ij} + \beta_{11}\text{Gender}_i \times \text{Time}_{ij} + (u_{0j} + u_{1j}\text{Time}_{ij} + r_{ij}).$$

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