

THE POSITIVE DEVELOPMENT OF YOUTH

TECHNICAL REPORT

THE 4-H STUDY OF POSITIVE YOUTH DEVELOPMENT: REPORT OF THE FINDINGS FROM THE FIRST FOUR WAVES OF DATA COLLECTION: 2002-2003, 2003-2004, 2004-2005, AND 2005-2006

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Institute for Applied Research in Youth Development

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Acknowledgments

The 4-H Study of Positive Youth Development is supported by a grant from the National 4-H Council. This funding was made possible through the generosity of the Phillip Morris U.S.A. Youth Smoking Prevention Department. We gratefully acknowledge their support and their great collegiality.

National 4-H Council is the national, private sector, non-profit partner of 4-H and the Cooperative Extension System. National 4-H Council focuses on fundraising; brand management; communications; legal and fiduciary support to national and state 4-H programs; and operation of the full-service National 4-H Youth Conference Center in Chevy Chase, MD and of the National 4-H Supply Service, the authorized agent for items bearing the 4-H Name and Emblem. Council is governed by its own Board of Trustees, made up of youth, representatives from 4-H, Extension, and land-grant universities, corporate executives, and other private citizens from a wide array of backgrounds. In 2000, National 4-H Council — seeking to research the quality of its Heath Rocks![®] Program — selected Tufts to design a research project. The Institute for Applied Research in Youth Development, directed by Dr. Richard M. Lerner, was selected to conduct the study. We are deeply grateful to Council for giving us the opportunity to conduct this work.

A Scientific Advisory Board composed of scholars from across the land-grant university system, as well as scholars from other higher education institutions, provide advice about the direction of the 4-H Study and feedback about its work. The research is regularly reviewed by the Tufts IRB and by the IRBs of cooperating land-grant universities. We appreciate greatly the contributions of all of these colleagues and of their institutions. Their efforts continue to enhance our research.

Our colleagues, students, and staff at the Institute constitute an incredibly talented, dedicated, and collaborative team. We are privileged to work with them. A list of our Tufts collaborators is in Appendix 1.

MESSAGE FROM THE DIRECTOR



I am pleased to share in this report the results of the first four waves of research in the 4-H Study of Positive Youth Development. I believe that this research embodies the goals of applied developmental science, that is, to conduct good science that enhances the abilities of practitioners, parents, policy makers, and young people themselves to promote positive human development. The results to date of the 4-H Study provide strong evidence that when the strengths of youth are aligned with the resources for healthy development that are found in families, schools, and communities, youth thrive. The data set underscores that all of us—as individuals, family members, professionals, advocates for youth, or members of the diverse communities of our nation—have it within our power to act to enhance the lives of all young people. I believe this message is vital and timely. I am honored that National 4-H Council has afforded my colleagues, students, and me the opportunity to ground this message in strong developmental science.

Richard M. Lerner, Ph.D.
Bergstrom Chair in Applied Developmental Science
Director, Institute for Applied Research in Youth Development

MESSAGE FROM THE ADVISORY BOARD

The amount of research on positive youth development (PYD) is small. Large portions of research on adolescent development proceed from the assumption that adolescents are broken, in danger of being broken, or display deficits. A new perspective, that of positive youth development, tries to counterbalance the assumption of broken youth with the perspective that youth are developing individuals who display considerable assets, and who can be guided to develop to become positive and constructive contributors to society. So, while deficits may exist, it is the goal of development to fill the gaps. This idea is in stark contrast to a perspective that focuses on punishment and the idea that adolescents are broken.

The 4-H Study of PYD that is being conducted at the Institute for Applied Research in Youth Development at Tufts University by Richard M. Lerner, Jacqueline V. Lerner, Erin Phelps, and their colleagues and students constitutes a first, major step toward filling the research gap concerning PYD. The 4-H Study Advisory Board believes that the study conducted by this team constitutes a milestone in developmental research. It is shown, for the first time, that PYD exists, and that youth development programs can play a major role in promoting PYD. The methods that the researchers employ for design, data analysis, and interpretation of results are state-of-the-art. The unique importance of the results speaks for itself.

The 4-H Study is a landmark investigation. If the researchers continue on their scientific path, they will have produced a study of truly historic importance. The study will be able to provide compelling information about the special and vital role that 4-H may play in the lives of America's young people.

Alexander von Eye, Ph.D.
Professor of Psychology, Michigan State University
Chair, the 4-H Study of Positive Youth Development Advisory Board

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INTRODUCTION

Granville (G.) Stanley Hall (1844-1924) was the founder of the scientific study of adolescent development. In 1904, Hall published the first text on adolescence, a two-volume work entitled: *Adolescence: Its psychology and its relations to physiology, anthropology, sociology, sex, crime, religion, and education*.

The book was a brilliant synthesis of all that was known about this age period at the beginning of the 20th century. In addition, it was prescient in anticipating several areas of adolescent research – for instance, spirituality and religiosity in adolescents – only now coming to the fore. Nevertheless, Hall's approach to adolescence started the field "on the wrong foot," at least in regard to the theoretical lens that he used to depict the essential quality of youth development.

The Deficit Model of Adolescence

Hall launched the study of adolescence with a theory that saw the period as one marked by "storm and stress." Hall believed that "ontogeny recapitulates phylogeny:" The changes that occur in a person's life mirror the changes that occurred in the evolution of the human species. Human evolution, he believed, involved changes that moved us from being beast-like to being civilized. Adolescence corresponded to the period in evolution when humans changed from being beasts to being civilized. Therefore, to Hall, adolescence was a time of overcoming one's beast-like impulses.

Few scientists believed the specifics of Hall's theory of recapitulation. However, his prominence in American psychology did influence the general conception scientists – and society – had of adolescence, as a time of upheaval and stress. Other scholars studying adolescent development adopted, in their theories, Hall's idea that adolescence was a necessarily stressful period.

For example, Anna Freud (1969) viewed adolescence as a universal period of developmental disturbance that involved upheavals in drive states, in family and peer relationships, in ego defenses, and in attitudes and values. Similarly, Erik Erikson (1959, 1968) spoke of adolescents as enmeshed in an identity crisis. In short, scientists defined young people as "at risk" for behaving in uncivilized or problematic ways and therefore as being dangerous to themselves and to others.

Simply, adolescents had a deficit in their behavior – their inherently "wild" and uncivilized behavior – that meant they were "broken" or in danger of becoming "broken." For most of the 20th century most writing and research about adolescence was based on this deficit conception of young people.

THE EMERGENCE OF THE POSITIVE YOUTH DEVELOPMENT (PYD) PERSPECTIVE

Beginning in the early 1990s, and burgeoning in the first half decade of the twenty-first century, a new vision and vocabulary for discussing young people has emerged. These innovations were framed by the developmental systems theories that were engaging the interest of developmental scientists (Lerner, 2002, 2006). Table 1 summarizes the key concepts associated with these models.

Table 1. Defining Features of Developmental Systems Theories

A relational metamodel

There is a rejection of all splits between components of the ecology of human development, e.g., between nature and nurture. Systemic relations replace such dichotomies.

The integration of levels of organization

All levels of organization within the ecology of human development are integrated. These levels range from the biology through culture and history.

Developmental regulation across life involves mutually influential, individual \leftrightarrow context relations

As a consequence of the integration of levels, the regulation of development occurs through mutually influential connections among all levels of the developmental system, ranging from genes through mental and behavioral functioning to society, culture, the designed and natural ecology and, ultimately, history. These mutually influential relations may be represented by bidirectional arrows (e.g., individual \leftrightarrow context).

Integrated actions are basic units within human development

The individual \leftrightarrow context relation is the fundamental unit of analysis in the study of human development.

Temporality and plasticity in human development

As a consequence of the role of history within the developmental system, the developmental system is characterized by the potential for systematic change, by plasticity. Pathways of individual change may vary across time and place as a consequence of such plasticity.

Plasticity is relative

Change in individual $\leftarrow \rightarrow$ context relations is not limitless, and the magnitude of plasticity may vary across individuals and history. Nevertheless, the potential for plasticity at both individual and contextual levels constitutes a fundamental strength of all human development.

Diversity is of fundamental substantive significance in human development

The variables that exist across the developmental system will vary at least in part across individuals and groups. This diversity is systematic and lawful. The range of differences among people in how they change across life is evidence of the plasticity of development, and makes the study of diversity of fundamental substantive significance for the description, explanation, and optimization of human development.

Optimism, the application of developmental science, and the promotion of positive human development

The potential for and instances of plasticity legitimate an optimistic and proactive search for characteristics of individuals and of their ecologies that, together, can be arrayed to promote positive human development across life. Through the application of developmental science in planned attempts (i.e., interventions) to enhance (e.g., through social policies or community-based programs) the character of humans' developmental trajectories, the promotion of positive human development may be achieved by aligning the strengths (operationized as the potentials for positive change) of individuals and contexts.

Multidisciplinary and the need for change-sensitive methodologies:

The integrated levels of organization comprising the developmental system require collaborative analyses by scholars from multiple disciplines. Multidisciplinary knowledge and, ideally, interdisciplinary knowledge is sought. The plasticity of development requires that research designs, methods of observation and measurement, and procedures for data analysis be able to detect change and be able as well to study change at all levels of the system.

Adapted from Lerner (2006).

The focus on plasticity within developmental systems theories led to an interest in assessing the potential for change at diverse points across ontogeny, ones spanning from infancy through the 10th and 11th decades of life (Baltes, et al., 2006). In addition, studies of change during adolescence found evidence discrepant from the deficit model of this period. Despite the presence in adolescence of problems such as alcohol use and abuse, unsafe sex and teenage pregnancy, school failure and drop out, crime and delinquency,

and depression and self-harming behaviors, most young people do not have a stormy adolescent period (e.g., Bandura, 1964; Block, 1971; Offer, 1969). Moreover, although adolescents spend increasingly more time with peers than with parents, most adolescents still value their relationships with parents enormously and have core values (e.g., about the importance of education in one's life, about social justice, and about spirituality) that are consistent with those of their parents; indeed, most adolescents select friends who share these core values (Douvan & Adelson, 1966).

The integration of theoretical ideas about the potential for plasticity in human development with findings about diversity of developmental pathways through the adolescent decade (the second decade of life; Lerner & Steinberg, 2004) led to the articulation of a new conceptual orientation about the nature of adolescence: The Positive Youth Development (PYD) perspective (Lerner, 2005). This conceptual innovation was propelled also by the increasingly more collaborative contributions of researchers focused on the second decade of life (e.g., Benson, et al., 2006; Damon, 2004; Lerner, 2004), practitioners in the field of youth development (e.g., Floyd & McKenna, 2003; Little, 1993; Pittman, Irby, & Ferber, 2001; Wheeler, 2003), and policy makers concerned with improving the life chances of diverse youth and their families (e.g., Cummings, 2003; Gore, 2003). These interests converged in the formulation of a set of ideas that enabled youth to be viewed as resources to be developed, and not as problems to be managed (Roth & Brooks-Gunn, 2003a, 2003b).

Features of the PYD Perspective

Based on both the experiences of practitioners and on reviews of the adolescent development literature (Eccles & Gootman, 2002; Lerner, 2004; Roth & Brooks-Gunn, 2003b), "Five Cs" -- Competence, Confidence, Connection, Character, and Caring -- were hypothesized as a way of conceptualizing PYD (and of integrating all the separate indicators of it, such as academic achievement or self esteem). In addition, practitioners reasoned that, when a young person manifests the Cs across time (when the youth is thriving), he or she will be on a life path marked by integrated and mutually reinforcing contributions to self (e.g., maintaining one's health and one's ability therefore to remain an active agent in one's own development) and to family, community, and the institutions of civil society (Lerner, 2004). In turn, practitioners and researchers (e.g., Benson, 2003; Benson, et al., 2006; Pittman, et al., 2001) suggested also that there should be an inverse relation within and across development between indicators of PYD and Contribution and behaviors indicative of risk behaviors or internalizing and externalizing problems, i.e., that the best means to prevent problems associated with adolescent behavior and development (e.g., depression, aggression, drug use and abuse, or unsafe sexual behavior) is to promote positive development.

These ideas about the substance, structure, and function of PYD coalesced with developmental systems theoretical ideas about human plasticity, to forge three key premises of the PYD perspective.

The fundamental premise of the perspective is that, because of plasticity, all youth have the potential to change, albeit to varying degrees (Baltes, et al., 2006; Lerner, 1984). Nevertheless, such potential means that the course of development can, under appropriate conditions, be improved. The potential for change is, then, a core strength of all youth. In other words, because all youth possess this potential, all youth have strengths.

What provides the conditions appropriate for capitalizing on the strengths of youth and promoting PYD? The second premise of the PYD perspective is that all of the key contexts where youth live, learn, and play have resources that may be used to promote positive youth development. These resources are termed “developmental assets.” These assets are the “social nutrients” needed for healthy development.

There is broad agreement among researchers and practitioners in the youth development field that the concept of developmental assets is important for understanding what needs to be marshaled in homes, classrooms, and community-based programs to foster PYD. In fact, a key impetus for the interest in the PYD perspective among both researchers and youth program practitioners, a basis for the collaborations that exist among members of these two communities, and a key reason that National 4-H Council sought to support research about the role of ecological or contextual assets in promoting PYD, is the desire to ascertain the nature of the resources for positive development that are present in youth programs. These programs include the literally hundreds of thousands of out-of-school-time (OST) activities delivered either by large, national organizations, such as 4-H, Boys & Girls Clubs, Scouting, Big Brothers/Big Sisters, YMCA, or Girls, Inc., or by local organizations.

The focus on youth programs is important not only for practitioners in the field of youth development, however. In addition, the interest in exploring youth development programs as a source of developmental assets for youth derives from theoretical interest in the role of macro-level systems effects of the ecology of human development on the course of healthy change in adolescence (Bronfenbrenner & Morris, 2006); interest derives as well from policy makers and advocates, who believe that at this point in the history of the United States community-level efforts are needed to promote positive development among youth (e.g., Cummings, 2003; Gore, 2003; Pittman, et al., 2001). There are data suggesting that, in fact, PYD is linked to developmental assets associated with youth programs, especially those that focus on youth development. That is, youth development (YD) programs are characterized by the presence of what Lerner (2004) termed the “Big 3” features of effective youth-serving programs:

1. Positive and sustained adult-youth relations;
2. Activities that build like skills among youth; and
3. Opportunities for youth to use these skills by participating in, and taking leadership of, valued community activities.

Reviews of the literature evaluating youth-serving programs (e.g., Blum, 2003; Roth & Brooks-Gunn, 2003a, 2003b) indicate that the integrated presence of the Big 3 is associated with the Cs of PYD. Consistent with this findings, researchers at Search

Institute (Scales, et al., 2000) found that youth reports of three or more hours a week of participation in sports, clubs, or organizations at school or in the community was the single developmental asset (of the 40 assets they surveyed) that was most linked to thriving outcomes among the adolescents in their sample.

Although reviews by Blum (2003), Eccles and Gootman (2002), Larson, Walker, and Pearce (2005), and Roth and Brooks-Gunn (2003a, 2003b) differ in the number of attributes they propose as important for the conduct of youth programs effective in promoting PYD, all of these scholars endorse the importance of the Big 3 attributes of OST activities noted by Lerner (2004) as crucial for promoting exemplary positive development. In addition, Roth and Brooks-Gunn (2003b), in making the above-noted differentiation between youth extracurricular activities and youth development programs in particular, report that findings of evaluation research indicate that the latter programs are more likely than the former ones to be associated with the presence of key indicators of PYD.

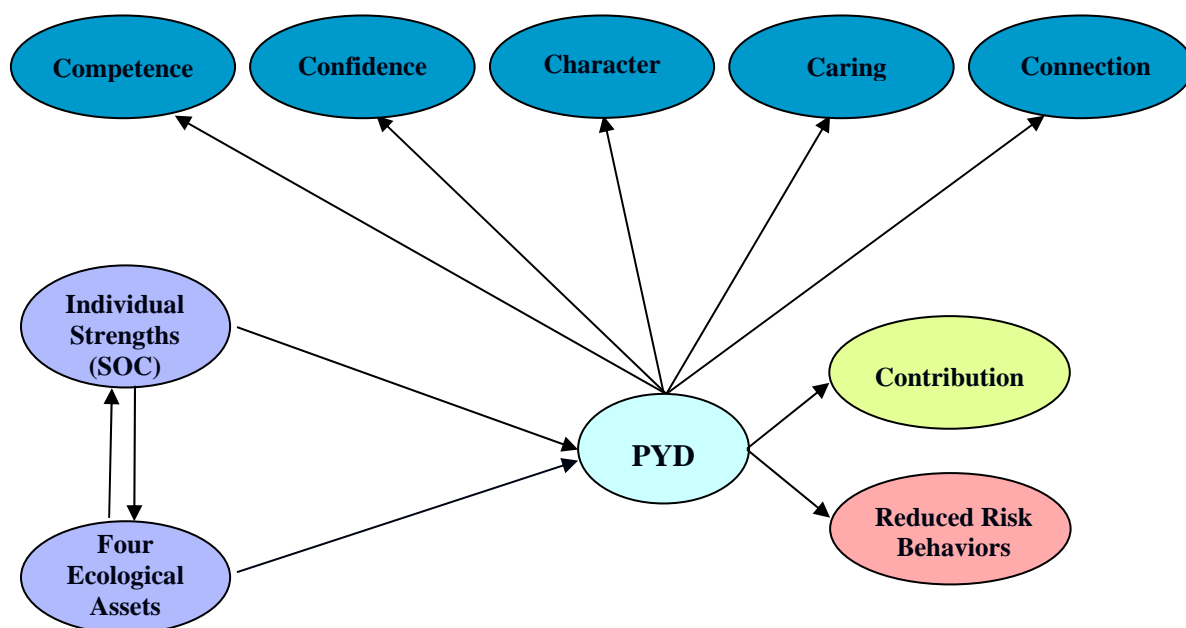
Proponents of the PYD perspective believe, then, that the developmental assets of youth-serving organizations, as well as of families, schools, faith institutions, and the community more generally, can be measured, marshaled, enhanced, and aligned across time with youth. As such, the third premise of the perspective is invoked. If the strengths of youth are combined with these ecological developmental assets, then positive, healthy development may occur. Accordingly, rather than accepting the features of adolescent development as we find them – be that at levels of functioning simply below the aspirations of young people or adults or, of more concern, at problematic levels – we can, from the PYD perspective, be optimistic that it is in our power to enhance in positive directions the development among all youth.

Although still at a preliminary stage of progress, there is growing empirical evidence that key ideas associated with the PYD perspective find empirical support. The purpose of this report is to present the findings from the 4-H Study of Positive Youth Development in order to ascertain whether it provides this evidence. As an active longitudinal study, data continue to be collected annually (at this writing – spring, 2008 – we are in the midst of the sixth wave of data collection, which will continue through the 2007-2008 academic year and focuses on tenth grade youth). This report will present data from the first four waves of data collection, the years for which data are both collected and analyzed. This period spans the fifth through eighth grades and involves the Years 2002-2003 (Grade 5), 2003-2004 (Grade 6), 2004-2005 (Grade 7), and 2005-2006 (Grade 8).

THE MODEL AND THE METHODS OF THE 4-H STUDY OF POSITIVE YOUTH DEVELOPMENT

The 4-H Study of Positive Youth Development (PYD) is a longitudinal investigation supported by a grant from the National 4-H Council. The 4-H study is designed to test a theoretical model about the role of developmental assets in the promotion of PYD, as conceptualized by the “Five Cs” of PYD (competence, confidence, connection, character, and caring) and of the “sixth C” of contribution, and in the diminution of problem and risk behaviors (Lerner, et al., 2005). Figure 1 provides an illustration of this theoretical model.

Figure 1. Summary of the Theoretical Model of 4-H Study of PYD



The 4-H Study involves a large team of doctoral-level researchers, full-time staff, and graduate students. Appendix 1 provides information about this team.

Design

The 4-H Study uses a form of longitudinal sequential design (Baltes, Reese, & Nesselrode, 1977). Fifth graders, gathered during the 2002-2003 school year (which was Wave 1 of the study), were the initial cohort within this design and this cohort was the only one studied in Wave 1. However, to maintain at least initial levels of power for within-time analyses and to permit assessing the affects of retesting, all subsequent waves of the study involve the addition of a new cohort (of youth of the current grade level of the initial cohort); this new cohort is then followed longitudinally.

Approach to Study Design

From the outset, the 4-H Study of Positive Youth Development was designed as a longitudinal study of the second decade of life focused on articulating diverse developmental pathways through adolescence and identifying how the strengths and plasticity of youth are supported and enhanced by features of and opportunities in their contexts. One kind of opportunity we were interested in was programs that engaged youth out of school, since there was existing evidence that programs can improve the lives of youth and because it is an arena where policy can have an impact.

The National 4-H Council was interested in our ideas and methodology and approached us about funding our research, if we would look specifically at their programs. The idea was not to conduct an intervention project but to consider 4-H as one context for youth that was already in place nationwide. As a consequence of this, the National 4-H Council-funded study was designed as a longitudinal study in which we asked participants whether or not they participated in 4-H. In the first year we identified only a handful of 4-H participants through our sampling process. Since then, 4-H clubs have also been invited to participate in order that we could provide information to 4-H about their clubs and programs as they naturally occur.

As our study has proceeded, there has been a great deal of interest and writing in the research community about randomized controlled trials (RCTs) as an important method of conducting intervention research (Cook, 1993; Green & McCall, 2005; McCall, Ryan, & Green, 1999; McCall, Ryan, & Plemons, 2003). It is an important methodology for identifying causal relationships and program effectiveness – in fact, one of the best methods. However, the constraints required are also substantial and not achievable in longitudinal research or investigations of intact programs in their natural ecologies. RCTs require randomly assigning participants to an intervention or control group, and maintaining the groupings during the delivery of valuable services or opportunities to the “treatment” group.

The approach of the 4-H Study is different, by being a multi-year longitudinal study of youth in their actual environments. In these environments, youth and their parents, rather than research investigators, make decisions about how to spend time. Youth grow and develop in our cities, towns, counties, at home, school, communities, out-of-school-time activities, etc. While this methodology is more valid given our research questions, it makes drawing causal conclusions about the effectiveness of 4-H more difficult. However, we can identify ways in which 4-H can enhance the lives of youth because, since we obtained large samples, we can match 4-H participants with other youth who are similar on a variety of demographic indicators but who are not 4-H participants.

Participants

At Wave 1, participants came from sites located in 13 states that provided regional, rural-urban, racial/ethnic, and religious diversity. Schools were chosen as the main method for collecting the sample. Assessment was conducted in 61 schools. Participants were 1,722

fifth grade adolescents (48% males; mean age = 11.05 years, SD = .52 years; 52% females, mean age = 10.93 years, SD = .45 years) and 1,139 of their parents.

At Wave 2, youth who were in the fifth grade during Wave 1 were retested. An additional sample of previously unassessed sixth graders was tested as well. A total of 1970 youth (43% males; mean age = 12.19 years, SD = .67 years; 57% females, mean age = 12.10 years, SD = .33 years) and 1,312 of their parents participated in Wave 2 data collection, sampled from 60 schools and 5 OST programs in 18 states across the nation.

At Wave 3, participants came from sites located in 17 states that provided regional, rural-urban, racial/ethnic, and religious diversity. Youth sampled were drawn from 45 schools and 29 4-H programs across the nation. Data were used from a total of 2,072 adolescents (40% males; mean age = 13.16 years, SD = .81 years; 60% females, mean age = 13.13 years, SD = .92 years) and 1,181 of their parents. At all three waves, the sample varied in race, ethnicity, socioeconomic status, family structure, rural-urban location, geographic region, and program participation experiences.

At Wave 4, participants came from sites located in 24 states that provided regional, rural-urban, racial/ethnic, and religious diversity. Youth sampled were drawn from 35 schools and 11 4-H programs across the nation; 8% of the sample was recontacted by mail. Data were used from a total of 1577 adolescents (38% males; mean age = 14.25 years, SD = .73 years; 62% females, mean age = 14.19 years, SD = .78 years) and 1061 of their parents. At all four waves, the sample varied in race, ethnicity, socioeconomic status, family structure, rural-urban location, geographic region, and program participation experiences. Table 2 provides demographic information about the sample and Figure 2 illustrates the overall distribution of participants in terms of race/ethnicity, region of the country and type of location.

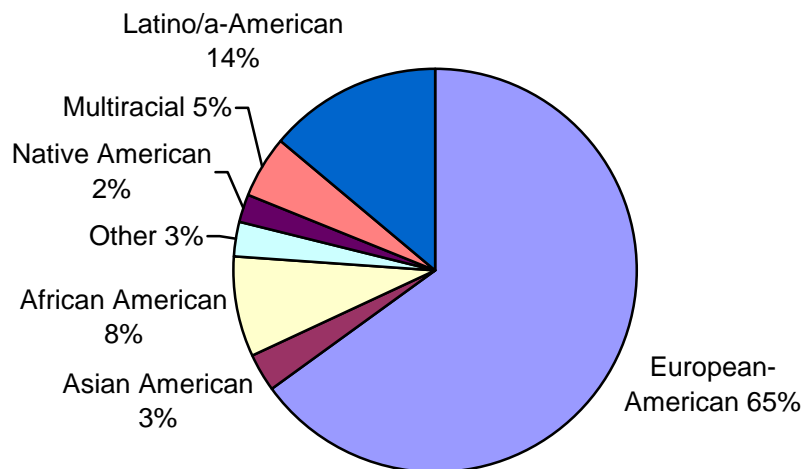
Table 2. Percentages of youth for background variables

		All and any waves	
		n = 3342	%
Sex	Female	1924	57.6
	Male	1418	42.4
Race/ethnicity	African American	272	8.1
	American Indian	78	2.4
	Asian American	93	2.8
	European American	2128	65.2
	Latino/a American	441	13.5
	Multiracial	146	4.5
	Inconsistent	108	3.3

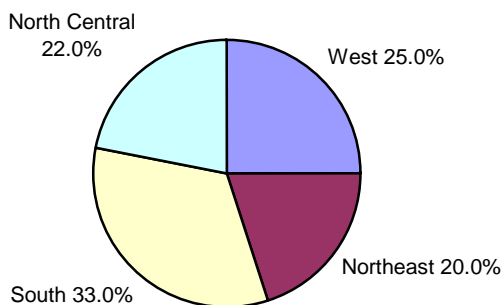
Urban/Rural	Urban	715	21.9
	Suburb	1254	38.4
	Rural	1296	39.7
Geographic Region (4-H)	Northeast	667	20.0
	South	1085	32.5
	North Central	744	22.3
	West	841	25.2
Single parent? Guardian participated		333	14.6
		2322	70.0
In 4H clubs, afterschool at least twice per month?		550	19.8
In Other OST		2225	66.6

Figure 2. Distribution of youth by race/ethnicity, residential type, and region

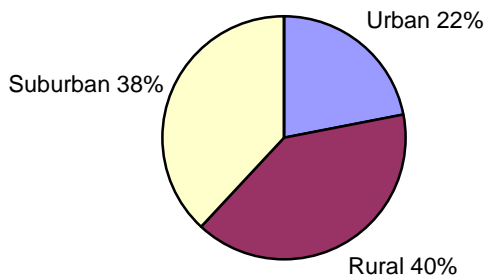
Race/ethnicity of youth in the overall sample



Geographic distribution of youth in the overall sample



Living environments of youth in the overall sample



Attrition and Generalizability

Attrition in the 4-H sample is not randomly distributed across schools. First, some school superintendents and principals withdrew consent for their schools to participate; in turn, some states that provided 4-H participants in one wave did not provide this collaboration in a subsequent wave. Second, we lost participants due to individual attrition. Across waves, the first type of attrition is the most frequent reason for losing participants (and this reason was especially pronounced in regard to state 4-H participation in Wave 4).

Because some school superintendents or principals withdrew consent for their schools to participate, their students “dropped out” without our having the opportunity to ask them if they wanted to remain in the study. Consent was most commonly withdrawn due to scheduling and/or time commitment issues. For example, in one state we were unable to collect data in Wave 2, resulting in the loss of over 250 participants. Overall, we lost 561 participants in Wave 2 because of the absence of principal or superintendent permission

to continue. In turn, however, attrition from Wave 1 to Wave 2 for students who *were* allowed to be asked to remain in the study was only 10%. Of the 1,954 participants who were tested in Wave 2, 337 participants (17.5%) dropped out because of school/site attrition in Wave 3, but there was also 21.5% individual attrition. For Wave 4, 746 (42%) of the 1,792 youth tested in Wave 3 dropped out because of site non-participation and 93 youth (5%) were lost to individual attrition. While we try to recapture participants in schools lost because of decisions by principals to withdraw from the study by using mailed surveys, this procedure has not resulted in an appreciable “recapture” of participants.

For each follow-up wave (Waves 2, 3, and 4 in this report), those youth who continued into the next wave and those who did not were compared on several background and outcome variables, including mother’s education, per capita income, race/ethnicity, residential category (urban/suburban/rural), and participation of guardian in survey.

The youth who continued in the study differed on two of these variables, race/ethnicity and residential category. In terms of race/ethnicity, youth who continued from Wave 1 to Wave 2 were significantly less likely to be African or Latino/a American and significantly more likely to be European American. The same pattern was found in terms of race/ethnicity for youth who continued from Wave 2 into Wave 3. For youth continuing from Wave 3 into Wave 4, youth were less likely to be Latino/a and more likely to be Asian American. In terms of residential category, youth who continued in the study from Wave 1 to Wave 2 were less likely to come from suburban areas and more likely to come from rural areas. When comparing youth who continued from Wave 2 into Wave 3, there were no differences in residential category between youth who did or did not continue into Wave 3. Similarly, for youth in Wave 3 there was no difference in residential category between those who did or did not continue into Wave 4. Table 3, on the following pages, shows how many youth participated in each wave and longitudinally, for each state.

Table 3. Numbers of youth in each wave and longitudinally**Numbers of participants by state for each grade (cross-sectionally)**

State	Grade 5	Grade 6	Grade 7	Grade 8
AL	45	3	1	1
AZ	191	138	141	103
CA	3	0	0	0
CO	0	0	0	60
CT	2	1	0	0
DE	0	34	0	1
FL	252	197	206	60
IA	0	0	1	0
ID	3	2	2	1
IL	1	34	58	54
KS	10	14	16	10
KY		42	87	91
MA	258	230	212	214
MD	22	23	7	2
MI	1	1	1	0
MN	20	17	245	63
MS	1	9	1	1
MT	145	146	142	111
NC	79	100	81	90
NH	3	1	2	0
NJ	2	0	31	17
NM	0	0	0	1
NY	322	87	62	30
OH	4	3	0	0
OR	1	1	0	0
PA	4	2	10	2
RI	0	1	13	0
SC	1	0	0	20
TN	77	72	68	74
TX	1	0	0	262
VA	1	1	1	0
WA	78	79	84	77
WI	102	251	318	230
Total	1630	1490	1792	1577

Numbers of participants by wave (longitudinally)

State	Any wave	2 waves	3 waves	4 waves	At least 2 waves
AL	45	5	0	0	5
AZ	293	83	84	14	181
CA	3	0	0	0	0
CO	60	0	0	0	0
CT	2	1	0	0	1
DE	35	2	0	0	2
FL	376	115	105	18	238
IA	1	0	0	0	0
ID	4	2	1	0	3
IL	61	24	32	0	56
KS	22	9	5	3	17
KY	110	60	29	0	89
MA	373	132	64	95	291
MD	26	15	4	2	21
MI	1	0	1	0	1
MN	277	64	2	0	66
MS	10	0	1	0	1
MT	192	41	68	59	168
NC	158	42	57	15	114
NH	4	1	1	0	2
NJ	48	2	0	0	2
NM	1	0	0	0	0
NY	325	43	49	12	104
OH	6	1	0	0	1
OR	1	1	0	0	1
PA	14	4	0	0	4
RI	14	13	0	0	13
SC	21	0	0	0	0
TN	109	33	24	34	91
TX	263	0	0	0	0
VA	2	2	0	0	2
WA	113	24	25	45	94
WI	367	128	197	18	343
Total	3342	848	749	315	1912

Measures

The measures used in the 4-H Study are collected through the use of a student questionnaire (SQ), a parent questionnaire (PQ), and – to assess facets of the settings within which youth develop -- from school district administrators and from web-based or census tract data, for example, about community and school resources and school climate. These data collection tools enable the 4-H Study to obtain information about the Five Cs of PYD, Contribution, and Risk and Problem Behaviors (e.g., smoking, drinking, bullying, or depression).

In addition, through obtaining information about the young person's abilities to select positive goals in life (S), to optimize the availability of the resources needed to reach these goals (O), and to compensate (C) when goals are lost or blocked we are able to assess the individual strengths of adolescents to interact in families, schools, and communities to both develop the Cs and Contribution and to diminish the likelihood of risks and problems. Moreover, our data collection procedures enable us identify the resources, or developmental assets, that exist in these settings of youth.

Finally, our measures include assessments of several other individual characteristics (demographic variables, identity, pubertal states, and behavioral and social engagement with schools). We assessed also patterns of participation in OST activities (e.g., “ever participated,” intensity of participation, or duration across years of participation). Such activities included youth development (YD) programs, such as 4-H, Boys & Girls Clubs, Scouts, YMCA, and Big Brothers/Big Sisters, sports, arts and crafts, interest clubs, religious clubs, performing arts organizations, or service organizations. We gathered information about civic engagement/civic contribution, future academic and occupational aspirations and expectations, relationships with parents, friends, and other adults, and values. We also ask parents about the nature and composition of their household, their parenting style, and their education, employment, and neighborhood.

Table 4 lists the various constructs we measure in the 4-H Study. Specific details about the substance and measurement characteristics of these measures can be found in the several refereed journal articles that have been derived from the 4-H Study. These articles are listed in Appendix 2. In addition, the work of the 4-H Study has impacted scientific and social policy and the media. Appendix 3 provides indicators of these impacts.

Table 4. The Constructs Measured in the 4-H Study

Characteristics of youth:

Positive Youth Development (PYD):

Competence

Confidence

Connection

Character

Caring

Contribution

Civic engagement/Civic contribution (CICE)

Risk and Problem Behaviors: Smoking, drinking, bullying, depression

Selection, Optimization, and Compensation

Demographic characteristics (age, sex, race/ethnicity, religion) and pubertal development

Participation in out-of-school-time (OST) activities

Behavioral and Emotional Engagement with School

Future aspirations and expectations

Identity

Relationships with parents, friends, and other adults

Values

Characteristics of the context of youth

Ecological Assets in families, schools, and communities

Individuals

Institutions

Collective Activity

Access

Composition of the adolescent's household

Parents' style of parenting

Parental education and employment

Neighborhood characteristics

Procedure

For Waves 1, 2, 3, and 4, student questionnaires (SQ) were administered within schools and after-school programs (4-H clubs, Boys & Girls Clubs). For each wave of data collection, teachers or program staff gave each participant an envelope to take home to his or her parent which contained a letter explaining the study, a consent form, a parent questionnaire, and a self-addressed envelope for returning the parent questionnaire. For those youth who received parental consent, data were collected by trained study staff or hired assistants from more remote locations. Administration of the survey began with reading the instructions to the youth. Participants were instructed that they could skip any questions they did not wish to answer. Data collection took approximately two hours, which included one or two short breaks. Students who were unable to be surveyed at their school or program site, in that they were either absent during the day of testing or the school superintendent did not allow testing to occur in the school the following year, received a survey in the mail.

RESULTS

In this section of the report we present information in regard to:

1. The key discoveries of the study to date in regard to the PYD perspective, generally, and
2. Participation in 4-H more specifically.

In both Parts 1 and 2 we will present, as appropriate, cross-sectional and/or longitudinal data, within subsections that are pertinent to several areas of interests, for instance, PYD, Contribution, risk behaviors such as smoking, bullying, and depression; academic achievement and school engagement; and civic engagement and civic contribution.

1. Key Discoveries, To Date, About the PYD Perspective

Both the initial findings of the 4-H study, and the more recent findings, have brought empirical data to bear on several key ideas within the PYD perspective. As such, the 4-H Study has helped change research and practice in youth development. We discuss several discoveries about the key premises of the PYD perspective and, as well, about the conceptualization of such development as involving “Five Cs” that, in turn, predict the development of youth Contribution.

The information we present in this section of the Report is based on scholarly publications (books, chapters, and refereed articles), or presentations at scholarly meetings or conferences, and on doctoral dissertations or master’s theses completed at Tufts University. As noted, Appendix 2 presents a list of these documents.

The structure and function of PYD

Using data from Wave 1 (Grade 5) of the 4-H Study, structural equation modeling procedures provided evidence for five first-order latent factors representing the “Five Cs” of PYD (competence, confidence, connection, character, and caring) and for their convergence on a second-order PYD latent construct. Table 5 describes each of the Five Cs. In addition to these Cs, a theoretical construct, youth Contribution, was also created and examined. Both PYD and YD program participation independently related to Contribution (Lerner, et al., 2005).

Table 5. The “Five Cs” of Positive Youth Development

Competence Positive view of one’s actions in specific areas, including social, academic, cognitive, health, and vocational. Social competence refers to interpersonal skills (e.g., conflict resolution). Academic competence refers to school performance as shown, in part, by school grades, attendance, and test scores. Cognitive competence refers to cognitive abilities (e.g., decision making). Health competence involves using nutrition, exercise, and rest to keep oneself fit. Vocational competence involves work habits and explorations of career choices.

Confidence An internal sense of overall positive self-worth and self-efficacy.

Connection Positive bonds with people and institutions that are reflected in exchanges between the individual and his or her peers, family, school, and community in which both parties contribute to the relationship.

Character Respect for societal and cultural norms, possession of standards for correct behaviors, a sense of right and wrong (morality), and integrity.

Caring/Compassion A sense of sympathy and empathy for others.

In turn, we tested longitudinally the expectation that PYD leads to both community contributions and lessened likelihood of risk/problem behaviors. We examined if PYD in Grade 5 predicted both youth contributions and risk behaviors and depression in Grade 6 (Jelicic, et al., 2007). Results of random effects regressions and SEM models indicated that, as expected, PYD in Grade 5 predicted higher youth contributions and lower risk behaviors and depression at Grade 6. There were significant sex differences for Contribution (girls had higher scores) and for risk behaviors (boys had higher scores), but not for depression. In turn, the structural model fit was equivalent for boys and girls.

The strengths of youth

Through use of data from 5th and 6th graders in the 4-H Study, structural equation modeling procedures, reliability analyses, and assessments of convergent, divergent, and predictive validity indicated that a global, 9-item form of the SOC measure was a valid index of intentional self-regulation in early adolescence (Gestsdottir & Lerner, 2007, in press), as indexed by a measure of adolescents’ scores for selection, optimization, and compensation (SOC). Indicative of youth abilities to engage in beneficial and positive relations with their social world, positive scores for SOC were related to indicators of positive and negative development in predicted directions, i.e., high SOC was associated within and across grades with higher PYD and Contribution scores and with lower risk/problem scores.

In turn, using data from Grades 5, 6, and 7 of the 4-H Study, we again found that a nine-item index of SOC was useful (Zimmerman, et al., in press). Results of hierarchical linear modeling analyses indicated that statistically significant but substantively minor changes in SOC scores existed across the three grades; these findings supported the use of the Grade 5 SOC scores as predictors of subsequent development. Accordingly, Grade 5 SOC scores positively predicted Grade 7 scores on the Five Cs of PYD and negatively predicted Grade 7 depression, delinquency, and risk behaviors. No gender effects were found in regard to changes in SOC scores.

Ecological assets and PYD

The relations among observed ecological assets in the families, schools, and neighborhoods of youth with positive and negative developmental outcomes were assessed with fifth-grade youth from the 4-H Study (Theokas & Lerner, 2006). The majority of participants were Latino (37.5%) or European American (35.5%) and lived in two-parent families. Ecological asset indicators were categorized into four dimensions: individuals, institutions, collective activity, and accessibility and were measured equivalently across the three contexts. Different dimensions of the family, school, and neighborhood settings had the most comprehensive impact on the different developmental outcomes, specifically collective activity in the family, accessibility in school, and human resources in the neighborhood. However, in all settings, assets associated with individuals were the most potent predictors of PYD. Family assets were most important in the lives of youth. One of the strongest predictors of PYD was eating dinner together as a family.

Youth Development (YD) programs are key developmental assets

Using data from the 4-H Study, the 983 youth studied in both Grades 5 and 6 were found to engage in structured OST activities at high levels (Balsano, et al., in press; Theokas, et al., 2006). Fewer than 12% did not participate in any activities. Participation in multiple activities was the norm for these youth and the configuration of activities changed between grades.

In turn, through use of all 5th and 6th graders participating in the 4-H Study (not only longitudinal participants), adolescents participating in YD programs were found to also engage in other types of programs. In Grades 5 and 6, 44.1% and 35.8% of youth, respectively, participated in YD-related programs, but typically in combination with other program types. The most frequent OST programs in which youth participated was sports (Balsano, et al., in press; Theokas, et al., 2006).

Accordingly, using longitudinal data from 1,622 youth (56.8% female) from the first three waves (Grades 5, 6, and 7) of the 4-H Study, we employed a pattern-centered approach to assess differences in adolescent functioning depending on what types of OST activities youth were participating in along with their sports participation (Zarrett, Fay, et al., 2008; Zarrett, Lerner, et al., 2007; Zarrett, Peltz, et al., 2007). Our findings suggest that youth benefit from their sports participation differently depending on what other

types of additional activities they participate in during their out-of-school time. In particular, the participation pattern characterized by high participation in sports and YD programs was found to be one of the most effective activity profiles for promoting PYD and preventing youth problems.

Promoting PYD Is Not Equivalent to Preventing Risk/Problem Behaviors

Using data from Grades 5, 6, and 7 from the 4-H Study, we assessed among 1,184 youth (58.5% female) the patterns of change associated with indicators of PYD and of risks/problem behaviors (Phelps, et al., 2007). Results indicated that five PYD trajectories represent change across grades, four trajectories were associated with indicators of internalizing problems, and three trajectories were associated with indicators of externalizing problems. Although theoretical expectations associated with the study of both child and adolescent resilience and PYD led to the expectation that most youth across the early adolescent period would show change marked by the coupling of increases in PYD and decreases in risk/problem behaviors, only about one-sixth of all youth in the sample manifested this particular pattern of change. Other youth remained stable over time, showed increases in PYD and risk, or declined in PYD. The multiplicity of patterns of conjoint trajectories for PYD and risks/problem behaviors constitutes a challenge for both developmental theory and applications aimed at enhancing resilience and positive development among adolescents.

School bullying and PYD

School bullying has negative implications for adolescent academic competence, making it important to explore what factors promote such competence for adolescents who bully and who are bullied (Ma, 2007; Ma, et al., 2007). Data derived from Grades 5 and 6 of the 4-H Study indicated that being a bully negatively impacted academic competence above and beyond the adolescents' demographic background, including sex and maternal education, and prior year academic competence. Random effects hierarchical regression analyses of a subsample of 250 adolescents suggested that educational expectations and school engagement interacted in fostering academic competence for bullies and victims. In turn, data derived from Grades 5, 6, and 7 of the 4-H Study suggested that being a bully predicted lower self-reported grades over time, and being a bully was more detrimental for girls than for boys. Being a bully and being a victim negatively predicted self-perceived academic competence, but these predictive effects did not change over time or differ by sex.

Several selected contextual and individual variables acted as developmental assets for academic competence in the context of bullying. Teacher support positively predicted self-reported grades, and the effect was stronger for victims than for a comparison group of non-victims. Greater parent support and teacher support independently predicted higher self-perceived academic competence. Greater educational expectations and school engagement independently predicted higher self-reported grades, while these two predictors positively interacted in explaining self-perceived academic competence.

Unexpectedly, peer support negatively predicted self-reported grades for victims, and it also negatively predicted self-perceived academic competence for bullies.

School engagement and academic competence

Relations between school engagement and academic competence were assessed through the use of Grades 5 and 6 data from the 4-H Study (Li, 2007). Factor analyses provided evidence for two school engagement components, Behavioral and Emotional. The results of hierarchical linear regression analyses indicated that several individual and contextual factors predicted both facets of school engagement: Youth who had higher scores for intentional self regulation, who perceived mothers as being warmer, and perceived their school atmosphere as being more positive reported higher levels of behavioral and emotional school engagement. There were sex differences (favoring girls) for both behavioral and emotional school engagement, but not for perceived academic competence. Behavioral school engagement at Grade 5 predicted higher perceived academic competence in Grade 6, after demographic and individual variables were controlled. Emotional school engagement did not predict perceived academic competence.

2. Key Discoveries, To Date, About 4-H and its Programs

A key idea within the PYD perspective is that OST activities, and perhaps YD programs in particular, constitute important developmental assets linked to the growth of PYD and youth Contribution and the diminution across time in risk/problem behaviors. The findings summarized above provide data in support of this idea (although, as noted, the patterns of longitudinal association between PYD and risk/problem behaviors are more complex than perhaps previously thought and, certainly, than previously reported).

The support of the National 4-H Council of the research that provided these findings constitutes an enormous benefit to scholarship and to practice in the field of youth development. The support of Council enabled us to also collect information targeted at learning about the links between youth participation in 4-H programs and the developmental course of PYD, Contribution, and risk/problem behaviors.

We should emphasize that we approached the study of these links from an unbiased, “two-tailed” perspective: It may be the case that 4-H activities are linked positively or negatively to PYD, Contribution, or risk/problem behaviors. Alternatively, 4-H activities may not be related at all to these variables. Although clearly constituting something of a risk on its part, National 4-H Council wanted just such a two-tailed approach to our study of these patterns of covariation, fully recognizing that the information we discovered could either reflect areas of success or areas where more or different efforts are needed.

The role of participation intensity in 4-H Clubs and 4-H OST programs

The goal of the analyses in this section is to assess the effects of participation in 4-H among the youth in the 4-H Study of PYD. For this report, three subsamples of youth

have been analyzed. First, we chose two cross-sectional groups – youth in Grades 6 and 8. In addition, we constructed a 4-wave longitudinal subsample composed of all youth who completed questionnaires at least twice. These groups were selected in order to provide a comprehensive picture of participation without overwhelming the reader with information from four different sets of cross-sectional analyses (from Grades 5 and 7, as well as from Grades 6 and 8) that are quite redundant with respect to the results reported.

Youth who participated in 4-H are defined as those who indicated that they attended 4-H clubs or 4-H OST programs at least twice a month. These two program formats are combined because there are regional differences in whether 4-H is offered through OST activity programs or as clubs. The 4-H youth identified in this way are then compared to youth who engage in other OST activities. These activities included sports, arts, language and other academic clubs, service and religious organizations, and other youth-development activities such as Boys & Girls Clubs, Boy and Girl Scouts, YMCA/YWCA, or Big Brothers/Big Sisters. Youth who participated in 4-H activities less than twice a month were excluded from these analyses altogether. In addition, occasionally youth who were older or younger than the target age range for each year completed questionnaires; they were also excluded from the analyses.

In order to compare these two groups of youth, a matched sample was created from the OST activities youth. Youth were matched on sex, race/ethnicity, whether they live in a rural, suburban, or urban setting, whether they live in a single parent household, whether a parent participated in the study, and the region of the country they come from. Students in this group reside in 34 different states. Table 2 shows, for the entire sample of 3,342 youth, the percentages in each category. In addition, family per capita income (median = \$12,500) and mother's highest level of education (median = 14 years) were included in the matching criteria.

For this report, four select groups of variables are considered. The first set of variables include the key developmental characteristics of PYD, Contribution, depressive symptoms, risk and behavior problems, and intentional self-regulation (SOC). SOC is studied because of its theoretical role in constituting an individual's contribution to the mutually influential and beneficial relations with the social contexts that are integral to positive development (Baltes, et al., 2006; Brandtstädter, 1998; Freund & Baltes, 2002). The second group of variables is comprised of education variables: Behavioral and emotional school engagement, grades, self-perceived academic competence, and academic aspirations. Mentoring and family engagement form the third set. Finally, civic identity and civic contribution measures were collected beginning with Grade 8 and constitute the fourth group.

Grade 6 Participation

The Grade 6 matched sample comparisons include 362 youth. Youth who participated in 4-H at least twice a month are compared to youth who participated in any other OST activity on their responses to the Grade 6 questionnaire. Matched-pairs *t*-tests were used to assess group differences. For the developmental measures, 4-H youth had higher

PYD, Contribution, and SOC scores, and lower risk and problem behaviors and depressive symptom levels. The difference is statistically significant for Contribution ($t(273) = -2.736, p = .007$), but the results are consistent for all measures. For the educational measures, 4-H youth have higher grades ($t(300) = -2.001, p = .046$), emotional school engagement, and expectations for going to college. The scores for behavioral school engagement and perceived academic competence were approximately equal for the two groups. In terms of opportunities for engaging with adults, youth in both groups had dinner with their families on average 4.5 days a week. Youth in 4-H reported slightly more mentors than non-4-H youth.

Overall, the average response differences consistently favor 4-H youth. In Grade 6, however, the differences are generally small. Table 6 displays means for the Grade 6 measures and Figure 3 provides histograms of these results.

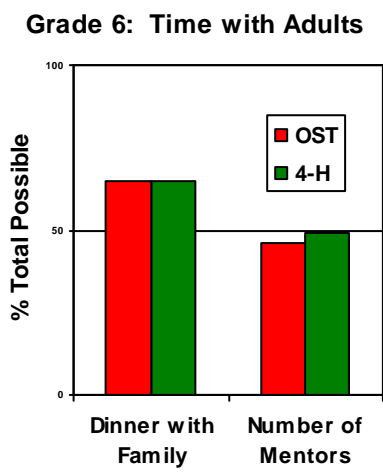
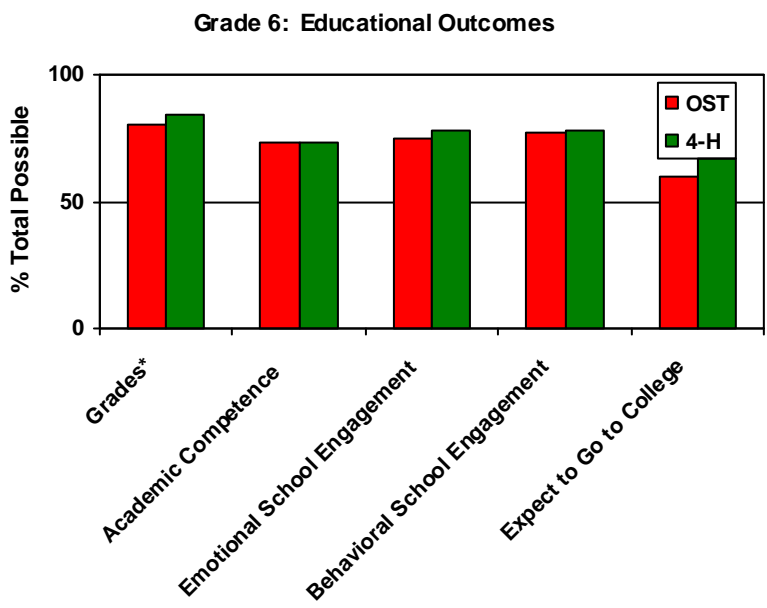
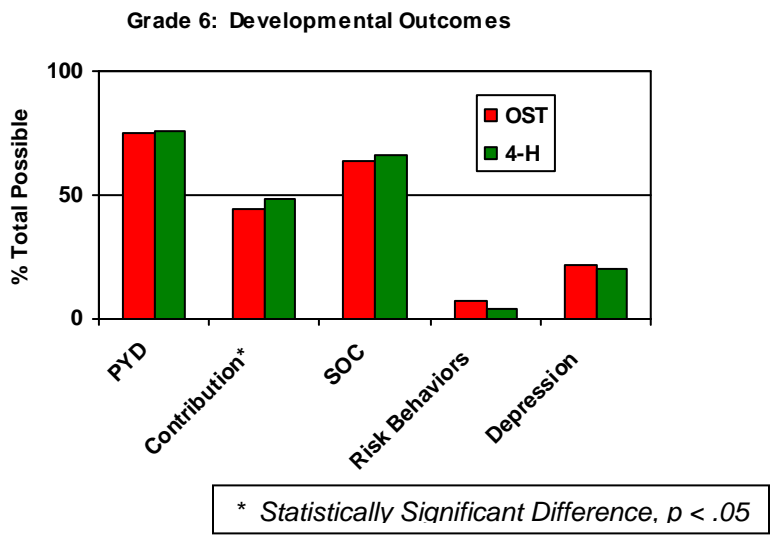
Table 6. Grade 6 statistics.

	Grade 6 (n = 362)								**
	In OST				In 4-H				
	<i>n</i>	<i>Mean</i>	<i>Median</i>	<i>sd</i>	<i>n</i>	<i>Mean</i>	<i>Median</i>	<i>sd</i>	
Contribution	140	43.97	44.58	12.98	146	48.31	47.92	13.93	**
Risk/Delinq	171	1.65	0.00	2.84	177	1.46	0.00	2.81	
Depression	157	13.46	10.00	10.46	169	12.26	9.00	9.37	
PYD	145	74.94	76.83	12.96	147	76.42	78.29	12.29	
SOC	172	7.07	7.78	2.32	170	7.28	7.78	2.24	
Grades	151	3.22	3.50	0.84	163	3.37	3.50	0.66	*
Academic Competence (Harter)	169	2.95	3.20	0.69	140	2.98	3.25	0.66	
School Engagement, Emotional	151	3.73	3.67	0.90	162	3.92	4.00	0.79	
School Engagement, Behavioral	145	3.84	4.00	0.93	169	3.88	4.00	1.01	
Aspirations, educational	133	0.60	1.00	0.49	144	0.67	1.00	0.47	
Eat dinner with family	162	4.57	5.00	2.45	173	4.57	5.00	2.43	
Mentoring	148	9.25	10.50	4.56	163	9.79	10.50	4.8	

T-tests were used to test for mean differences

Legend: * $p < .05$, ** $p < .01$; *** $p < .001$

Figure 3. Grade 6 graphs



Grade 8 Participation

The Grade 8 matched sample is comprised of 368 youth and they are compared on their responses to the Grade 8 questionnaire.

PYD, Contribution, and SOC scores were significantly higher for 4-H than for other OST activities youth (PYD: $t(344) = -2.337, p = .02$; Contribution: $t(350) = -7.142, p < .001$; SOC: $t(348) = -1.928, p = .055$). Risk-taking behavior remains at a low level in Grade 8, making differences difficult to detect. However, 4-H youth report somewhat lower levels of these problem behaviors than youth in other OST activities. Youth in 4-H reported slightly lower levels of depressive symptoms than youth in other OST activities in 8th grade.

The results for 8th grade educational measures are comparable to those in 6th grade. Youth in 4-H have higher grades and emotional school engagement. In addition, a significantly larger percentage of 4-H youths expect to attend college when compared to youth in other OST activities ($t(334) = -2.099, p = .037$). As in 6th grade, the scores for behavioral school engagement and perceived academic competence were approximately equal for the two groups.

In terms of opportunities for engaging with adults, youth in both groups had dinner with their families on average 5 days a week. By 8th grade, youth in 4-H reported significantly more mentors than non-4-H youth (11 compared to 9; $t(351) = -2.057, p = .040$). Table 7 and Figure 4 present means and histograms for these findings.

Table 7. Grade 8 statistics

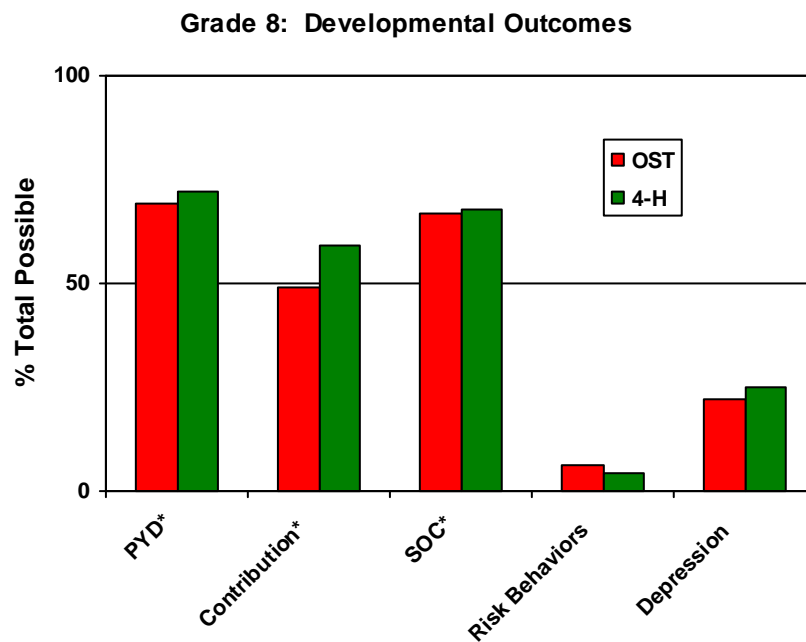
	Grade 8 (n = 368)								
	In OST				In 4-H				**
	<i>n</i>	<i>Mean</i>	<i>Median</i>	<i>sd</i>	<i>n</i>	<i>Mean</i>	<i>Median</i>	<i>sd</i>	
Contribution	173	47.73	48.75	13.25	179	57.77	58.89	13.94	**
Risk/Delinq	173	2.03	0.00	4.10	180	1.51	0.00	2.72	
Depression	178	13.45	11.88	10.79	179	14.63	11.58	9.14	
PYD	179	68.99	70.39	12.73	179	71.74	72.93	11.99	*
SOC	179	7.01	7.78	2.33	182	7.47	7.78	2.06	*
Grades	172	3.29	3.50	0.05	176	3.41	3.50	0.05	
Academic Competence (Harter)	169	3.22	3.20	0.69	163	3.22	3.25	0.66	
School Engagement, Emotional	177	3.58	3.67	0.90	179	3.73	3.67	0.87	
School Engagement, Behavioral	157	1.69	1.00	0.99	162	1.66	1.00	0.95	
Aspirations, educational	173	0.64	1.00	0.48	174	0.74	1.00	0.44	*

Eat dinner with family	175	5.11	5.00	1.70	178	5.04	5.00	1.71	
Mentoring	175	9.27	10.50	4.20	178	10.87	12.00	3.80	**
Civic duty	182	4.72		1.00	184	5.21		0.98	***
Civic voice	172	12.56		6.85	182	15.34		6.85	***
Civic neighbors	168	6.84		1.72	176	7.53		1.68	***
Civic peers	173	5.54		1.82	178	5.74		1.80	
Civic information	175	9.40		6.66	182	10.10		5.98	
Civic help	179	8.94		5.34	181	12.38		6.27	***
Civic activities	175	6.88		5.63	180	10.59		6.07	***
Civic adults	174	8.56		3.67	178	9.63		3.43	**
CICE	178	7.96		2.40	183	9.57		2.63	***

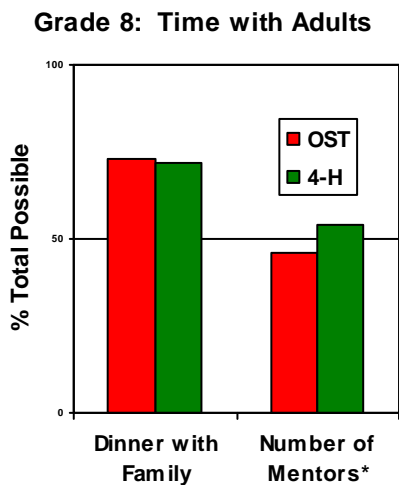
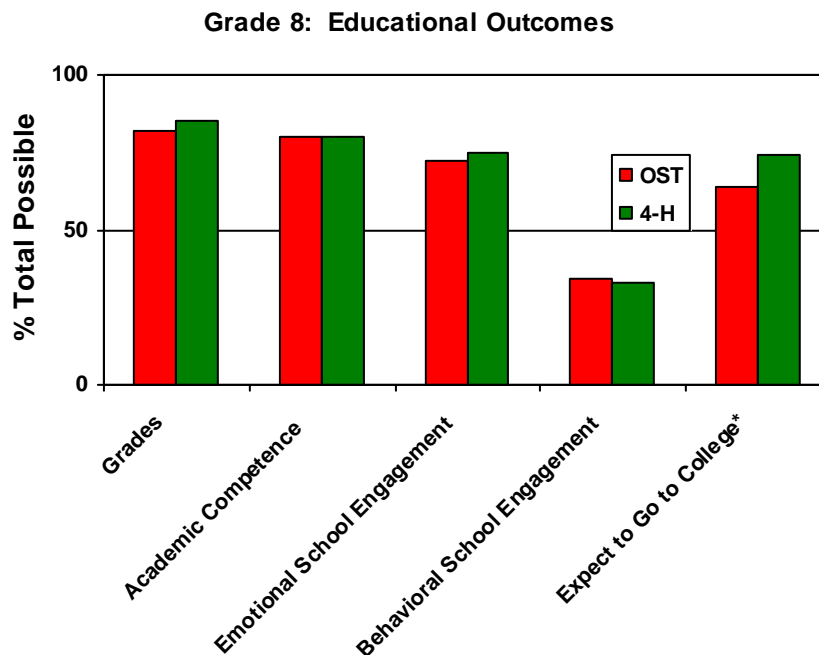
T-tests were used to test for mean differences

Legend: * $p < .05$, ** $p < .01$; *** $p < .001$

Figure 4. Grade 8 graphs



* Statistically Significant Difference, $p < .05$



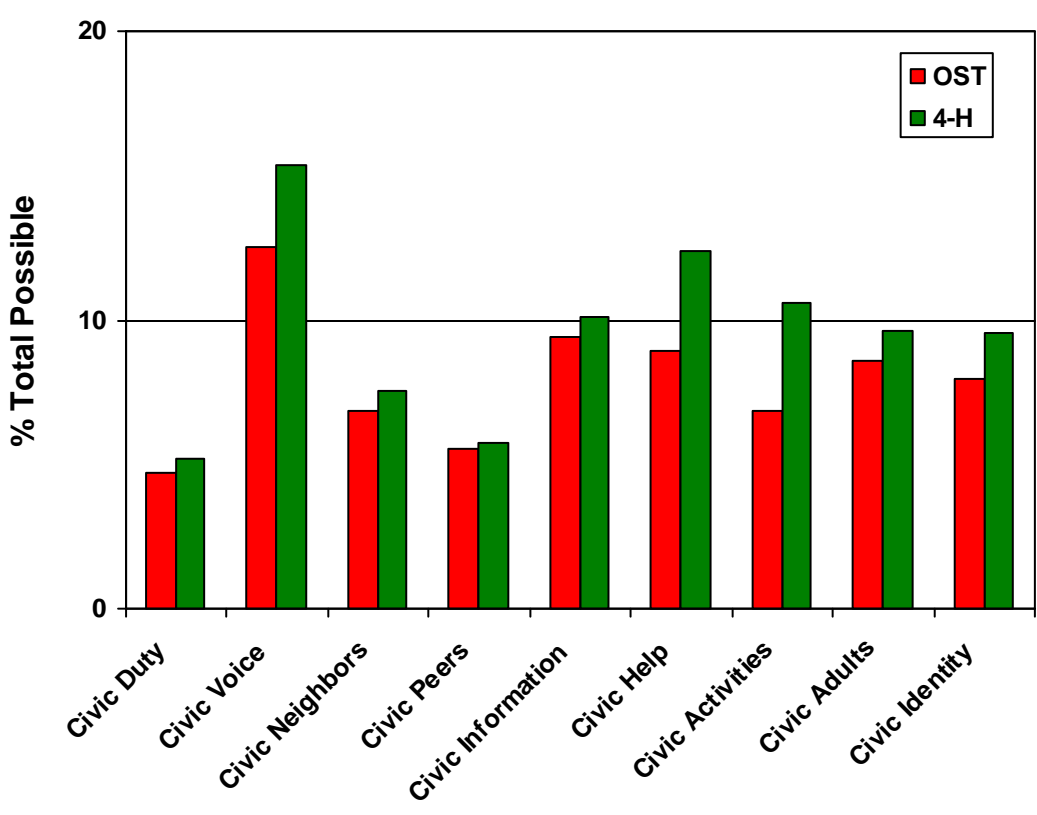
In Grade 8, youth were asked about their participation in civic activities and about their civic identities. Eight different kinds of activities or identity-related constructs were identified, and then these were combined into an overall civic identity/civic engagement (CICE) scale. These scales are listed in Table 8. For six of the subscales and CICE, 4-H 8th graders had significantly higher scores than the youth in other OST activities. For the remaining two subscales, 4-H youth were higher than youth in other OST activities, but the difference was smaller than for the other subscales. Figure 5 illustrates the group means with histograms.

Table 8. Civic identity and civic engagement (CICE) factors

- 1. Neighborhood Social Capital/Social Trust
- 2. Peer Social Capital/Social Trust
- 3. Adult Social Capital/Social Trust
- 4. Civic Duty
- 5. Civic Information
- 6. Civic Voice
- 7. Civic Helping
- 8. Civic Activities

Based on Bobek (2007)

Figure 5. Grade 8 Civic Identity and Civic Engagement (CICE)



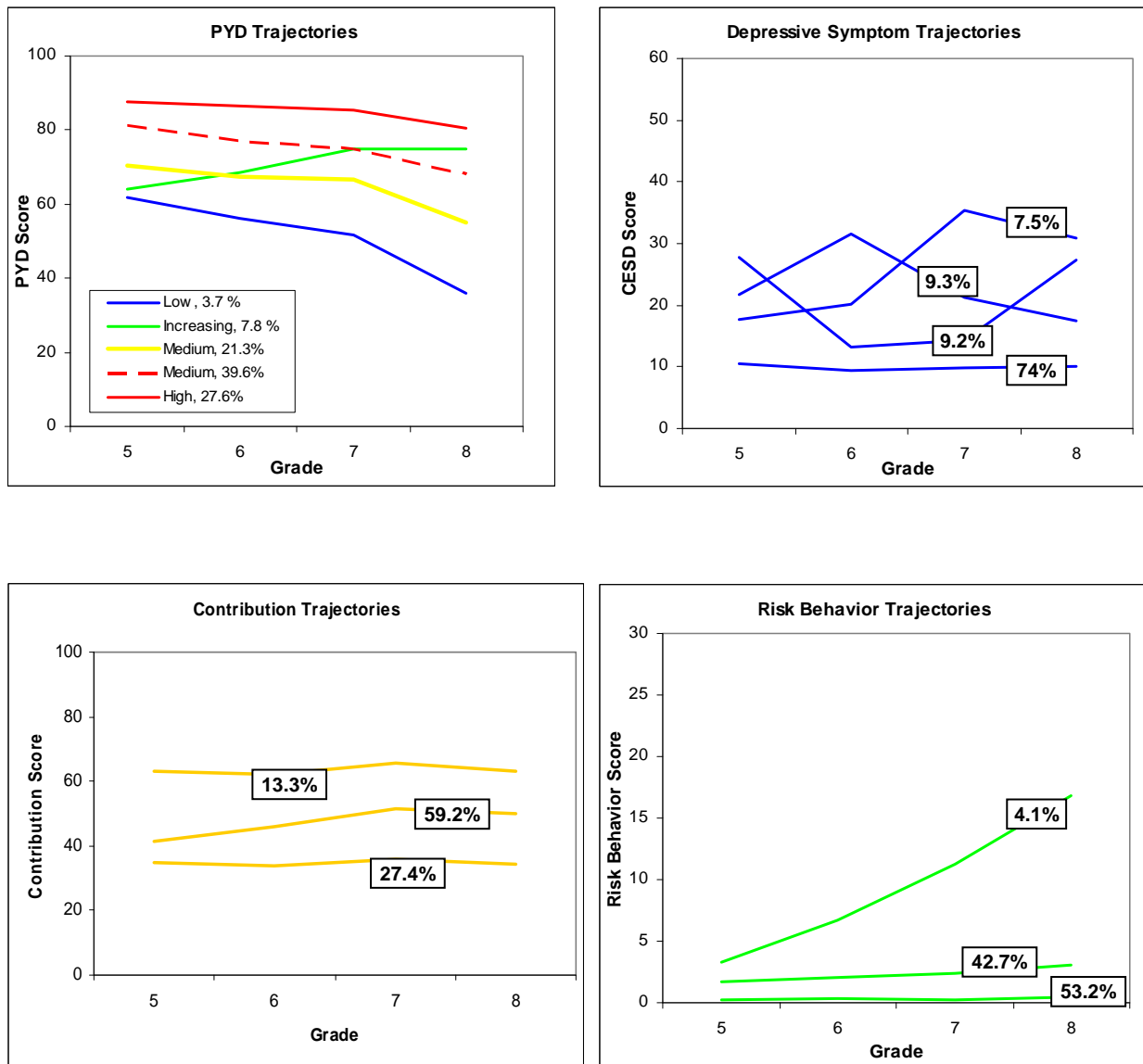
Longitudinal analyses of participation

Looking at the Grade 6 and 8 results provides only a snapshot of youth in these two years. That is, comparisons are made between 4-H and youth in other OST activities on measures obtained during the same year. Yet the value of participation is surely in its longer-term effects rather than on concurrent characteristics. It will be in the enriched and successful lives that the value of 4-H participation will be ultimately demonstrated. At the current time, our data have been collected and processed through Grade 8. We are finalizing the cleaning of the data from 9th Grade and, at the writing, we are collecting Grade 10 data. Eventually, there will be outcomes through Grade 12 and beyond, and we will be able to assess the cumulative value of 4-H participation more fully. Our hope is to be able to determine whether 4-H participation helps launch youth on a path of productive adulthood. Only if data collection extends beyond Grade 12 will we be able to make this assessment.

Using a trajectory analysis approach to charting development across time (e.g., Nagin, 2005), patterns of change in PYD, Contribution, Depressive symptoms, and Risk-taking behaviors were identified in each youth who completed questionnaires during two or more years of the study. A finite mixture model approach was used to estimate trajectories for each of the four longitudinal constructs of interest and these trajectory groups are used to approximate an unspecified but possibly continuous distribution of trajectories. This does not imply, however, that there are literally distinct groups that remain constant over time and samples. That is, our use of developmental trajectories to describe change should be interpreted as a model, i.e., an approximation to reality that permits person-centered analysis of change. The “Proc Traj” procedure in SAS 9.1 was used to construct trajectories and the estimation was conducted assuming that the constructs each followed a censored normal distribution. This methodology is especially useful for identifying heterogeneity in types of trajectories. In addition, through the use of full information maximum likelihood (FIML) estimation, cases with only two time points for a measure can be incorporated into the models, rather than being deleted from analyses of three waves of data.

Developmental trajectory models were estimated for PYD, Contribution, depressive symptoms, and risk/problem behaviors over four time points. Figure 6 illustrates the trajectories that were obtained.

Figure 6. Trajectories



As shown, the estimation method identified five (5) trajectories for PYD, three (3) trajectories for Contribution, four (4) trajectories for depressive symptoms, and three (3) trajectories for risk/problem behaviors. There are three key products of model estimation. The first is the shape of the trajectories; the second is the estimated proportion of the population who belong to each group; and the third is the posterior probability of group membership for each participant. Based on these estimates, participants are assigned to the group that best fits their observed scores. Selection of the final model for each construct requires determining the number of groups that best describes the data. Nagin (2005) recommends using the Bayesian Information Criterion (BIC) as one basis for choosing a model and we adopted this approach. In addition, there is an interplay of formal statistical criteria and subjective judgment required for making a well-founded decision on the number of groups to include in the model. The BIC can

continue to improve with increasing numbers of trajectory groups for a construct. Increasing the number of groups can cause two major problems: The number of participants in a group can become very small as the number of groups increases; and some of the trajectories that are produced can become so similar that they are indistinguishable from a theoretical standpoint. An example of this problem in the current study is when we estimate five trajectories for depression, and two of them are low and constant over time but differ by two scale points across Waves 1 through 4. In this case, while the model BIC improves significantly with the five-group model over the four group model, we chose the four-group model. More information about our approach to trajectory analysis can be found in Phelps, et al., (2007). Figure 6 shows the trajectories defined for these four measures using a finite mixture model method, and the percentages of all youth characterized by each trajectory.

Table 9 shows the percentages of 4-H and youth in other OST activities in the optimal trajectories. Chi-square analyses were used to assess group differences for these categorical variables. For PYD, we have defined the optimal trajectories as the high and medium high trajectories combined. For Contribution, the highest trajectory is identified as optimal. For Depressive symptoms and Risk/problem behaviors, the very low and stable trajectories are optimal.

Table 9. Trajectories for 4-H and OST youth (% in the optimal trajectories)

Trajectories		All and any waves		Longitudinal (Were ever in 4-H?)				
		n=	%	In OST		In 4-H		**
				n=	%	n=	%	
Contribution	Low, flat	449	23.5	64	26.2	41	16.3	***
	Medium, increasing	1260	65.9	171	69	161	64.1	
	High, increasing	203	10.6	12	4.8	49	19.5	
Risk behaviors	None, stable	1079	56.4	124	50	142	56.6	
	Low, stable	767	40.1	113	45.6	99	39.4	
	Increasing	66	3.5	11	4.4	10	3.6	
Depression	Low	1503	78.6	187	75.4	201	77.8	
	2	134	7	21	8.5	15	6	
	3	157	8.2	19	7.7	18	7.2	
	4	118	6.2	21	8.5	18	6.8	
PYD	Low stable	50	2.6	10	4	5	2	
	Low, Increasing	356	18.6	56	22.6	41	16.3	
	Medium, decreasing	84	4.4	8	3.2	8	3.2	
	Medium-high	921	48.2	116	46.8	121	48.2	
	High	501	26.2	58	23.4	76	30.3	

Dichotomized Trajectories		All and any waves		Longitudinal (Ever in 4-H?)				
		n=	%	In OST		In 4-H		**
				n=	%	n=	%	
Contribution Trajectory	Low, Med	1709	89.4	236	95.2	202	80.5	**
	High	203	10.6	12	4.8	49	19.5	
Risk/Delinq Trajectory	None	1079	56.4	124	50	142	56.6	
	Some	833	43.6	124	50	109	43.4	
Depression Trajectory	Low	1503	78.6	187	75.4	201	80.1	
	Other	409	21.4	61	24.6	50	19.9	
PYD Trajectory	Low, Med	490	25.6	74	29.8	54	21.5	*
	High: 4, 5	1422	74.4	174	70.2	197	78.5	

Chi-square tests were used to test for relationships

Legend: * $p < .05$, ** $p < .01$; *** $p < .001$

Youth who had participated in 4-H at some point during Grades 5 through 8 are significantly more likely to be represented in the optimal PYD and Contribution categories ($\chi^2(1) = 4.5331, n = 499, p < .000$; $\chi^2(1) = 20.118, n = 499, p < .000$; respectively) and less likely to fall into the problematic trajectories. This pattern is weaker in Grade 6 and somewhat stronger in Grade 8. Stated in the language of odds ratios, youth who were in 4-H in Grade 6 were 1.24 times more likely than OST youth to be members of the optimal PYD trajectories. By Grade 8, 4-H youth were 1.54 times more likely that OST youth to be members of the optimal PYD trajectories, and combining youth across waves, youth who had participated in 4-H for at least one year were 1.55 times more likely to fall into the optimal trajectories. For Contribution, the odds ratios for youth in Grade 6 and Grade 8 were 1.90 and 3.75. For the longitudinal sample, 4-H youth are nearly **3.5 times** more likely than OST youth to be in the highest Contribution trajectory. In addition, 4-H youth are more likely to be characterized by the lowest Depressive symptoms and Risk/problem behavior trajectories and less likely to be part of the higher problem trajectories.

Intensity of participation

For youth who do participate in 4-H, we evaluated whether or not it matters how much time they spent participating each month (intensity). That is, are 1-2 meetings a month equivalent to meeting 2 or 3 times a week in terms of the outcomes defined here? The correlations for Grade 6 are neither high nor significant.

There are significant Pearson product-moment correlations at Grade 8 between intensity of participation (defined as times per month) and Grade 8 Contribution ($r(557) = .134, p$

< .01), and the Civic Engagement scales of Civic Duty, Civic Helping, Civic Activities, Civic Adult Social Capital, and Civic Identity. Table 10 shows these correlations. For these measures, greater participation results in higher scores.

Table 10. Correlations with participation intensity

Participation is dichotomized^a

	Grade 6		Grade 8	
	<i>Dosage</i>	<i>n</i>	<i>Dosage</i>	<i>n</i>
Contribution	-0.144	164	0.156	557***
Risk/problem behaviors	-0.007	209	-0.023	556
Depression	-0.075	203*	0.033	556
PYD	-0.082	172		
Grades	0.038	191	-0.024	548
Academic Competence (Harter)	0.084	169	0.029	509
SOC	0.025	204	0.07	564
Mentoring	-0.093	189	0.099	551
School Engagement, Emotional	-0.029	188	-0.068	554
School Engagement, Behavioral	-0.113	197	0.098	500*
Aspirations, educational	-0.009	173	0.031	547
Eat dinner with family	-0.054	200	-0.072	564
Civic duty			0.082	576
Civic voice			0.041	557
Neighborhood social capital/social trust			0.046	542
Peer social capital/social trust			0.022	549
Civic information			0.045	559
Civic helping			0.083	565
Civic activities			0.164	557***
Adult social capital/social trust			0.086	550*
CICE			0.128	568**

Legend: * $p < .05$; ** $p < .01$; *** $p < .001$

^aDichotomized participation: 0 = < once a week; 1 = at least once a week

Conclusions about 4-H and PYD

These analyses of 4-H participation show a consistent pattern of benefits, even though the differences are often small. The overwhelming pattern of differentially more positive developmental outcomes associated with 4-H participation is clear and striking. In addition, these patterns appear to be strengthening as the youth get older. Eventually, our data will be used to determine whether 4-H participation is related to dropping out of school, going to college, and/or successful entry into the work force (assuming, once again, we are able to collect post-high school data).

Health Rocks![®] and Health-related Behaviors

Supported through funds provided by Philip Morris U.S.A., Health Rocks![®] is a National 4-H Council-sponsored program aimed at helping youth from 8-12 years develop life skills. The program helps youth gain decision making, communication, critical thinking, and stress management skills, as well as focusing on youth smoking and drug use prevention. In addition, Health Rocks! promotes adult-youth partnerships to develop initiatives and strategies that support and foster positive life skills across the youth in the community. 4-H believes that a prevention program based on the foundation of life-skill development and decision-making skills leads to a program whose effect is a reduction in youth tobacco and drug use. To appraise these views, we gathered a sample of youth who participated in the Health Rocks! program.

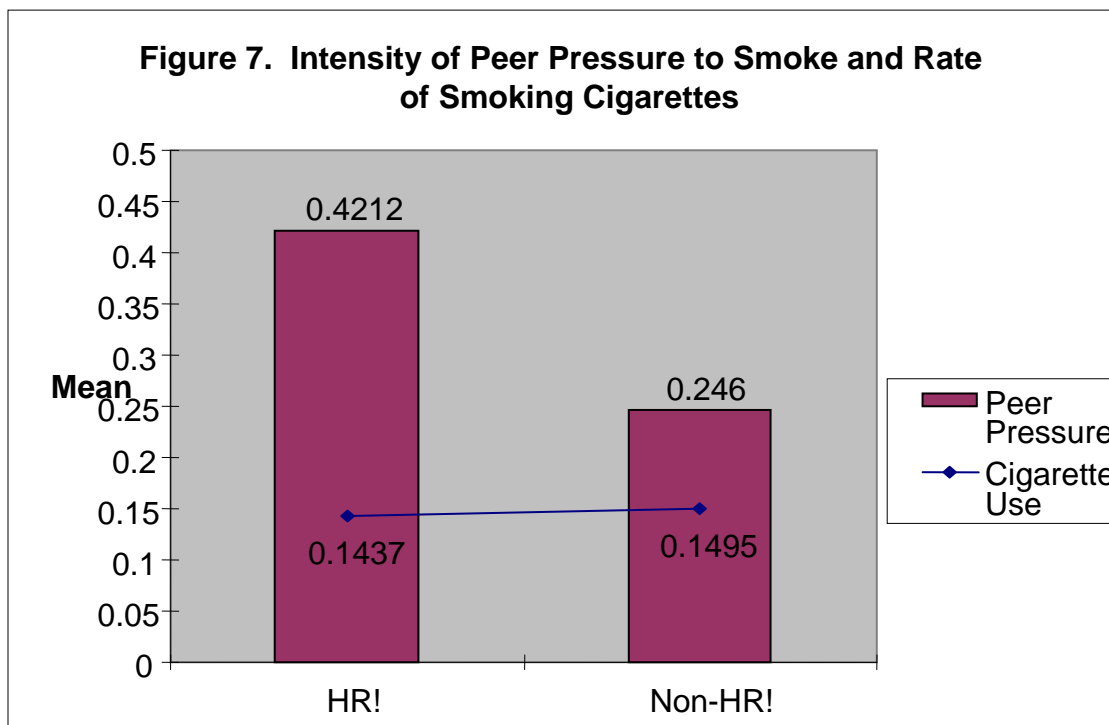
The sample of Health Rocks! (HR) youth we have gathered within the 4-H Study come from backgrounds and have characteristics linked to greater levels of risks/problems than other youth in our sample. As such, we controlled for these factors before comparing HR and non-HR youth. We created a matched sample based on sex, mother's education, family per capita income, race/ethnicity, geographic location, and participation in 4-H (i.e., one-third of the youth in both groups were in 4-H).

At Wave 2 (6th Grade), we studied matched groups of 344 HR youth and 344 non-HR youth (58% girls in both groups). At Wave 3 (7th grade), we were able to study 571 HR youth to compare them to a matched group of 571 non-HR youth (59% girls in both groups). The larger, Wave 3 sample affords greater confidence about the links between HR participation and indicators of positive and problematic development.

HR appears to serve as an inoculation against smoking and other health-compromising and risk/problem behaviors. HR youth differ from non-HR youth in regard to the presence of peer pressures to smoke. As shown in Figure 7 on the following page, the peers of HR youth put significantly and substantially more pressure on them to smoke than is the case with non-HR youth. Such intense peer pressure should have profound negative implications for the HR youth, since in these early years of adolescence peers are quite important (and some would argue they are of chief importance) in influencing adolescent behavior. Nevertheless, HR youth are not succumbing to this peer pressure: Their level of smoking is identical to the level of the non-HR youth, youth who are not experiencing this intense peer pressure to smoke.

In addition, HR youth also show low levels and rates of other risk behaviors and, as well, of positive behaviors, that are equivalent to the matched sample. Moreover, we found equivalence between HR and non-HR youth within both 6th and 7th Grades in regard to the following risk/problem behaviors: Rates of substance abuse, rates of delinquency,

rates of bullying, rates of peer engagement in risk behaviors, numbers of smokers present in household, and levels of depression.



We also found that HR may be a possible promoter of PYD. There was equivalence between the HR and the non-HR Groups in respect to positive behaviors at both Grades 6 and 7 for: Rates of physical exercise, each of the Five Cs, overall PYD and Contribution. Moreover, the academic grades gap between HR youth and non-HR youth that was present in Grade 6 disappeared in Grade 7. In Grade 6, HR youth averaged about a “B,” and non-HR youth averaged about a “B+,” a significant difference. However, in Grade 7, both groups are the same; they both average about a “B.”

IMPLICATIONS AND NEXT STEPS

At this writing, data in the 4-H Study have been collected and processed through Grade 8. We are completing the cleaning of Grade 9 data and collecting Grade 10 data. Currently, we have funding to continue the study through Grade 12 and, as such, these data will enable us to appraise the course of PYD across the late elementary, middle school, and high school years. Such work will be unique.

Moreover, these data will also enable us to ascertain more fully the long-term, cumulative value of 4-H participation. However, to understand how positive development during adolescence may launch the young person on a life path into a productive and healthy

adulthood, one marked by successful individual, family, and community life, and whether 4-H participation contributes to this positive transition to young adulthood, it will be essential for the 4-H Study to extend beyond Grade 12. If we are able to continue the study in “Grade 13,” we will be able to determine how ecological assets in the lives of youth, and 4-H participation more specifically, is related to such critical life events as dropping out of school, going to college, and/or successful entry into the work force.

While we are excited about the prospects of continuing the 4-H Study through Grade 12 and beyond the high school years, we are enthusiastic as well about what the data have revealed to date about the nature of PYD, about the association of OST activities – and of 4-H – with such development. We believe that we have learned more about the nuanced connections between 1. youth contributions to their own positive development (through their “internal” developmental assets, which we have operationalized through the SOC model); and 2. the key resources of the ecology of youth development – obviously OST activities and 4-H but, as well, of the vital role of individuals in all settings of youth development and of the still primary influence of the family.

Furthermore, we have gained a greater understanding of what youth-serving professionals need to do to enhance their abilities to promote PYD. The fact that youth engage in multiple OSTs in any one year and that, as well, that the array of OSTs in which they participate changes substantially from year-to-year means that practitioners need to collaborate in providing support to youth. The great likelihood is that practitioners “share” the youth in their program with two to three other programs, and thus – in the service of enhancing coherence and clarity in the lives of youth -- efforts must be made to be certain that more congruent messages about the nature of positive development are delivered across programs.

In addition to greater collaboration across programs, practitioners need to design more differentiated programs. Given the different and changing interest and activity patterns of the youth they are serving, programs must be attentive to individuality of program design in order to increase the fit between what they offer young people and the individual talents, interests, and needs of the youth being served. Simply, one size does not fit all when it comes to building effective youth programs and, therefore, cookie-cutter approaches, if they ever used, need to be eliminated from the tool set of youth-serving practitioners.

In regard to the tools practitioners may use, we believe the 4-H Study is also able to enhance the means available plan and evaluate youth programs. Both a common vocabulary for speaking about PYD and a tool for measuring PYD – and Contribution as well – can be derived from the 4-H Study. The tool can be used to assess the status of young adolescents on these indicators of healthy development and of program success in promoting contributions to, and leadership of, valued community programs.

Finally, we believe that our findings, to date, indicate that practitioners need to attend to issues of both PYD promotion and risk/problem behavior prevention in planning their programs. Despite initial ideas about the relation between PYD and risk/problem

behaviors, our longitudinal data indicate clearly that even youth with high PYD may show risk behaviors, AND youth who are engaged in risk may also show high PYD. Therefore, BOTH prevention and promotion must be pursued, because there is not a simple inverse relation between PYD and risks/problems.

Given the current and potential future scientific and applied contributions of the 4-H Study, we look forward to continuing the collection and analysis of our data set and, as well, to continuing to collaborate with scientists and practitioners across the land-grant and broader higher educational and practitioner communities. We remain committed to scientific dissemination, integrated research-practice programs with youth-serving professionals, and public dissemination of our findings in order to inform policy makers and funders of youth development research and programs. Accordingly, we hope that this report will be an important step towards enhancing our opportunities to collaborate and contribute to enhancing knowledge about the ways in which individuals and communities can further healthier and more successful development for all youth.

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Footnote

¹ These epigrams are responses to an open-ended question in the SQ, “What is the most important/meaningful thing that you do? Why?” Participation in 4-H was not prompted in the question. We use these epigrams to enliven what may be seen as “dry” numbers about the impact of 4-H participation on youth development.

Appendices

Appendix 1. The 4-H Study of Positive Youth Development: Faculty, Staff, and Graduate Student Roster

Appendix 2. Cumulative Publication and Presentation List of the 4-H Study of Positive Youth Development

Appendix 3. Scientific, Policy, and Media Impact of the 4-H Study of Positive Youth Development

Appendix 1

The 4-H Study of Positive Youth Development:

Faculty, Staff, and Graduate Student Roster

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Appendix 2

Cumulative Publication and Presentation List of the 4-H Study of Positive Youth Development

I. Books

1. Lerner, R. M. (2007). *The Good Teen: Rescuing Adolescents from the Myths of the Storm and Stress Years*. New York, NY: The Crown Publishing Group.
2. Silbereisen, R. K., & Lerner, R. M. (Eds.). (2007). *Approaches to positive youth development*. London: Sage Publications.

II. Book Chapters

1. Lerner, R. M. (2005, September). *Promoting Positive Youth Development: Theoretical and Empirical Bases*. White paper prepared for the Workshop on the Science of Adolescent Health and Development, National Research Council/Institute of Medicine. Washington, D.C.: National Academies of Science.
2. Lerner, R. M., Lerner, J. V., Almerigi, J., Theokas, C., Phelps, E., Naudeau, S., Gestsdottir, S., Ma, L., Jellicic, H., Alberts, A., Smith, L., Simpson, I., Christiansen, E., Warren, D., von Eye, A. (2006). Toward a new vision and vocabulary about adolescence: Theoretical and empirical bases of a “positive youth development” perspective. In L. Balter, & C. S. Tamis-LeMonda (Eds.). *Child Psychology: A handbook of contemporary issues* (pp. 445-469). New York: Psychology Press/Taylor & Francis.
3. Lerner, R. M., Phelps, E., Alberts, A., Forman, Y., & Christiansen, E. (2007). The many faces of urban girls: Features of positive development in early adolescence. In B. Leadbeater, & N. Way (Eds.). *Urban Girls Revisited: Building Strengths, Volume 2* (pp. 19-53). New York: New York University Press.
4. Jellicic, H., Theokas, C., Phelps, E., & Lerner, R. M. (2007). Conceptualizing and measuring the context within person \leftrightarrow context models of human development: Implications for theory, research, and application. In T. D. Little, J. A. Bovaird, & N. A. Card. *Modeling contextual effects in longitudinal studies* (pp. 437-456). Mahwah, NJ: Erlbaum.
5. Zarrett, N., Lerner, R. M., Carrano, J., Fay, K., Peltz, J. S., & Li, Y. (2007). Does adolescent engagement in sports promote positive youth development?: A developmental systems perspective. In N. L. Holt (Ed.). *Positive Youth Development through Sport* (pp. 9-23). Oxford: Routledge.
6. Lerner, R. M., Abo-Zena, A., Bebiroglu, N., Brittan, A., Doyle, A., Isaac, S. (In press). Positive youth development: Contemporary theoretical perspectives. In R.

DiClemente, R. Crosby, & J. Santelli (Eds.). *Adolescent Health: Understanding and Preventing Risk Behaviors and Adverse Health Outcomes*. San Francisco: Jossey-Bass.

III. Refereed Journal Articles

1. Lerner, R. M., Lerner, J. V., Almerigi, J., Theokas, C., Phelps, E., Gestsdottir, S. Naudeau, S., Jelicic, H., Alberts, A. E., Ma, L., Smith, L. M., Bobek, D. L., Richman-Raphael, D., Simpson, I., Christiansen, E. D., & von Eye, A. (2005). Positive youth development, participation in community youth development programs, and community contributions of fifth grade adolescents: Findings from the first wave of the 4-H Study of Positive Youth Development. *Journal of Early Adolescence*, 25(1), 17-71.
2. Alberts, A., Christiansen, E. D., Chase, P., Naudeau, S., Phelps, E., & Lerner, R. M. (2006). Qualitative and quantitative assessments of thriving and contribution in early adolescence: Findings from the 4-H Study of Positive Youth Development. *Journal of Youth Development*, 1(2).
3. Theokas, C., & Lerner, R.M. (2006). Observed ecological assets in families, schools, and neighborhoods: Conceptualization, measurement and relations with positive and negative developmental outcomes. *Applied Developmental Science*, 10(2), 61-74.
4. Theokas, C., Lerner, J. V., Lerner, R.M. & Phelps, E. (2006). Cacophony and change in youth after school activities: Implications for development and practice from the 4-H Study of Positive Youth Development. *Journal of Youth Development: Bridging Research and Practice*, 1(1).
5. Gestsdottir, S., & Lerner, R. M. (2007). Intentional self-regulation and positive youth development in early adolescence: Findings from the 4-H Study of Positive Youth Development. *Developmental Psychology*, 43(2), 508-521.
6. Jelicic, H., Bobek, D., Phelps, E., Lerner, J. V., Lerner, R. M. (2007). Using positive youth development to predict contribution and risk behaviors in early adolescence: Findings from the first two waves of the 4-H Study of Positive Youth Development. *International Journal of Behavioral Development*, 31(3), 263-273.
7. Phelps, E., Balsano, A., Fay, K., Peltz, J., Zimmerman, S., Lerner, R., M., & Lerner, J. V. (2007). Nuances in early adolescent development trajectories of positive and of problematic/risk behaviors: Findings from the 4-H Study of Positive Youth Development. *Child and Adolescent Clinics of North America*, 16(2), 473-496.
8. Zarrett, N., Peltz, J.S., Fay, K., Li, Y., Lerner, J.V., & Lerner, R.M. (2007). Sports and youth development programs: Theoretical and practical implications of early adolescent participation in multiple instances of structured out-of-school (OST) activity. *Journal of Youth Development*, 2(1).

9. Balsano, A., Phelps, E., Theokas, C., Lerner, J. V., & Lerner, R. M. (In press). Patterns of early adolescents' participation in youth developing programs having positive youth development. *Journal of Research on Adolescence*.
10. Lerner, R. M., Brittan, A., & Fay, K. (In press). Mentoring: A key resource for promoting positive youth development. *MENTOR's Research in Action Series*.
11. Zimmerman, S. M., Phelps, E., & Lerner, R. M. (In press). Intentional self-regulation in early adolescence: Assessing the structure of selection, optimization, and compensations processes
12. Ma, L., Phelps, E., Lerner, J. V., & Lerner, R. M. (Under review). Pathways to academic competence for adolescents challenged by school bullying: Initial findings from the 4-H Study of Positive Youth Development.

IV. Posters and Papers: Presented

1. Lerner, R. M., Lerner, J. V., Alberts, A., Christiansen, E., Gestsdottir, S., Jelicic, H., Ma, L., Theokas, C., & Warren, D. (2003, March). 4-H Longitudinal Study of Positive Youth Development. Poster presentation at the *Indicators of Positive Development* Conference, Washington, DC.
2. Jelicic, H., Alberts, A. E., Christiansen, E., Lerner, J. V., Lerner, R. M. (2003, June). Positive youth development in community context: The role of individual and community-based activities. Poster presentation at the *Building Pathways to Success: Research, Policy, and Practice on Development in Middle Childhood* Conference, Washington, DC.
3. Alberts, A., Christiansen, E., Gestsdottir, S., Jelicic, H., Ma, L., Simpson, I., Theokas, C., Warren, D., Lerner, J. V., & Lerner, R. M. (2003, November). Empirical evidence for the 5 "C"s of positive youth development: Competence, confidence, connection, character, and caring. Poster presentation at the Third Biennial Meeting of the *Society for the Study of Human Development* (SSHD), Cambridge, MA.
4. Alberts, A. E., Warren, D., Lerner, J. V., & Lerner, R. M. (2003, November). Does function follow form? The role of the family structure in positive youth development. Poster presentation at the Third Biennial Meeting of the *Society for the Study of Human Development* (SSHD), Cambridge, MA.
5. Theokas, C., Naudeau, S., Almerigi, J., Gestsdottir, S., Alberts, A. E., Jelicic, H., Ma, L., Simpson, I., Smith, L., Christiansen, E., von Eye, A., Lerner, J. V., & Lerner, R. M. (2004, March). The "six Cs" of positive youth development: The role of youth development programs. Poster presentation at the *Society for Research on Adolescence* (SRA), Baltimore, MD.

6. Alberts, A., Jellicic, H., Naudeau, S., Gestsdottir, S., Ma, L., Simpson, I., Smith, L. M., Theokas, C., Almerigi, J., Christiansen, E., Lerner, J. V., & Lerner, R. M. (2004, July). The 4-H study of positive youth development: Summary of year 1 findings pertinent to the role of 4-H programs in the promotion of thriving. Poster presentation at the *International Society for the Study of Behavioral Development (ISSBD)*, Ghent, Belgium.
7. Naudeau, S., Alberts, A., Gestsdottir, S., Jellicic, H., Ma, L., Simpson, I., Smith, L., Theokas, C., Christiansen, E., von Eye, A., Lerner, J. V., & Lerner, R. M. (2004, July). Positive development among children of incarcerated, divorced, and military deployed parents: Preliminary results from the 4-H Study of PYD. Poster presentation at the *American Psychological Association (APA)*, Honolulu, HI.
8. Ma, L., Phelps, E., Lerner, J. V., & Lerner, R. M. (2005, April). Pathways to academic competence for adolescents challenged by school bullying. Paper symposium presented at the Society for Research in Child Development (SRCD) Biennial Meeting, Atlanta, GA.
9. Jellicic, H., Alberts, A. E., Smith, L. M., Gestsdottir, S., Ma, L., Miller, D., Naudeau, S., Richman-Raphael, D., Li, Y., Zimmerman, S., Theokas, C., Almerigi, J., Phelps, E., Lerner, R. M., Christiansen, E., & Lerner, J. V. (2005, April). The 4-H Study of Positive Youth Development: Initial findings from Grades 5 and 6. Poster presentation at the Society for Research in Child Development (SRCD) Biennial Meeting, Atlanta, GA.
10. Jellicic, H., Bobek, D., Phelps, E., Lerner, R.M., & Lerner, J.V. (2005, October). Using positive youth development (PYD) to predict positive and negative outcomes in adolescence: Findings from the 4-H Study of PYD. Poster presentation at the Fourth Biennial Meeting of the Society for the Study of Human Development (SSHD), Pacific Grove, CA.
11. Anderson, P. M. (2005, October). Is obesity in early adolescence related to self-perceptions of psychosocial and physical competencies?: Findings from the 4-H Study of Positive Youth Development. Poster session presented at Fourth Biennial meeting of the Society for the Study of Human Development, Pacific Grove, CA.
12. Alberts, A. E., Christiansen, E. D., Chase, P., Naudeau, S., & Phelps, E. (2005, October). The nature of thriving and contribution in adolescence: Insights from qualitative data. Poster presentation at the Fourth Biennial Meeting of the *Society for the Study of Human Development (SSHD)*, Pacific Grove, CA.
13. Lerner, R. M., Lerner, J. V., Phelps, E., Balsano, A. (2006, January). The 4-H Study of Positive Youth Development: Current findings, future directions, and national and international impacts on policy and practice. *Paper presented at the Semiannual Meeting of the Health Rocks! Collaboration*. Chevy Chase, MD: National 4-H Council.

14. Christiansen, E., & Alberts, A. E. (2006, March). The nature of contribution in adolescence: Insights from qualitative data. Poster presentation at the Lynch School of Education Graduate Research Forum, Boston College.
15. Perkins, D. F., Borden, L., Griffin, A., & Ma, L. (2006, March). Participation in Sports Programs, Healthy Life Styles, and the Five Cs of Positive Youth Development. Poster presented at the Biennial Conference of Society for Research on Adolescence. San Francisco, CA.
16. Zimmerman, S. M., Jelicic, H., Bobek, D., Alberts, A., Anderson, P., Gestsdottir, S., Li, Y., Ma, L., Miller, D., Naudeau, S., Theokas, C., Phelps, E., Lerner, R. M., Christiansen, E., Lerner, J. V., Chase, P., Peltz, J., & Fay, K., (2006, March). Changes in Positive Youth Development (PYD) Across Early Adolescence: Initial Findings of the First Three Waves of the 4-H Study. Poster presented at the Biennial Conference of Society for Research on Adolescence. San Francisco, CA.
17. Zimmerman, S. M. (2006, March). Individual and Ecological Moderators of the Relation between Organismic and Intentional Self-Regulation in Early Adolescence. Poster presented at the Biennial Conference of Society for Research on Adolescence. San Francisco, CA.
18. Phelps, E., Forman, Y., Alberts, A. E., Jelicic, H., Lerner, R. M., Christiansen, E. D., & Lerner, J. V. (2006, March). Positive Youth Development: Looking at Urban Youth. Poster presented at 2006 Biennial Conference of Society for Research on Adolescence. San Francisco, CA.
19. Li, Y., Ma, L., Lerner, R. M., & Chau, C. (2006, March). School Engagement and Academic and Social Competence among Adolescents from Different Ethnic Groups: Findings from the 4-H Study of Positive Youth Development. Poster presented at 2006 Biennial Conference of Society for Research on Adolescence. San Francisco, CA.
20. Balsano, A.B., Jelicic, H., Fay, K., Phelps, E., Lerner, R.M., & Lerner, J.V.(2006, May). Changes in positive youth development across early adolescence among youth growing up in bilingual and English-only speaking households. Poster presented at the European Association for Research on Adolescence Conference. Antalya, Turkey.
21. Balsano, A. B., Theokas, C., Phelps, E., Lerner, J. V., & Lerner, R. M. (2006, May). Cacophony and Change in Early Adolescent After-School Activities: Implications for Positive Youth Development. Paper presented at the European Association for Research on Adolescence Conference. Antalya, Turkey.
22. Ma., L., Li, Y., Phelps, E., Lerner, J. V., & Lerner, R. M. (2006, July). Lost in Bullying? Pathways to Caring Development for Adolescents Challenged by Bullying. Paper symposium presented in the paper symposium entitled "School Context Through The Looking Glass: Who Bullies; Who Witnesses; Who Copes; Who Cares; Who's

Gay?" at the International Society for the Study of Behavioral Development Biennial Meeting, Melbourne, Australia.

23. Li, Y., Ma, L., Phelps., E., Gianinno, L., Lerner, R. M., & Lerner, J. V. (2006, July). School Engagement and Academic Competence: A Developmental-Contextual Analysis of the Influences of School and Family. Poster presented at the International Society for the Study of Behavioral Development Biennial Meeting, Melbourne, Australia.

24. Fay, K. E., Doyle, A. C., & Becker, A. E. (2007, May). Body blame: The moderated relation between sexual harassment and disordered eating. Poster presented at the International Conference for Eating Disorders, Baltimore, MD.

25. Fay, K., Becker, A., Richards, L. (2007, May). *Acculturation as a predictor for body image disturbance and disordered eating: Inconsistencies in definition and operationalization of the construct*. Paper presentation at the 2007 International Conference on Eating Disorders, Baltimore, Maryland.

26. Lerner, R. M. (2007, August). Developmental systems theory, plasticity, and the promotion of positive development among adolescents: Recent Findings from the 4-H Study of Positive Youth Development. Paper presented at the Max Planck Institute, Leipzig, Germany.

27. Lerner, R. M. (2007, September). Promoting Positive Development, Community Contribution, and Leadership Among America's Young People: Current Findings from the 4-H Study of Positive Youth Development. Tufts' Civic Engagement Research Group (CERG) Fall Series. Medford, MA.

V. Recent Dissertations and Theses

1. Anderson, P. (2007). Is Obesity in Early Adolescence Related to Self-Perceptions of Psychosocial and Physical Competencies?: Findings from the 4-H Study of Positive Youth Development. Unpublished doctoral dissertation, Tufts University, Medford, MA.

2. Bobek, D. (2007). Maintaining Civil Society and Democracy: The Role of Youth Development Organizations in Promoting Civic Identify Development. Unpublished doctoral dissertation, Tufts University, Medford, MA.

3. Yi, L. (2007). School engagement and academic competence: The roles of individual and contextual assets. Unpublished Master's thesis, Tufts University, Medford, MA.

3. Ma, L. (2007). The development of academic competence among adolescents who bully and who are bullied. Unpublished doctoral dissertation, Tufts University, Medford, MA.

4. Peltz, J. S. (2007). The father factor: Paternal engagement and adolescent psychosocial functioning. Unpublished Master's thesis, Tufts University, Medford, MA.

Appendix 3

Scientific, Policy, and Media Impact of the 4-H Study of Positive Youth Development

White Papers

Lerner, R. M. (2005, September). *Promoting Positive Youth Development: Theoretical and Empirical Bases*. White paper prepared for the Workshop on the Science of Adolescent Health and Development, National Research Council/Institute of Medicine. Washington, D.C.: National Academies of Science.

Lerner, R. M., Alberts, A. E., & Bobek, D. (2007). *Thriving youth, flourishing civil society: How positively developing young people may contribute to democracy and social justice: A Bertelsmann Foundation White Paper*. Gutersloh, Germany: The Bertelsmann Foundation.

Contacts with Government Officials and Programs

Youth Leadership in America's Communities, National Youth Summit, U.S. Department of Health and Human Services; Administration for Children and Families; Administration on Children, Youth and Families; Family and Youth Services Bureau, July 2004, Cleveland, Ohio.

White House Conference on Helping America's Youth, October 2007, Washington, D.C.

Media Appearances and Articles Featuring the 4-H Study

Fox 25 Morning News, Boston, November 14, 2007

Good Morning America, October 26, 2007

Newsweek, Parents Debate: Should Teens Drink at Home?, June 25, 2007

Newsweek, A Peaceful Adolescence, April 25, 2005

New England Cable News, October 24, 2007

Smithsonian Magazine, Interview: Richard Lerner: The Tufts University developmental scientist challenges the myth of the troubled adolescent in his new book, "The Good Teen" September 27, 2007

USA Today, Is it just adolescent angst, or something more?, September 27, 2007

USA Today, Teens driven to distraction: Nature or nurture?, September 27, 2007

WebMD, Richard M. Lerner, Contributor, Safety4Kids,
<http://blogs.webmd.com/safety4kids/2007/07/getting-to-know-your-teens.html>