Hope in Context: Developmental Profiles of Trust, Hopeful Future Expectations, and Civic Engagement Across Adolescence

**Kristina Schmid Callina · Sara K. Johnson ·
Mary H. Buckingham · Richard M. Lerner**

Abstract Hopeful expectations for the future have been shown to play an important role in the positive development of youth, including youth contributions to society. Although theory and some research suggest that familial socialization may influence future-oriented cognitions, little work has focused on the possible interrelation of parent–child relationships and the development of hope, particularly during adolescence. Accordingly, the first goal of this study was to identify developmental profiles of youth with respect to hopeful future expectations (HFE) and parental trust across adolescence. Next, we explored whether these developmental trajectories were related to youth Contribution, indexed by community leadership, service, and helping attitudes and behaviors. We used growth mixture modeling to simultaneously examine trajectories of adolescents' perceived connections with parents (indexed by parent trust) and HFE among 1,432 participants (59 % female) from Waves 3 through 6 (Grades 7 through 10) of the 4-H Study of Positive Youth Development. A four-profile model provided the best fit to the data, with the following profiles: Moderate HFE/U-shaped Trust; Moderate HFE/Increasing Trust; Both Decreasing; and Both High Stable profiles. We then explored whether hope-trust profiles were related to youth Contribution in Wave 7. Contrary to hypotheses, results indicated that the profile reflecting the greatest discrepancy in HFE and trust across early to middle adolescence (i.e., Moderate Hope/U-shaped Trust) was associated with the highest mean Contribution scores. The implications of the findings for future theory and research are discussed.

K. S. Callina · S. K. Johnson · M. H. Buckingham ·
R. M. Lerner (✉)
Tufts University, Medford, MA, USA
e-mail: iaryd.pubs@gmail.com

Introduction

Over the past two decades, researchers have given much attention to the important role of hope in positive youth functioning. Such work has found robust associations between hope, conceptualized as emotions and cognitions that energize behavior in the direction of future goals (Schmid and Lopez 2011), and various aspects of youth thriving. For instance, higher levels of hope predict academic success (e.g., Ciarrochi et al. 2007), psychosocial well-being, academic achievement, and athletic achievement (see Lopez et al. 2009, for a review). Hopeful future expectations (HFE) also have been linked to more global indicators of youth thriving, including positive youth development (PYD) as indexed by the "Five Cs"—Competence, Confidence, Character, Connection, and Caring—as well as the "Sixth C," Contribution (Lerner et al. 2005; Schmid et al. 2011). In addition, analysis of the 2010 *Gallup Student Poll*, a survey of more than 240,000 youth in Grades 5 through 12, showed that hope was very strongly correlated with indicators of PYD, such as self-efficacy, intentional self-regulation, and well-being (Lopez et al. 2010).

Despite the importance of hope for the positive development of youth, very little research has been done to explore the role of hope in adolescents' developmental pathways. Moreover, there is a lack of research that explores the contextual features in young people's lives that either support or inhibit hope (Schmid and Lopez 2011). In particular, Tennen and colleagues (Tennen et al. 2002), have noted that the
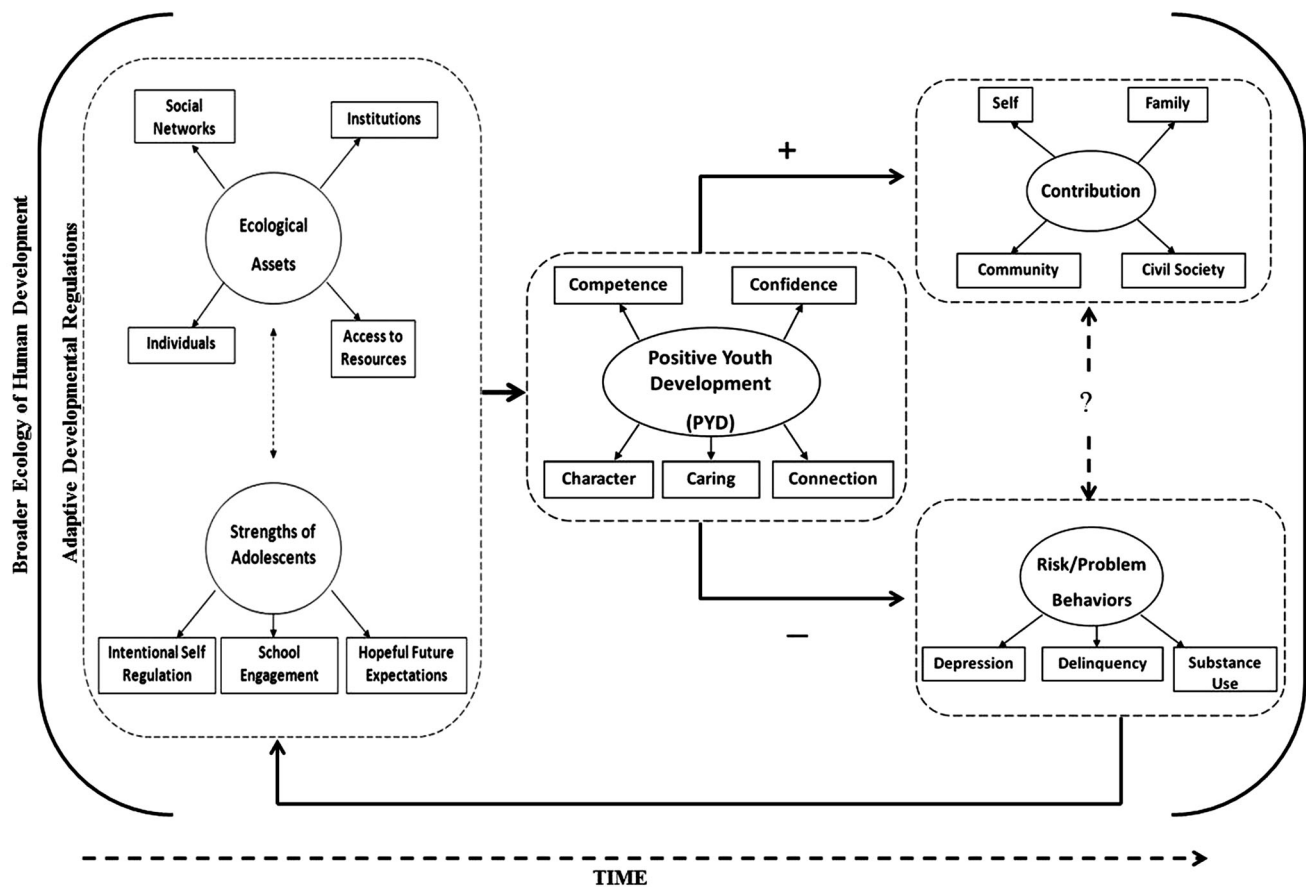
Fig. 1 A relational, developmental systems model of the role of hope (indicated by hopeful future expectations and intentional and organismic self regulation) in positive youth development

concept of trust, which Erikson (1959) theorized as being foundational to the emergence and course of hope across childhood and adolescence,[1] has been absent from hope research in recent decades. Accordingly, in the present study we were interested in the developmental course of hope and trust across the adolescent period. In particular, we examined simultaneous trajectories of HFE and trust in order to model profiles of these theoretically mutually-influential constructs over the course of the adolescent period.

This research is informed by a relational developmental systems perspective of human development (Overton 2010; Overton and Müller 2013). Such frameworks emphasize that the mutually influential relations between individuals and contexts are the key process of change involved in life-span

development. Hope theory (e.g., Little et al. 2006; Schmid and Lopez 2011) identifies hope is a key individual strength that contributes to the agency of the individual in successfully regulating his or her relations with the context. As such, we expect that hope develops in a dynamic relationship with various aspects of the context (see Mascolo and Fischer 2010) and, in turn, plays an important role in the nature of the relations between the individual and his or her environment.

This work is based on a model wherein hope involves HFE and intentional self-regulatory skills such as goal setting and management (Schmid and Lopez 2011). However, for the present study, we focus on HFE. Figure 1 (from Schmid and Lopez 2011) illustrates the role of HFE within the developmental system. As illustrated in the figure, HFE is influenced by ecological assets and, in turn, plays a role in the individual's relations with the environment. Prior research on future-oriented cognitions and emotions points to the important socialization role of the family for providing contextual assets that support hope (Trommsdorff 1983). Specifically, the development of hope involves a history of trust and positive feedback from social interactions (Tennen et al. 2002). In turn, HFE is linked to features of positive youth development, including

---

[1] According to Erikson, hope provides a framework for an individual's movement through the stages of early childhood through old age, and its meaning for the individual's social interactions is expanded or refined as new strengths emerge (Erikson 1968). Any of the virtues that arise from the resolution of a conflict at a particular stage inform the subsequent stages. Therefore, hope is not only foundational for healthy development in infancy, but it provides a lens through which the adolescent approaches new social relationships as part of the identity crisis.

youth contributions to their communities. Individuals who are hopeful may be more likely to engage in a positive and goal-oriented way with their families, communities, and society (Snyder et al. 1997; Flanagan 2003).

Trust and Hope

Despite the attention in various literatures (e.g., psychology, education, nursing, and medicine) to the predictive power of hope with respect to positive youth functioning, very little is known about the role of contextual assets in nurturing and shaping hope during adolescence. Little et al. (2006) suggested that a sense of hope is established by one's history of actions that lead to the attainment of goals. Feedback from self-evaluations of previous successes and failures provide information about which actions will yield desired outcomes under different circumstances. However, the development of hope does not emerge only as a result of inward reflection on one's own abilities. Consistent with relational developmental systems theories, hope is influenced by various constraints or supports from the context that either hinder or promote goal attainment. According to Trommsdorff (1983), "Socialization is always future oriented, and future orientation (as a component of the person's time perspective) is an integral part of the socialized personality" (p. 381). The development of an individual's HFE is therefore dynamically linked to his or her relationships with important others.

In the present study, therefore, we examined the developmental interplay between adolescents' HFE and their perceived trusting relationships with their parents. Following from definitions of interpersonal trust by Erikson (1959), Bowlby (1969, 1973), Rotter (1980), and others (e.g., Rotenberg 1995), trust is conceptualized here as adolescents' expectations for warm, supportive, and reliable interactions between themselves and their parents. Such parent–child interactions may promote HFE in several ways. First, they provide a foundation for expectations that other social interactions will be positive (i.e., Bowlby's 1969, 1973 "internal working model" hypothesis). Second, such interactions provide models of positive behaviors that youth incorporate into their own self-concepts, which in turn informs their hopes for the future (Trommsdorff 1983; McCabe and Barnett 2000). According to Snyder et al. (1997), "through the encouragement of role models…high hope children learn to find and maintain pathway and agentic thoughts for their goals in the face of barriers" (p. 108). For instance, future expectations may become more salient for youth whose parents encourage them to make plans and set goals. McCabe and Barnett (2000) found that explicit discussion between children and parents about the child's future goals, such as what job the child would like to have when he or she grows up, was associated with the

child thinking more frequently and in greater detail about the future.

Adolescents' trust that their parents are supportive also plays a key role in giving adolescents the confidence that their future plans may be realized. For instance, Kerpelman et al. (2008) found that maternal support was associated strongly with future education orientation, which was measured by the extent to which youth were making plans for their future educational attainment. Dubow et al. (2001) found that parental support predicted increases in positive future expectations over a nine month period. Finally, Seiffge-Krenke et al. (2010)found that parental support for autonomy was associated with higher developmental aspirations. In turn, youth without contextual supports may become disengaged from their future selves. For instance, Seginer and Lilach (2004) found that loneliness among youth, including endorsing items such as *there is no one I can turn to*, was associated with lower scores on motivation orientation, which was assessed by value, expectance, and internal control of one's future plans. The present study extends this prior research by exploring simultaneous trajectories of hope and parent trust across several years of the adolescent period.

Overall, parent-adolescent relationships may provide a context for hope to the extent that the relationship is characterized by connectedness and trust (e.g., Erikson 1959; Flanagan 2003). Although there is no research on the links between hope and trust, a few researchers have examined the nature of hope across development in the context of parenting practices. For example, Stoddard et al. (2011) examined trajectories of hopelessness among African-American youth living in impoverished neighborhoods. The authors found that youth with strong maternal connections in early adolescence reported less hopelessness at age 13. Nurmi and Pulliainen (1991) suggested that parenting practices may have differential influences on adolescents' hopes for the future at different developmental periods. Among 15-year-olds, higher levels of family discussion were associated with greater optimism and with greater steps taken toward future goals. In the present study, we extend the work by Stoddard and Nurmi by assessing the longitudinal associations between parent–child trust and hope.

A secondary goal of this investigation was to examine the association between hope-trust profiles and youth Contribution. Variations in the trajectories of HFE and parent trust may have implications for adolescents' social relationships outside of the family. Erikson (1959) theorized that hope plays an important role in an individual's identity development in adolescence and beyond. He proposed that hope is maintained by trusting that social interactions (particularly with close friends and family within the most proximal levels of the ecology) will be

positive. These positive social interactions, in turn, are the primary force shaping identity development in adolescence (Erikson 1968). Thus, hope may serve to reinforce positive engagement with others, as well the exploration of and commitment to one's future adult roles. As such, hope must be assessed not only as a set of goal-directed cognitions and emotions, but also as relational behaviors between the individual and others.

Hope Beyond the Self

Trusting social relationships may engender, build, and support hope as youth develop. In turn, hopeful youth may be more likely to engage with their context in positive ways. Snyder et al. (1997) argue that hope functions to promote the well-being of one's social group, because individuals with higher hope have the capacity and the motivation to realize the shared goals of the collective. Consistent with the sort of relational developmental systems model presented in Fig. 1, the links between HFE and contextual engagement may occur indirectly, due to the foundation of trust and connectedness with the individuals in their immediate context, especially parents. According to Tennen et al. (2002), "The hopeful person's resolute trust and capacity to rely on others may also explain why hopeful people are able to select pathways that facilitate others' assistance or support" (p. 312). Thus, we expect that youth with high hopeful expectations will also show high trust and high engagement with the context, as indicated by Contribution.

There is some evidence in the youth development literature for the proposed links between hope and youth engagement. Youth with greater HFE may be more effective in their ability to regulate their relationships with their context (e.g., Bowers et al. 2012; Bowers and Johnson 2013). Research by Damon and colleagues on youth purpose (Damon et al. 2003; see also Mariano and Going 2011) suggests that hopeful youth may be more likely to identify meaningful goals, or purposes, that actively engage and contribute to their families, schools, and communities. Similarly, analyses of data from youth in Grades 7 through 9 from the 4-H Study of Positive Youth Development (PYD; Lerner et al. 2005, 2011) indicated that HFE was associated in theoretically expected ways with trajectories of positive developmental outcomes, including Contribution (Schmid et al. 2011). Individuals with higher hopeful expectations for the future were significantly more likely to be in the group of youth who followed a path of high Contribution scores across Grades 7 through 9. Such research emphasizes the mutual benefit of hopefulness for both the individual and context. In the present study, we will extend prior research by examining the relations between hope-trust trajectories and youth

Contribution that indicate the presence of hope beyond the self.

The Present Study

To understand better the nature of the relations between hope, trust, and Contribution, we explored two primary research questions about hope in context. First, what are the developmental profiles of youth with respect to HFE and perceived trust from the parent across adolescence? Second, how are these developmental profiles related to indicators of positive youth development, such as Contribution? In the present study, we sought to investigate trajectories of HFE across several years of the adolescent period. This middle- to late-adolescent period is important because of the relevance of future-oriented cognitions, such as the ability to plan for one's future, for the selection of behaviors that inform the adolescent's emerging identity (Nurmi 1991). There is evidence, for example, that adolescents' beliefs about the future become more internalized as they begin to make the transition into their future adult roles (Nurmi 1989).

We hypothesize that trajectories at the highest levels of hope, when coupled with the highest levels of trust, will be associated with the highest levels of Contribution; conversely, low hope and low quality of parenting relationships will be associated with the lowest levels of Contribution. These predictions follow from the theoretical relations among hope, parenting, and Contribution described above. However, it is possible that trajectories may emerge which demonstrate that hope and parent-adolescent relationships are not as tightly linked. For example, youth may have high trajectories of HFE but low trust scores across the adolescent period, or scores that reflect a decrease, increase, or curvilinear trajectory. The reverse might also be the case, in which high trajectories of quality parent-adolescent relationships would not necessarily be associated with high trajectories of HFE. Such alternative trajectories are exploratory in the present study, given the lack of previous findings on the developmental nature of the relations among HFE, parenting, and Contribution in adolescence.

To simultaneously examine trajectories of adolescents' HFE and trust we used a growth mixture modeling approach with data from Waves 3 through 6 of the 4-H Study of Positive Youth Development[2] (Lerner et al. 2005, 2011). We

---

[2] In the 4-H Study, earlier Waves of data collection corresponded with the participants' grade in school. For instance, in Wave 1 of the 4-H Study, youth were in Grade 5 and in Wave 2, they were mostly in Grade 6. However, in later Waves of data collection, participants were sampled from a wider range of grades. For example in Wave 6, the majority of participants were in Grade 10, but there were also participants in Grades 9 and 11. Therefore, in the present study we refer to "Wave" to indicate the times of testing, rather than "Grade."

then examined whether youth in certain hope-trust profiles were more likely to engage in and value Contribution to their community. We included demographic characteristics—specifically, sex and mother's education—in the analyses to describe the participants in the different trajectory profiles, and also because both characteristics have been shown previously to be associated with levels of Contribution in the 4-H Study sample (with girls showing higher Contribution scores, and with higher Contribution scores associated with higher levels of mother's education; e.g., Schmid et al. 2011).

Methods

Full details of the 4-H Study of Positive Youth Development have been presented elsewhere (Lerner et al. 2005, 2009, 2010, 2011). Therefore, we present here only the features of the methods relevant to the present research, which includes data from Waves 3 through 6. A discussion of the overall method of the 4-H Study is provided in the introductory article of this special issue (Bowers et al. in press).

Procedure

In Waves 1 through 3 of the 4-H Study, data collection from youth was conducted by trained study staff or, at more distant locations, hired assistants. A detailed protocol was used to ensure that data collection was administered uniformly and to ensure the return of all study materials. After Wave 1, youth who were absent on the day of the survey or were from schools or programs that did not allow on-site testing were contacted by e-mail, mail, or phone, and were asked to complete and return the survey to us. Beginning in Wave 5, youth completed the survey online unless they requested a paper survey. Parents completed online or paper surveys. Paper surveys were delivered to their homes by their children or through the mail (in the latter case, return postage was provided).

Participants

The analyses for this study involved data from 1,432 youth (59 % female) who participated in two or more waves of data collection. Mean age for the youth in Wave 3 was 13.02 (SD = .53); in Wave 4, M_{age} = 14.09 (SD = .61); in Wave 5, M_{age} = 15.04 (SD = .61); and in Wave 6, M_{age} = 16.08 (SD = .61). Across Waves 3 through 6, self-reported race/ethnicity for these youth was American Indian, 1.6 %; Asian American, 2.8 %; African American, 7.0 %; Latino/a, 7.8 %; and European American, 62.2 %. A portion of youth (17.3 %) reported their race/ethnicity

Table 1 Analytic sample size by wave

	Wave 3	Wave 4	Wave 5	Wave 6
Full sample (total N = 3,971)	N = 1,839	N = 1,483	N = 988	N = 1,876
One-wave only (total N = 2,539)	N = 651	N = 409	N = 216	N = 1,263
Analytic sample (total N = 1,432)	N = 1,188 (65 % of full sample)	N = 1,074 (72 % of full sample)	N = 772 (77 % of full sample)	N = 613 (33 % of full sample)

differently across waves of participation, and a small number (1.3 %) selected "Multiracial" or "Other" for race/ethnicity.

Missing Data and Attrition

We included participants in the analytic sample if they had data available for two or more waves of data collection across the four years assessed in the trajectory analysis. That is, participants were included in the analysis if they had at least two data points across Waves 3 through 6. The analytic sample used in the present study represented 35 % of the full sample of youth who participated in the 4-H Study in Waves 3 through 6. However, Table 1 shows that within each wave of data collection, the proportion of youth from the full sample included in the analytic sample varied from 33 to 77 %. Youth may be missing data either because they did not participate in a given wave of data collection, or because they chose not to respond to one of the variables of interest in the present analysis. Variable non-response for HFE and parent connection ranged from 1 to 13 %.

We conducted t tests to determine whether youth included in the analytic sample and youth who only participated in one wave of data collected differed in mean levels of HFE, parent connection, or Contribution. Full details of these analyses may be obtained upon request from the corresponding author. Although some mean differences were significant, the mean differences were very small (and therefore, not meaningful) and inconsistent across waves. We thus assumed that data were missing at random and handled missing data using maximum likelihood estimation within MPlus.

Measures

The analyses for the present study involved modeling trajectories of HFE and adolescents' perceived connections with parents, conceived as parent trust. In addition, we examined whether hope-trust trajectory membership was

Table 2 Correlations among HFE (Waves 3 through 6), Trust (Waves 3 through 6), and Contribution (Wave 7)

	M (SD)	1	2	3	4	5	6	7	8	9
1. HFE W3	4.07 (0.40)	–								
2. HFE W4	4.08 (0.42)	.384	–							
3. HFE W5	4.09 (0.37)	.345	.383	–						
4. HFE W6	4.03 (0.43)	.473	.507	.461	–					
5. Trust W3	4.52 (0.55)	.386	.264	.181	.216	–				
6. Trust W4	4.52 (0.61)	.307	.416	.291	.290	.489	–			
7. Trust W5	4.67 (0.64)	.211	.286	.343	.343	.332	.563	–		
8. Trust W6	4.44 (0.65)	.217	.157	.204	.391	.349	.464	.558	–	
9. Cont. W7	59.01 (18.85)	.450	.444	.501	.463	.274	.304	.235	.325	–

All correlations are statistically significant, $p < .000$

related to youth Contribution. Table 2 shows the means, standard deviations, and correlations of these three constructs in each wave.

Hopeful Future Expectations

Items related to having a hopeful future were drawn from questions within the 4-H Study data set. Four items were used from a set of questions that assessed participants' expectations that they will experience certain situations later in life. Participants were asked the following question: 'Think about how you see your future. What are your chances for the following?' Items included being involved in helping other people, being healthy, having friends you can count on, and being safe, with response options ranging from 1 = *Very Low* through 5 = *Very High*. Two additional items were included from the larger 4-H Study survey. For the first item, participants were asked to report how often during the past week they felt hopeful about the future, with response options ranging from 0 = *Most or all of the time* through 3 = *Rarely or none of the time*. This item was reverse coded such that higher scores indicated higher HFE. The second item asked participants how much education they expected to complete, with response options ranging from *8th grade or less* through *degree after college*. Response options were collapsed and recoded such that 1 = *less than high school*, 2 = *complete high school*, 3 = *education beyond high school*, and 4 = *degree after college*. In the present study, Cronbach's alphas for the 6-item HFE scale were low to acceptable, ranging from .61 to .70 across Waves 3 *through* 6.

Although the reliability coefficient is not high, previous research (e.g., Schmid et al. 2011) indicates that this measure is a robust predictor of indicators of positive youth development. For example, Schmid and colleagues used data from the 4-H Study of PYD to assess the relations between HFE and positive (e.g., 5Cs of PYD, youth Contribution) and negative (depressive symptoms, risk

behaviors) developmental outcomes. These studies indicate that the HFE measure has good convergent and divergent validity.

Trust

Trust was assessed by adolescents' perceived positive connections with their parents. Six items from the Search Institute's Profiles of Student Life-Attitudes and Behaviors (PSL-AB) questionnaire were used to measure trust (Leffert et al. 1998). All items are measured on a Likert-type scale, with response formats ranging from 1 = *strongly agree* to 5 = *strongly disagree* for the first five items. These items were then reverse coded, such that higher scores indicated higher connection to one's family. Sample items include "I get along with my parents" and "I have lots of good conversations with my parents." The sixth item, "If you had an important concern about drugs, alcohol, sex, or some other serious issue, would you talk to your parent(s) about it?" was scored on a scale from 0 to 4, such that 0 = *no*, 1 = *probably not*, 2 = *I'm not sure*, 3 = *probably*, and 4 = *yes*. The six items were then averaged to create a trust scale score, with higher scores indicating greater trust. In the present study, Cronbach's alpha for the 6-item scale ranged from .74 to .84 across Waves 3 through 6.

Contribution

To assess attitudes and behaviors toward contribution in Wave 7, we used items from prior 4-H Study research (e.g., Lerner et al. 2005). Contribution items were derived from existing instruments with known psychometric properties and used in large-scale studies of adolescents: the Profiles of Student Life-Attitudes and Behaviors Survey (PSL-AB; Benson et al. 1998) and the Teen Assessment Project Survey Question Bank (TAP; Small and Rodgers 1995). Participants responded to twelve items, which were

weighted and summed to create a composite score of Contribution. These items comprised four subsets: leadership, service, helping, and ideology. Items from the leadership, service, and helping scales measured the frequency of time youth spent helping others (e.g., friends or neighbors), providing service to their communities, and acting in leadership roles; together, the leadership, service, and helping subsets comprise an action component of Contribution. The ideology scale measured the extent to which contribution was an important facet of participants' identities and future selves (e.g., "It is important to me to contribute to my community and society"). Contribution scores could range from 0 to 100, with higher scores indicating higher levels of Contribution. In the present study, Cronbach's alpha for the 12-item Contribution measure was .71 in Grade 11.

Demographic Characteristics

Mother's education and sex were included in the analyses as covariates. Mother's education was measured as the highest reported level of education attained by the participant's mother across the waves of data collection. The variable is categorical, ranging from 1 = *8th grade or less* through 8 = *degree after college*.

Results

We examined the developmental profiles of youth with respect to HFE and parental trust across adolescence and, in turn, explored how these developmental profiles were related to youth engagement, particularly with respect to Contribution. To address these research questions, we first established measurement invariance across waves for the HFE and parental trust constructs. Second, we fit growth mixture models using Mplus (Muthén and Muthén 2012). Third, we examined whether levels of Contribution varied across hope-trust trajectories.

Measurement Invariance

We tested measurement invariance for the latent constructs of HFE and parent trust across Waves 3 through 6. We established invariance using the recommendations outlined by Little (in press), in which a longitudinal Confirmatory Factory Analysis (CFA) is employed to test whether the constructs are comparable across time. This method proceeds in three steps. First, we established configural invariance, which indicates whether the patterns of factor loadings (that is, the patterns of free and fixed parameters) were the same across measurement occasion. Next, we assessed weak factorial invariance by testing whether the factor loadings themselves were the same across waves. Finally, we constrained the intercepts of the factor loadings to be equal to test for strong factorial invariance across waves. We deemed the latent constructs to be invariant if the model fit did not change substantially (i.e., a change of less than .01 in the Comparative Fit Index; Cheunga and Rensvold 2002) in each subsequent invariance test.

Table 3a, b show the model fit statistics for the configural invariance, factor loading (weak) invariance, and intercept (strong) invariance models for HFE and parent trust, respectively. The latent HFE and parent trust constructs showed both weak and configural invariance across Waves 3 through 6; in other words, the pattern of factor loadings and the magnitude of the loadings themselves for the items in each latent construct were the same at each time point. Tests of strong invariance indicated partial support for both constructs. For HFE (Table 3a), all of the items were invariant with respect to their intercepts at each time point with the exception of two items at Wave 6: *How often during the past week did you feel hopeful about the future* and *How much education do you expect to complete*. Wave 6 participants endorsed the hopeful future item more strongly, which means that for a participant at the average level of the latent construct, the expected value of this item is higher than the model constraint. With respect to the education item, the intercept was lower than the model constraint, which means that for a participant at the average level of the latent HFE construct, the value of the education item was lower than expected. For the latent parental trust construct (Table 3b), all items showed strong invariance except one item at Wave 6, *My parents give me help and support when I need it*. The intercept for this item was lower than the model constraint, indicating that for a participant at the average level of the latent trust construct, the value of the "help and support" item was lower than expected.

Table 4 provides the raw-metric factor loadings and intercepts for the strong invariance models for the HFE and parental trust items across Waves 3 through 6. As shown in the table, despite the slight variations in the intercepts for a few of the items at Wave 6, the results of the invariance tests indicated that items for HFE and the items for parent trust represented the same latent constructs across Waves 3 through 6. In the next step of the analysis, we examined the developmental profiles of youth with respect to HFE and parent trust across this period.

Growth Mixture Modeling

To investigate the presence and nature of trajectories of HFE and parental trust, we used growth mixture modeling (GMM; Muthén and Muthén 2000). GMM is similar to the general technique of latent growth curve modeling in that it

Table 3 a) Model fit statistics for latent HFE factor across Waves 3 through 6 and b) model fit statistics for latent trust factor across Waves 3 through 6

Model	Chi square (df)	p	RMSEA [90 % CI]	CFI	TLI/NNFI	ΔCFI
(a)						
Configural invariance	522.569 (206)	<.001	0.033 [0.029, 0.036]	0.948	0.930	
Loading invariance	586.491 (221)	<.05	0.034 [0.031, 0.037]	0.939	0.924	0.009
Intercept invariance (partial)	665.400 (237)	<.05	0.036 [0.032, 0.039]	0.929	0.917	0.010
(b)						
Configural invariance	540.002 (202)	<.001	0.034 [0.031, 0.038]	0.969	0.957	
Loading invariance	604.995 (217)	<.05	0.035 [0.032, 0.039]	0.964	0.954	0.005
Intercept invariance (partial)	645.009 (234)	<.05	0.035 [0.032, 0.038]	0.962	0.955	0 .002

Table 4 Raw-metric factor loadings and intercepts for HFE and trust items across Waves 3 through 6

	Factor loadings				Intercepts			
	G7	G8	G9	G10	G7	G8	G9	G10
Hope								
FUT12	0.350	0.350	0.350	0.350	4.625	4.625	4.625	4.625
FUT13	0.291	0.291	0.291	0.291	4.846	4.846	4.846	4.846
FUT14	0.270	0.270	0.270	0.270	4.860	4.860	4.860	4.860
FUT15	0.274	0.274	0.274	0.274	4.836	4.836	4.836	4.836
DEPR	0.284	0.284	0.284	0.284	1.719	1.719	1.719	**1.995**
EDR	0.147	0.147	0.147	0.147	3.325	3.325	3.325	**3.228**
Trust								
FAM1	0.456	0.456	0.456	0.456	4.743	4.743	4.743	4.743
FAM2	0.443	0.443	0.443	0.443	4.775	4.775	4.775	4.775
FAM3	0.412	0.412	0.412	0.412	4.758	4.758	4.758	4.758
FAM4	0.546	0.546	0.546	0.546	4.612	4.612	4.612	4.612
FAM5	0.529	0.529	0.529	0.529	4.636	4.636	4.636	**4.104**
PDRG	0.499	0.499	0.499	0.499	3.537	3.537	3.537	3.537

Bolded items were not held invariant

estimates intercept and slope parameters to describe trajectories. GMM differs from general latent growth curve modeling, however, in that it allows for separate trajectories for distinct groups of individuals that differ in their intercepts and growth parameters. In the most general form of GMM, these parameters are allowed to vary within trajectory groups, whereas in the most restricted version (i.e., Latent Class Growth Analysis) they are not. The most general form of GMM is often the most realistic model but it is also the most computationally intensive; the most restrictive form has a considerably lower computational burden but the assumption of no variance within classes is often unrealistic.

An alternative to selecting either the most general *or* the most restrictive model is to estimate an intermediate model in which only some variances (e.g., the intercept) are allowed to vary across classes. We used this approach because it provides a balance between facilitating model estimation and retaining a realistic model specification. Specifically, we estimated unique variances for the intercepts within each trajectory class and allowed the HFE and parental trust intercepts to covary within classes as well. (We also ran less restricted models in which the slope parameters were allowed to vary across classes; these models, however, had significant convergence issues and thus we pursued the above strategy.)

The procedure for GMM involves testing models with varying numbers of trajectory classes and comparing fit indices, as well as theoretical interpretability, to decide on the most appropriate number of trajectory groups. Because we sought to understand whether there were distinct profiles with respect to HFE and parent trust across the adolescent period, we based the trajectories on modeling HFE and parent trust simultaneously (rather than modeling the trajectories separately and then examining relationships between HFE trajectory and parent trust trajectory

Table 5 Model fit statistics for growth mixture models

Number of classes	LMR	BLRT	AIC	BIC	aBIC	Entropy
2	.22	.00	12,509.09	12,640.76	12,561.35	.83
3	.02	.00	12,348.84	12,522.65	12,417.82	.84
4	.04	.00	12,249.55	12,465.49	12,335.25	.84
5	.06	.00	12,171.73	12,429.81	12,274.15	.78

membership). In other words, we sought to identify unique profiles of hope-trust development across the high school years for the youth in this study.

We used several criteria to determine the number of latent trajectories that best represented the data (Nagin 2005; Collins and Lanza 2010; see also Luyckx et al. 2008). First, we compared the Bayesian Information Criterion (BIC) and Akaike Information Criterion (AIC) statistics across successive numbers of trajectory classes; we considered model fit to improve when adding classes led to a lower BIC and AIC. Second, we used the bootstrap likelihood ratio test (BLRT; McLachlan and Peel 2000), and the Lo-Mendell-Rubin likelihood test (LMR; Lo et al. 2001) to compare the improvement in fit between solutions with k and $k - 1$ trajectory groups (BLRT and LMR were calculated using the method proposed by Asparouhov and Muthén 2012). Third, we assessed each model's classification quality using entropy (E), an index of the accuracy with which individuals are placed into trajectory classes based on the posterior probabilities of class membership. Finally, we evaluated the trajectory classes for parsimony and interpretability.

Table 5 provides the model fit statistics for linear growth models with two, three, four, and five classes. The LMR and BLRT for the three- and four-class solutions were both significant, indicating that the three-class model fit better than the two-class model, and the four-class model fit better than the three-class model. In addition, the AIC and BIC decreased for each successive class, again indicating that the four-class model is the best fit for the data. Finally, the four-class solution was substantively interpretable; therefore, we chose this model as the best fit.

Figure 2 presents graphical depictions of the trajectory groups. As seen in the figure, the four trajectory classes show markedly different hope-trust profiles. In the first class, HFE and trust are moderate in Wave 3, but then the trust scores follow an inverted u-shaped pattern across Waves 4 through 6, while HFE dips only slightly at Wave 4 and then remains stable. Therefore, we labeled this group Moderate HFE/U-shaped Trust. The second class was characterized by moderate and stable HFE across Waves 3 through 6, with trust starting low and then increasing across the four waves. We called this group Moderate HFE/Increasing Trust. In the third and fourth trajectory classes,

(Fig. 2c, d) the HFE and trust scores were nearly parallel to one another. In the third class, HFE and trust were moderate at Wave 3 but then decreased across Waves 4 through 6; in the fourth class, HFE and trust were high and stable across the four waves. We labeled these trajectory classes Both Decreasing and Both High Stable, respectively. We then conducted further analyses using this four-class model to determine whether hope-trust trajectory groups were associated with differences in demographic characteristics (i.e., sex and mother's education) as well as Contribution scores.

Trajectory Group Differences in Demographic Characteristics and Contribution

The second goal of this study was to explore whether the hope-trust profiles were associated with differences in youth demographic characteristics and Contribution. We investigated these research questions using the three-step process available in MPlus (Asparouhov and Muthén 2013). This procedure, newly available in MPlus Version 7, operates as follows. First, the growth mixture model is estimated. Second, the most likely trajectory group membership is found for each individual (based on the trajectory class to which the participant has the highest probability of belonging). Using these probabilities, a classification uncertainty rate is computed. In the third step, most likely trajectory class membership is modeled as a latent variable within a larger model of interest, with uncertainty rates (i.e., measurement error) prefixed at the probabilities obtained in step two. Here, our larger model included testing for differences in a) the proportion of female participants in each trajectory group; b) the mean level of mothers' education within each trajectory group; and c) the mean level of Wave 7 Contribution within each trajectory group.

Table 6 provides descriptive statistics (proportions, means, and standard deviations) for sex and mother's education for each trajectory group, as well as the pairwise comparisons of proportions and means. The proportion of female participants did not differ among trajectory groups, but the mean level of mother's education did. Mothers of participants in the Moderate HFE/U-shaped Trust group completed fewer years of education, on average, than
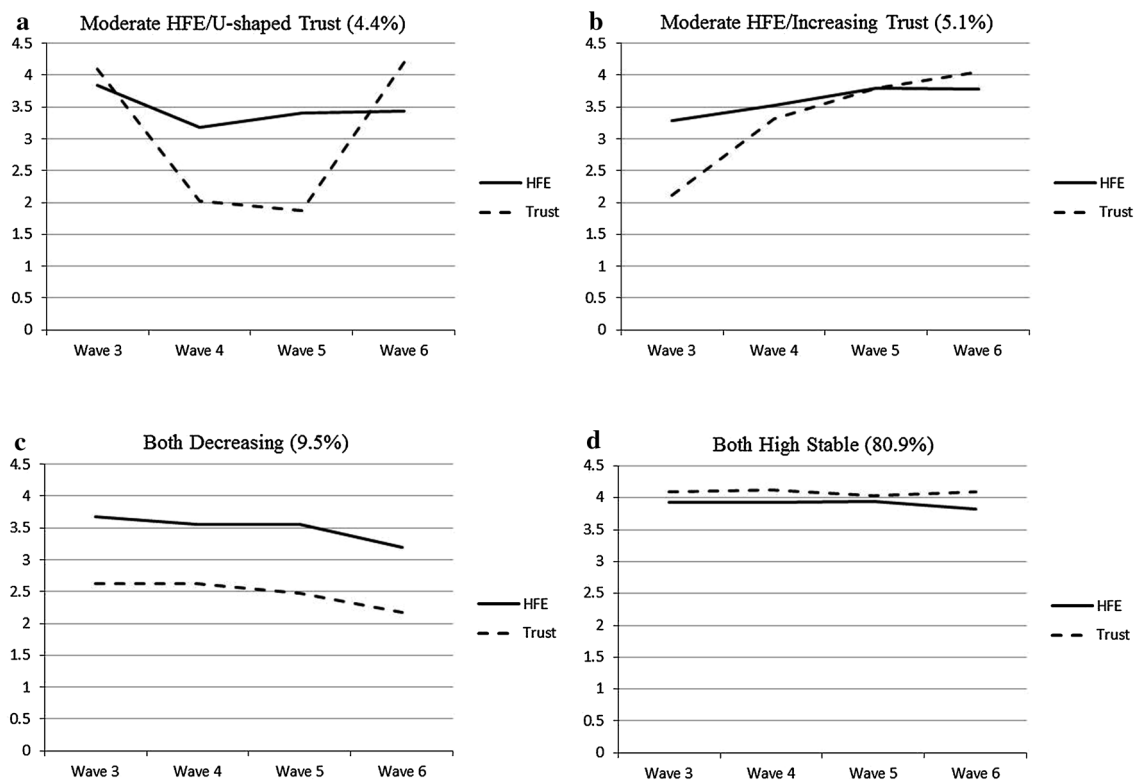
Fig. 2 Four-class solution for modeling trajectories of trust and HFE across Waves 3 through 6 (percent of sample represented in each class shown in parentheses)

Table 6 Equality tests of mean differences across classes for contribution, sex and mother's education

	Profile description	Sex (percentage female)	Mother's Education Mean (SD)	Contribution Mean (SD)
Class 1	Moderate HFE/U-shaped trust	68	3.73 (0.32)[a,b]	70.74 (3.73)[a,b]
Class 2	Moderate HFE/increasing trust	60	4.71 (0.05)[a]	60.31 (1.18)[a,c]
Class 3	Both decreasing	64	4.30 (0.26)	39.56 (5.13)[b,c]
Class 4	Both high stable	68	5.08 (0.56)[b]	66.34 (13.92)

Significant mean differences indicated by same superscript within the same column

mothers of youth in the Moderate HFE/Increasing Trust and Both High Stable groups. In addition, mothers of youth in the Both Decreasing profile had completed fewer average years of education compared to mothers of participants in the Both High Stable group.

As shown in Table 3, the overall mean for Wave 7 Contribution scores for this sample was 59.01 ($SD = 18.85$). The Moderate HFE/U-shaped Trust (Fig. 2a) group had the highest Contribution score ($M = 70.74$). The Moderate HFE/Increasing Trust (Fig. 2b) and Both High Stable groups (Fig. 2d) both had Contribution scores that were slightly above the overall mean, 60.31 and 66.34, respectively. The Both Decreasing group (Fig. 2c) had the lowest mean

Contribution score. Pairwise mean differences of Wave 7 Contribution across the hope-trust profiles are shown in Table 6. The Moderate HFE/U-shaped Trust trajectory (Fig. 2a) had the highest Contribution score, and this was significantly different from both the Moderate HFE/Increasing Trust ($\chi^2 = 7.01$; $p = .008$) and the Both Decreasing ($\chi^2 = 24.88$; $p < .001$) groups. The mean Contribution scores for these latter two groups were also significantly different from one another ($\chi^2 = 15.04$; $p < .001$). The mean Contribution score for the Both High Stable group was not significantly different from the mean Contribution score for any other group (this finding of non-significance was likely due to differences in sample size).

Discussion

Prior research has emphasized the cognitions and emotions associated with hope (Snyder 1994). However, narrowly defining hope as goal-oriented or future-oriented cognitions or emotions may diminish attention to the fact that hope is contextualized. Critiques of hope research from the past few decades (e.g., Aspinwall and Leaf 2002) has found the predominant conceptualization of hope to be "strongly individualistic" (p. 284) in that it does not account for the social relationships that may be critical for young people to realize future goals. Theoretical models of the development of hope informed by relational developmental systems theories (e.g., as illustrated in Fig. 1; Schmid and Lopez 2011) suggest that hope develops in a dynamic relationship with various aspects of the context. However, data about the links between hope and the context of youth development are relatively sparse; where such links do exist (e.g., Dubow et al. 2001), their connection with indicators of PYD has not been explored.

Accordingly, to understand hope in context—and specifically to understand the relations between HFE and trust and, in turn, the ways in which these links might predict youth Contribution—we explored two primary research questions. First, what are the developmental trajectories of youth with respect to HFE and parental trust across adolescence? Second, how are these developmental trajectories related to youth civic engagement, particularly with respect to community contribution? To examine trajectories of trust and HFE simultaneously, we used a growth mixture modeling approach with data from Waves 3 through 6 of the 4-H Study of Positive Youth Development (Lerner et al. 2005, 2011). We then explored differences in hope-trust profiles with respect to Contribution, sex, and mother's education.

Four latent hope-trust profiles emerged for this sample. These were a Moderate HFE/U-shaped Trust profile; a profile characterized by moderate HFE, with low to increasing trust across Waves 3 through 6 (labeled Moderate HFE/Increasing Trust); a Both Decreasing group, where trust and HFE both dropped off in the later waves; and a Both High Stable group. This latter group (Fig. 2d) comprised the majority of the sample, with about 80 % of participants falling into this category.

In regard to the first research question, the examination of the simultaneous development of HFE and trust across middle to late adolescence resulted in the finding that, for a majority of youth in the sample, HFE and trust seem to develop in conjunction with one another. This relationship was particularly apparent for youth in the High Stable profile, whose mean HFE and trust scores follow the same pattern (high, stable) across Waves 3 through 6, indicating that, at least for this sample of youth, HFE and trust may be highly linked. Moreover, this result is consistent with previous findings from the 4-H Study of PYD, which suggest that a majority of youth in this sample are on optimal trajectories of thriving indicators (Lewin-Bizan et al. 2010).

It is not surprising, therefore, that less than 10 % of the sample fell into the two classes marked by decreasing HFE and trust. For the first of these, Moderate HFE/U-shaped Trust, parent trust and HFE decreased across Waves 3 through 4 (Grades 7 through 8), with HFE recovering slightly and trust following a U shape. Perhaps the divergence between hope and trust represents a difference in meaning for parent trust among youth in this profile, such that their hope is supported or hindered by aspects of the context outside of the relationship with their parents. For instance, Bowers and colleagues have shown that HFE mediates the relations between quality of non-parental adult relationships and psychosocial strengths of youth such as confidence and caring (Bowers et al. 2012; Bowers & Johnson, 2013). Future research is needed to cross-validate and ascertain the bases of this trajectory.

Furthermore, the Moderate HFE/U-shaped Trust group was associated with the highest mean Contribution scores, a surprising finding given that the profiles of HFE and trust were so divergent and that trust dipped so dramatically. Perhaps the fact that both the HFE and trust scores for these youth were moderate-to-high in Wave 6 accounts for the high Contribution scores in Wave 7. Future research here might examine whether the concurrent hope-trust profiles of youth are most relevant for predicting their attitudes and behaviors toward Contribution, using methods such as parallel-process latent growth curves to test the covariations between HFE and trust across this developmental period. Further research could also examine the relation between hope-trust trajectories and trajectories of Contribution across the same time period.

The mother's education scores for youth in the Moderate HFE/U-shaped Trust profile were significantly lower than for youth in the Moderate HFE/Increasing Trust and the Both High Stable profiles (see Table 6). This finding speaks to the relationship between socioeconomic status and the divergence of HFE and trust across the early to middle adolescent period. Additional research is needed about the role of family-level demographic characteristics in the relations between HFE and trust across the adolescent period. Nurmi and Pulliainen (1991) found that, among 15-year-olds, higher levels of family discussion were associated with greater optimism about the future. Research could investigate whether parent educational attainment predicts family discussions related to adolescents' HFE.

Moreover, it is important to note that the mother's education scores for youth in the Moderate HFE/U-shaped

Trust profile, although significantly lower than the Moderate HFE/Increasing Trust and the Both High Stable groups, were still moderate. That is, mothers in this divergent group, on average, were high school graduates and had completed some college. Perhaps this is a group who is not necessarily socioeconomically *dis*advantaged, but rather, they are simply not a high socioeconomic group. Moderate HFE/U-shaped Trust also had the highest scores on Contribution relative to youth in other profiles. The nature of the relationship between socioeconomic status and civic engagement is well-documented (Flanagan and Levine 2010), with behaviors such as voting and volunteering associated with higher levels of educational attainment. In the present study, Contribution was assessed by leadership, service, and helping attitudes and behaviors, such as the frequency of time youth spent helping friends and neighbors, and providing service to their communities. Additional research could usefully investigate different aspects of Contribution and civic engagement that might be associated with variations in youth profiles of HFE, trust, and socioeconomic background.

Consistent with our expectations about the role of the dual HFE-trust trajectories in predicting Contribution, the Both Decreasing profile had the lowest mean Contribution score. Future research should continue to follow youth in this profile to determine first whether this declining trajectory persists to the end of high school and into early adulthood, and second, whether there are negative implications of this decline besides relatively low Contribution, for example whether the trajectory predicts future educational or vocational attainment.

The largest trajectory group was characterized by high, stable HFE and trust across 4 years of data collection. In the present study, we did not allow the slopes to vary, an analytical approach which allowed us to obtain a balance between facilitating model estimation and retaining a realistic model specification However, future research should examine whether there is inter-individual variation in the slopes for the youth in this class. Certainly, there was a lot of variation around the mean with respect to the Contribution scores for this group; the standard deviation of Contribution for this class was 13.92. Nevertheless, taken together, the findings provide evidence for the importance of HFE and family support in the civic engagement of youth.

Of course, the findings of the present study should be interpreted carefully, in light of the limitations of this research. First, one potential limitation of this research is selection bias involving a volunteer sample. In addition, many of the self-report measures may be subject to social desirability response. As with any instance of growth mixture modeling, the trajectory groups that we identified may be sample-dependent. The data were collected from

participants in the 4-H Study of PYD, who are predominantly female and European-American. Future work should be done to cross-validate these findings with other samples of youth. For example, it is likely that cultural differences with respect to parenting and future orientation would be reflected by different latent hope-trust trajectories.

Another limitation of the study is that parent–child connectedness was used as an indicator, or proxy, of trust. Parent–child relationships that evolve from trust (versus mistrust) are, according to Erikson (1959, 1968), characterized by a positive affective quality and would be part of feelings and reports of connectedness. We recognize that we cannot know how much of the variance in a latent variable of trust was actually accounted for by our measure of parent connection. Nevertheless, we believe that we assessed an affective state that is consistent with Erikson's theoretical concepts, and that connectedness is therefore a useful proxy for trust in the present research.

Although the findings presented here are mixed with respect to the role of HFE-trust profiles in Contribution outcomes, the youth in the trajectories marked by higher levels of trust nevertheless had moderate to high scores on Contribution. The findings presented here indicate that supportive parent–child relationships may be a key ingredient in nurturing HFE, a key component of hope, at least for a majority of youth. Future research should explore whether supportive relationships with other individuals in the youth context, including adults such as mentors and teachers, as well as peers, are associated with patterns of co-development with hope, or whether there is a unique relationship between parent trust and hope across the adolescent period (e.g., Bowers et al. 2012). With respect to application of these findings, youth programming that seeks to promote Contribution might capitalize on the hope-trust links explored in the present study. For example, by engaging both parents and youth in community service or service learning projects, programs might help facilitate the parental support and trust that some youth need to feel confident in their ability to contribute.

Clearly, more research is needed to further elucidate the relationships between hope and trust, and to explore their associations with Contribution among diverse youth. Nevertheless, the findings indicate that hope is indeed a relational aspect of youth development (Schmid and Lopez 2011), one that is intimately linked with trust, at least in the family domain, and which plays an important role in adolescents' positive engagement. Future research should also account for other aspects of trust that develop across childhood and adolescence. For instance, the quality of peer relationships may play an important role in moderating the relations between parent and family connection, hope, and Contribution. In addition, Flanagan (2003) notes that while formative experiences with caregivers and

friends provide the foundations for social trust, there is a different quality to trust extended beyond one's immediate social network. In other words, future research should explore further the correlates of limited versus global trust (what Putnam 2000 and others refer to as thick versus thin trust, respectively), and the relations between these correlates, different levels of trust, and community contribution.

Conclusion

To understand the relations between HFE, parent trust, and Contribution across the adolescent period, the present study examined trajectories of HFE and trust, and explored whether membership in different hope-trust profiles was associated with Contribution in late adolescence. The findings from this research indicated that, contrary to hypotheses, the profile reflecting the greatest discrepancy in HFE and trust across early to middle adolescence, Moderate Hope/U-shaped Trust, was associated with the highest mean Contribution scores. In turn, however, the Both Decreasing profile was associated with the lowest mean Contribution scores, and this finding was consistent with our hypotheses. This latter finding, in particular, emphasizes the need for parents (or other important non-parental adults; Bowers et al. 2012) to strive toward maintaining trusting relationships with youth in order to promote community engagement in later adolescence.

The findings suggest that HFE and trust may be important for understanding pathways to youth Contribution, although they also point to further areas of inquiry. For example, additional research will be needed to determine whether youth profiles in HFE and trust across the adolescent period are associated with *trajectories* of Contribution, rather than the point-in-time estimates that were established in the present study. Future analyses also could be extended to include scores for hope and trust in the later high school years and into early adulthood. Such work will allow researchers to understand better the implications of membership in a particular hope-trust profile for long-term civic engagement.

Research following from the present study may have implications for the promotion of civic hope within youth by enhancing our understanding of the cognitive-emotional and familial bases of the individual's orientation toward Contribution. Such research may aid researchers and practitioners to find ways to engage youth in what Flanagan (2008) and others (Lummis, 1996) refer to as *public hope*, the notion that one's future is contextualized by the future of everyone in the community—a community that is increasingly global. If this is the case, then people must align their actions and expectations to achieve end goals with mutual benefit. Expansion of hope research that moves the unit of analysis beyond the level of the individual may be a useful next step in the prediction of civic contributions. As an impetus for such future scholarship, the present study provides evidence for the importance within adolescence of trust in the links between hope and Contribution.

References

Asparouhov, T., & Muthén, B. (2012). Using Mplus TECH11 and TECH12 to test the number of latent classes. *Mplus Web notes: no. 14*. Retrieved from http://www.statmodel.com/examples/webnotes/webnote14.pdf.

Asparouhov, T., & Muthén, B. (2013). Auxiliary variables in mixture modeling: A 3-step approach using MPlus. *MPlus Web notes: no. 14*. Retrieved from https://www.statmodel.com/examples/webnotes/AuxMixture_submitted_corrected_webnote.pdf.

Aspinwall, L. G., & Leaf, S. L. (2002). In search of the unique aspects of hope: Pinning our hopes on positive emotions, future-oriented thinking, hard times, and other people. *Psychological Inquiry, 13*(4), 276–288.

Benson, P. L., Leffert, N., Scales, P. C., & Blyth, D. A. (1998). Beyond the "village" rhetoric: Creating healthy communities for children and adolescents. *Applied Developmental Science, 2*, 138–159.

Bowers, E. P., Geldhof, J. G., Schmid, K. L., Napolitano, C. M., Minor, K., & Lerner, J. V. (2012). Relationships with important nonparental adults and positive youth development: An examination of youth self-regulatory strengths as mediators. *Research in Human Development, 9*(4), 298–316.

Bowers, E. B., & Johnson, S. K. (2013, May). The adult social milieu and character development: Potential mechanisms of influence. In N. Hurd (Chair), *Mentoring and adolescent development: Assessing pathways and exploring complexities.* Symposium conducted at the annual meeting of the Association of Psychological Science, Washington, DC.

Bowlby, J. (1969). *Attachment and loss: Vol. 1. Attachment* (Vol. 1). New York: Basic Books.

Bowlby, J. (1973). *Attachment and loss: Vol. 2. Separation* (Vol. 2). New York: Basic Books.

Cheung, G. W., & Rensvold, R. B. (2002). Evaluating goodness-of-fit indexes for testing measurement invariance. *Structural Equation Modeling, 9*, 233–255.

Ciarrochi, J., Heaven, P. C. L., & Davies, F. (2007). The impact of hope, self-esteem, and attributional style on adolescents' school grades and emotional well-being: A longitudinal study. *Journal of Research in Personality, 41*, 1161–1178.

Collins, L. M., & Lanza, S. T. (2010). *Latent class and latent transition analysis: With applications in the social, behavioral, and health sciences.* Hoboken, NJ: Wiley.

Damon, W., Menon, J., & Bronk, K. C. (2003). The development of purpose during adolescence. *Applied Developmental Science, 7*(3), 119–128.

Dubow, E. F., Arnett, M., Smith, K., & Ippolito, M. F. (2001). Predictors of future expectations of inner-city children: A 9-month prospective study. *The Journal of Early Adolescence, 21*(1), 5–28.

Erikson, E. H. (1959). *Identity and the life cycle; selected papers.* New York: International Universities Press.

Erikson, E. H. (1968). *Identity, youth, and crisis.* New York: W. W. Norton.

Flanagan, C. A. (2003). Trust, identity, and civic hope. *Applied Developmental Science, 7*(3), 165–171.

Flanagan, C. (2008). Private anxieties and public hopes: The perils and promise of youth in the context of globalization. In J. Cole & D. Durham (Eds.), *Figuring the Future: Globalization and the Temporalities of Children and Youth* (pp. 125–150). Santa Fe, New Mexico: School of Advanced Research Press.

Flanagan, C. & Levine, P. (2010, spring). Youth civic engagement during the transition to adulthood. In M. Waters, G. Berlin, & F. Furstenberg (Eds.), *Transition to adulthood,* Princeton/Brookings The Future of Children, Vol. 20(1), 159–180.

Kerpelman, J. L., Eryigit, S., & Stephens, C. J. (2008). African American adolescents' future education orientation: associations with self-efficacy, ethnic identity, and perceived parental support. *Journal of Youth and Adolescence, 37,* 997–1008.

Leffert, N., Benson, P. L., Scales, P. C., Sharma, A. U., Drake, D. R., & Blyth, D. A. (1998). Developmental assets: Measurement and prediction of risk behaviors among adolescents. *Applied Developmental Science, 2*(4), 209–230.

Lerner, R. M., Lerner, J. V., Almerigi, J., Theokas, C., Phelps, E., Gestsdottir, S., et al. (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.

Lerner, R. M., Lerner, J. V., Bowers, E. P., Lewin-Bizan, S., & von Eye, A. (Eds.) (2011). Individual and contextual bases of thriving in adolescence: Findings from the 4-H Study of Positive Youth Development. *Journal of Adolescence, 34*(6), 1107–1114.

Lerner, R. M., von Eye, A., Lerner, J. V., & Lewin-Bizan, S. (2009). Exploring the foundations and functions of adolescent thriving within the 4-H study of positive youth development: A view of the issues. *Journal of Applied Developmental Psychology, 30*(5), 567–570.

Lerner, R. M., von Eye, A., Lerner, J. V., Lewin-Bizan, S., & Bowers, E. P. (Eds.). (2010). The meaning and measurement of thriving in adolescence: Findings from the 4-H Study of Positive Youth Development. *Journal of Youth and Adolescence, 39*(7), 707–719.

Lewin-Bizan, S., Lynch, A. D., Fay, K., Schmid, K., McPherran, C., Lerner, J. V., et al. (2010). Trajectories of positive and negative behaviors from early- to middle-adolescence. *Journal of Youth and Adolescence, 39,* 751–763.

Little, T. D. (in press). *Longitudinal structural equation modeling.* New York: Guilford press.

Little, T. D., Snyder, R., & Wehmeyer, M. L. (2006). The agentic self: On the nature and origins of personal agency across the lifespan. In D. Mrocek & T. D. Little (Eds.), *The handbook of personality development* (pp. 61–79). Mahwah, NJ: Lawrence Erlbaum and Associates.

Lo, Y., Mendell, N. R., & Rubin, D. B. (2001). Testing the number of components in a normal mixture. *Biometrika, 88,* 767–778.

Lopez, S. J., Agrawal, S., & Calderon, V. J. (2010). *The Gallup student poll technical report.* Washington, DC: Gallup.

Lopez, S. J., Rose, S., Robinson, C., Marques, S. C., & Pais-Ribeiro, J. (2009). Measuring and promoting hope in schoolchildren. In R. Gilman, E. S. Huebner, & M. J. Furlong (Eds.), *Handbook of positive psychology in schools* (pp. 37–50). New York, NY: Routledge.

Lummis, C. D. (1996). The democratic virtues. In C. D. Lummis (Ed.), *Radical democracy,* (pp. 143–157). Ithaca, New York: Cornell University Press.

Luyckx, K., Schwartz, S. J., Goossens, L., Soenens, B., & Beyers, W. (2008). Developmental typologies of identity formation and adjustment in female emerging adults: A latent class growth analysis approach. *Journal of Research on Adolescence, 8*(4), 595–619.

Mariano, J. M., & Going, J. (2011). Youth purpose and positive youth development. In R. Lerner, & J. Lerner (Eds.), *Advances in child development and behavior. positive youth development: Research and applications for promoting thriving in adolescence.* Boston, MA: Elsevier.

Mascolo, M. F., & Fischer, K. W. (2010). The dynamic development of thinking, feeling, and acting over the life span. In W. F. Overton, & R. M. Lerner (Eds.), *Handbook of life-span development, Vol. 1: Biology, cognition and methods across the life-span,* (pp. 149-194). Hoboken, NJ: Wiley.

McCabe, K., & Barnett, D. (2000). First comes work, then comes marriage: Future orientation among African American young adolescents. *Family Relations, 49*(1), 63–70.

McLachlan, G. J., & Peel, D. (2000). *Finite mixture models.* New York: Wiley.

Muthén, B. O., & Muthén, L. K. (2000). Integrating person-centered and variable-centered analyses: Growth mixture modeling with latent trajectory classes. *Alcoholism, Clinical and Experimental Research, 24*(6), 882–891.

Muthén, L. K., & Muthén, B. O. (2012). *Mplus user's guide* (7th ed.). Los Angeles, CA: Muthén and Muthén.

Nagin, D. (2005). *Group-based modeling of development.* Cambridge, MA: Harvard.

Nurmi, J.-E. (1989). Development of orientation to the future during early adolescence: A four-year longitudinal study and two cross-sectional comparisons. *International Journal of Psychology, 24,* 195–214.

Nurmi, J. E. (1991). How do adolescents see their future? A review of the development of future orientation and planning. *Developmental Review, 11,* 1–59.

Nurmi, J.-E., & Pulliainen, H. (1991). The changing parent-child relationship, self-esteem, and intelligence as determinants of orientation to the future during early adolescence. *Journal of Adolescence, 14*(1), 35–51.

Overton, W. F. (2010). Life-span development: Concepts and issues. In R. M. Lerner (Ed.), *The handbook of lifespan development.* Hoboken, NJ: Wiley.

Overton, W. F., & Müller, U. (2013). Meta-theories, theories, and concepts in the study of development. In R. M. Lerner, M. A. Easterbrooks & J. Mistry (Eds.). *Comprehensive handbook of psychology: Vol. 6. Developmental psychology* (2nd edn). Editor-In-Chief: I. B. Weiner. New York: Wiley.

Putnam, R. D. (2000). *Bowling alone: The collapse and revival of American community.* New York: Simon & Schuster.

Rotenberg, K. J. (1995). The socialisation of trust: Parents' and children's interpersonal trust. *International Journal of Behavioral Development, 18,* 718–726.

Rotter, J. B. (1980). Interpersonal trust, trustworthiness and gullibility. *American Psychologist, 35,* 1–7.

Schmid, K. L., & Lopez, S. (2011). Positive pathways to adulthood: The role of hope in adolescents' constructions of their futures. In R. M. Lerner, J. V. Lerner, & J. B. Benson (Eds.), *Advances in*

child development and behavior: Positive youth development (Vol. 41, pp. 72–89). London, England: Academic Press.

Schmid, K. L., Phelps, E., & Lerner, R. M. (2011). Constructing positive futures: Modeling the relationship between adolescents' hopeful future expectations and intentional self-regulation in predicting positive youth development. *Journal of Adolescence, 34*(6), 1127–1135.

Seginer, R., & Lilach, E. (2004). How adolescents construct their future: The effect of loneliness on future orientation. *Journal of Adolescence, 27*, 625–643.

Seiffge-Krenke, I., Kiuru, N., & Nurmi, J.-E. (2010). Adolescents as "producers of their own development": Correlates and consequences of the importance and attainment of developmental tasks. *European Journal of Developmental Psychology, 7*(4), 479–510.

Small, S. A., & Rodgers, K. B. (1995). *Teen assessment project (TAP) survey question bank*. Madison: University of Wisconsin-Madison.

Snyder, C. R. (1994). *The psychology of hope: You can get there from here*. New York: Free Press.

Snyder, C. R., Cheavens, J., & Sympson, S. C. (1997). Hope: An individual motive for social commerce. *Group Dynamics: Theory, Research, and Practice, 1*(2), 107–118.

Stoddard, S. A., Henly, S. J., Sieving, R. E., & Bolland, J. (2011). Social connections, trajectories of hopelessness, and serious violence in impoverished urban youth. *Journal of Youth and Adolescence, 40*, 278–295.

Tennen, H., Affleck, G., & Tennen, R. (2002). Clipped feathers: The theory and measurement of hope. *Psychological Inquiry, 13*(4), 311–317.

Trommsdorff, G. (1983). Future orientation and socialization. *International Journal of Psychology, 18*, 381–406.

Kristina Schmid Callina is a post-doctoral fellow at the Institute for Applied Research in Youth Development at Tufts University. Her research examines the role of hope in positive youth development.

Sara K. Johnson is a research assistant professor at the Institute for Applied Research in Youth Development at Tufts University. Her work integrates the study of positive youth development, civic engagement, and identity development using mixed-methods approaches.

Mary H. Buckingham is a doctoral student at the Institute for Applied Research in Youth Development at Tufts University. Her research interests involve the study of positive youth development and parenting.

Richard M. Lerner is the Bergstrom Chair in Applied Developmental Science and the Director of the Institute for Applied Research in Youth Development at Tufts University. He received his Ph.D. in developmental psychology from the City University of New York. His work integrates the study of public policies and community-based programs with the promotion of positive youth development and youth contributions to civil society.