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Authors

McGinley, Meredith
Davis, Alexandra N
Carlo, Gustavo
et al.

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A Parallel Process Model of Integration and Multidimensional Prosocial Behaviors in Recent Immigrant U.S. Latinx Adolescents

Meredith McGinley 🄳
Department of Psychology, University of Wisconsin-
Parkside, Kenosha, WI, USA

Alexandra N. Davis
Family and Child Studies, Individual, Family, and
Community Education Department, University of
New Mexico, Albuquerque, NM, USA

Gustavo Carlo
Department of Human Development and Family Science,
University of Missouri, Columbia, MO, USA

Seth J. Schwartz
Department of Public Health Sciences, University of
Miami, Coral Gables, FL, USA

Elma I. Lorenzo-Blanco
Department of Human Development and Family Sciences,
University of Texas at Austin, Austin, TX, USA

Jennifer B. Unger
Institute for Health Promotion and Disease Prevention,
University of Southern California, Los Angeles, CA, USA

Corresponding Author:
Meredith McGinley, Department of Psychology, University of Wisconsin-Parkside, MOLN 262, 900 Wood
Road, Kenosha, WI 53144, USA.
Email: mcginley@uwp.edu

José Szapocznik
Department of Public Health Sciences, University of
Miami, Coral Gables, FL, USA

Lourdes Baezconde-Garbanati and Daniel W. Soto
Institute for Health Promotion and Disease Prevention,
University of Southern California, Los Angeles, CA, USA

Sabrina E. Des Rosiers
Department of Psychology, Barry University, Miami
Shores, FL, USA

Juan A. Villamar
Center for Prevention Implementation Methodology,
Northwestern University, Evanston, IL, USA

Karina M. Lizzi
Covance Inc., Princeton, NY, USA

Abstract

With a growing population of Latinx youth immigrating to the United States, it is important to understand how Latinx youth adapt to mainstream U.S. culture. Given that the majority of research examining social development among recent immigrant adolescents has focused on negative adjustment outcomes, research examining positive social behaviors is needed to avoid deficit approaches to their development, gain a holistic understanding of youth development, and improve interventions with this population. This study examined the associations among trajectories in cultural integration and multiple prosocial behaviors among recent immigrant U.S. Latinx adolescents in Miami, Florida and Los Angeles, California. Adolescents ($N = 302$; 53.3% males; M age $= 14.51$ years) completed measures of integration and prosocial behaviors across six time points. Latent growth curve models indicated that integration significantly increased, though this growth tapered off over time. The growth in prosocial behaviors depended on the specific form of helping assessed. While the growth in altruistic and compliant prosocial behaviors was stagnant, there was an increase in anonymous prosocial behaviors and a decrease in public and dire prosocial behaviors. Emotional behaviors did not linearly change, though slightly tapered off by the final time points. Parallel process latent growth curve model results indicated positive correlations between the slopes of cultural integration and most forms of prosocial behaviors. These findings highlight the positive role of cultural

integration as an acculturative process for U.S. Latinx youth and the multidimensionality of prosocial behaviors.

Keywords
Acculturation, cultural integration, prosocial behaviors, Latinx immigrants, adolescent development, longitudinal methodology, parallel process model

Introduction

Examining the development of acculturative processes among immigrant adolescents living in the United States can improve our understanding of the relations among cultural transitions and desirable social behaviors. Currently, Latinxs are among the fastest growing ethnic groups in the United States (Flores, 2017), and the Latinx population is the youngest ethnic group in the United States, with 32.4% younger than 18 years old (Patten, 2016). Immigration still accounts for a large amount of population growth, even as birth rates of Latinx women in the United States have decreased (Radford & Noe-Bustamante, 2017). Furthermore, 35.5% of U.S. Latinxs are foreign-born (Krogstad & Lopez, 2014). From 2010 until 2017, the annual number of Venezuelan immigrants has nearly doubled from 184,000 to 351,000 (Zong & Batalova, 2019). Over 3 million individuals immigrated from the Northern Triangle in Central America in 2017 (Zong & Batalova, 2019). With a growing population of Latinx youth immigrating to the United States, it is important to understand factors that affect development among this group, including how Latinx youth adapt to mainstream U.S. culture. Unfortunately, the majority of research examining social development among recent immigrant adolescents has focused on negative adjustment outcomes (e.g., substance use and delinquency; Cano et al., 2015; Sirin et al., 2013). Although understanding negative adjustment is important, to avoid deficit approaches to ethnic minority adolescent development and to gain a holistic understanding of youth development, it is important to examine positive social behaviors, particularly among ethnic minority and immigrant populations (Cobb et al., 2019). Focusing on cultural and developmental strengths of this particular population is important from both a research and an intervention perspective (Fuller & García Coll, 2010).

Theoretical links between acculturation and prosocial behaviors

Prosocial behaviors (i.e., actions intended to benefit others; see Eisenberg et al., 2006) represent an important positive developmental outcome. Prosocial behaviors include a variety of helping behaviors, such as volunteering, donating time or resources, and comforting others (see Carlo & Randall, 2002). Prosocial

behaviors may also serve as a marker for other positive outcomes such as academic success (Carlo et al., 2018; Wentzel, 1993), positive interpersonal relationships (Markiewicz et al., 2001), and improved mental health (Jenkinson et al., 2013). Therefore, understanding the factors associated with prosocial behaviors is important to promote health and resilience among youth.

Latinx adolescents who immigrate to the United States go through a process of acculturating to the new environment and to the dominant cultural practices, values, and identities within their new receiving community (Phinney et al., 2006; Schwartz, Unger, Baezconde-Garbanati, et al., 2015). *Acculturation* refers to the process of adjusting to a new culture and community while also selectively retaining the cultures of origin (see Berry, 1997). This process encompasses multiple domains (practices, values, and identities) which are related but distinct (Schwartz, Unger, Zamboanga, et al., 2015). Individuals may in fact acquire practices of the mainstream culture earlier than values and identities given the "survival" value in being a successful member of the mainstream culture (Lee et al., 2020).

Scholars have additionally suggested distinct typologies of acculturation based on involvement in the receiving society as well as maintenance of traditional cultural practices (Berry et al., 2006). *Integration* refers to involvement in mainstream society while simultaneously maintaining connections to traditional cultural practices (Berry et al., 2006). This approach to acculturation is thought to be least stressful to individuals; indeed, researchers have consistently found that youth who use integration as an acculturative process score higher on indicators of positive adjustment, including life satisfaction and self-esteem (Berry, 1997; Berry et al., 2006; Nguyen & Benet-Martínez, 2013). Compared to alternative acculturative processes (i.e., assimilation, separation, and marginalization), integration may uniquely predict outcomes related to prosocial behaviors for multiple reasons. Scholars have suggested that navigating between multiple cultural streams might foster complex cognitive abilities (Benet-Martínez et al., 2002; Tadmor & Tetlock, 2006; Tadmor et al., 2009). Engaging in multiple cultural practices might specifically foster sociocognitive and socioemotive skills (e.g., empathy and perspective taking) that contribute to helping behaviors in multiple contexts (Carlo et al., 2016). There is evidence that bicultural individuals are able to understand relevant cues from each culture, even competing ideas, and integrate these cues into a coherent way of reasoning that can help generate creativity and complex cognitive processing (Saad et al., 2013). Additionally, retaining one's heritage culture entails learning about or retaining one's culture of origin, which in the case of Latinx youth promotes traditional values of familism, respect for others, religiousness, and simpatia (sympathy)—values consistent with consideration of others and prosocial tendencies (Knight & Carlo, 2012).

The ability to span identities and values across heritage and host cultures has been associated with prosocial behavioral outcomes in U.S. Latinx youth

(Knight & Carlo, 2012). Youth who can navigate multiple contexts might also gain interpersonal connections with others that promote positive relationships and ultimately provide opportunities for prosocial responding. Consistent with this theorizing, social integration among college students has been linked to altruistic responding (Branas-Garza et al., 2010). Schwartz, Unger, Zamboanga, et al. (2015) reported that latent classes of immigrant youth defined by increasing aspects of acculturation (practices, values, and identity in both heritage and host cultures) were more likely to report higher mean generalized prosocial behaviors. A limitation of the existing literature, however, involves a lack of understanding regarding co-occurring longitudinal changes among integration and prosocial behaviors as youth undergo U.S.-cultural acquisition and retention of heritage culture after immigrating to the United States. In this study, we examined the associations between the trajectories of integration (an acculturative process, defined as behavioral involvement with both heritage culture and mainstream U.S. culture) and trajectories of six types of prosocial behaviors among recent U.S. immigrant Latinx adolescents.

Growth in prosocial behaviors

Adolescence is an important developmental period in which to study prosocial behaviors because of the increasing autonomy and identity exploration occurring during this period (Collins & Steinberg, 2006; Waterman, 1982). As adolescents gain independence, they may be more easily able to engage in specific forms of helping, such as donating and volunteering. Additionally, adolescence is often associated with increases in advanced social cognitions such as perspective taking (i.e., understanding the thoughts, feelings, and social situations of others), moral reasoning (i.e., thinking of moral dilemmas when the needs of another contrast with the needs of the self; Eisenberg, 1986), and empathic responding (i.e., feelings of sorrow or concern for others; Eisenberg & Spinrad, 2014; Luengo Kanacri et al., 2013), which all facilitate prosocial behaviors. Adolescents are also increasingly focused on maintaining peer relationships (Furman & Rose, 2015), which also may predict engagement in specific forms of helping. Therefore, it is important to understand developmental changes in prosocial behaviors across adolescence.

Research on the growth of prosocial behaviors across adolescence and into early adulthood has been somewhat mixed. Some studies have found that prosocial behaviors typically decline or remain stable throughout adolescence, with a slight rebound in these behaviors in late adolescence or early adulthood (Carlo et al., 2007; Eisenberg et al., 2005; Luengo Kanacri et al., 2014; Padilla-Walker, Memmott-Elison, et al., 2018). In contrast, one study found increases in prosocial behaviors in mid-adolescence followed by decreases in late adolescence (Van der Graaff et al., 2018). Notably, this prior longitudinal research utilized global measures of prosocial behaviors that assess helpfulness, volunteering, donating,

and sharing. Studies that have specified varying recipients of helping, however, have uncovered more varied trajectories. Padilla-Walker, Carlo, et al. (2018) reported that across ages 12 to 20 years, while kindness and generosity toward family members remained stable, these same behaviors toward peers and strangers increased (though a slight deceleration in this growth was observed for strangers). Given the inconsistent existing research on longitudinal trajectories of adolescents' prosocial behaviors, more research is needed to understand these temporal changes during adolescence as well as changes in specific types of prosocial behaviors. Moreover, these prior studies focused on samples of White, European, or European American youth. This study extends prior research on prosocial development by examining the changes in six specific forms of prosocial behaviors in recent immigrant U.S. Latinx youth across three years and how these changes relate to changes in integration as an acculturative process.

The multidimensionality of prosocial behaviors

Recently, researchers have suggested that prosocial behaviors are complex and multidimensional and should not be examined as a unidimensional or a single global construct (see Padilla-Walker & Carlo, 2014). Six types of prosocial behaviors that are common among adolescents and young adults are emotional, dire, compliant, public, anonymous, and altruistic prosocial behaviors (Carlo & Randall, 2002). Emotional prosocial behaviors are those expressed in emotionally evocative situations, such as comforting another person. Dire prosocial behaviors refer to helping in crisis situations. Compliant prosocial behaviors include helping when asked. Anonymous prosocial behaviors involve helping without others' knowledge. Public prosocial behaviors involve helping behaviors occurring in the presence of others. Finally, altruistic prosocial behaviors involve helping with no expected benefit to the self (Carlo & Randall, 2002). Interestingly, public and altruistic prosocial behaviors are thought to tap into motivations for helping. Because public helping is done with the knowledge that others are watching, it is thought to be relatively more self-serving. Altruistic helping, on the other hand, is a relatively selfless form of helping because there is no expected benefit to the helper. Research has consistently supported these forms of helping as common and distinct constructs in Latinx youth (Carlo et al., 2010; McGinley et al., 2014). Therefore, an additional purpose of this study was to examine the unique growth trajectories in these six distinct forms of prosocial behaviors across adolescence.

On the premise that these distinct forms of prosocial behaviors possess different correlates, we speculated disparities in their patterns of growth across time. For example, internalized moral reasoning is uniquely positively predictive of altruistic prosocial behaviors but negatively predictive of public prosocial behaviors (Carlo et al., 2011; McGinley et al., 2014). This suggests

that these forms of helping might be linked to moral identity development. As moral identity becomes more principled and integrated into the self during adolescence (Hardy & Carlo, 2011), we anticipated that altruistic prosocial behaviors could increase over time, whereas public prosocial behaviors could decrease over time. Familism and ethnic identity have been strongly linked to emotional, compliant, and dire prosocial behaviors, which suggests that these prosocial behaviors might be more linked to ethnic and cultural socialization processes (Armenta et al., 2011). However, during adolescence, individuals seek autonomy and increasingly spend more time with peers (Allen, 2008), which may impact the frequency of certain helping behaviors. For example, trajectories of helping peers across adolescence are more likely to be defined by growth as compared to trajectories of helping toward parents, which often remain stable (Padilla-Walker et al., 2015). Thus, it is tenable that forms of helping linked to the familial socialization processes (emotional, dire, and compliant) could decrease over time. Finally, as adolescents increasingly interact with systems outside of the family (Allen, 2008), they may have more resources (e.g., due to employment) and encounter more opportunities to help others anonymously. Thus, we expected that anonymous prosocial behaviors could increase over time.

Examining links between integration and specific forms of prosocial behaviors is important to better capture the diversity of such behaviors. The sociocognitive and socioemotive skills that stem from integration (e.g., empathy and perspective taking) have been consistently related to prosocial behaviors that require an understanding and connection with others (e.g., emotional, dire, compliant, and anonymous prosocial behaviors) in Mexican American youth and emerging adults (Knight et al., 2015; McGinley et al., 2010). However, these skills have also been related to helping in front of audiences (Knight et al., 2015). This suggests that skills like perspective taking could facilitate an understanding of when others need help but including situations that are self-serving. Latinx youth who integrate also retain traditional values (e.g., familism) that have been directly and positively linked to emotional, dire, compliant, and anonymous prosocial behaviors (Knight et al., 2015). While familism can undermine selfless helping, it may also promote internalized prosocial moral reasoning, which has been uniquely positively related to altruistic prosocial behaviors (Knight et al., 2015).

Taken together, we expected that integration would be positively related to emotional, dire, compliant, and anonymous prosocial behaviors due to the sociocognitive and socioemotive skills that result from integration as well as the values that are retained (i.e., familism). However, given the mixed relations among these constructs and altruism and public prosocial behaviors, we did not make any a priori hypotheses regarding the relations between integration and these motivationally defined forms of helping.

The current study

As stated above, in this study we sought to further investigate (a) developmental trajectories of integration and distinct forms of prosocial behaviors across adolescence in a sample of recent Latinx immigrants as well as (b) links between growth processes for integration and prosocial behaviors. Prior research has demonstrated that growth in cultural practices appears to be stable or positive over time in adolescence and among immigrant adolescents specifically (e.g., Meca et al., 2018). We note that prior studies using data from the current sample (Schwartz et al., 2013; Schwartz, Unger, Zamboanga, et al., 2015) have generally found positive growth in both U.S. and Latinx cultural practices across four or five time points. In this study, however, we instead (1) utilize six waves of data, and (2) combined these cultural practices to reflect the broader construct of integration (where integration represents high levels of both heritage and receiving cultural orientations). Thus, we hypothesized that integration would significantly increase across three years in adolescence. However, given the additional time point and the focus on integration as a combination of Latinx culture retention and U.S. culture acquisition, we examined both linear and quadratic forms of change. Additionally, because prior research has supported that specific forms of prosocial behaviors have distinct correlates, we hypothesized that the six forms of prosocial behavior explored (altruistic, public, emotional, dire, compliant, and anonymous) would be characterized by distinct developmental trajectories (see above). Again, the growth curve for each type of prosocial behavior was individually modeled to establish the best fit to the data. While we did hypothesize that the trajectories of the distinct forms of helping would diverge, because no prior research has examined growth trajectories for these distinct forms of helping, we did not posit a priori hypotheses for these trajectories..

Finally, we hypothesized that positive relations among growth components for integration and prosocial behavior would be observed in a parallel process latent growth curve model. We again note that a prior investigation analyzing these data (Schwartz, Unger, Zamboanga, et al., 2015) has found *mean differences* in a unidimensional assessment of prosocial behaviors across broader latent classes of acculturation defined by varying growth and stability over time (i.e., U.S. and heritage practices, values, and identification). Additionally, these mean differences in unidimensional prosocial behaviors were only examined cross-sectionally. The current investigation will move beyond this previous study by examining longitudinally, across six time points, the *co-occurring change* in integration and each of the six prosocial behaviors. Again, we speculated that integration would be positively related to emotional, dire, compliant, and anonymous prosocial behaviors due to the potential increase in empathy, perspective taking, and retention of heritage values that may also foster moral reasoning. However, the relations among

these constructs and internally and externally motivated forms of helping have been less consistent, so we did not form any a priori hypotheses regarding the links between integration and altruistic and public prosocial behaviors.

Method

Participants

This study was conducted using data from a longitudinal project entitled Construyendo Oportunidades Para los Adolescentes Latinos (COPAL (Building Opportunities for Latino Adolescents); Schwartz, Unger, Baezconde-Garbanati, et al., 2015; Schwartz, Unger, Zamboanga, et al., 2015). The goal of this longitudinal project was to examine cultural changes and health behaviors among recently immigrated Latinx adolescents and their families (see Forster et al., 2015). Only adolescent data were used for this study.

Participants were 302 immigrant adolescents (53.3% males, average age at the first wave of data collection was 14.51 years (range = 13–17)). Data were collected from adolescents in two U.S. cities: Los Angeles ($n = 150$) and Miami ($n = 152$). All adolescents had been in the United States for five years or less at baseline. These two cities were selected because they are both home to large numbers of Latinx adolescents. Participants from Los Angeles were predominantly from Mexico (70%), El Salvador (9%), Guatemala (6%), and other countries (15%), and participants from Miami were predominantly from Cuba (61%), the Dominican Republic (8%), Nicaragua (7%), Honduras (6%), Colombia (6%), and other countries (12%). Primary caregivers also reported on their years of education (Los Angeles sample mean (M) = 8.84 years, standard deviation (SD) = 4.72 years; Miami sample mean (M) = 11.23 years, $SD = 3.67$ years). The majority of adolescents were from two-parent homes (71%). Per inclusion criteria, each target school was at least 75% Latinx. We targeted areas densely populated with Latinx families because many recent Latinx immigrants tend to settle in ethnic enclaves (Portes & Rumbaut, 2006).

Of the 302 participants who initially participated at Time 1, 278 (92% of the original sample) participated at Time 2, and 256 (85% of the original sample) participated from Time 3 to Time 6. Those who participated at each time point ($n = 256$) were compared to those who dropped out of the study at any time point ($n = 46$) on a number of demographic and main study variables collected at Time 1. Independent samples t tests indicated that the *parents* of participants (and not participants themselves) who dropped out reported being in the United States longer ($M = 5.15$ years) than those who remained in the study ($M = 3.35$ years), $t(300) = -2.79$, $p < .01$. Additionally, the parents of participants who dropped out reported being in Southern California/Florida longer ($M = 4.96$ years) than those who remained in the study ($M = 3.13$ years), $t(300) = -2.67$, $p < .01$. Chi-square tests indicated that parents of participants

who dropped out were more likely to be employed (59.6%) than those who remained in the study (43.5%), $\chi(1) = 4.43$, $p = .04$. Bivariate tests did not indicate any other significant differences among the Time 1 participant self-reported demographics (e.g., age, gender, time in the United States) or the Time 1 prosocial behavior and cultural practices variables.

Procedures

Research ethics committee approval was obtained at the two participating universities for the study "The Role of Culture in Thriving and Risk Behaviors in Hispanic Adolescents" (protocol number 20081162). Adolescents were recruited from 13 schools in Los Angeles County and 10 schools in Miami-Dade County. Latinx students were eligible to participate in the study if they had lived in the United States for five years or less and were entering or finishing the ninth grade at baseline. Data collection occurred at schools, research centers, or other locations convenient to families every six months.

The assessment battery was available in both English and Spanish, and participants were asked to choose their preferred language at the beginning of each assessment. Spanish versions of each measure were created using back translation, where one person translated the original English version into Spanish, a second translator translated the Spanish version back into English, and then the two translators met to discuss discrepancies between the original and backtranslated English versions and to translate the final English version into Spanish (see Sireci et al., 2006) for further details on this translation method.

The majority of adolescents completed the measures in Spanish (84% at baseline, 77% at Time 2, 72% at Time 3, 66% at Time 4, 68% at Time 5, and 71% at Time 6). Adolescents received a movie ticket at each time point for their participation. Parents and adolescents were assessed in separate rooms. Surveys were administered via audio computer-assisted software. Participants indicated their responses using the keyboard or mouse.

Measures

Integration. At all six time points, participants completed a measure of U.S. and Latinx cultural practices (Szapocznik et al., 1980). The Bicultural Involvement Questionnaire consists of 42 items asking about language usage, social practices, and media. Sample items include "How comfortable do you feel speaking Spanish in general?" "How much do you enjoy American T.V. programs?" and "I would want the way of celebrating birthdays to be Hispanic/Latino." All items were mean scored to create a composite to reflect integration (a process of acculturation). Alpha coefficients for these subscales can be found in Table 1.

Prosocial behaviors. At all six time points, adolescents completed a measure of their tendency to engage in six forms of prosocial behaviors: emotional, dire,

Table 1. Means, SDs, internal reliabilities, and intercorrelations for integration and prosocial behaviors across the six time points.

Variable	M	SD	α	T1	T2	T3	T4	T5	T6
T1 integration	2.48	0.43	.84	–					
T2 integration	2.61	0.51	.90	.53**	–				
T3 integration	2.71	0.55	.92	.42**	.61**	–			
T4 integration	2.78	0.55	.93	.45**	.56**	.58**	–		
T5 integration	2.77	0.57	.94	.38**	.53**	.49**	.59**	–	
T6 integration	2.78	0.60	.95	.28**	.53**	.49**	.47**	.58**	–
T1 altruistic	2.73	1.09	.69	–					
T2 altruistic	2.74	1.12	.76	.51**	–				
T3 altruistic	2.83	1.05	.73	.51**	.53**	–			
T4 altruistic	2.72	1.10	.77	.39**	.52**	.54**	–		
T5 altruistic	2.79	1.16	.81	.34**	.56**	.51**	.64**	–	
T6 altruistic	2.84	1.13	.81	.31**	.46**	.44**	.44**	.58**	–
T1 public	1.52	1.10	.84	–					
T2 public	1.36	1.15	.87	.51**	–				
T3 public	1.25	1.15	.89	.46**	.57**	–			
T4 public	1.21	1.15	.89	.45**	.53**	.57**	–		
T5 public	1.16	1.23	.91	.41**	.54**	.52**	.64**	–	
T6 public	1.11	1.16	.90	.37**	.44**	.45**	.57**	.65**	–
T1 emotional	2.25	0.98	.76	–					
T2 emotional	2.35	1.01	.80	.48**	–				
T3 emotional	2.28	0.98	.77	.45**	.53**	–			
T4 emotional	2.26	1.00	.81	.38**	.40**	.53**	–		
T5 emotional	2.28	1.05	.83	.39**	.45**	.49**	.53**	–	
T6 emotional	2.12	1.10	.86	.41**	.43**	.46**	.47**	.50**	–
T1 dire	2.52	0.99	.77	–					
T2 dire	2.60	0.99	.76	.45**	–				
T3 dire	2.58	0.97	.73	.39**	.50**	–			
T4 dire	2.47	0.95	.73	.33**	.28**	.37**	–		
T5 dire	2.54	1.00	.77	.28**	.34**	.34**	.42**	–	
T6 dire	2.24	1.11	.85	.28**	.38**	.35**	.33**	.41**	–
T1 anonymous	1.86	1.08	.80	–					
T2 anonymous	2.00	1.13	.83	.32**	–				
T3 anonymous	1.97	1.11	.81	.38**	.44**	–			
T4 anonymous	2.14	1.06	.82	.31**	.29**	.43**	–		
T5 anonymous	2.10	1.15	.85	.30**	.41**	.44**	.47**	–	
T6 anonymous	2.05	1.14	.86	.21**	.29**	.38**	.39**	.47**	–
T1 compliant	2.48	1.02	.53	–					
T2 compliant	2.52	1.04	.53	.37**	–				
T3 compliant	2.54	1.03	.53	.41**	.42**	–			
T4 compliant	2.56	1.00	.57	.37**	.34**	.51**	–		
T5 compliant	2.59	1.02	.57	.30**	.29**	.38**	.42**	–	
T6 compliant	2.43	1.15	.74	.29**	.37**	.42**	.45**	.42**	–

Note: SD: standard deviation; T: Time.
**p < .01.

compliant, anonymous, altruistic, and public prosocial behaviors (assessed using an adapted version of the Prosocial Tendencies Measure-Revised; Carlo et al., 2003). Emotional prosocial behaviors (four items) include helping behaviors in emotionally evocative situations (e.g., "I feel better when I am able to comfort someone who is very upset"). Dire prosocial behaviors (three items) include helping in emergency situations (e.g., "I like to help people who are in a real crisis or need"). Compliant prosocial behaviors (two items) include helping others when asked (e.g., "When people ask me to help them, I help them as quickly as I can"). Anonymous prosocial behaviors (three items) include helping without the knowledge of others (e.g., "Most of the time, I like to help others when they do not know who helped them"). Altruistic prosocial behaviors (three items) include helping behaviors with no expectation for personal reward (e.g., "I believe I should receive more recognition for the time and energy I spend helping others" (reversed)). Public prosocial behaviors (four items) include helping in the presence of others (e.g., "I am best at helping others when everyone is watching"). Participants rated each item on a scale from 0 = *does not describe me at all* to 4 = *describes me greatly*. Alpha coefficients for scores on the prosocial behavior subscales can be found in Table 1.

Data analysis plan

Initially, descriptive statistics and correlations were examined in SPSS at each of the six time points. Next, unconditional latent growth curve models for each of the seven variables (integration; six prosocial behaviors) across the six equally spaced time points were examined using Mplus 8.0 (Muthén & Muthén, 1998–2017). The models were centered at the third time point due to estimation issues (likely due in part to the inherent collinearity between the linear and quadratic slopes; see Wang & Wang, 2012). Two models were examined for each growth process: one including the intercept, linear slope, and their variances and the other additionally including the quadratic slope and its variance. In addition to examining the significance of the linear and quadratic terms to determine model fit, we also adopted the fit index guidelines provided by Hu and Bentler (1998, 1999). To determine model fit, we used the following indices: root-mean-square error of approximation (RMSEA), comparative fit index (CFI), and standardized root mean residual (SRMR). Models were characterized as fitting the data well if they produced values of CFI $\geq$ .95, RMSEA $\leq$ .06, and SRMR $\leq$ .08 (Hu & Bentler, 1999). Once the growth curve for each individual process was determined, a series of six separate unconditional parallel latent growth models (see Figure 1) were estimated to examine the covariances among the intercepts and linear and quadratic slopes for integration and each of the six prosocial behaviors. Models were estimated using full information maximum likelihood estimation to make use of all available data.
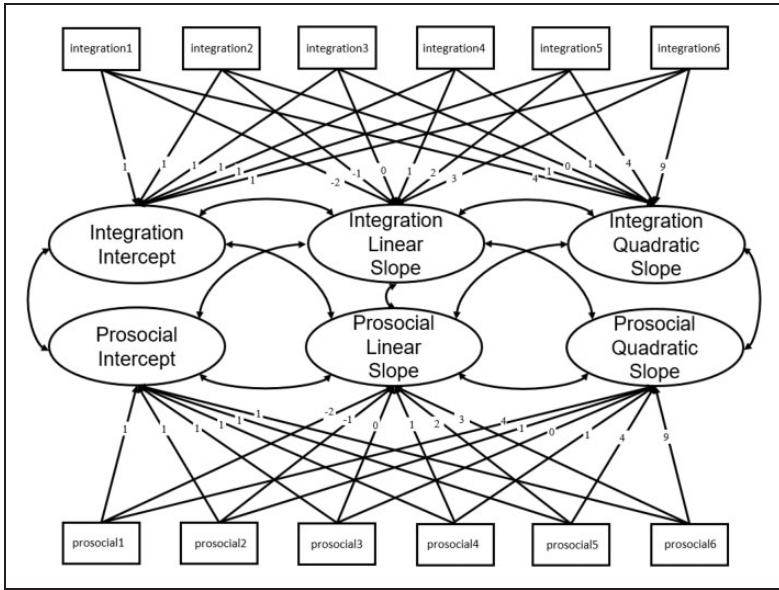
Figure 1. The unconditional parallel process latent growth curve model for integration and prosocial behaviors.

Results

Descriptive statistics and bivariate correlations

Descriptive statistics (Table 1) and bivariate correlations (Tables 1 and 2) were initially examined. There was stability in each of the prosocial behaviors and integration across the six time points (i.e., these measures were significantly and positively correlated across all time points; see Table 1). Integration and emotional, dire, anonymous, and compliant prosocial behaviors were generally positively correlated (see Table 2). Relations among integration and altruistic prosocial behaviors were either negative or zero, and relations among integration and public prosocial behaviors were zero or positive (see Table 2).

Initial latent growth curve models

Preliminary analyses indicated that some of the initial and parallel models fit the data only adequately. An examination of the individual plots suggested that one individual had only floor and ceiling effects for integration across time (i.e., endorsed the lowest and highest possible scores). Given that fit of all models improved notably (e.g., an indicator of model fit, the CFI, increased from .89 to .94 in one model) after these single individual's data were removed from the

Table 2. Standardized correlations among the main study variables within time points.

	1	2	3	4	5	6	7
Time 1 variables							
1. Integration	–						
2. Altruistic prosocial behaviors	−.14*	–					
3. Public prosocial behaviors	.15*	−.69**	–				
4. Emotional prosocial behaviors	.21**	−.39**	.47**	–			
5. Dire prosocial behaviors	.14*	−.28**	.40**	.69**	–		
6. Anonymous prosocial behaviors	.12*	−.45**	.40**	.51**	.52**	–	
7. Compliant prosocial behaviors	.15**	−.18**	.21**	.50**	.53**	.35**	–
Time 2 variables							
1. Integration	–						
2. Altruistic prosocial behaviors	−.03	–					
3. Public prosocial behaviors	.04	−.74**	–				
4. Emotional prosocial behaviors	.25**	−.39**	.35**	–			
5. Dire prosocial behaviors	.29**	−.25**	.30**	.76**	–		
6. Anonymous prosocial behaviors	.18**	−.41**	.35**	.50**	.46**	–	
7. Compliant prosocial behaviors	.27**	−.15*	.12*	.61**	.61**	.44**	–
Time 3 variables							
1. Integration	–						
2. Altruistic prosocial behaviors	−.03	–					
3. Public prosocial behaviors	.08	−.74**	–				
4. Emotional prosocial behaviors	.24**	−.32**	.30**	–			
5. Dire prosocial behaviors	.32**	−.21**	.26**	.75**	–		
6. Anonymous prosocial behaviors	.21**	−.37**	.35**	.58**	.52**	–	
7. Compliant prosocial behaviors	.20**	−.12†	.09	.60**	.65**	.45**	–
Time 4 variables							
1. Integration	–						
2. Altruistic prosocial behaviors	−.17**	–					
3. Public prosocial behaviors	.10	−.76**	–				
4. Emotional prosocial behaviors	.22**	−.22**	.19**	–			
5. Dire prosocial behaviors	.17**	−.24**	.23**	.71**	–		
6. Anonymous prosocial behaviors	.15*	−.28**	.23**	.61**	.56**	–	
7. Compliant prosocial behaviors	.18**	−.10	.02	.61**	.59**	.45**	–
Time 5 variables							
1. Integration	–						
2. Altruistic prosocial behaviors	−.17*	–					
3. Public prosocial behaviors	.16*	−.79**	–				
4. Emotional prosocial behaviors	.28**	−.38**	.37**	–			
5. Dire prosocial behaviors	.30**	−.26**	.26**	.79**	–		
6. Anonymous prosocial behaviors	.22**	−.48**	.43**	.69**	.62**	–	
7. Compliant prosocial behaviors	.36**	−.10	.07	.56**	.66**	.41**	–

Table 2. Continued.

	1	2	3	4	5	6	7
Time 6 variables							
1. Integration	–						
2. Altruistic prosocial behaviors	−.05	–					
3. Public prosocial behaviors	.12†	−.75**	–				
4. Emotional prosocial behaviors	.24**	−.46**	.39**	–			
5. Dire prosocial behaviors	.29**	−.39**	.31**	.81**	–		
6. Anonymous prosocial behaviors	.25**	−.41**	.35**	.66**	.61**	–	
7. Compliant prosocial behaviors	.36**	−.20**	.10	.67**	.72**	.59**	–

*$p < .05$. **$p < .01$. $^†p < .10$.

analysis, it was determined that this erratic pattern of growth was unlikely to be valid. Thus, all growth curve analyses reported below included the remaining 301 adolescents.

Results (Table 3) indicated that integration increased initially, and that there was significant heterogeneity in this positive slope. However, the significant negative quadratic term suggested that this growth did taper off by the final time points, and no significant variance was observed for the quadratic growth term (see Figure 2). Overall, this finding suggests that youth are becoming integrated, at least in terms of cultural practices. Conversely, no mean linear growth was found for altruistic prosocial behaviors, although the variance term for linear growth was significant. Public and dire prosocial behaviors significantly declined across the six time points, and the variance terms of these negative linear slopes were statistically significant. No significant linear growth was found for emotional or compliant prosocial behaviors, but a significant negative quadratic trend emerged for emotional prosocial behaviors, suggesting a relatively more rapid deceleration in this form of helping by the final time points. The variance terms for these linear slopes were statistically significant. Anonymous prosocial behaviors significantly increased over time, and the variance in this growth was significant. The latent growth curves for all prosocial behaviors can be found in Figure 3.

Parallel process latent growth curve models

Correlations among the latent growth variables for the six parallel process latent growth models can be found in Table 4. In each model reported below, we report whether the correlation among growth in integration and prosocial behaviors was significant (refer to Table 4 for correlations across growth factors in integration and prosocial behaviors that approached significance). These correlations directly test our hypothesis regarding co-occurring change in

Table 3. Unstandardized individual latent growth model curve results for integration and prosocial behaviors.

	Latent variable						Model fit statistics				
	Intercept		Slope		Quadratic						
Growth model	Mean	Variance	Mean	Variance	Mean	Variance	χ^2	df	CFI	RMSEA	SRMR
Integration[a]	5.41**	.63**	0.15**	.02*	−0.04**	n.s.	15.75	12	.99	.03	.07
Altruistic	2.78**	.59**	n.s.	.02*	—	—	29.80	16	.97	.05	.07
Public	1.31**	.66**	−0.08**	.03**	—	—	6.31	12	1.00	.00	.02
Emotional[b]	2.31**	.50**	n.s.	.02*	−0.02*	.00†	8.43	12	1.00	.00	.03
Dire	2.51**	.37**	−0.04*	.02*	—	—	30.45	16	.94	.05	.05
Anonymous	2.00**	.44**	0.04*	.02*	—	—	18.21	16	.99	.02	.05
Compliant	2.52**	.41**	n.s.	.01*	—	—	13.80	16	1.00	.00	.05

Note: Models without a superscript did not have a significant quadratic factor in alternative models examining quadratic growth. Thus, the model only estimating the slope was retained. RMSEA: root-mean-square error of approximation; CFI: comparative fit index; SRMR: standardized root mean residual; n.s.: not significant.
[a]Fit for the growth model with only the slope factor, $\chi^2(16) = 43.469$, CFI = .92, RMSEA = .08, SRMR = .10, was poorer than the model that also included the quadratic factor.
[b]Fit for the growth model with only the slope factor, $\chi^2(16) = 17.234$, CFI = .997, RMSEA = .02, SRMR = .03, was poorer than the model that also included the quadratic factor.
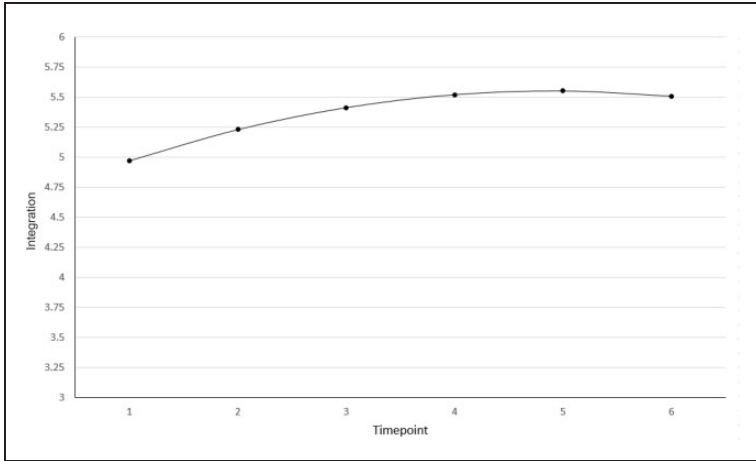*$p < .05$. **$p < .01$. †$p < .10$.

Figure 2. The latent growth curve model for integration
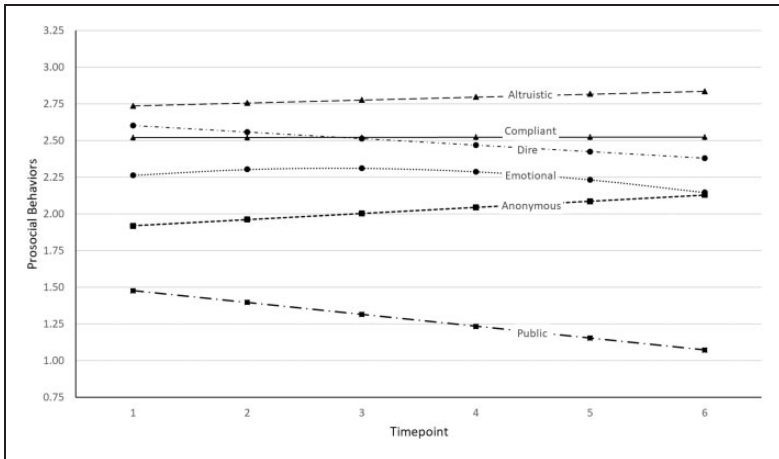

Figure 3. The latent growth curve model for the six types of prosocial behaviors.

integration and prosocial behavior over time. In general, positive correlations among these growth processes were found. These correlations can be interpreted such that increased growth in integration is related to increased growth in the specific form of prosocial behavior. Additionally, we found positive correlations among the other growth components between these two processes, namely, those involving the intercepts (defined as the mean level of integration or pro-social behavior at the third time point). Correlations involving the intercepts do

Table 4. Unstandardized correlations among the latent growth variables for prosocial behaviors and integration in the parallel process latent growth curve models.

	1	2	3	4	5	6
Altruistic prosocial behaviors						
1. Prosocial intercept	–					
2. Prosocial linear slope	n.s.	–				
3. *Prosocial quadratic slope*[a]	–	–	–			
4. Integration intercept	−.08[†]	−.02[†]	–	–		
5. Integration linear slope	n.s.	−.01[†]	–	.03*	–	
6. Integration quadratic slope[b]	–	–	–	–	–	–
Public prosocial behaviors						
1. Prosocial intercept	–					
2. Prosocial linear slope	n.s.	–				
3. *Prosocial quadratic slope*[a]	–	–	–			
4. Integration intercept	.10[†]	.03*	–	–		
5. Integration linear slope	n.s.	.01*	–	.05**	–	
6. Integration quadratic slope	n.s.	−.00*	–	−.02*	n.s.	–
Emotional prosocial behaviors						
1. Prosocial intercept	–					
2. Prosocial linear slope	.02*	–				
3. Prosocial quadratic slope	n.s.	−.01[†]	–			
4. Integration intercept	.17**	n.s.	n.s.	–		
5. Integration linear slope	.02*	.01*	n.s.	.03*	–	
6. Integration quadratic slope[b]	–	–	–	–	–	–
Dire prosocial behaviors						
1. Prosocial intercept	–					
2. Prosocial linear slope	n.s.	–				
3. *Prosocial quadratic slope*[a]	–	–	–			
4. Integration intercept	.21**	n.s.	–	–		
5. Integration linear slope	.04**	n.s.	–	.05**	–	
6. Integration quadratic slope	−.01[†]	n.s.	–	−.02*	n.s.	–
Anonymous prosocial behaviors						
1. Prosocial intercept	–					
2. Prosocial linear slope	n.s.	–				
3. *Prosocial quadratic slope*[a]	–	–	–			
4. Integration intercept	.15**	.02[†]	–	–		
5. Integration linear slope	.02[†]	.01*	–	.05**	–	
6. Integration quadratic slope	n.s.	n.s.	–	−.02*	n.s.	–
Compliant prosocial behaviors						
1. Prosocial intercept	–					
2. Prosocial linear slope	n.s.	–				
3. *Prosocial quadratic slope*[a]	–	–	–			
4. Integration intercept	.18**	n.s.	–	–		
5. Integration linear slope	.03*	.01*	–	.03*	–	
6. Integration quadratic slope[b]	–	–	–	–	–	–

Note: n.s.: not significant.
[a]No quadratic growth term was included in the parallel process model given that the linear growth model was the best-fitting model (see Table 2).
[b]This variance component was constrained to zero due to a non-positive definite covariance error message in the parallel process model.
*$p < .05$. **$p < .01$. [†]$p < .10$.

not directly test our questions regarding co-occurring change in integration and prosocial behaviors but are informative regarding patterns among these constructs over time. Several positive correlations were found among intercepts for both processes (i.e., integration and prosocial behavior) as well as among intercepts of one process and a growth component of the other. In general, a positive correlation between two intercepts would be interpreted as those with higher mean integration also tended to report higher mean prosocial behavior at the third time point. Positive correlations among intercepts of one process and linear slopes of the other would indicate, for example, that participants with higher mean integration at the third time point had more positive growth in that form of prosocial behavior.

In the *altruistic prosocial behaviors model* ($\chi^2 = 81.39$, df = 63, $p = .06$; CFI = .98; RMSEA = .03; SRMR = .08), no significant associations emerged among the growth components. In the *public prosocial behaviors model* ($\chi^2 = 75.91$, df = 58, $p = .06$; CFI = .98; RMSEA = .03; SRMR = .06), the linear slopes for public helping and integration were positively correlated. The integration intercept was also positively related to the prosocial linear slope. For the *emotional prosocial behaviors model* ($\chi^2 = 84.03$, df = 57, $p < .01$; CFI = .97; RMSEA = .04; SRMR = .07), the linear slopes for both growth processes were positively correlated. Additionally, the emotional prosocial behavior intercept was positively correlated with both the integration intercept and linear slope. In the *dire prosocial behaviors model* ($\chi^2 = 104.40$, df = 58, $p < .001$; CFI = .94; RMSEA = .05; SRMR = .06), the intercept for dire prosocial behaviors was positively related to the integration intercept and linear slope. The linear slopes for dire prosocial behaviors and integration were not significantly intercorrelated, however. In the *anonymous prosocial behaviors model* ($\chi^2 = 81.21$, df = 58, $p < .05$; CFI = .97; RMSEA = .04; SRMR = .06), the linear slopes for anonymous prosocial behaviors and integration were positively associated. Additionally, the intercept for anonymous prosocial behaviors was positively associated with the integration intercept. Finally, in the *compliant prosocial behaviors model* ($\chi^2 = 100.58$, df = 63, $p < .01$; CFI = .95; RMSEA = .05; SRMR = .08), the intercept and linear slope for compliant prosocial behaviors were all positively correlated with the integration linear slope. The intercepts for compliant prosocial behaviors and integration were also positively correlated.

In sum, positive correlations involving linear growth were found in four of the six models examined (public, emotional, anonymous, and compliant prosocial behaviors). These findings suggest that more positive growth in integration is simultaneously related to more positive growth in these four prosocial behaviors, supporting our hypothesis regarding co-occurring changes in these growth processes. Correlations were also found among the intercepts and growth components. For public prosocial behaviors only, higher mean levels of integration are related to more positive linear growth in this prosocial behavior. Increased mean levels of emotional, dire, anonymous, and compliant prosocial behaviors were related to

both increased mean levels of integration at the third time point. Increased mean levels of emotional, dire, and compliant prosocial behaviors at the third time point were associated with more positive linear growth in integration.

Discussion

The current results suggest positive links between growth in integration and growth in multiple forms of prosocial behaviors, highlighting the potential promotive role of engaging in cultural practices across both heritage and host cultural streams for recent Latinx immigrant youth in the United States. Specifically, growth in integration as an acculturative process was positively related to growth in emotional, compliant, public, and anonymous prosocial behaviors. Our findings are consistent with cultural scholars who assert the adaptive importance of integration as an acculturative process for Latinx youth and with cultural models of prosocial development that identify changes in cultural processes as linked to changes in prosocial behaviors in these youth. Furthermore, the present findings are the first to highlight developmental changes in integration and specific forms of prosocial behaviors in recently immigrated Latinx youth. For example, integration increased initially but then tapered off at later time points. In contrast, depending upon the type of prosocial behavior, an increase, decrease, or stable pattern of growth was observed.

As previously stated, changes in integration were positively associated with changes in four specific types of prosocial behaviors: emotional, compliant, anonymous, and public prosocial behaviors. We had hypothesized positive links between integration and emotional, compliant, and anonymous prosocial behaviors (as well as dire prosocial behaviors; see below). These forms of prosocial behaviors are conceptually and empirically the most commonly exhibited forms in U.S. Latinx youth (Knight & Carlo, 2012). Traditional Latinx cultural values, such as familism and respect values, tend to emphasize the needs of the broader group over self-interests (Campos et al., 2008; Hardway & Fuligni, 2006). Adolescents who learn about these particular values through their own cultural practices, while simultaneously navigating and learning about mainstream U.S. values, are likely better able to understand others' perspectives and needs (i.e., perspective taking), thus increasing their motivation to respond to others in need across multiple situations (Armenta et al., 2011; Benet-Martínez et al., 2002; Knight et al., 2016; Tadmor & Tetlock, 2006; Tadmor et al., 2009). Indeed, there is evidence that perspective taking fosters familism values and vice versa among Mexican American youth (Knight et al., 2015). Thus, the findings suggest that as U.S. Latinx immigrant youth reported increased engagement in everyday practices across cultures, they may be able to connect with others from diverse cultural groups, which may foster social relationships that ultimately promote prosocial behaviors in a variety of

contexts. However, given that we did not directly assess socioemotive and socio-cognitive competencies or cultural values in this study, future investigations should incorporate these mediating variables. Additionally, as correlations across growth factors were examined, it is plausible that participating in proso-cial behaviors may facilitate the integration process. Engaging in prosocial behaviors can increase an individuals' socioemotive and sociocognitive skills as well as increase the expressions of sensitivity in social partners (McGinley & Carlo, 2007; Newton et al., 2014). In turn, prosocial adolescents may have an easier time establishing meaningful connections in both heritage and host cul-tural contexts. Continued research is needed to better understand the direction-ality of the relations examined among integration and prosocial behaviors.

The relations between integration and *public* prosocial behaviors, however, warrant an alternative interpretation. Public prosocial behaviors are self-presentational helping behaviors and thus not theoretically linked with under-standing another's perspective or empathic concern. Indeed, previous research has found that public prosocial behaviors are not consistently related to per-spective taking and empathic concern (e.g., Carlo et al., 2003; McGinley, 2018; McGinley et al., 2010), though Knight et al. (2015) found positive relations among perspective taking and public prosocial behaviors in a sample of Mexican American early adolescents. One explanation could be that adolescents who purposefully integrate (e.g., perhaps they believe this process is successful) are also engaging in public types of helping to ensure their successful integration into (or "survival" in) the host culture (Lee et al., 2020). Perspective taking may facilitate the achievement of these goals (e.g., identifying opportunities to help publicly). This idea may shed light on the nonsignficant relations for altruism and dire prosocial behaviors. As previously mentioned, altruistic prosocial behaviors are, by definition, helping behaviors that come at a cost to the self. Dire prosocial behaviors are helping behaviors in situations that involve emer-gency care for others. Adolescents currently focused on "survival" in a host culture may simply not have the prerequisite resources for engaging in these overly taxing prosocial behaviors.

Our results also indicated growth in Latinx adolescents' endorsement of inte-gration as an acculturative process. This approach to acculturation increased initially, although growth tapered off by the final assessments. Adolescents who immigrate to the United States often endure a complicated process of cultural adaptation. It may be that immigrant youth become increasingly integrated in their practices as they are exposed to U.S. culture from contact with diverse peers while receiving continuous exposure to the culture of origin from family members (Rumbaut, 2005; Schwartz, Unger, Zamboanga, et al., 2015). Assessing cultural *practices* alone, however, is not entirely sufficient as we did not assess simultaneous changes in cultural values or identity. However, given that values and identity may take additional time to develop (e.g., Lee et al., 2020) and the recent immigrant status of these participants, future research

should assess the acculturative process in multiple domains over an extended period of time. Again, we did not directly assess the hypothesized socioemotive or sociocognitive processes (e.g., empathy, perspective taking) that could emerge as a product of integration. Thus, our understanding of the mechanisms through which growth in integration impacts growth in prosocial behaviors over time is limited.

This heterogeneity in growth across the six prosocial behaviors provides new insight on how helping unfolds during adolescence. For example, previous research with European Americans has suggested that general prosocial behaviors decrease across high school, with a slight rebound around Grade 12 (Carlo et al., 2007). In contrast, this study found a decrease in dire and public prosocial behaviors, an increase in anonymous prosocial behaviors, and stagnant growth in altruistic, compliant, and emotional prosocial behaviors during the same time period. Given that these differential patterns of growth would be obscured if global indices of helping were used, researchers examining longitudinal patterns in prosocial behaviors across adolescence should take care to measure distinct types of prosocial behaviors. However, growth in helping also depends on the relation to the recipient (e.g., Padilla-Walker, Carlo, et al., 2018). This study may have overlooked how changes in specific types of helping (e.g., compliant prosocial behavior) may depend on whether the individual requesting help is a family member, friend, or stranger. Future research is needed to more carefully disentangle these patterns of growth in specific prosocial behaviors aimed at various recipients.

Opportunities and challenges that arise during adolescence may affect the tendency to engage in these types of prosocial behaviors. As previously suggested, the increase in anonymous helping may be due to adolescents achieving increased mobility, independence, and resources (e.g., expendable income through after-school employment). Conversely, observed declines and stability in dire and emotional prosocial behavior may correspond to adolescents' increasing focus on the self and attaining personal goals (e.g., academic, relationship, identity). Striving to meet these personal goals can tax individuals' resources, and recently immigrated Latinx adolescents may consequently have less time and energy to attend to others in need (cf., Carlo et al., 2007). Additionally, given adolescents' focus on concerns external to the family, familial socialization processes that promote these prosocial behaviors may be less effective. Future research should examine how affordances and challenges unique to adolescence facilitate or dampen the growth in specific types of helping behaviors.

We had also surmised that altruistic prosocial behaviors would increase over time, and public prosocial behaviors would decrease over time, as adolescents develop a more principled and integrated moral identity over time (Hardy & Carlo, 2011). Indeed, we saw evidence for the latter pattern in this study. As individuals develop more internalized values regarding helping across

adolescence, it follows that externally driven public prosocial behaviors would decrease. Yet, no growth was observed for altruistic prosocial behaviors. We have already suggested that these behaviors may be taxing to adolescents who are already focused on "survival" in a host culture and their own developmental needs (e.g., identity). Adolescents may also find it challenging to consistently adhere to selfless interests due to underdeveloped self-regulation skills (Steinberg, 2004). Future research should follow the growth of these two motivationally defined forms of helping, as well as other correlates of moral identity, into emerging adulthood in order to better understand this developmental process. Overall, our results highlight the importance of recognizing prosocial behaviors as a multidimensional construct, with an especial need to consider the role of situations and motivations underlying helping behaviors.

Limitations

Despite the contributions of the current work, some limitations should be acknowledged. All measures relied on adolescent self-report; therefore, shared method variance and self-presentation biases might affect the results (see Podsakoff et al., 2012). Future studies should utilize multiple reporters, behavioral tasks, and independent behavioral observations to account for these potential biases. Additionally, although we used data from two major U.S. cities, the findings may not generalize to immigrant Latinxs residing in noncoastal and/or rural regions of the United States. Similarly, these findings may not apply to Latinx subgroups not well represented in the sample (i.e., Latinx subgroups other than Mexican or Cuban) or to nonimmigrant Latinxs (see Knight & Carlo, 2012). In sum, future research should continue to examine these processes across diverse samples of Latinx youth.

Furthermore, all participants were recent immigrants to the United States, and Latinx adolescents who have been living in the United States for longer periods may have different experiences with integration. Integration may also have different trajectories across different domains (see Meca et al., 2018). However, in this study, we considered integration collapsed across domains. This approach captured our rationale for why integration (i.e., as compared to alternative acculturation modes such as assimilation, separation, and marginalization) would be uniquely linked to prosocial behaviors. As previously mentioned, engaging in multiple cultural practices likely fosters mediating mechanisms such as sociocognitive and socioemotive skills that facilitate helping across contexts (Carlo et al., 2016). A preference for both practices and languages across U.S. and heritage cultures would likely encourage frequent and meaningful behaviors and cognitions needed to develop these complex skills. Future studies should consider assessing more nuanced approaches to integration across longer periods of time, as well as potential mediators (e.g., sympathy,

perspective taking) in order to unpack the precise influence of this process on prosocial behaviors.

Conclusions

Despite these and other limitations, this study is the first, to our knowledge, to establish links between changes in integration and changes in specific forms of prosocial behaviors for recent immigrant U.S. Latinx adolescents, highlighting the promotive role of integration for distinct forms of prosocial behaviors, as well as integration as an acculturative process. Moreover, it is also the first study, to our knowledge, to report longitudinal trajectories of multidimensional prosocial behaviors. As prosocial behaviors are indicators of health and well-being, these novel findings suggest that Latinx adolescents' involvement with heritage and host cultural systems might be beneficial for youth and place them on a positive developmental trajectory. These results suggest that community supports that promote the acquisition of host culture behaviors, as well as maintaining ties to traditional cultural values, might be protective for youth and are a worthy area of intervention. Additionally, these findings are important because of the need to focus on positive cultural and social development among U.S. Latinx youth. Such a focus is critical for avoiding contributing to deficit and pathology based models of ethnic minority development. Focusing on indicators of positive adjustment is important in order to highlight cultural strengths that can foster resilience and health among U.S. Latinx youth.

ORCID iD
Meredith McGinley https://orcid.org/0000-0002-9542-9162

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Author Biographies

Meredith McGinley is assistant professor of Psychology at the University of Wisconsin-Parkside. She received her PhD in Developmental Psychology from the University of Nebraska-Lincoln. Her major research interests include the examination of social, emotional and cultural influences on helping behaviors, victimization, aggression, and mental and behavioral health, as well as the application of advanced statistical techniques.

Alexandria N. Davis received her PhD in Human Development and Family Sciences at the University of Missouri. Currently she is an assistant professor of Individual, Family, and Community Education at the University of New Mexico. She has been involved in research projects examining sociocultural and contextual factors related to positive functioning, including family relationships and prosocial/moral development, among ethnic minority and low-SES youth and adolescents.

Gustavo Carlo is a Millsap Professor of Diversity and Multicultural Studies in the department of Human Development and Family Science at the University of Missouri. Dr. Carlo received his PhD in Developmental Psychology from Arizona State University. His research focuses on prosocial and moral development, as well as positive health and adjustment among Latino families and youth.

Seth J. Schwartz is a professor in the department of Public Health Services at the University of Miami. He received his PhD in Psychology at Florida International University. His research encompasses five general areas: identity, parental involvement, cultural processes, intrinsic motivation, and prevention/promotion.

Elma I. Lorenzo-Blanco is an assistant professor of Psychology at the University of South Carolina. Dr. Lorenzo-Blanco received her PhD in Psychology and Women's Studies at the University of Michigan, and she specializes in Latino/a mental health and substance use.

Jennifer B. Unger is a professor of Preventive Medicine at the University of Southern California. Dr. Unger received her PhD from the University of Southern California, and her research interests include psychological, social, and cultural influences on health-risk and health-protective behaviors in diverse populations

José Szapocznik is a professor of Public Health Sciences, Architecture, Psychology, Educational Research and Counseling Psychology at the University of Miami. He received his PhD from the University of Miami. His interests include the role of family context on adolescent problem development, and the role of the built environment on physical activity and related health outcomes.

Lourdes Baezconde-Garbanati is an associate professor in the Keck School of Medicine at the University of Southern California. She received her PhD from the University of California. Her work focuses on community-based research and public health initiatives that explore the role of culture in health behaviors, with an emphasis on the elimination of health disparities.

Daniel W. Soto has a Master's in Public Health from the University of Southern California. He is interested in acculturation, tobacco use, and methods of recruiting and retaining Hispanic families in longitudinal research studies.

Sabrina E. Des Rosiers is an associate professor of Psychology at Barry University. She received her PhD in Developmental Psychology from Florida International University. Her research interests include adolescent/youth development, risk and protective factors, acculturation, alcohol expectancies, family processes, underage drinking, substance use, and health disparities.

Juan A. Villamar is executive coordinator at the Center for Prevention Implementation Methodology (Ce-PIM) at the Northwestern University Feinberg School of Medicine. He received his Master's of Science in Education in Mental Health Counseling and Research Methods from the University of Miami, Miami, Florida. His research interests include prevention, health disparities, dissemination and implementation science, implementation research, complexity and systems science.

Karina M. Lizzi received her Master's in Public Health from the University of Miami. She is currently an Associated Feasibility Strategist at PPD. She is interested in drug safety pertaining to new pharmaceuticals.