

EXCERPTS FROM:

Development of Self-Direction in Youth-Program-Family Interaction Systems: Latino and Non-Latino Adolescents

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I. MAJOR QUESTIONS

“The economic, social, and political order of our society presupposes an individual who is capable of autonomous action. In the emerging heterogeneous global society where job demands and basic life course and life-style decisions are not preconfigured, adolescents need to acquire the motivation and skills to create order, meaning, and action out of a field of ill-structured choices.” (Larson, *American Psychologist*, 2000, p. 171)

Our program of research is making progress toward understanding how youth develop important competencies for autonomous action or *self-direction*. In a large qualitative study, TYDE (funded by W.T. Grant), we derived preliminary grounded theory on the *processes and pathways* through which ethnically-diverse high-school-aged adolescents develop these competencies within project-based youth programs, and through the collateral transactions with parents. The set of competencies we are studying (responsibility, strategic thinking, teamwork, effort) are *abilities for organizing actions over time to meet commitments and achieve goals*. Recent scholarship suggests that they should not be confused with 19th-20th century individualism. They entail coordination of personal agency with contextual demands, one’s own actions with others’ (Larson et al., 2002), and, in the family context, autonomy-with-relatedness (Smetana, 2002). Nor is their developmental importance restricted to Western culture. Young people across cultures must navigate ill-structured and changing environments and become able to organize actions to achieve individual and collective goals (Kagitcibasi, 2007; Hardway & Fuligni, 2006). Our proposal is aimed at contributing to the WT Grant Foundation objectives of understanding the processes and practices in settings through which these critical competencies develop.

The proposal immediately presents what the researchers want to study and how it builds on prior work.

This mixed-methods study will advance knowledge on how self-direction develops across four interconnected interactional systems (Figure 1). First, we will employ *quant* (quantitative) analyses to test hypotheses derived from TYDE about developmental processes in these systems:

Within Youth Program Settings

- System 1 is youth’s interactions with the arts, tech, science, service and leadership projects that are the focus of many programs for high-school-aged youth. Our hypothesis from TYDE is that the engine of development is youth’s process of deep cognitive engagement (and struggle) with the demands and strategic challenges of their projects, coupled with learning through feedback on their actions (Larson & Angus, in press – a & b; Wood et al., 2009).

The research team introduces a core idea (i.e., four interconnected, interactional systems) around which they organize the proposal.

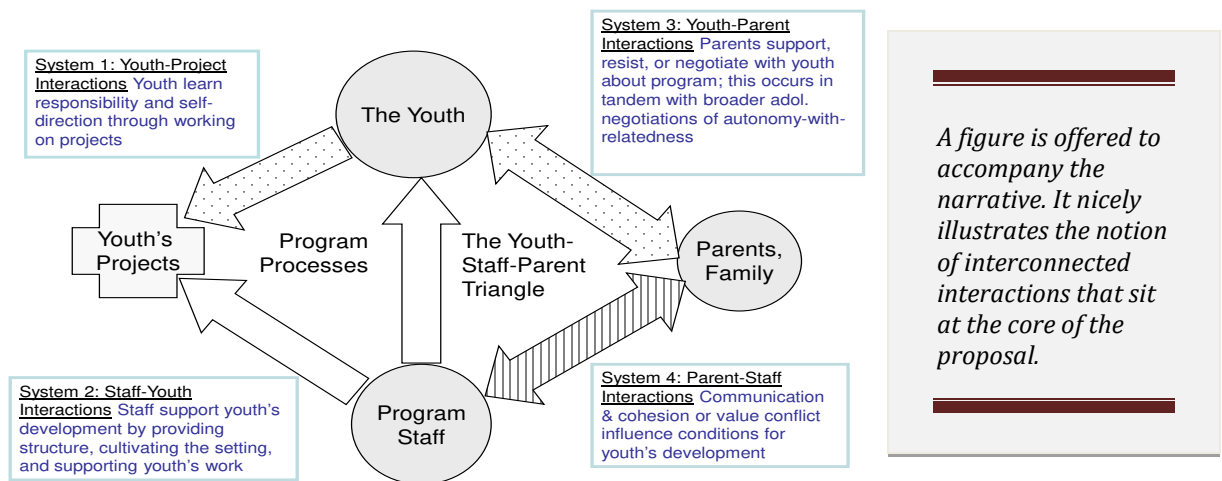
- System 2 is program leaders’ interactions with youth, and our hypothesis is that youth’s development of self-direction is facilitated by leaders “leading from behind” to provide structures and support for the youth-driven developmental processes in System 1.

Within the Youth-Family-Program Triangle

- System 3 encompasses interactions between youth and parents concerning the program, and our central hypothesis is that youth transfer self-directed behavior from the program to home, and that this can stimulate a sequence of negotiations leading to adolescents’ increased autonomy-with-relatedness in the family (Larson, Pearce, Sullivan, & Jarrett, 2007).
- System 4 is the meso-system between parents and program. We examine how parent-leader dynamics and leaders’ responses to family-related *dilemmas of practice* can facilitate System 1-3 processes, with stakes highest in Latino families (Griffith & Larson, 2009).

For each system, we will draw on data provided by multiple informants to test longitudinal pathways within and across systems.

Figure 1: Interaction Systems in the New “Pathways” Study



Second, we will analyze embedded *qual* (qualitative) data to better understand how youth, leaders and parents *experience* these pathways. The aim is to extend and deepen our grounded theory about the underlying contextual processes that correspond to the quant findings. This qual component employs an action perspective (Valach et al., 2002) that focuses on how processes are *experienced and enacted over time* by the parties involved (youth, leaders, parents). Across systems, we are interested in the cyclical dynamics between: (a) these parties’ experiences of *obstacles, conflicts, and challenges* to their goals, and (b) their use of creative *strategies and negotiations* to address challenges. We ask, How does the experience of these dynamics unfold over time for each party? How do strategies and negotiations in each system address (or fail to address) these challenges? How are these cycles related to youth’s process of change and learning? The qual data will help us understand these dynamics in context, from the actors’ points of view – and in a form directly usable by practitioners, administrators, and policy leaders (Valach et al., 2002).

In summary, our goal is to test and chart a *dense network* of transactions, paths, and conditions that influence developmental outcomes. The target sample reflects our objective to gain knowledge of the range of processes and pathways related to youth development in an economically and ethnically diverse sample. By studying working class and low income youth, we focus on those who show the largest benefits from programs (Mahoney et al., 2009). By including 50% Latino youth, we will generate information on a growing segment of the U.S. population. Latino children and adolescents represent nearly one fifth (18%) of the under-18 population (Fields, 2003), with 60% of Latino youth aged 12-17 living in immigrant households (Raffaelli et al., 2005). Remarkably little research has been done on Latino youths' experiences in youth programs (Mahoney et al., 2009). The study will address an urgent need for research on processes and practices associated with positive development for diverse youth.

This paragraph offers a clear rationale for the population to be studied.

II. NOT INCLUDED.

III. SPECIFIC HYPOTHESES AND RESEARCH QUESTIONS

For each system we have paired central *quant hypotheses* that will be tested statistically and *qual questions* aimed at extending and deepening grounded theory about the underlying experiential processes. Both sets of analyses focus on paths: the first on statistical paths, the second on verbal descriptions of these paths. In addition, we will ask how processes and pathways differ for Latino and non-Latino youth and families and by other factors (e.g., as a product of gender, age, prior experience with youth programs).

This section articulates the quantitative hypotheses to be studied, and, relatedly, the qualitative questions to be asked. This pairing is very effective—although other approaches also work.

System 1: Youth's Interactions With Their Projects

Quant Hypoth 1: Youth's increases in self-direction (i.e., responsibility, strategic thinking) will be predicted by significant paths from (a) high ownership, (b) high engagement with challenge and accountability demands in their projects, (c) and feedback on outcomes of their work.

Qual Question 1: How do youth who show *high vs. low* increases in self-direction differ in their descriptions of the processes in Hypoth 1: challenges, engagement, strategies, turning points?

System 2: How Leaders And Programs Facilitate the Processes in System 1 (Figure 2).

Quant Hypoth 2a: Individual youth's reports of autonomy support from leaders predicts high ownership, engagement, and increases in youth's self-direction (a-c in Hypoth 1).

Qual Question 2a: How do youth who show *high vs. low* increases in self-direction describe when and how leaders provided assistance and how that assistance influenced them?

Quant Hypoth 2b: Self-direction will increase more in programs that have leaders with high expectations and who provide youth with more opportunities for engagement.

Qual Question 2b: How do programs with *higher vs. lower* changes in youth self-direction differ in leaders' initial plans for the year, how these are implemented, and how leaders respond to dilemmas that arise over the year? How do they "balance" competing objectives?

System 3: Youth-Parent Interactions (Figures 2 & 3)

Quant Hypoth 3a: Support from parents for youth’s program participation (from the beginning, or as a result of parent-adolescent negotiations) predicts a sequence of positive paths leading to increases in youth’s self-direction and autonomy-with-relatedness in the family.

Qual Question 3a: How is *high vs. low* parental support for the program related to parent-youth experiences concerning the program over the year? How do these experiences differ between youth who showed *high vs. low* increases in self-direction?

Quant Hypoth 3b: Parents’ ongoing support for youth’s participation in the program (and negotiation with youth) will be predicted by youth-parent congruence in goals for the youth (and by other variables); these predictor variables will be more salient for Latino families.

Qual Question 3b: How do congruence vs. incongruence (and other factors) play out in these youth-parent interactions?

System 4: How Parent- Leader Interactions Influence What Happens in Systems 1-3

Quant Hypoth 4: Processes in Systems 1-3 are more favorable when: a) there is greater goal convergence between leaders and parents, b) programs communicate with and make efforts to involve families, and c) leaders are knowledgeable about and sensitive to families’ cultural background and immigrant experiences.

Qual Question 4: What strategies do leaders use that are effective in communicating with families and addressing dilemmas involving families from different cultural backgrounds?

The hypotheses are organized around the four inter-related systems that lie at the core of the proposal. This presentation makes it easy to understand the motivation for each hypothesis and question. Reviewers can also readily assess the potential contribution of the proposed work.

IV. RESEARCH METHODS

Study Design: Overview and Rationales

This mixed methods study will follow youth, their parents, and program leaders at 4 time points across the full duration (typically 9 months, one academic year) of 12 programs (or “program offerings”). All will be high dosage project-based programs for low income and working class high-school-aged youth. Programs selection will be stratified to achieve a sample of youth that is 50% Latino (with at least half of these from immigrant families). Longitudinal questionnaire data will be obtained from all youth in the 12 programs ($N = 240$) and their parents, plus the 1-2 principal leaders in each program. Ongoing qual interviews will be conducted with leaders and with youth and parents in two embedded samples. Observations will also be conducted. Detailed information on sampling, tracking, and assessments is provided below.

The opening lays out the study design in broad strokes and highlights what will be done.

The study design is guided by several strategic choices suited to a second-generation study aimed at theory testing and development:

- 1) The mixed methods, multi-informant design will permit predictive and descriptive analyses to examine developmental transactions and sequences in complex contexts (Creswell, 2003).

- 2) Inclusion of Latino youth will allow us to study potentially crucial variations in these pathways for a growing and understudied segment of the U.S. population. Although Latino rates of program participation are somewhat lower than other groups (Mahoney et al., 2009), in TYDE we were successful in recruiting programs serving Latinos.
- 3) We focus on high dosage programs (min. of 120 contact hours) in order to maximize observing substantial effects of program experiences on the most engaged youth. Our pilot study (YPED) indicates that we have a high probability of observing significant differences between youth (including within-program) as a function of differing experiences.
- 4) The design prioritizes between-youth differences, due to cost considerations and the greater progress we have made on these differences in our prior research. Obtaining quant data from youth and leaders at 4 time points will allow us to test predictors of individual change in self-direction (e.g., through growth modeling) and explore reciprocal relations and developmental sequences (e.g., through structural equation modeling) (Singer & Willett, 2003). Program differences, nonetheless, are an important secondary focus, and this study is designed to build evidence toward a next stage of research that will evaluate program-level hypotheses.

The research team describes key choices in the design of the study and sampling framework. These insights help reviewers understand the rationale for the study design and the project's relevance—to both theory and practice.

Sample and Procedures

Program Selection

The selection of the 12 programs will be stratified to obtain diversity among project-based programs. First, to obtain geographical and demographic diversity, the study will include 4 programs from each of three study sites. Researchers at the U of Illinois will work with programs in Chicago and in central Illinois. Researchers at the U of Minnesota will work with programs in Minneapolis/Saint Paul. Second, to obtain a sample that is half Latino youth, we will choose 6 programs that primarily serve this population. Ideally, 2 of the Latino programs will come from each site, but we are not yet sure about programming for youth in the relatively new rural Latino communities in downstate Illinois. Third, we will obtain diversity in program content. All programs chosen will be project-based but we will obtain representation of those in which the projects are in the arts, tech, or science and those in leadership, service, or youth activism.

To maintain balance, we will select paired Latino and non-Latino programs that are approximately matched in project content, as well as whether they are community vs. school-based, the amount of time demanded of youth, and community variables. We are interested in diverse program content in order to increase the generalizability of the findings – at the same time our research and others' suggests that program content and whether a program is school or community based have relatively little impact on quality (Smith, personal communication) and outcomes (Hansen & Larson, 2007).

A strong rationale is provided for the selection of "paired Latino and non-Latino programs that are approximately matched in project content."

All programs must meet a set of criteria in addition to those described above (e.g., a minimum of 120 contact hours, stable staff, low youth drop-out rates). Finally, programs must enroll at least 20-30 youth and not be highly selective (e.g., of elite youth) or target a single gender.

It should be noted that we will include programs in the study in which youth participate over multiple years (as happens, for example, in a school science club or FFA program). This adds complexities to our data analyses. Novice and veteran youth may start the year at different levels of competency, have different experiences, and show different patterns of change. Nonetheless, we think this multi-cohort mix of youth is an important natural feature of many programs (missed in random assignment studies), because veteran youth pass on a culture and mentor novices. It will allow us to observe these processes and compare novice-veteran trajectories.

Sample and Data Collection Schedule

The study includes youth, parents, and primary leaders from each program. The data collection schedule for these multiple informants and for two qual sub-samples is summarized in Table 2.

The *Full Sample* will include all youth in each program (expected ages 13-1) and at least one parent or other primary caregiver (estimated $N = 240$ youth and $N = 220$ parent-youth pairs, accounting for attrition) plus the 1-2 principal leaders in each program (estimated $N = 18$). The following types of data will be collected from the full sample of participants:

- *Youth.* Questionnaire data will be collected from youth at all four points in time. It should be noted that Time 1 for youth, parent, and leader questionnaires will come in week 2-3 of the program, so that all are able to provide data based on initial experiences (Schochet, submitted).
- *Parents* will provide data at Times 1 and 4. Although mothers are more likely than fathers to participate in studies about their children, either or both parents will be allowed to participate if they so desire.
- *Program leaders.* Leaders will complete structured questionnaires (including rating individual youth) and interviews at each time point. The Time 1 interview for leaders will be completed *prior* to the start of the program.

This section of the narrative includes a comprehensive discussion of the sample. For example, the discussion of the full sample includes each group's sample size and the broad strokes of the associated data collection effort.

Two embedded sub-samples of youth and their parents will be selected to take part in individual narrative interviews dealing with their experiences, actions, and negotiations in, and in relationships to, the program. Both sub-samples will be stratified by ethnicity and (to the extent possible) other appropriate variables (e.g., gender, years in program, formal role in program).

- *Prospective Subsample:* 24 youth and their parents will be selected following the Time 1 questionnaires to be interviewed at three time points over the study. This sample will be selected to include 10 families in which parents are supportive of the youth's participation in the program and 14 in which parental support is weak or ambivalent.
- *Retrospective Subsample:* A subsample of 40 youth and their parents will be selected for interviews at the end of the study period. These pairs will be selected using a stratification design aimed at achieving representation of youth who showed high vs. low rates of change in self-direction (strategic thinking or responsibility) over the program.

The researchers also provide a rich description of the two subsamples.

Recruitment and Tracking

The study team has extensive experience working with youth programs in the various study communities. Drs. Raffaelli and Simpkins have both worked with Latino adolescents and their families. Drs. Larson, Walker, and Wood had leadership positions in TYDE. These experiences will contribute to the success of the proposed study.

Recruitment. One key to recruiting programs and participants will be introducing the project in a simple yet compelling way. We have chosen a project name, “The Pathways Project”, that (while not very original) translates well into Spanish and identifies the purpose of the research in a way that is meaningful to program leaders, parents, and adolescents. As in TYDE we will guarantee “safeguards” for study participants and be attentive to the concerns of program staff and families, as well as provide information that is of immediate value for participants (e.g., creating a project newsletter for parents; providing feedback to programs in individual meetings). A bilingual community liaison will be hired at each site to assist with information dissemination and recruitment; this person will also assist with tracking of longitudinal study participants.

After recruiting programs, we will talk to youth about the project and give them information to take home to their parents. To maximize parent participation, we will incorporate recruitment strategies advocated for use with economically and ethnically diverse populations (e.g., Knight et al., 2009; Marín & Marín, 1991). For example, materials directed to parents will be available in both English and Spanish, and the community liaison will be available to discuss the study with parents who prefer face-to-face communication. Latino parents will be interviewed by bilingual interviewers. Incentives will also be structured to maximize recruitment and retention; for example, youth will receive a bonus for completing at least 3 of the 4 assessments.

Tracking. The tracking protocol reflects recommendations from published reviews of effective tracking strategies (e.g., Ribisl et al., 1996; Sullivan et al., 1996), procedures used in longitudinal studies of Latinos (e.g., Knight et al., 2009), and team members’ personal experience conducting longitudinal research (e.g., NIMH Multisite HIV Prevention Trial, 1997). At the first data collection, address, telephone, and email information will be obtained, and contact information for at least four different relatives and friends will be requested. In addition, information on planned travel or moves will be gathered. Preferred method of communication will be assessed (e.g., some parents may not be fully literate in either English or Spanish, and may prefer being contacted by telephone or in person instead of by mail). Participants will be provided with postage-paid postcards so they can report address or telephone changes. We will send mailings (e.g., project newsletters, holiday cards) with change of address notification requested, and tracking will begin immediately if mailings are undeliverable or the family has moved. Contact information will be updated at each subsequent data collection point. This information and notes detailing contact attempts will be entered into a central database (Cotter et al., 2002).

Sample attrition. Although we will select programs with low drop out rates, we expect some attrition. If youth drop out of the program we will conduct phone follow-up interviews with the

The team describes the nuanced approach they will adopt to meet the needs of potential participants. This level of detail and thoughtfulness helps build confidence that the project is feasible.

youth and parents. For those who drop out after Time 2, this will include oral administration of the final questionnaire (so they may be retained in the final sample). We will also ask new youth who join the program between Times 1 and 2 to take part in the study. Taking these steps into account, attrition estimates based on TYDE, YPED, and other studies are as follows. Across the 12 programs, we expect 300 potential participants (25 per program). We estimate 270 (90%) will provide consent. After accounting for early drop outs and late additions, we expect that 240 youth and 220 parents will provide longitudinal data. This final sample of 240 youth and 220 youth-parent dyads, represents 80% of youth and 73% of parents across the 12 programs.

The issue of sample attrition is openly acknowledged. The research team also offers a detailed plan for how they will handle associated challenges.

Measures and Interview Protocols

The data collection will include a mix of quant and qual assessments. These have been selected based on their match with our research questions, prior use with similar populations, and their precision in assessing the phenomena of interest. Many have been used in prior research, and will not require modification; others are being adapted or developed specifically for the new study. Many measures will need to be translated into Spanish, which will be accomplished using a procedure that incorporates translation/back-translation and review by Spanish speakers who are not bilingual and represent diverse educational backgrounds (Knight et al., 2009).

Plans for a pilot study are introduced. The description states the goals of the pilot study, when it will be conducted, who will participate, and how this work will inform the larger project.

Before starting the main study, we will conduct a pilot study to evaluate the measures and protocols across ethnic/language groups. Approximately 38 individuals similar in age and other demographic characteristics to our target population will be recruited: 16 parents (8 Latino, 8 non-Latino), 16 youth (8 Latino, 8 non-Latino), and 6 program leader. They will be asked to complete and critique the measures. (Formal tests of measurement equivalence are planned once Time 1 data are available, as described in the *Preliminary Analyses* section.)

Quantitative Measures

The quant measures have been selected to test hypothesized processes and pathways. All will come from questionnaires completed by the youth, leaders, and parents (except for the YQPA). Our goal is to select and create measures that assess ongoing occurrences and that are *change sensitive*. To achieve this most of our measures will focus on behavior or experiences “during the last month.” They will also be context specific (in most cases focused on: “in the program,” but for youth and parents, also “at home” and “in schoolwork”). In addition we will ensure that the items in each measure cover the appropriate range of skills or behavior; and when necessary (e.g., when responses to a scale are skewed to the top end of the scale), we will add items aimed at expanding the range of the scales to cover youth at higher and lower levels of competency. This is particularly important for our outcome variables, because our goal is to access upward positive development, both for novice and veteran youth. It is also important for measures of leader support, where the type of support provided to youth may be adjusted according to the ability

The team lists their criteria for selecting the quantitative measures.

levels of the specific youth. Our research collaborator, Brett Roberts, has extensive experience with item analysis and will be consulted on strategies for item design and assessment.

Outcome variables. The central outcome variables will be assessed using existing measures administered at multiple time points to multiple reporters (see Table 3, which also describes measures of secondary outcomes). Because leaders will assess all youth at all 4 time points, they will use the single-item scales employed in TYDE, in which each youth is rated on deciles, relative to other youth (e.g., top 10%, 30-40th percentile). These measures have demonstrated: a) good distributions, b) with means and standard deviations that were quite similar across leaders in the 10 programs, c) respectable correlations with youth measures of the same variable, and d) construct validity as demonstrated by preliminary findings that confirmed predictions (Table 1).

Youth and parent reports on outcome variables will be made on multi-item scales that are specific to contexts (Table 3). Primary outcome variables include:

Individual self-direction:

- Youth's *Responsibility* in the program, at home, and in schoolwork will be assessed using an adapted 10-item measure developed by our collaborator Brent Roberts, a personality psychologist who has published extensively on conscientiousness. In order to maximize the range, items on the scale have been selected based in part on Graded Response indices.
- *Strategic thinking* will be assessed using a 4-item measure of "strategic planning" (Hansen & Larson, 2009) employed in YPED (alpha = .61; $M = 2.96$, $SD = .75$) on a 1-5 scale.

Autonomy-with-relatedness in the family:

- *Family decision-making* will be assessed with youth and parent reports on the Self-Report Decision Making Questionnaire (Smetana, 2004; Steinberg, 1986), which presents respondents with a checklist of categories of decision making pertinent to the child (e.g., curfew, spending money) and asks them to indicate who typically makes the decision.
- A 4-item *Autonomous-Related Self-in-Family Scale* developed by Kagitcibasi (2007) (alpha = .77) will be used as an additional measure of autonomy-relatedness in the family.

Measures of independent and process variables. The focal independent variables have been identified in the conceptual model for each of the four major systems, as described in the Rationale sub-sections above. These are described in the respective tables.

- *Youth-Project Interactions and the Role of Staff.* Variables for Systems 1 and 2 include youth's leadership roles, experience of demands, engagement with challenge, and autonomy support from leaders. Some of these measures were drawn from the broader literature and most were piloted in YPED (see Table 4).
- *The Youth-Parent-Program Triangle.* System 3 and 4 variables include those related to parental support for youth's program participation, interactions between parents and staff, and general family features expected to influence these variables (see Tables 5 and 6).

The proposal explicitly states the outcome variables and how they will be measured.

The proposal also includes a clear presentation of the measures for the independent and process variables as well as the assessment of program quality.

The YQPA: An observational measure of program quality. The Youth Program Quality Assessment (research version 5.2) measures program quality at the point of service. After observing a complete session, observers make ratings on a set of scales that represent best practices in after school programs. These scales have been validated and show respectable reliability (alphas = .62-.82), inter-rater agreement, and stability over time (Smith et al., 2009a). In our study, observations will be conducted at Times 1-3 to identify changes over the program cycle. The YQPA scales include dimensions closely related to our hypotheses: youth's engagement, planning, and reflection; quality of relationships; and various dimensions of program activities. These will allow us to differentiate the 12 program settings on these quality variables for comparative qual and quant analyses. Dr. Larson visited the Weikart Center in August of 2009 and is communicating with Charles Smith and Tom Akiva about conceptual and methodological synergies between our two programs of research.

Power analysis. We conducted power analysis for tests of the predictive power of individual-level independent variables, using results from the YPED study as a basis for estimating effect sizes in a youth program over a one year period. In those analyses we regularly found effects at levels ranging from $r = .20 - .40$ for relations between the focal independent variables and changes in measures of responsibility (Table 1) and strategic thinking (these analyses controlled for program and the dependent variable at Time 1). To be conservative, in the power analysis we used .20 as the theorized population effect sizes we wanted to be able to detect with statistical significance. The power analyses (Cohen, 1992; Cohen et al., 2003) showed that with a sample of 240 participants, we will have an 88% probability of finding effects with population correlation coefficients of .20 to be significant at the .05 level. Indeed, if our sample size drops as low as 194 (which is extremely unlikely, but is a worst case scenario for the parent data), we still have an 80% chance of detecting such effects for a given analysis.

The power analysis provides reviewers with assurances that the sample size is not arbitrary. It also reveals assumptions about anticipated effect sizes and informs reviewers' judgment about the study's ability to detect effects of a given size in a particular situation.

Qualitative Interview Protocols

The qual and quant parts of the study are closely linked. Many parts of the qual interviews are aimed at obtaining verbal descriptions of the *same* paths and processes tested in the quant analysis. Specific sections of the qual interviews *are paired with* specific quant tests.

The important contribution of the qual interviews is understanding these processes *in complex contexts as experienced and enacted by the participants* (youth, leaders, parents). What are the obstacles/ challenges/ dilemmas that these parties experienced? What are the strategies/ responses/ supports/ negotiations that account for turning points, surmounting obstacles, and positive change? Also, what conditions prevent these from being surmounted? This study will build on TYDE by employing a second generation of targeted qual interview questions aimed at better understanding

The link between the quantitative and qualitative efforts is succinctly reiterated, and additional rationale is offered regarding the importance of the qualitative work.

the conscious processes at work – across cultural groups – in a way that both: 1) *facilitates translation of our findings to the complex situations of practice* and 2) *generates new hypotheses*.

The qual interviews will employ the method of “event history calendars” (EHC) to help reconstruct event sequences (Belli et al., 2007). Research shows use of EHC leads to better and more accurate data (Belli et al., 2007). Our focus is on reconstructing both short time sequences around specific events, challenges, and transactions, as well as the overall timeline of program-related experiences across the year. Along with this, we will use the qual technique of examining “turning points.” This involves identifying “consequential shifts” in a person’s experiences, shifts that redirect or alter the flow of movement of their experiences, then asking about the factors or processes that account for these shifts (Lofland & Lofland, 1995).

Leader interviews. The leader interviews will play a key role in helping us understand the timeline of each program, including leaders’ initial goals for activities and how these unfold. They will also address questions in System 2 about leaders’ complex task of supporting youth’s developmental processes, both within specific situations and over the arc of the program. The *initial leader interview* (before the program starts) will focus on the leaders’ intentions, philosophy, anticipated schedule, and a priori expectations for youth and for youth’s unfolding experiences (their “espoused theory”; Argyris and Schön, 1974). For example, how do they conceptualize their own role and the role of youth in shaping activities over the months ahead? Do they – and how do they – think about balancing the tension between providing “appropriate structure” and high expectations for youth *with* honoring youth’s voice, agency and personal process of learning self-directions from their own actions (including from mistakes)? Do they have a timeline of how youth’s learning process unfolds?

The *subsequent leader interviews* will then be aimed at filling in the timeline of what actually happens, as experienced and enacted by the leaders (their “theories-in-use”; Argyris and Schön, 1974). How does the unfolding program differ from her/his expectations? What challenges or practitioner dilemmas occurred, how did they respond to them, toward what goals, and how effective was their response? We are interested not solely in dilemmas, but turns of events and opportunities that leaders use to facilitate the goals of supporting youth’s development and self-direction. A particular focus in both the initial and subsequent interviews will be on planned or unplanned interactions with youth’s parents (System 4), as well as any interactions in which families’ ethnicity or immigrant status appear to be a factor.

Youth and parent interviews. Youth and parents in the two subsamples will participate in qualitative interviews focused on key issues from our major questions. These interviews will start with filling in an event history calendar of experiences pertinent to the person, the family, and especially to the program (e.g., significant events, milestones, turning points). The *Prospective Interviews* will be structured to elicit accounts of youth’s and parents’ specific ongoing experiences related to the program (challenges/obstacles, strategies/negotiations, parent and leader support for the youth, youth’s learning, changes in the youth-parent relationship). Part of the focus will be on the unfolding of parent support or lack of support and the factors associated with this (e.g., congruence of goals). The *Retrospective Interviews* will elicit reconstructions of these experiences and how they relate to the youth’s change or lack of change on the self-direction variables, as well as how these changes may have fed back on the family.

The interview protocol will be longer for youth, because it will include questions related to their experiences both in the program *and* their interactions with their parents (Systems 1, 2 & 3). We will ask youth to reconstruct the creation of their projects, starting with original goals and plans, then ask about challenges and how they were overcome. They will also be asked about their experiences of struggle/ engagement, change points, receipt of feedback, and assistance from leaders or parents that was or was not helpful. We will ask about the processes related to each change point identified. We will also ask youth about what they learned and how they learned it.

Parents will be asked about their experience of the program, what they observed in youth's behavior, and about any interactions they had with program staff. Both parents and youth will be asked about conversations between them around the program, as well as numerous other questions aimed at understanding how that family's experience did or did not fit the conceptual paths of our preliminary grounded theory, as outlined in Figures 2 and 3.

V. ANALYSIS PLAN

Overview

The goal of the analyses is to understand the processes and pathways for the development of self-direction across the 4 systems. For each system, the respective analysis team will use the quant data to test hypotheses for the sample as a whole and for critical subgroups (e.g., Latino vs. non-Latino youth), and draw on the qual data to understand the same processes and paths as "experienced and enacted" by participants. We will also run separate analyses for different outcome variables (e.g., responsibility, strategic thinking). Given space limits, we provide representative illustrations of planned analyses of major questions. For ease of presentation, we describe major quant and qual analyses separately; however, these analyses will be integrated during the process of data coding, analysis, and interpretation (Creswell, 2003; Sells et al., 1995).

Preliminary Analyses

Quant data. Once the Time 1 quantitative data are available, analyses will be conducted to evaluate the study measures. Basic psychometric properties of measures (e.g., factor structure, reliability) will be examined in the entire sample. Cross-ethnic measure equivalence/invariance will be evaluated for core study measures (Knight et al., 2009). We will examine intercorrelations among study variables to ensure they follow expected patterns. In addition, where data from multiple reporters (e.g., parent and youth) or from multiple assessment modalities (e.g., observational and leader interview) are available, information will be compared. Prior to the data analyses, distributions will be checked for normality and transformations performed if necessary. As data from later waves become available, possible effects of attrition will be examined by comparing participants who dropped out to those retained in the sample.

Qual data. As interviews are conducted, they will be transcribed and entered into NVivo. We will code into preliminary "descriptive codes" that identify material pertinent to the major topic

The analysis plan is tightly aligned with the quantitative hypotheses and qualitative questions (see section III). The consistent presentation of this organizational scheme is a real asset. It allows reviewers to focus on the content of the materials rather than having to hunt for facts.

areas of the study (e.g., by System, process, relevance to hypotheses) and undertake other steps of data preparation (Miles & Huberman, 1994).

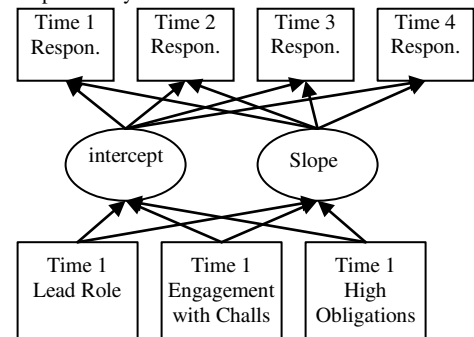
System 1: Youth’s Interactions with their Projects

Quant analysis. Quant Hypoth 1 identifies experiences in youth’s projects that will predict changes in self-direction (i.e., responsibility, strategic thinking). These relations will be tested through latent growth curves in structural equation modeling (i.e., SEM) with MPlus v5 (Muthén & Muthén, 2007). All SEM models will be estimated with full information maximum likelihood (FIML) to include cases with missing data (Schafer & Graham, 2002). The models will also account for the correlated errors among adolescents in this type of nested data (i.e., adolescents nested within programs). The consultant, Sandi Simpkins, has extensive experience with this type of analysis (e.g., Simpkins et al., 2008; Simpkins et al., in press).

The research team provides enough details for reviewers to assess the merits of the proposed analyses.

As illustrated in Figure 4, youth’s responsibility in the program is expected to be higher at Time 1 and show larger increases from Times 1 to 4 if they have a lead role, experience engagement with challenges, high obligations, and ownership of their work, and if they obtain feedback on their work. This model will be replicated with youth and leader report of youths’ responsibility in the program. These relations may differ for novices and veterans; non-Latino and Latino youth. These expectations for moderation will be tested with interaction terms in SEM to obtain adequate power (Curran et al., 2004). Significant interactions in all models will be examined with simple slope analyses (Curran et al., 2004; Preacher et al., 2006). In addition, we are interested in how changes in youth’s program behavior (e.g., engagement, responsibility) predict indicators of responsible behavior outside the program (e.g., GPA, health behaviors). To do this, we will use the intercept and slope from a latent growth curve on youth’s behavior in the program to predict their behavior outside of the program at Time 4 while controlling for Time 1 behavior outside of the program. Each latent growth curve of youth’s program behavior will be examined separately in SEM.

Figure 4: Example latent growth curve for youth responsibility



Qual analysis. Just as the goal of the quant analysis is to test the paths in youth’s learning process, the goal of the qual analysis is to illuminate these processes as experienced by youth. The qual analysis for System 1 will focus on data from the Retrospective Sample and on comparing experiences for youth who did vs. did not show gains in self-direction. A focal question for responsibility is what accounts for some youth persevering in fulfilling obligations (especially when they become onerous), while other youth back out? This perseverance is the unsolved puzzle in our grounded theory of the developmental process (Wood et al., 2009).

The plan for the qualitative analysis highlights a few key areas of exploration. The areas identified are informed by prior empirical work and theory.

For the development of strategic thinking, a key objective is to better illuminate the cognitive process of “engaging with challenges.” Is this most

often an individual or group experience? What is the thought process in identifying challenges, generating and choosing alternative courses of action, and modifying strategies based on events? We have speculated that this thought process involves “rational imagination” (Byrne, 2007), but how much is it subject to the cognitive flaws, blind spots, and fallacies that may compromise experiential learning (Byrnes, 2005)? And does youth’s learning include learning to “control for” these flaws and fallacies?

Synthesis. The combination of quant and qual analyses are designed to, at once, test our preliminary theory and move it forward. We expect to verify processes and sequences for learning different forms of self-direction. At the same time we expect to better illuminate how these are experienced by youth in the context of their struggles with specific demands and challenges in their projects. These analyses will give particular attention to how the processes may be distinct for Latino youth. We are also interested in differential learning patterns in programs where projects engage youth with adult members of the community (Bouillion Diaz, in press) and for novice as compared to veteran youth (Cumberton & Bouillion Diaz, in press).

System 2: How Leaders and Programs Facilitate the Processes in System 1

System 2a: Leaders’ assistance to youth

Quant analysis. Quant Hypoth 2a examines whether youth’s experience of balanced autonomy support from the leader predicts change in their experiences in the program (i.e., ownership, engagement) and development of self-direction. This hypothesis will be tested through multiple models. First, Time 1 autonomy support will be used to predict separate latent growth curves of youth experiences and responsibility in the program. In each model, Time 1 autonomy support is expected to positively predict each indicator at Time 1 and greater increases from Times 1 to 4. Taken together, Quant Hypotheses 1 and 2a suggest that program experiences will *mediate* the relations between autonomy support and development of self-direction in the program. In these SEM models, we will test if Time1 autonomy support predicts Time 2 program experiences, which in turn predict Time 3 responsibility in the program. Mediation will be formally tested with the Sobel test with bootstrapping to assess the significance and confidence intervals of the effect (Mackinnon et al., 2002). These findings will inform whether autonomy support predicts youths’ program experiences and increases in self-direction over time as well as whether program experiences explain the relation between support and youth self-direction.

Qual analysis. We and others have repeatedly suggested the importance of balanced autonomy support (leading from behind) and keeping learners in a “channel” or “zone” that is matched to their ability. It is essential to take the next step of asking what this means in different situations and for different youth (including youth from different cultural backgrounds). We are particularly interested in asking leaders (and youth) to provide examples that show what the *situational guidelines* are for providing assistance vs. stepping back. And, in what situations are these guidelines violated: when, for example, is youth’s sense of ownership diminished by intrusive assistance or by being left to flounder for too long? The System 2 analysis team is generating new items for the leader and youth interviews aimed at identifying the guidelines and strategies associated with appropriate and effective leader

This section communicates what will be asked, why this information is important, how it will be used, and contribute to new knowledge.

support. Comparison of the narratives of youth who show high and low increases in self-direction will provide a related tool.

System 2b: Role of staff and program-level differences

Quant analysis. The number of programs in the proposed study (12) will limit our ability to examine program-level effects in quant analyses. However, we may be able to explore how program factors (as indexed by the YQPA) predict different trajectories of change in self-direction. In this way, the study will allow us to generate estimates of program-level effects that we can use to plan future studies. If the findings with 12 programs are compelling, we will consider requesting funds to collect quant data from 8-12 more programs.

Qual analysis. As described above, we have several planned lines of investigation on program-level differences. One involves comparing leaders' initial intent (plans, expectations, timelines for the year) to how that intent is implemented and, then, to youth's experiences in their projects. We expect that discrepancies between intent and implementation will be related to the degree to which youth show gains in self-direction. An additional approach to studying these issues will involve identifying the 3-4 programs with the highest and lowest change in youth's self-direction and/or YQPA scores (with approximate matching of the two groups on other characteristics), then comparing the sequence for each leader's initial plans, how they were implemented, and how these related to youth experiencing the requisite processes for developing self-direction.

A second line of investigation continues our research on dilemmas of practice. As before, we will create a data base of dilemmas experienced by the leaders. Tailored questions in the new study will provide more detailed information on the contingencies, decision process, outcomes, significance of culture, etc. for each reported dilemma. One goal is to better evaluate how the most effective leaders appraise and respond to the variety of dilemmas that occur, including ones involving discrepant cultural goals or misunderstandings. What are differences in responses between programs that are high and low in youth development? Again, one of our interests is to learn about "situational guidelines" and strategies used by the most effective leaders.

Synthesis. Although we have separated the qual and quant in these descriptions, our goal will be to use them together to advance theory (and measurement) dealing with processes and effective practices in youth programs (Larson et al., 2009). Our objective is to obtain preliminary findings on program processes that position us to expand this study, or initiate a new one, aimed at testing setting-level grounded theory about factors that influence program quality.

The research team explicitly states how the quantitative and qualitative analyses will be used.

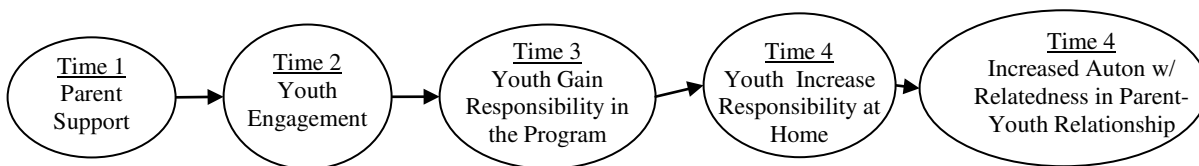
System 3: Youth-Parent Interactions Vis a Vis the Program

Our central question in System 3 is how families affect (and are affected by) youth's experiences in the program. Hypoth 3a posits that parents' support for youth's program participation predicts a sequence of positive paths leading to increases in youth's self-direction and autonomy-with-connection in the family (a "virtuous cycle"). Hypothesis 3b proposes a set of family variables expected to predict parents' support, and thus the likelihood of this positive sequence occurring.

Quant analysis for 3a: Pathways of family negotiation and change. Figure 5 shows the sequence that we will test for Hypoth 3a. This is the core positive sequence described by families

in TYDE (from the fuller conceptual model for the “Virtuous Cycle” in Figure 2). This hypothesis will be tested through three main analyses. First, we will test the basic model presented in Figure 5. The latent variable for each indicator will be based on reports from multiple respondents (e.g., parent and youth reports of parents’ support at Time 1). Second, we will test the same relations in Figure 5 controlling for prior levels of the youth indicators through path analysis. For example, is youth’s engagement at Time 2 predicted by parent support at Time 1, while controlling for youth engagement at Time 1? These first two sets of models will test whether change in each variable in the sequence predicts change in the subsequent one, including across settings. For example, does the data support the hypothesis that responsibility developed in the program transfers to the family? These analyses will also allow us to verify Scenario B (The Resiliency Cycle; see Figure 3), which predicts that when parents change from being unsupportive to being supportive it influences the subsequent steps in this sequence.

Figure 5. Pathway of Family Negotiation and Change



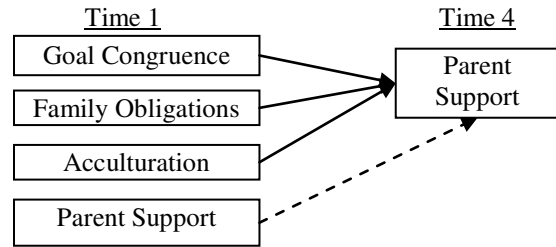
Third, change in the core outcomes will be tested with latent growth curve analyses in SEM. For example, we will test how Time 1 parent support and youth engagement predict youth’s responsibility in the program at Time 1 (i.e., the intercept) and the change in responsibility from Times 1 to 4 (i.e., the slope). These growth curve analyses will assess the concurrent and long-term influence of family factors on the outcome variables (i.e., on the different forms of self-direction). All models for 3a will be tested first for the sample as a whole, then, with interaction terms to test differences in the model for Latino and non-Latino families.

Qual analysis for Hypoth 3a: How paths in scenarios are enacted and experienced. The youth in our study will be a “self-selected” group: teens who had enough family support to join the program (although in TYDE some youth joined *despite parent opposition* or unenthusiasm). Qual data from the Prospective Sample will allow us to follow the experiences of 10 families in which youth had high initial support and 14 in which support was low. We will supplement this with data from the Retrospective Sample for families who had low initial parental support.

The qual analyses will evaluate youth’s and parents’ descriptions of their actions and experiences related to each of the paths (arrows) in the different scenarios described in Figures 2 and 3. Central questions are: a) How do the words or actions associated with parents’ support (or lack of support) influence youth’s engagement in the program (as reported by youth)? b) What are the youth-parent-program transactions through which parents who were initially unsupportive changed and became supportive (see center boxes in Figure 3) and how did this change influence parents’ actions and behavior? and c) How did youth’s increases in responsibility in the program feed back on to the family: on youth’s responsibilities at home, on parents’ views of the youth, and on family-level changes in the rights, decision-making, and respect afforded to youth?

Quant analysis for Hypoth 3b: Factors influencing parents' support. Under Quant Hypothesis 3b, we test cultural and family factors expected to predict parental support for youths' participation in the program. As shown in Figure 6, the change in parent support will be tested by predicting parent support at Time 4 from the hypothesized factors at Time 1 while controlling for initial support through path analysis in SEM (these analyses will use parent and youth reports at Times 1 & 4). Because youth will report on parent support at Times 1-4, the hypothesized factors will be used to predict the latent growth curve of *youth's reports* of parent support. It is expected that higher goal congruence, lower family obligations, and higher family acculturation will predict higher parent support at Time 1 (i.e., the intercept) and larger increases in support across time (i.e., the slope). In addition, we expect these relations will be stronger for Latino vs. non-Latino youth, given the greater salience of these factors for Latino families. This moderation will be tested with interaction terms in SEM.

Figure 6. Factors Influencing Parents' Support



Qual analysis for Hypoth 3b. These analyses will focus on the processes accounting for differences found in the corresponding quant analyses. Our aim is to understand how parents from different backgrounds view youth programs (e.g., as potential contexts for development or as distractions from long-term goals and family obligations). We also hope to understand what causes parents' views of programs to change over time. Finally, we will explore how these changes affect parent-youth interactions within the home.

Synthesis. Our research recognizes that transfer of learning between contexts is a complex process that depends on the dynamics in the context to which transfer is to occur, in this case, on parents' goals for their children, cultural expectations, and how these are negotiated. Results of the System 3 analyses will illuminate how this transfer unfolds for a high stakes process: how families negotiate youth's increased responsibility, and how this might vary across cultural groups that differ in conceptions of independence, authority, and familism.

System 4: How Parent-Leader Interactions Influence What Happens in Systems 1-3.

Most of the analyses for System 4 will follow the quant and qual procedures already described. In some cases the parent-staff variables will be added to those analyses as another predictor variable. The general goal of the System 4 analysis team will be evaluate obstacles to positive parent-staff relationships and factors related to improving them. What proactive policies, procedures, and activities cultivate effective communication and goal consensus between programs and diverse parents? Analysis of practitioner dilemmas related to families (especially Latino families) will be particularly useful in generating knowledge that is directly applicable to daily challenges of practice. What are the variety of situations that novice practitioners must be prepared to respond to, and what characterizes sensitive, culturally appropriate responses?

Integration of Findings

Although we have described analyses that are largely within systems, we expect to identify processes and pathways of influence that operate across them (Seidman, 1991). Our ultimate goal is to weave together findings from these analyses to yield integrated insights about the

connections across settings and levels of analysis. For example, unpublished analyses of data from YPED indicate that youth's reports of autonomy support from program leaders and support from parents have significant independent associations to youth's engagement with challenge. But it is important to understand how these two forms of support interface. The proposed study, which involves multiple reporters and time points, will allow us to examine how parent and leader influences operate over time and across contexts to support youth's development. We believe this integrated knowledge will provide valuable information on how to make youth programs effective. The findings we obtain on youth's developmental processes within programs, the role of staff in supporting these processes, and the linkages with processes in the family system will help inform practice, policy, and efforts to improve program quality.

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YPF Master List of Tables and Figures

Tables	Title
Table 1	Factors Predicting Increases in Responsibility as Rated by Youth and Leaders
Table 2	Design of the data collection
Table 3	Outcome variables
Table 4	Measures of processes and factors in the program (System 1 & 2)
Table 5	Measures for Youth-Family Interactions (System 3)
Table 6	Measures for Parent-Leader interactions (System 4)

Figures	Title
Figure 1	Interaction systems in the new “pathways” study [located in the text of the proposal]
Figure 2	Pathways between youth, parents, and program (Scenario A: Virtuous cycle)
Figure 3	Pathways between youth, parents, and program (Scenario B: Resiliency cycle)
Figure 4	Example latent growth curve for youth responsibility [located in the text]
Figure 5	Pathway of family negotiation and change [located in the text]
Figure 6	Factors influencing parents’ support [located in the text]

Table 2: Design of the Data Collection

	Stage in the Program Cycle		
Source & Type of Data Collection	Start of Program Time 1 ¹	Middle Time 2-3	End of Program Time 4 ²
Youth			
<i>Questionnaires (Full sample N=240)</i>	<i>Background info, data on ind and dep variables; short-answer qual data</i>	<i>Data on ind and dep variables.</i>	<i>Data on dep variables, etc.</i>
Interviews with <u>Prospective Sample</u> (N=24). Selected for families high/low on parent support.	Interview on joining program, parental support	One interview on ongoing experiences with their projects, with leaders, and with their parents	Interview on parental support, effect of program on own self-direction
<u>Retrospective Sample</u> (N=40) Select youth with high vs. low change in self-direction			Retrospective interview on experiences, negotiations, change process.
Parents of Same Youth			
<i>Questionnaires (Full sample N=240)</i>	<i>Background info, data on ind and dep variables; short-answer qual data</i>		<i>Data on dep variables, etc.</i>
Interviews with parents in <u>Prospective Sample</u> (N=24)	Interview on joining program, parental support	One interview on ongoing experiences	Interview on effects of program
Interviews with parents in <u>Retrospective Sample</u> (N=40)			Retrospective interview on negotiations, change process.
Primary Program Leaders			
<i>Questionnaires (N=18)</i>	<i>Background info on program, philosophy, & expectations</i> <i>Rate all youth on dep variables</i>	<i>Rate all youth on dep variables at each time</i>	<i>Summary information on the year</i> <i>Rate all youth on dep variables</i>
Interviews (N=18)	Information on program and plans for the year	Periodic check-ins on program activities, activities for families, dilemmas experienced	Retrospective data on interactions with youth and parents
Observations of Program Sessions	Observe day 1 <i>Administer the YQPA</i>	Observe program events for families <i>Administer the YQPA</i>	Observe concluding events of program (e.g. a showcase, performance)

Key: Quantitative data collections are in italics

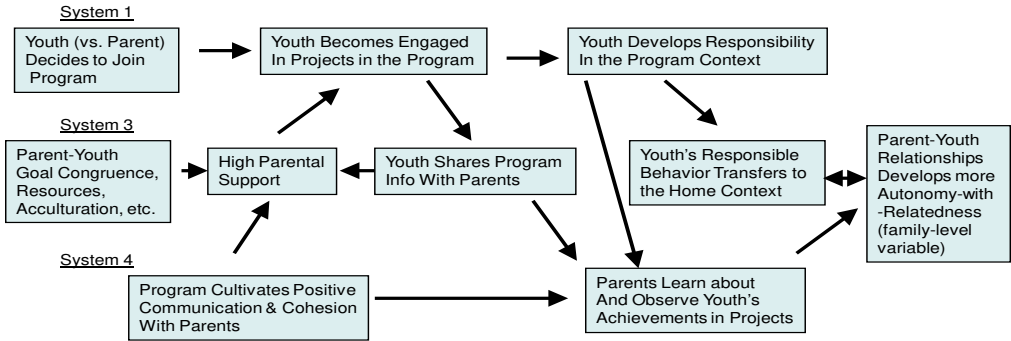
¹ For Time 1, the youth and parent questionnaires will be in Week 2 of the program and the qualitative interviews with the Prospective Sample will be in Week 3-4. The Time 1 Leader Interviews will be before the start of the program.

² For Time 4, the Retrospective Sample interviews will be after the study is completed.

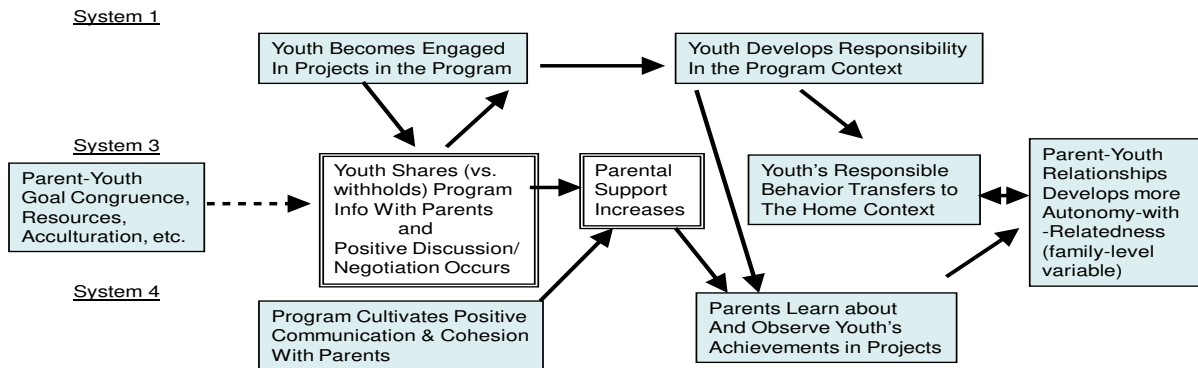
Table 3: Outcome Variables

Construct	Measure	Youth	Leader	Parent
Individual Level				
Responsibility in these contexts: 1. In Program 2. At Home 3. In Schoolwork	<u>From Leaders</u> : a 1-item % rating (Wood & Larson, used in YPED) <u>From Youth and Parents</u> : 5-items. Adapted from scale developed by Brent Roberts. Same items will be used to ask about behavior in three contexts.	Prog: T1-4 Hom: T1,4 Sch: T1,4	Prog: T1-4	Hom: T1,4 Sch: T1,4
Strategic Thinking	<u>From Leaders</u> : a 1-item % rating (Hansen & Larson, used in YPED) <u>From Youth and Parents</u> : 4 item scale of strategic planning (Hansen & Larson, 2009; used in YPED)	Prog: T1-4 Hom: T1,4 Sch: T1,4	Prog: T1-4	Hom: T1,4 Sch: T1,4
Teamwork	<u>From Leaders</u> : a 1-item % rating (used in YPED) <u>From Youth and Parents</u> : 5-item scale adapted from Davis (1995)	Prog: T1, 4 Hom: T1,4 Sch: T1,4	Prog: T1,4	Hom: T1,4 Sch: T1,4
Mobilizing effort	<u>From Leaders</u> : a 1-item % rating <u>From Youth and Parents</u> : 5-item scale adapted from Sherer (1982)	Prog: T1, 4 Hom: T1,4 Sch: T1,4	Prog: T1,4	Hom: T1,4 Sch: T1,4
Family Level				
Family Decision Making	18-items; SDMQ from Steinberg (1986); adapted by Smetana (2004).	T1,4		T1,4
Autonomous-Related Self-in-Family Scale	4-items; developed by Kagitcibasi (2007)	T1,4		T1,4
Ancillary Dependent Variables				
Parent-Adolescent Closeness	12-items; IPPA, adapted by Laible, Carlo, & Raffaelli (2000)	T1,4		T1,4
Youth's GPA	1-item	T1,4		
Youth's Health Behavior	10-items, used in YPED	T1,4		T1,4
Career & College Decisions	3-items, used in YPED	T1,4		T1,4

**Figure 2: Pathways Between Youth, Parents, and Programs
Scenario A: Virtuous Cycle**



**Figure 3: Pathways Between Youth, Parents, and Programs
Scenario B: Resiliency Cycle**



Notes: Double-lined boxes are what differentiate this Scenario from Scenario A.