Mexican-Origin Adolescents in Latino Neighborhoods:

A Prospective and Mixed Methods Approach

by

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ABSTRACT

Neighborhoods are important aspects of the adolescent and family ecology. Cultural developmental perspectives posit that neighborhood environments contain both promoting and inhibiting characteristics for ethnic-racial minoritized populations (García Coll et al., 1996). Historically, neighborhood researchers have approached Latino neighborhoods from a deficit perspective. Thus, there is limited research about how Latino neighborhoods support Latino youth development and family processes. In my dissertation, I examine both the promoting and inhibiting aspects of Latino identified neighborhoods for adolescent development.

In study 1, I prospectively examined a model in which Mexican-origin parents' perceptions of social and cultural resources in neighborhoods may support parents to engage in higher levels of cultural socialization and, in turn, promote adolescents' ethnic-racial identity (ERI). Findings suggest neighborhood social and cultural cohesion in late childhood promoted middle adolescents' ERI affirmation via intermediate increases in maternal cultural socialization. Similar patterns were observed for ERI resolution, but only for adolescents whose mothers were born in the United States. Findings have critical implications for how neighborhoods support parents' cultural socialization practices and adolescents' ERI.

In study 2, I used a convergent mixed methods research design to compare and contrast researchers' neighborhood assessments collected using systematic social observations (e.g., physical disorder, sociocultural symbols) with adolescents' qualitative neighborhood assessments collected by semi-structured interviews with Mexican-origin adolescents. Using quantitative methods, I found that researchers observed varying

degrees of physical disorder, physical decay, street safety, and sociocultural symbols across adolescents' neighborhood environments. Using qualitative methods, I found that adolescents observed these same neighborhood features about half the time, but also that they often layered additional meaning on top of distinct neighborhood features. Using mixed methods I found that, in the context of high spatial concordance, there was a high degree of overlap between researchers and adolescents in terms of agreement on the presence of physical disorder, physical decay, street safety, and sociocultural symbols. Lastly, adolescents often expanded upon these neighborhood environmental features, especially with references to positive and negative affect and resources. Overall, findings from study 2 underscore the importance using mixed methods to address the shared and unique aspects of researchers' objectivity and adolescents' phenomenology.

DEDICATION

I would like to dedicate this work my parents, Rebecca and Jose, my Auntie Sally, and my brother, Jason. Thank you for supporting me through this process and instilling the importance of education, family, and pride in Pilipino culture. Love you all so much!

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DISSERTATION OVERVIEW

During adolescence, a time of increasing autonomy and cognitive development, neighborhoods are a particularly important social context (Leventhal, Dupéré, & Brooks-Gunn, 2009). Cultural developmental theory postulates that neighborhood environments can be simultaneously promoting and inhibiting for ethnic-racial minoritized populations (García Coll et., 1996). For example, having access to co-ethnic community and neighbors who share similar values may be a resource in minoritized neighborhoods that promotes developmental competencies (Sampson, Raudenbush, & Earls, 1997). On the other hand, because of mechanisms of social stratification, minoritized neighborhoods may lack access to critical institutional resources and, therefore, may inhibit certain developmental competencies (García Coll et., 1996). Individuals, however, are not passive recipients of their environment and adaptive cultural systems of socialization have evolved whereby communities and families of color often promote healthy family processes and adolescent development despite social stratification (White, Nair, & Bradley, 2018). Furthermore, major models of neighborhood effects emphasize ways in which family and neighborhood processes come together to influence adolescent development (Leventhal & Brooks-Gunn, 2015; Noah, 2015).

Historically, neighborhood researchers have approached Latino neighborhoods from a deficit perspective (Sampson, Raudenbush, & Earls, 1997). There is limited empirical knowledge about how Latino neighborhoods support Latino youth development and family processes. Furthermore, culturally-informed theoretical perspectives highlight that it is important to incorporate phenomenology to account for meaning making processes associated with individuals' experiences in their neighborhoods (Spencer,

2007), suggesting that an accurate understanding of the ways in which minoritized neighborhoods shape adolescent development will incorporate phenomenological perspectives. Thus, this dissertation project addressed the need to document both the promoting and inhibiting aspects of Latino identified neighborhoods for adolescent development. I focused on Mexican-origin families and adolescents, the largest ethnic-racial minoritized group in the U.S. (Noe-Bustamante, Flores, & Shah, 2019). Across the two studies, I incorporated phenomenological perspectives (both parents' and youths') and a wide set of methods capable of tapping into the strengths and challenges Mexican-origin adolescents may encounter across diverse neighborhood environments.

In paper 1, I prospectively examined a model in which Mexican-origin parents' perceptions of social and cultural resources in neighborhoods may support parents to engage in higher levels of cultural socialization and, in turn, promote adolescents' ethnic-racial identity (ERI). Past research suggests adolescents whose parents engaged in more cultural socialization, an important aspect of racial socialization (Hughes et al., 2006), had higher levels of ERI exploration and more clarity toward their ethnic-racial background (Umaña-Taylor et al., 2009). Parenting, however, is also situated within neighborhood contexts and can be influenced by resources available in neighborhoods (Yoshikawa, 2011). For example, having neighbors who share mutual values, trust one another (Sampson et al., 1997), and appreciate/celebrate one's heritage culture (Nair et al., 2013) may be resources that promote parents' efforts to engage in cultural socialization. My findings have critical implications for how neighborhoods support parents' cultural socialization practices and adolescents' ERI (García Coll et al., 1996). Furthermore, my findings enhance empirical knowledge of parenting processes and

development in the context of the promoting nature of socially and culturally supportive neighborhood environments for Mexican-origin families and adolescents.

In paper 2, I used a convergent mixed methods research design (Fetters, 2019) to compare and contrast how researchers' neighborhood assessments collected by systematic social observations (e.g., physical disorder, sociocultural symbols) were corroborated and/or expanded by adolescents' qualitative neighborhood assessments collected via semi-structured interviews with Mexican-origin adolescents. Prior neighborhood reviews highlight that objective data are preferred because they are not biased by participants' perceptions (Leventhal & Brooks-Gunn, 2000). Culturally-informed theoretical perspectives, however, emphasize that phenomenology is needed to account for youths' meaning making processes associated with adolescents' experiences in their neighborhoods (Spencer, 2007). This study addressed limitations to prior research relative to objective and subjective approaches to assessing neighborhood environments (Plunkett Abarca-Mortensen, Benhke, & Sands, 2007; Len Chung, Slocum, & Proverbs, 2013; Orstad, McDonough, Stapleton, Altincekic, & Troped, 2017). Findings also contributed to empirical and theoretical knowledge of what Mexican-origin adolescents highlight to be important in their neighborhoods.

Overall these studies captured the lived experiences of Mexican-origin adolescents and families in Latino neighborhoods. Findings from these studies contribute to the breadth of knowledge of both the promoting and inhibiting aspects of Latino identified neighborhoods and how they influence family processes and adolescent development (García Coll et al., 1996). Lastly, the studies contribute to methodological advances by using prospective and mixed methods designs.

Paper 1: A Prospective Examination of Neighborhood Resources and Parenting Processes on Ethnic-Racial Identity among Mexican-origin Adolescents

Adolescence is a formative period in which youth are developing their self-concepts (Erikson, 1968). Ethnic-racial identity (ERI) refers to the meaning and significance that individuals place on their ethnic-racial backgrounds, in addition to the process by which adolescents develop meaning and significance over time (Sellers, Smith, Shelton, Rowly, & Chavous, 1998; Umaña-Taylor et al., 2014). Culturally and contextually informed sociological (Portes & Rumbaut, 2001) and developmental (García Coll et al., 1996) theories highlight that familial and extrafamilial contexts shape youth development, including ERI, but there is little research that examines their combined effects (c.f., White, Knight, Jensen, & Gonzales, 2018). Prior research has established that parents' cultural socialization, practices that parents use to teach their children about their ethnic-racial backgrounds, influences adolescents' ERI development (García Coll., 1996; Hughes et al., 2006; Priest, Walton, White, Kowal, Baker, & Paradies, 2014; Umaña-Taylor et al., 2014). However, there is limited research that examines how extrafamilial contexts, especially the neighborhood, shape parents' engagement in cultural socialization.

In the current study, I examined if perceived social and cultural cohesion in Mexican-origin families' neighborhoods supported mothers and fathers to engage in higher levels of cultural socialization, and in turn, promoted adolescents' ERI (see Figure 1 for conceptual model). Neighborhoods are an important socializing context for both parents and youth (García Coll et al., 1996; Portes and Rumbaut, 2001). Available resources in the neighborhood and perceptions of cultural norms can influence how

parents socialize their children (Yoshikawa, 2011). For example, having neighbors who share mutual values, trust one another (Sampson, Raudenbush, & Earls., 1997), and appreciate/celebrate one's heritage culture (Nair, White, Roosa, & Zeiders, 2013) may be a resource that promotes parents' efforts to engage in cultural socialization. The current study focused on Mexican-origin Latino families, the largest Latino subgroup in the United States (Ennis, Ríos-Vargas, & Albert, 2011), in which cultural socialization is an important and normative parenting process (Hughes et al., 2006). Additionally, I focused on adolescence, as ERI is salient during this developmental period because social and cognitive maturation allows adolescents to think more abstractly about ethnicity and race (Umaña-Taylor et al., 2014).

ERI in Adolescence

ERI is comprised of two main components: processes and content. Processes include exploring one's ethnic-racial background and gaining clarity about what one's ethnic-racial background means to the individual. Exploration, for example, includes attending events that celebrate one's heritage culture, talking to others about one's ethnic-racial background, or reading books about one's ethnic-racial group (Syed et al., 2013; Umaña-Taylor & Fine, 2004). Resolution is the degree to which individuals have a clear understanding of what their ethnic-racial background means to them (Umaña-Taylor, Zeiders, & Updegraff, 2013). ERI content involves attitudes and beliefs individuals have toward their ethnic-racial group. For example, an adolescent can have a high degree of ethnic-racial affirmation, which is the degree to which individuals have pride and positive feelings towards their ethnic-racial background (Umaña-Taylor et al., 2014). Because ERI is a salient aspect of development for adolescents of color, including Latino

adolescents (Umaña-Taylor et al. 2013), it is important to consider how familial and extrafamilial contexts influence ERI processes and content.

Culturally-informed development theories emphasize the family context as a main socializing agent that shapes youth's development (García Coll et al., 1996; Spencer, 2007), including ERI. Families play a critical role in providing tools and skills to youth to help them be successful in their culturally bounded context (Fuller & García Coll, 2010; White, Nair, Bradley, 2018). For ethnic-racial minoritized parents, teaching their children about ethnicity, race, and culture is an important part of socialization, specifically ethnic-racial socialization (Hughes et al., 2006). Cultural socialization, an important component of ethnic-racial socialization, involves overt and covert practices in which parents teach their children about ethnic-racial heritage through promoting cultural traditions and values, talking to children about prominent historical events and figures, celebrating cultural holidays, and speaking the culture's native language (Hughes et al., 2006). In the current study, I focused on cultural socialization, as it is particularly important for Latino families to expose children to values, traditions, and behaviors of the culture of origin because these are distinctly different from values, traditions, and behaviors of the host U.S. culture (Umaña-Taylor & Yazedjian, 2006). Parental and familial engagement in cultural socialization has been positively associated with adolescents' ERI. For instance, family engagement in more cultural socialization has been linked to higher levels of exploration (Umaña-Taylor & Fine, 2004), resolution, and affirmation for Latino adolescents (Umaña-Taylor & Guimond, 2012). In another study, Umaña-Taylor & Guimond (2010) found that cultural socialization was associated with higher levels of

ERI exploration and resolution and that these associations were stronger for Latina girls than for Latino boys.

Prior work has focused on both familial and parental cultural socialization. For instance, respondents may report on familial cultural socialization, which includes all family members' contribution to the process of cultural socialization (Umaña-Taylor, Alfaro, Bámaca, & Guimond, 2009). Or, respondents may report on a specific parents' cultural socialization. When parent-specific assessments are available, it is important to consider mothers' and fathers' contributions separately. For example, although mothers are considered the carriers of culture and the main agents in culturally socializing children (Phinney, 1990), fathers' ethnic-racial socialization may also have implications for youth's ERI. In one study, Knight and colleagues (2017) found that maternal cultural socialization at fifth grade and paternal cultural socialization at seventh grade were associated with Mexican-origin adolescents' exploration at tenth grade. The effects of mothers' and fathers' cultural socialization practices on ERI, therefore, may depend on developmental timing. Thus, it is important to examine the unique effects of mothers' and fathers' cultural socialization practices on ERI during adolescence.

Ethnic-Racial Socialization and Identity in Neighborhood Contexts

Major models of neighborhood effects highlight numerous ways in which family processes and neighborhoods combined to influence youth development (Leventhal et al., 2015; Noah, 2015). One mechanism by which family processes and neighborhoods combined to influence youth development involves mediation, such that parenting processes mediate the association between neighborhood contexts and youth development (Leventhal et al., 2015; Noah, 2015). Substantial work has examined

parenting and family processes that mediate the effects of neighborhood characteristics on adolescents' behavioral and emotional health (e.g., Deng et al., 2006; Mrug & Windle, 2008; Taylor, 2000; White, Liu, Nair, & Tein, 2015). This work consistently finds evidence of parenting and family processes mediating the association between neighborhood contexts and adolescent development. The aforementioned work, however, has limitations. First, the studies focused on negative aspects of neighborhood environments (i.e., risky, dangerous, disadvantaged) alongside costs to family processes and adolescent development. Second, there was a focus on family processes derived primarily from work with European American families (e.g., parental warmth, cohesion). Parental cultural socialization has not been examined as a mediator of neighborhood context on adolescent development, despite its importance to ethnic-racial minoritized youth. Last, prior work has largely been conducted with cross-sectional data (Taylor, 2000; Supple et al., 2006; White & Roosa, 2012).

Although prior theoretical and developmental models emphasize that neighborhoods influence adolescent development via intermediary parenting processes, there is limited research that has examined how neighborhood environments may support parents' engagement in ethnic-racial socialization practices. For instance, when Black/African American parents lived in predominantly Black neighborhoods, they engaged in more ethnic-racial socialization practices (Stevenson, McNeil, Herrero-Taylor, & Davis, 2005). Similarly, neighborhood environments predominated by Latinos may support Latino parents' cultural socialization practices. Immigrant Latino families are more likely to live in neighborhoods that have fewer economic, institutional, and social resources (i.e. mainstream resources) to support parenting processes (Leventhal et

al., 2009). Although these neighborhoods may be low on certain mainstream resources, they may be higher on other resources including, access to co-ethnic neighbors who support heritage culture, shared values, mutual trust, social and cultural cohesion, and group solidarity (Sampson et al., 1997; Portes & Rumbaut, 2001; Nair et al., 2013). In response to varying levels of economic resources in the neighborhood, parents may rely on other resources (e.g., shared values, social and cultural cohesion) to support parenting processes. No prior work, however, has examined how neighborhood social and cultural cohesion may support parents' cultural socialization practices. Having neighbors who share mutual values, trust one another (Sampson et al., 1997), and support or participate in Mexican culture (Nair et al., 2013) may be a resource that supports parents' engagement in cultural socialization. In addition, these same neighborhood resources may also have implications for ERI, especially for Mexican-origin adolescents (White, Zeiders, & Safa, 2018; Pasco & White, 2019). Parents' perceptions of neighborhood social and cultural cohesion may promote adolescents' ERI via parents' cultural socialization. It is also possible that higher levels of neighborhood social and cultural cohesion will influence adolescents' ERI directly, because nurturing and culturally cohesive contexts support adolescents to development a healthy self-concept (Feinauer & Whiting, 2012).

The Current Study

The current study addressed theoretical and methodological gaps in neighborhood and family scholarship on youth development. First, addressing theoretical gaps in prior research (Taylor, 2000; Supple et al., 2006; White et al., 2015), I examined whether Mexican-origin parents' perceptions of neighborhood social and cultural cohesion

supported parents' engagement in cultural socialization practices, and in turn adolescents' ERI. Second, the study addresses methodological gaps by testing a prospective mediational model across three waves of data from late childhood to middle adolescence, offering a true test of mediation. Overall, the current study addressed the following research question: Can neighborhoods that are high in social and cultural cohesion promote adolescent ERI, including exploration, resolution, and affirmation, by supporting parents' efforts to engage in cultural socialization? Hypothesis: Parents who perceived more neighborhood social and cultural cohesion will engage in more cultural socialization practices which, in turn, will increase adolescents' ERI.

Method

Participants

Data are from three waves (5th, 7th, 10th grades) of a study investigating culture, context, and Mexican-origin youth and their families (Roosa et al., 2008). Beginning in Fall 2004, Mexican origin families (N = 749) were recruited from 5th grade classes in a southwestern region of the United States. Study procedures, which are detailed elsewhere (Roosa et al., 2008), were approved by the institutional review board at the authors' university. Stratified random sampling was used to identify communities served by 47 public, religious, and charter schools throughout the metropolitan area. All study materials were available in English and Spanish. Recruitment materials were sent home with all fifth graders in the chosen schools and interested families were screened for eligibility. Of the eligible families, 73% of them participated. Informed consent and assent were obtained from the parents and youth, respectively. Participating family members completed computer assisted interviews and were paid $45 for participating at

5th grade, $50 at 7th grade, and $55 at 10th grade. Of the original sample of families (N = 749) that participated in 5th grade, 710 (95%) participated in 7th grade, and 638 (85%) participated in 10th grade.

Procedures

Families were screened according to the following criteria: they had a target fifth grader attending one of the sampled schools; the participating mother was the biological mother, lived with the youth, and identified as Mexican or Mexican American; the youth's biological father was Mexican-origin; the youth was not learning disabled; and no step-father or mother's boyfriend was living with the youth (unless he was the biological father). Father participation from two-parent households was optional; 467 (83%) of the 579 eligible (biological and living in the same household as the target youth) fathers participated at 5th grade. The full sample of mothers and their youth (749 = 579 two-parent and 170 single-parent female headed) represents one of the largest and most diverse samples of Mexican-origin families (Roosa et al., 2008). The subsample of fathers and youth is an important sample containing fathers from a wide range of neighborhood environments (White & Roosa, 2012).

In the sample of mother-youth dyads (father-youth dyads), 48.9% (48.4%) of the youth were female, the mean age at 5th grade was 10.9 (10.8) years and the SD was 0.46 (0.47); 70.2% (66.6%) of youth were born in the U.S with the remaining of the youth born in Mexico, and 82.4% (81.6%) of youth in the study were interviewed in English (the remaining in Spanish). Most, 74.4% (79.9%) mothers (fathers) were born in Mexico and most, 69.9% (76.8%), were interviewed in Spanish. Mean age was 35.9 (SD = 5.81) for mothers and 38.1 (SD = 6.26) for fathers. First generation immigrant mothers were on

average 22.57 years (SD = 8.74) and fathers were 21.42 years (SD = 7.81) old when they first came to the U.S. The average family income on a scale of 1 ($0,000 -$5,000) to 20 ($95,001+) in the sample of mother-youth dyads was 6 ($25,001-$30,000/year) and father-youth dyads was 7 ($30,001 - 35,000/year).

Measures

Demographic variables

Parents reported on adolescents' country of birth (0 = Mexico, 1 = United States) and sex (0=female, 1 = male). Mothers and fathers reported on annual family income (1 = $0,000 - $5,000 to 20 = 95,001+) and their own countries of birth (0 = Mexico, 1 = United States).

Neighborhood social and cultural cohesion (5th Grade)

Mothers and fathers reported on their own perceptions of neighborhood social and cultural cohesion using a 6-item scale. Neighborhood social and cultural cohesion assessed the degree to which neighbors shared mutual values and goals and trusted one another (e.g., "People around here are willing to help their neighbors"; Sampson et al., 1997) and support Mexican families, culture, and traditions (e.g., "People in this neighborhood appreciate Mexican culture and people"; Nair et al., 2013) using a 5-point scale, 1 (not at all true) to 5 (very true) and each parent was assigned a mean score. Factor structure and reliability are established elsewhere (Nair et al., 2013). Cronbach's alpha was .84 for mother and .82 for fathers. In the subsample of two-parent families, the correlation between mothers' and fathers' report of neighborhood social and cultural cohesion was small ($r = .242$, $p < .01$).

Cultural socialization (5th grade, 7th grade)

Mothers and fathers reported on their own cultural socialization practices by responding to 10-item Ethnic Socialization Scale (Knight et al., 1993). The factor structure, reliability, and construct validity of the ethnic socialization scale are established elsewhere (Knight et al., 2011). Parents separately reported the frequency of their behaviors (e.g., "How often do you tell your child about successful Mexican American people who live in your community?") using a 5-point scale, 1 (almost never or never) to 5 (a lot of the time), and each parent was assigned a mean score. Cronbach's alpha was .74 in 5th grade and .76 in 7th grade for mothers and .75 in 5th grade and .77 in 7th grade for fathers.

Ethnic-racial identity exploration (7th grade, 10th grade)

Adolescents responded to seven items (e.g., "You have attended events that have helped you learn more about your background") on the exploration subscale from the Ethnic Identity Scale (Umaña-Taylor et al., 2004) using a 4-point scale, 1 (does not describe me at all) to 4 (describes me very well). A total score was computed by calculating the mean across all items of the subscale. Cronbach's alpha was .73 in 7th grade and .81 in 10th grade.

Ethnic-racial identity resolution (7th grade, 10th grade)

Adolescents responded to four items (e.g., "You understand how you feel about your background") on the resolution subscale from the Ethnic Identity Scale (Umaña-Taylor et al., 2004) using a 4-point scale, 1 (does not describe me at all) to 4 (describes me very well). A total score was computed by calculating the mean across all items of the subscale. Cronbach's alpha was .74 in 7th grade and .86 in 10th grade.

Ethnic-racial identity affirmation (7th grade, 10th grade)

Adolescents responded to four items (e.g., "You have a lot of pride in your Mexican roots") using the Mexican American Ethnic Pride scale that assessed adolescents' sense of affirmation and positive attitudes toward their ethnic-racial group (Umaña-Taylor et al., 2012). The scale was assessed on a 5-point scale, 1 (not true at all) to 5 (very true). A total score was computed by calculating the mean across all items. Cronbach's alpha was .70 for 7th grade and .78 for 10th grade.

Data Analytic Plan

Preliminary Analysis

Prior to conducting primary analyses, I conducted attrition analyses to examine whether families who participated in 7th and 10th grade interviews differed on 5th grade child demographic (i.e., age, nativity, gender, household structure), mother demographic (i.e., marital status, age, annual family income, nativity, education), and father demographic (i.e., age, education) variables from those who did not participate. Next, I examined descriptive statistics (i.e., frequencies, means, standard deviations, correlations, skewness, kurtosis) of observed study variables using SPSS 24 (IBM Corp, 2016). Skewness is the asymmetry versus kurtosis is the peak of a distribution (Wright & Harrington, 2011). Skewness values that are close to 2/-2 and kurtosis values that are close 7/-7 contribute to non-normality of the data (Curran, West, & Finch, 1996). Furthermore, because some families were clustered within the same neighborhoods (i.e., census tracts), I estimated intraclass correlation coefficients (ICC) to examine the proportion of neighborhood-level shared variance in all main study variables.

As an additional preliminary step, I fit a multi-group structural equation model to examine if the hypothesized model fit equally well across three social position factors that can theoretically set parents and adolescents of color on different developmental pathways (García Coll et al., 1996), including adolescent gender, adolescent nativity, parent nativity, and household structure (one-parent vs. two-parent households). In these preliminary analyses, I examined each social position variable as separate grouping variables in the multi-group framework. First, I estimated a model constraining all mediational paths to be equal across the grouping variable. Then, I estimated a model where all paths were free. I compared the relative fit of the nested models using Satorra-Bentler scaled χ 2 difference tests (Satorra, 2000). A non-significant χ 2 difference test indicated that adding model constraints did not lead to misfit. A significant χ 2 difference test indicated that one or more model constraints contributed to misfit. In the latter case, I freed each path one by one to examine which path constraint or constraints contributed to misfit to determine where differences among the grouping variable in the model occurred (Mackinnon, 2008). Any observed differences were carried into the primary analytic models.

Primary Analysis

After examining preliminary analyses, I examined a longitudinal mediation models using path analysis in structural equation modeling framework using Mplus 8 (Muthén & Muthén, 2017). Based on attrition analyses, variables were included as auxiliary variables in the analytical models to reduce bias attributed to missingness (Enders, 2010). I examined whether perceived neighborhood social and cultural cohesion in 5th grade supported parents to engage in higher levels of cultural socialization in 7th

grade and, this, in turn, promoted adolescents' ERI exploration, resolution, and affirmation in 10th grade. I controlled for prior levels of parents' cultural socialization and adolescents' ERI exploration, resolution, affirmation. Missing data were handled using a Full Information Maximum Likelihood estimator (Acock, 2005), which minimizes bias in parameter estimates but retains original sample size (Enders, 2013). All exogenous variables were allowed to covary in these models. Model fit was assessed using chi-square tests (Hu & Bentler, 1999); root mean square error of approximation (values less that .06 indicate acceptable fit; RMSEA; Hu & Bentler, 1999); standardized root mean square residual (values less than .08 indicate acceptable fit; SRMR; Hu & Bentler, 1999); and comparative fit index (values close to 1 indicate acceptable fit; CFI; Hu & Bentler, 1999). I tested mediation in two ways. First, I estimated indirect effects in Mplus (Muthén & Muthén, 2017). Second, I used the test of joint significance. Prior research suggests that the test of joint significance holds more power and produces reasonable Type I errors rates (Leth-Steetson & Gallitto, 2016). Because the mother sample and the father subsample derive from different underlying populations (mothers are from populations of two-parent and single-parent families; fathers are from a population of two-parent families only), I tested the hypothesized model separately in these samples.

Results

Preliminary Analyses

Attrition analyses examined whether families who participated in interviews in 7th and 10th grades differed on 5th-grade child demographic (i.e., age, nativity, gender, household structure), mother demographic (i.e., marital status, age, annual family

income, nativity, education), father demographic (i.e., age, education), and study variables from those that did not participate. The majority of demographic comparisons were non-significant, however families who participated in 10th grade (n = 640) reported higher 5th grade annual family income [t(730) = -2.986, p = .003] and children were less likely to be born in Mexico [x2(1) = 4.681, p = .031] compared to those who did not participate in 10th grade (n = 109). On study variables, fathers who participated in 10th grade (n = 395) reported higher baseline neighborhood social and cultural cohesion that fathers who did not participate [t(464) = 2.092, p = .042]. Because all other variables related to attrition were incorporated into the model testing framework and, therefore, accounted for in the FIML estimates, 5th grade annual family income was included as an auxiliary variable to address further address missingness.

Correlations, means, standard deviations, Cronbach's alpha, skewness, and kurtosis are presented in Table 1. In the mother-adolescent dyad, mothers' 5th grade neighborhood social and cultural cohesion was positively associated with their cultural socialization in the 5th and 7th grades. Maternal cultural socialization in the 7th grade was positively associated with ERI exploration, resolution, and affirmation in the 7th and 10th grades. Adolescent ERI exploration, resolution, and affirmation in the 10th grade were positively associate with one another. In the father-adolescent dyad sample, fathers' 5th grade neighborhood social and cultural cohesion was positively associated with their cultural socialization in the 5th and 7th grades. Paternal cultural socialization in the 7th grade was positively associated with adolescent ERI exploration in the 7th and 10th grades, but not with ERI resolution or ERI affirmation. Adolescent ERI exploration, resolution, and affirmation in the 10th grade were positively associated with one another.

Next, I examined skewness and kurtosis for study variables in the mother-adolescent dyad and in the father-adolescent dyad samples and found evidence of non-normality for adolescents' reports of ERI affirmation in both samples. ERI affirmation was negatively skewed for both samples (see Table 1). Lastly, I examined ICCs for main study variables (see Table 2). The highest ICC was .059 which indicates that about 6% of the variance for fathers' 5th neighborhood social and cultural cohesion was shared between individuals in each census tract. I used maximum likelihood estimation with robust standard errors (MLR; Enders, 2013) to account for non-normality of the data. To account for non-independence associated with individuals being clustered in neighborhood census tracts, I used the CLUSTER IS command and TYPE = COMPLEX, which adjusted the standard errors across individuals living in the same census tract.

The results of the preliminary multi-group structural equation models examining whether the hypothesized model fit the data equally well across key social position variables are presented in Table 3. For the mother-adolescent dyad sample, nested model comparisons indicated that the hypothesized model fit equally well across adolescent gender, household structure, and adolescent nativity, but not across maternal nativity. There was a difference in the association between maternal cultural socialization and ERI resolution across adolescents of U.S. born vs. Mexico-born mothers. Primary analysis for mothers allowed this association to vary across these groups. For the father-adolescent dyad sample, nested model comparisons indicated that the hypothesized model fit equally well across adolescent gender, adolescent nativity, and father nativity.

Effects of Neighborhood Social and Cultural Cohesion on Adolescents' ERI via Mothers' Cultural Socialization

Based on the preliminary analyses with the mother and adolescent data, I tested multi-group longitudinal structural equation model in Mplus 8 (Muthén & Muthén , 2017) using MLR (Enders, 2013) to account for the ERI affirmation variable being skewed. Additionally, I used the CLUSTER IS command and TYPE = COMPLEX to account for non-independence of individuals living in the same census tract. I used maternal nativity as a grouping variable, constraining all mediational paths to be equal across maternal nativity, except the path from maternal cultural socialization to adolescent ERI resolution, which was free to vary across groups. Based on results of attrition analyses, 5th grade family income was included as an auxiliary variable to reduce bias attributed to missingness (Enders, 2010).

Results, including model fit statistics, are presented in Figure 2. Model fit was considered acceptable. Mothers' 5th grade neighborhood social and cultural cohesion predicted higher 7th grade cultural socialization (B = .043 (.022), $p < .05$), controlling for prior levels of cultural socialization. Mothers' 7th grade cultural socialization positively predicted adolescents' 10th grade ERI exploration (B = .122 (.057), $p < .05$), and affirmation (B = .108 (.036), $p < .05$) controlling for adolescents' 7th grade ERI exploration and affirmation, respectively. For Mexico-born mothers, 7th grade cultural socialization did not predict adolescents' ERI resolution [B = -.014 (.072), ns]. For U.S.-born mothers, 7th grade cultural socialization predicted increases in adolescents' ERI resolution (B = .286 (.079), $p < .001$). Finally, neighborhood social and cultural cohesion

had a negative direct effect on adolescents' 10th grade ERI exploration (B = -.098 (.041), $p < .05$), but did not have direct effects on resolution or affirmation.

I examined two tests of mediation. The test in Mplus showed that the indirect effect of neighborhood social and cultural cohesion on ERI exploration (ab = .005 (.004), ns), resolution (ab = .013 (.008), ns), or affirmation (ab = .006 (.004), ns), via mothers' cultural socialization, was not significantly different from zero. Using the test of joint significance (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002; Leth-Steensen & Gallitto, 2016), however, neighborhood social and cultural cohesion had a positive mediated effect on ERI exploration and affirmation through mothers' cultural socialization, as the a and b paths in the path analyses were significantly different from zero. For ERI exploration only, the positive mediated effect of neighborhood social and cultural cohesion (according to the test of joint significance), however, was contrasted by a negative direct effect (B = -.098 (.041), $p < .05$). Because the test of joint significance does not take into account the effect of the c path (MacKinnon et al, 2002; Leth-Steensen & Gallitto, 2016), I report the total effect (net of direct and indirect) of neighborhood social and cultural cohesion on ERI exploration: it was negative and significant (B = -.092 (.039), $p < .05$). Finally, for ERI resolution, according to the same test of joint significance, mediation was present for youth with U.S.-born mothers, but not Mexico-born mothers.

Effects of Neighborhood Social and Cultural Cohesion on Adolescents' ERI via Fathers' Cultural Socialization

Based on preliminary analyses with the father and adolescent data, the hypothesized model fit equally well across key social position variables (i.e., adolescent

gender, adolescent nativity, and father nativity), so I did not use a multi-group framework. I tested a longitudinal structural equation model using Mplus 8 (Muthén & Muthén, 2017) with MLR estimation to account for ERI affirmation data being skewed, and the CLUSTER IS command and TYPE = COMPLEX to account for non-independence among individuals living in the same census tract. Based on results of attrition analyses, 5th grade family income was included as an auxiliary variable to reduce bias attributed to missingness (Enders, 2010).

Results, including model fit statistics, are presented in Figure 3. Model fit was considered acceptable. Fathers' 5th grade neighborhood social and cultural cohesion did not predict 7th grade cultural socialization, controlling for previous levels of cultural socialization (B = .036 (.024), ns). In addition, 5th grade neighborhood social and cultural cohesion was not associated with 10th grade adolescents' ERI exploration (B = -.028 (.050), ns), resolution (B = -.045 (.040), ns), or affirmation (B = .048 (.032), ns). In addition, 7th grade fathers' cultural socialization did not predict 10th grade adolescents' ERI resolution (B = .112 (.060), ns) or affirmation (B = .069 (.046), ns). However, 7th grade fathers' cultural socialization predicted higher levels of 10th grade adolescents' ERI exploration (B = .180 (.071), $p < .05$). The pattern of results precluded further examination of any mediated effect.

Discussion

The current study addressed theoretical and methodological gaps in neighborhood and family scholarship on Mexican-origin adolescent development. I examined whether Mexican-origin parents' perceptions of neighborhood social and cultural cohesion supported parents' engagement in cultural socialization practices, and in turn adolescents'

ERI. Consistent with study hypotheses, my findings showed that neighborhood social and cultural cohesion in late childhood promoted middle adolescents' ERI affirmation via intermediate increases in maternal cultural socialization. Similar benefits were observed for ERI resolution, but only for adolescents whose mothers were born in the U.S. Findings for ERI exploration were somewhat equivocal. Contrary to study hypotheses, however, neighborhood social and cultural cohesion did not promote adolescents' ERI through paternal cultural socialization, regardless of adolescent gender, adolescent nativity, or father nativity. The current study tested a prospective mediation model from late childhood to middle adolescence, which shows how earlier neighborhood contexts and family processes may influence future adolescent outcomes. Contributing to neighborhood and family research, the current study underscores the importance how socially and culturally supportive neighborhood environments and parents' cultural socialization work together to support adolescents' ERI affirmation and in some ways, ERI resolution.

Effects of Neighborhood Social and Cultural Cohesion on Adolescents' ERI via Mothers' Cultural Socialization

Consistent with my hypothesis, mothers who perceived higher levels of neighborhood social and cultural cohesion engaged in more cultural socialization practices which, in turn predicted increases in adolescents' ERI affirmation, and, for those with U.S. born mothers, their resolution. There was also some evidence that similar processes operated for ERI exploration, regardless of nativity, but those findings were somewhat equivocal and are discussed in more detail later. Overall, my findings are consistent with theoretical models of neighborhood and family processes on youth

development, which implicate parenting processes as mechanisms via which neighborhood environments influence youth development (Leventhal et al., 2015; Noah et al., 2015). Parenting processes, specifically mothers' cultural socialization, may be an indirect pathway by which neighborhoods influence adolescent outcomes overtime, including ERI. This work addressed major gaps in that literature by advancing beyond a focus on (a) on negative aspects of neighborhood environments (i.e., risky, dangerous, disadvantaged; Mrug & Windle, 2009; Taylor, 2000), (b) neighborhood costs to family processes and adolescent development (e.g., Deng et al., 2006), (c) family processes derived primarily from work with European American families (e.g., parental warmth, cohesion; White et al., 2015), and (d) cross-sectional associations (Supple et al., 2006; Taylor, 2000; White & Roosa, 2012).

First, neighborhood social and cultural cohesion supported mothers to engage in more cultural socialization, an important aspect of ethnic-racial socialization that involves practices in which parents teach their children about their ethnic-racial heritage (Hughes et al., 2006). This finding is consistent with prior theoretical and empirical work that suggests that neighborhood sociocultural resources can support normative parenting processes among immigrant populations (e.g., Portes & Rumbaut, 2001; Yoshikawa, 2011). Parents, especially those from immigrant backgrounds, may rely on informal networks to help socialize their children (Yoshikawa, 2011). When mothers' perceived their neighbors to have shared goals, mutual trust and support Mexican culture (Nair et al., 2013), they engaged in higher levels of cultural socialization. Thus, these neighborhood resources may be key to supporting Mexican-origin mothers in their efforts to culturally socializing their adolescents. My work extends prior research (e.g., Deng et

al., 2006; Supple et al., 2006; Taylor, 2000; White & Roosa, 2012), such that this is the first study to examine how neighborhood social and cultural cohesion, a social process in neighborhoods, supports cultural socialization practices. Prior work has focused on how ethnic and racial compositions, structural characteristics of neighborhoods, influence family processes and youth development (e.g., Tatum, 2000; White et al., 2017, Winkler, 2012). Broad neighborhood theory (Sampson et al., 1997) emphasizes that neighborhood social processes, like shared culture and values, are important for family processes. My study shows that these mechanisms positively predict Mexican-origin parents' cultural socialization, an aspect of socialization that is understudied in neighborhood contexts. Future research should consider incorporating parents' perception of neighborhood social processes in addition to ethnic and racial structuring of neighborhood environments.

Next, my findings indicate that mothers' cultural socialization predicted higher levels of adolescent ERI exploration and affirmation, and for youth with U.S. born mothers, higher ERI resolution. This finding is consistent with literature that shows that familial cultural socialization supports middle adolescents to explore their ERI (e.g., Umaña-Taylor & Fine, 2004) and predicts higher levels of resolution and affirmation among Latinos (Umaña-Taylor & Guimond, 2012). An important difference, however, is that the current findings document the influence of maternal cultural socialization specifically, not cultural socialization in the broader family context (Umaña-Taylor & Fine, 2004; Umaña-Taylor & Guimond, 2012). My findings suggest that Mexican-origin mothers, specifically, can help promote both ERI exploration and affirmation (and for some youth resolution) by providing their children with resources to learn about one's ethnic-racial background, talking about historical events or prominent figures, celebrating

cultural events (e.g., Día de los Muertos), and speaking in Spanish (Umaña-Taylor et al., 2014).

The significant positive association between mothers' cultural socialization and ERI resolution applied to adolescents with U.S.-born mothers, and not to those with Mexico-born mothers. This finding contrasts prior work that found that adolescents' report of familial cultural socialization predicted higher levels of ERI for youth with Mexico-born mothers , but not youth with U.S.-born mothers (Umaña-Taylor, Zeiders, Updegraff, 2013). That work, however, differs from the current study in important ways. Umaña-Taylor and colleagues (2013) utilized adolescents' report of familial cultural socialization and related familial cultural socialization to an ERI composite of exploration and resolution. Consequently, the difference in my current findings from that of Umaña-Taylor and colleagues' (2013) findings may be due to either parent-specific versus family-wide nature of cultural socialization or my separate examination of exploration and resolution. Notably, subsequent theoretical and conceptual advancements to ERI strongly supports treating each ERI component separately (Umaña-Taylor et al., 2014). In terms of the current study's findings, it is important to consider that U.S.-born mothers may be able to couple cultural socialization messages with specific references to gaining clarity relative to what it means to be Mexican in the U.S. because these mothers also experienced their adolescence in the U.S. In contrast, Mexico-born mothers, who, on average in the current sample, experienced their adolescence in Mexico, may not be coupling their cultural socialization messages with specific references to gaining clarity in the U.S. context. More research is needed to understand U.S.-born mothers' cultural

socialization practices, specifically, and the role mothers' nativity plays in such processes, generally.

Finally, regarding the equivocal nature of the ERI exploration findings, after accounting for the positive indirect effect, there was a residual, negative direct association between mothers' perception of neighborhood social and cultural cohesion in 5th grade and adolescent ERI exploration in 10th grade. Although this finding suggests inconsistent mediation, it is also important to note that the total effect for the association between neighborhood social and cultural cohesion in 5th grade and adolescents' ERI exploration in 10th grade was negative and significant. Mothers' perception of 5th grade neighborhood social and cultural cohesion, even though they promoted 7th grade maternal cultural socialization which promoted ERI exploration, may have undermined adolescents' 10th grade exploration. This finding contrasts prior research that found that neighborhoods that were more culturally cohesive, (i.e., neighborhoods with a higher prevalence of Spanish language, including Spanish language billboards, bilingual services) promoted and supported adolescents' ERI (Feinauer & Whiting, 2012). Perhaps neighborhood signs and symbols of race and ethnicity may be more important for adolescents' ERI whereas neighborhood social and cultural cohesion may be more important for parents' cultural socialization practices.

The negative direct association between mothers' perception of neighborhood social and cultural cohesion in 5th grade and adolescent ERI exploration in 10th grade merits further investigation. First, mothers' perceptions may not match adolescents' perceptions of the neighborhood. Thus, while mothers' may have been tuning into cultural and social cohesion in the 5th grade neighborhood, youth may have been tuning

into other features, including ones indicating racial and ethnic stratification (Pasco & White, 2019). Second, and related to the first, the salience of the 5th grade neighborhood context for adolescents' 10th grade ERI exploration, may be reduced or altered. By middle adolescence, youth are gaining more autonomy and are likely exploring their neighborhood more independently (Leventhal et al., 2015). Adolescents are making their own meaning of their neighborhood spaces and choosing what spaces (even within the boarder neighborhood context) are relevant to exploring their ethnic-racial background. Additionally, given the inter-neighborhood mobility of this sample (White et al, 2014), this finding could reflect, to some degree, confounds associated with mobility between 5th and 10th grade. Additional research documenting this neighborhood social and cultural cohesion and adolescents' ERI is needed to explicate this finding.

Effects of Neighborhood Social and Cultural Cohesion on Adolescents' ERI via Fathers' Cultural Socialization

Contrary to study hypotheses, however, neighborhood social and cultural cohesion did not promote adolescents' ERI through paternal cultural socialization, regardless of adolescent gender, adolescent nativity, or father nativity. This is because neighborhood social and cultural cohesion did not predict fathers' cultural socialization. One explanation for these non-significant findings is that fathers may be responding, parentally, to a different set of neighborhood signals. Prior research, for example, has found significant associations between fathers' perceptions of neighborhood danger and their parenting processes, but has documented inconsistent associations between mothers' perceptions of neighborhood danger and their parenting processes (White et al., 2009; White et al., 2015). Fathers may attend and respond, parentally, to signals of

neighborhood danger because of their sense of obligation, as the main authority figure, to protect the family. Neighborhood resources, on the other hand, do not pose threat to the family. Therefore, neighborhood resources may not be the neighborhood signals to which fathers' parenting processes are responsive. Research that simultaneously examines neighborhood danger and social and cultural cohesion as predictors of parents' cultural socialization could examine potential gender differences in parents' responses to different features of the neighborhood environment.

Though neighborhood social and cultural cohesion did not predict fathers' cultural socialization, their cultural socialization did positively predict adolescents' ERI exploration. This pattern was also observed in the mother-adolescent models. Extending upon prior work on cultural socialization that focused mostly on mothers (Hughes, Hagelskamp, Way, & Foust, 2009) or all family members (Umaña-Taylor & Guimond, 2012), the current finding underscores the importance of fathers in Mexican-origin adolescents' cultural development. For example, Zeiders and colleagues (2016) found that Mexican-origin fathers' familism values were associated with increases in youths' familism values and, in turn, set the tone for family members' daily activities, which may be consistent with their authority figure roles (Umaña-Taylor & Updegraff, 2012). Thus, Mexican-origin fathers may be encouraging their children to spend time and engage in activities that help them to learn about their ethnic-racial background and get involved in their heritage culture, thus promoting ERI exploration.

Fathers' cultural socialization, however, did not predict adolescents' ERI resolution or affirmation. These patterns were unique from those found in the mother-adolescent models. These father-specific findings are unique from prior work that

focused on cultural socialization in the broader family context and found that it promoted ERI resolution (Umaña-Taylor & Guimond, 2010) or affirmation (Umaña-Taylor & Guimond, 2012). Thus, my work raises important questions about fathers' specific roles with regard to cultural socialization in the broader family context and encourages future work to tease apart caregivers' unique roles relative to cultural socialization of adolescents (White, Nair, Bradley, 2018). In one prior examination that considered maternal and paternal cultural socialization separately, the effects of mothers' and fathers' cultural socialization practices on ERI depended on developmental timing (Knight et al., 2017), a dimension I was not able to tease apart in the current study. However, that work, combined with the current work suggests that cultural socialization from mothers and from fathers may play unique roles at unique times for unique components of adolescent ERI. These patterns, therefore, raise important questions for developmental scientists regarding how timing, parenting roles, and specific developmental competencies influence associations between cultural socialization and ERI. Importantly, it is not possible to make a direct comparison between the father and mother findings in the current study because they were estimated in separate models and the samples derive from distinct underlying populations, with the father subsample being constrained to two-parent family contexts and the mother sample including both two-parent and single-mother families. Still, the mother-model findings generalized across household structure, thus the observed difference in the pattern of findings for mothers and fathers is not likely due to differences in household structure.

Summary, Limitations, and Future Directions

Prior models of neighborhood effects emphasized the importance of including family processes as mechanisms explaining associations between neighborhood contexts and youth development (Leventhal et al., 2015; Noah, 2015). Consistent with neighborhood theory and perspectives (Noah, 2015), I found that mothers who perceived more neighborhood social and cultural cohesion engaged in more cultural socialization practices which, in turn, increased adolescents' ERI affirmation and, for youth with U.S. born mothers, their ERI resolution. These findings, however, did not extend to father-adolescent models. The current study addresses limitations of prior work regarding how neighborhood and family processes combine to influence adolescent development. First, I employed a longitudinal design to examine a true test of mediation. I focused on a culturally-informed positive aspect of neighborhood environment (i.e., social and cultural cohesion). The majority of prior work focuses on the negative aspects of neighborhood environments (Deng et al., 2006; Mrug & Windle, 2009; Taylor, 2000). I examined parent-specific cultural socialization and found that for mothers, it is a key mechanism through which neighborhoods indirectly influence adolescent outcomes, especially ERI affirmation and, for youth with U.S. born mothers, ERI resolution. Finally, my focus on parent-specific cultural socialization, vs. family-wide cultural socialization, raised important questions for future research.

The contributions, however, must be considered alongside limitations. Although, I drew from multiple reporters across multiple waves, I did not capture adolescent report of neighborhood social and cultural cohesion. Future research should capture adolescents' perception of neighborhood social and cultural cohesion, especially in middle

adolescence, a time where youth gain more autonomy and are exploring and experiencing their neighborhoods independently. Neighborhood selection bias may be a limitation to the current study because individuals are not randomly assigned to neighborhoods and individuals have some degrees of choice in which they select where they live (Leventhal et al., 2015). Various demographic characteristics may influence and limit which neighborhoods individuals select to live. Although, I accounted for key demographic characteristics (i.e., family income, nativity, gender) and controlled for prior levels of study variables that would reduce the effects of neighborhood selection, only a true experimental design is capable of eliminating the confound of neighborhood selection.

The current study highlights how neighborhood and family processes worked together to influence adolescent development. My findings show that Mexican-origin mothers, in particular, are accessing and relying on other resources (i.e., neighbors who support heritage culture and have shared values) to support their cultural socialization efforts. These findings highlight the importance of examining both neighborhood processes and the cultural resources that exist in the neighborhood that support parents and adolescents. Future research should also consider incorporating adolescents' perception of neighborhood social and cultural cohesion. By examining both parents' and adolescents' perception, this work can provide insight on the salient and promoting aspects of neighborhood environments on family processes and adolescent development for ethnic-racial minoritized populations.

Paper 2: A Mix Methods Comparison of Objective and Subjective Assessments of Neighborhood Characteristics in Latino Neighborhoods

Neighborhoods are a salient context of the developmental ecology, especially during adolescence, a time of active cognitive and socioemotional developmental. Adolescents' social worlds are expanding and they are able to explore their neighborhoods independently (Leventhal, Dupéré, & Shuey, 2015). Cognitively, adolescents are able to make meaning of the signs and symbols that exist in their neighborhoods. Prior research has shown that neighborhood environments may have implications for adolescent development including, mental health (Hill & Maimon, 2013; Hurd, Stoddard, & Zimmerman, 2013), behavior problems (Kulis, Marsiglia, Sicotte, & Nieri; Lee & Liechty, 2015), and cultural developmental processes and experiences (i.e., ethnic-racial identity and discrimination; White, Knight, Jensen, & Gonzales, 2018; Juang & Alvarez, 2011). This work relies on a variety of approaches to assessing neighborhood factors, with little attention to similarities and differences across approaches. Prior neighborhood reviews highlight that objective approaches are preferred because they are not biased by participants' perceptions (Leventhal & Brooks-Gunn, 2000). However, culturally informed theoretical perspectives emphasize that phenomenology is needed to account for youths' meaning making processes related to both objective (Leventhal, Dupéré, & Brooks-Gunn, 2009) and subjective (Spencer, 2007) contextual experiences. Because prior research and theoretical perspectives highlight a variety of approaches to examining neighborhood effects on adolescent development, it is important to gain a better understanding of the shared and unique aspects of such approaches.

There are two main approaches to measuring neighborhood environmental features in research on adolescent development, and researchers typically refer to these as objective and subjective (Bass & Lambert, 2004; Roosa, White, Zeiders, & Tein, 2008). Objective assessments are researcher-driven and focus on archival data (e.g., census) or systematic social observations of neighborhood environments (Leventhal et al., 2015). Subjective assessments focus on participants' perceptions of their neighborhoods (Nicotera, 2008; Roosa et al., 2008). While both approaches may be important to understanding youth development, there is a dearth of research on the overlapping and unique aspects of objective and subjective approaches, generally, and among Latino adolescents, specifically. The current study used a mixed methods design to compare and contrast researcher and adolescent neighborhood assessments among Mexican-origin Latino youth living in predominantly Latino neighborhoods. Specifically, I compared researchers' observations of neighborhood environments to adolescents' own narrative descriptions of the same neighborhood environments. Using mixed methods, I explored whether adolescents' narratives *corroborated* or *expanded* on researcher's observation of neighborhood environmental features (Fetters, 2019).

In the current study, I focused on Mexican-origin Latinos living in concentrated Latino neighborhoods (i.e., neighborhoods comprised of greater than 50% Latino residents). These minoritized neighborhood environments are the products of residential segregation, a major mechanism of social stratification in the United States (García Coll et al., 1996). Neighborhood theory and scholarship (Sampson, Raudenbush & Earls, 1997) have focused on the deficits associated with living in neighborhoods higher on Latino concentration. In doing so, this research may have relied on neighborhood

constructs and measures that did not account for social and historical circumstances of Latino families and youth (Spencer, 2007). Additionally, cultural developmental theory posits that minoritized neighborhoods can be simultaneously promoting and inhibiting for ingroup members and recognizes that social stratification produces distinct environments and pathways of development (García Coll et al., 1996; Portes, Fernandez-Kelly, & Haller, 2005). Thus, it is important to conduct research with the potential to capture both the promoting and inhibiting features of Latino neighborhoods for Mexican-origin adolescents living therein. Examination of adolescents' lived experiences in neighborhoods relative to researchers' observations can illuminate gaps in extant neighborhood theory, constructs, and measures.

Developmentally Inhibiting and Promoting Characteristics of Neighborhood Environments

Cultural developmental perspectives postulate that neighborhood environments, including concentrated Latino neighborhoods, contain inhibiting and promoting characteristics that can have implications for ethnic-racial minoritized adolescents' development and experiences (García Coll et al., 1996). In terms of inhibiting characteristics, for example, physical disorder and physical decay are commonly examined signs of neighborhood disorder that may undermine ethnic-racial minoritized adolescents' development. Signs of physical disorder include graffiti and trash in public spaces, abandoned houses, and cars (Ross & Mirowsky, 1999). Signs of physical decay include deteriorated sidewalks, streets, residential houses, and commercial buildings (Ross & Mirowsky, 1999). These signs of neighborhood disorder can convey messages of environmental instability and low resource availability to which developing organisms

should respond and which may be particularly salient during adolescence (Del Giudice, Ellis, & Shirtcliff, 2011). The implications, however, may vary depending on whether objective or subjective neighborhood assessments were used (e.g., Gonzalez et al., 2011). For example, in one study, subjective assessments of inhibiting characteristics were more predictive of adolescent internalizing symptoms than objective assessments (Goldman-Mellor, Margerison-Zilko, Allen, & Cerda, 2016). In a different study, however, objective assessments of neighborhood inhibiting characteristics were positively associated with internalizing symptoms for adolescent girls (Browning, Soller, Gardner, & Brooks-Gunn, 2013). A third study found that objective neighborhood inhibiting characteristics were not associated with youth internalizing symptoms (Molnar, Gortmaker, Bull, & Buka, 2004). Across these studies, the association between neighborhood inhibiting characteristics and youth outcomes varied across objective and subjective neighborhood assessments.

Promoting characteristics in the neighborhood can include access to institutional or cultural resources and positive social processes. Institutional resources may include access to public parks, health services, and afterschool programs (Molnar, Cerda, Roberts, & Buka, 2008; Pate et al., 2008). Cultural resources and processes include having access to the co-ethnic community, services with appropriate languages, and institutions that celebrate heritage cultural holidays or support exchange with countries of origin (Yoshikawa, 2011). Positive social processes include social cohesion, informal social control, and street safety (Sampson, et al., 1997). Access to institutional and cultural resources and positive social processes can have implications for adolescent development (Feinauer & Whiting, 2012; Nair, White, Roosa, & Zeiders, 2013; Pasco &

White, 2019). The implications, however, may vary when objective and subjective assessments are used. For example, White and colleagues (2014) found that Mexican-origin adolescents who had greater objective access to the co-ethnic community reported fewer experiences of discrimination. However, a study that focused on subjective access to the co-ethnic community found that Chinese adolescents who perceived higher levels of Asian concentration reported more experiences of discrimination (Juang & Alvarez, 2011). These differences may be situated in ethnic-group differences, or they may be situated in assessment differences.

Overall, neighborhood promoting and inhibiting characteristics exist both objectively and subjectively. Ethnic-racial minoritized adolescents may tune-into, perceive, and make meaning of the characteristics that are theoretically and empirically important according to researchers, or they may not. Moreover, adolescents' phenomenologies are important for their meaning making and have implications for adjustment and psychosocial functioning (García Coll et al., 1996; Spencer, 2007). It is important to consider that the ways in which neighborhood promoting and inhibiting characteristics matter for adolescent development may vary by objective and subjective assessments. However, without a better understanding of the overlapping and unique aspects of objective and subjective assessments, it is difficult to make meaning across contrasting findings.

Objective versus Subjective Measures of Neighborhood Environments

In limited prior work, researchers have attempted to understand the shared and unique aspects of objective and subjective approaches to assessing neighborhood environments. A prior systematic review examined the associations between objective

and subjective measures of neighborhood environment and physical activity among adults (Orstad, McDonough, Stapleton, Altincekic, & Troped, 2017). First, they found that there was low agreement between objective and subjective assessments, suggesting that objective and subjective measures are not interchangeable. This finding is consistent with prior developmental work with Latino adolescents that also identified low correlations between objective and subjective assessments of neighborhood environments (Plunkett, Abarca-Mortensen, Benhke, & Sands, 2007). Second, the systematic review found that subjective assessments were more strongly associated with physical activity than objective assessments. The second finding is also similar with prior developmental research, which found that subjective assessments had stronger associations with youth outcomes than objective assessments (Hadley-Ives et al., 2000). This suggest that objective and subjective measures of neighborhood context are unlikely to be interchangeable.

While there is limited work that compares and contrasts objective and subjective neighborhood data (e.g., Plunkett et al., 2007; Orstad et al., 2017), these studies have limitations. First, subjective reports often rely on researcher-selected neighborhood constructs and measures, which may not account for the sociocultural and historical background of the populations of interest (Cokley, 2007), a problem that may be particularly costly in research with ethnic-racial minoritized youth living in minoritized neighborhoods (Spencer, 2007). Moreover, adolescents may or may not cue into the features that researchers think are important. Second, the limited work rests on the assumption of spatial concordance across the objective and subjective assessments. Prior work suggests that study participants and researchers rarely have concordant

neighborhood spatial operationalizations (Robinson & Oreskovic, 2013; Colabianchi, Coulton, Hibbert, McClure, Ievers-Landis, & Davis, 2014). Consequently, unexamined differences in researchers' and respondents' spatial definitions of the residential neighborhoods offer one methodological explanation for low agreement between objective and subjective assessments found in prior work (Plunket et al., 2007; Orstad et al., 2017). This is problematic because underlying geographic and spatial differences in researcher versus participant-defined neighborhoods offer alternative explanations for both systematic and random discrepancies between objective and subjective neighborhood assessments.

Perhaps reflecting an acknowledgement of low agreement between objective and subjective assessments (Plunket et al., 2007; Orstad et al., 2017), some researchers argue that objective neighborhood data should not be used without subjective data from the individuals living within the neighborhood (Bass & Lambert, 2004; Len Chung, Slocum, & Proverbs, 2013). In many cases, however, assessing both objective and subjective data sources may not be possible. Moreover, a more accurate understanding of the overlapping and unique aspects of objective versus subjective assessments can facilitate broader meaning-making across extant research findings that have relied upon one source or the other (not both).

The Current Study

In the current study, I used a convergent mixed methods research design (Fetters, 2019) to address how researchers' assessments of neighborhood environmental features compared with Mexican-origin adolescents' neighborhood phenomenologies. First, researchers used systematic social observations, which are widely considered objective

neighborhood assessments (Leventhal et al., 2015), to quantitatively rate neighborhood environmental features. Second adolescents' narratively described features of their neighborhood environments during semi-structured interviews. These narratives are widely considered to be subjective in nature. The use of both data sources facilitated identification of both the overlapping and unique aspects of researcher – driven neighborhood objectivity and adolescent – driven neighborhood phenomenology. Second, the current study utilized photos Mexican-origin adolescents took of the strengths and challenges they encountered in their predominantly Latino neighborhoods. These photos were coded by researchers, using an established systematic social observations protocol (Odgers, Caspi, Bates, Sampson, & Moffitt, 2012; Pasco & White, 2019); adolescents also narratively described the same photos. Therefore, there is a high degree of spatial concordance between researchers' and adolescents' characterizations. Lastly, the current study focused on Mexican-origin adolescents living in predominantly Latino neighborhoods, a context that is understudied and may be especially misunderstood and misrepresented by predominant frameworks defining promoting or inhibiting characteristics of neighborhoods (Garcia Coll et al., 1996; Spencer, 2007).

The current study explored three aims (see Figure 1). The first aim was to describe levels of neighborhood promoting and inhibiting characteristics, including physical disorder, physical decay, street safety, and sociocultural symbols based on researchers' observations (quantitative) of photos that Mexican-origin adolescents took in their neighborhoods (Odgers et al., 2012; Pasco & White, 2019). The second aim was to identify themes in Mexican-origin adolescents' descriptions of the same neighborhood photos during semi-structured interviews (qualitative). Finally, I compared and contrasted

researchers' observations and adolescents' narratives of neighborhood environmental features (aim three). I utilized a complementary mixed methods framework in which I employed distinct methods that explored the same conceptual phenomenon (i.e., neighborhood environmental features). I employed an interpretivist/constructivist epistemology with a focus on adolescents' perspectives and comparing them to researchers' observations. I interpreted their experiences in a theoretically grounded framework. My goal in the current study was to not elevate one perspective (objective vs. subjective) over the other. Both researchers' objectivity and adolescents' phenomenology likely provide critical information about adolescents' neighborhood environments.

Method

Participants

Data for this study came from an exploratory, mixed-methods study of 14 Mexican-origin adolescents (64% female) living in Latino neighborhoods (≥50% Latino population). Data collection took place in Phoenix, AZ in 2014 and 2015 and was approved by Arizona State University's Institutional Review Board (IRB). Participants were eligible if they were between the ages of 13 and 17 and were either, born in Mexico or the children of families with a Mexican background. Twelve adolescents were from immigrant families, wherein parents were born in Mexico and adolescents were born in Mexico (n = 3) or the United States (n = 9). Two adolescents were from nonimmigrant families. These nativity and generational breakdowns reflect population patterns in the metropolitan area (Roosa et al., 2008). For language, 13 adolescents preferred English and one adolescent preferred Spanish. Thirteen adolescents reported that they were eligible for free/reduced lunch. All adolescents were enrolled in schools, with 2

adolescents in 8th grade, 3 in 9th grade, 1 in 10th grade, 6 in 11th grade, and 2 in 12th grade. The adolescents' parents had a range of education, from no formal education to a masters' degree. The adolescents were in 9 census tract neighborhoods and the range of Latino concentration was 55.4% to 92.8%.

The state population from which this sample was drawn (Arizona) is comprised of primarily non-Latino Whites (59%) and Latinos (30%). The remaining 11% consists almost evenly of non-Latino Blacks, non-Latino Native Americans and Alaskan Natives, and other races. The overwhelming majority (91%) of Latinos are of Mexican-origin (Brown & Hugo Lopez, 2013). Historically, Phoenix has been an established settlement area for large numbers of immigrants. Although, this number had declined in the past, Phoenix re-emerged as an important gateway since 2000, with high increases in immigrant settlement, particularly for Mexican-origin Latinos (Singer, 2004).

Qualitative Data from Adolescents

The research team partnered with three community organizations located in or adjacent to census tracts with high Latino concentrations to recruit Mexican-origin adolescents to participate in the study. These community organizations were located in the three different major sections of the larger metropolitan area: West Valley, Central Phoenix, and East Valley. Community organization staff members distributed recruitment materials, parental consent forms, and adolescent assent forms (in Spanish and English) to Mexican-origin families and adolescents served by the organizations. Everyone who returned the forms, regardless of participation, were entered in drawings (one at each community partner) for two movie tickets to local theatres. Thirty-seven forms were collected and 78% agreed to be contacted. We successfully contacted 21 adolescents for

screening using a combination of phone, email, and text messages. We then screened adolescents for eligibility over the phone. Nineteen adolescents were eligible and 14 participated in the study.

Once eligibility was determined, adolescents were asked additional demographic questions (e.g., residential street address so they could be assigned to census tracts, eligibility for free/reduced lunch), given more information about the study procedures, and were invited to participate in a photo elicitation study. At the end of the screening call, the first of three in-person meetings was scheduled with each participant. Meeting locations were selected based on convenience to the adolescents and included the following types: residences, community centers, and schools. Meeting one lasted approximately 20 minutes. Adolescents were given a digital camera and a brief orientation the camera features, photography (e.g., lighting), and safety precautions (e.g., do not take a picture if taking it might get you in trouble). Additionally, and consistent with the problem identification and prioritization cycle of community improvement (IOM, 1997), we provided a brief orientation to scientific concepts, including the use of observational methods in social science research (Cozby & Bates, 2012), because community members identified this as a need for their adolescents.

Adolescents were given the first of two photo-journalistic assignments and invited to spend a week taking pictures to address their assignment. One assignment instructed adolescents to take photographs that show the things that they thought were positive in their neighborhoods and a second assignment instructed adolescents to take photographs that show the things that they thought were negative in their neighborhoods. The order of photo-journalistic assignments was randomized. At the end of Meeting one, Meeting two

was scheduled with the adolescents approximately one week later. At Meeting two, a trained interviewer met with each adolescent to conduct a semi-structured qualitative interview about the photos taken. Before the interview began, the interviewer distributed a $10 incentive to the participant. The photos were downloaded onto a laptop and adolescents selected up to five photos to talk about (some adolescents took less than five photos and some took more). The interview was audio recorded for later transcription. The same set of semi-structured questions were asked for each photo. At the end of Meeting two, the adolescent was given the second photo assignment. Meeting three was scheduled approximately a week later to allow the adolescent time to complete their photo assignment. Meeting three was conducted in the same manner as Meeting two. Immediately after Meetings two and three, photos and audio files were downloaded to a secure network drive and any identifying information was removed. Meetings two and three lasted approximately 1 to 1.5 hours each. All adolescents participated in Meeting one; 100% participated in Meeting two, and 87% participated in Meeting three. The semi-structured interview protocol used in Meetings two and three was adapted from photo-elicitation protocols that are commonly used in research with adolescent-aged groups (Richardson & Nuru-Jeter, 2011). All 26 photo elicitation interviews were transcribed following established procedures (McLellan, MacQueen, Neidig, 2003). Adolescents took a total of 301 photos and discussed 96 photos during semi-structured interviews.

Quantitative Data Sources

Systematic social observations (SSO)

The current study draws from systematic social observation methods examining neighborhood environment features using Google Street View (Odgers et al., 2012; Pasco & White, 2019). Members of the research team adapted a systematic social observations protocol to assess four neighborhood environmental features in photos: physical disorder, physical decay, street safety, and sociocultural characteristics (e.g., Spanish language services and signs) in the 301 photos that adolescents took. This adapted protocol has demonstrated evidence of reliability and construct validity in a sample of Phoenix-area neighborhoods in prior work (Pasco & White, 2019). Two trained coders coded 34 randomly selected photos to estimate intraclass correlation coefficients (ICCs) and establish the inter-rater reliability of the protocol using methods described elsewhere (Hallgren, 2012).

Measures

Physical Disorder

Researcher's assessment of physical disorder includes the presence of garbage or litter on the street; abandoned, boarded up, or burned out cars, residential units, or commercial/business properties; and vandalized or faded signs (Odgers et al., 2012). Researchers coded seven items [six items were coded (0) = *no* and (1) = *yes* and one item was coded (0) = *none*, (1) = *light*, (2) = *moderate*, and (3) = *heavy*] for the presence of physical disorder in each photo. The ICC was .81, which is considered excellent (Hallgren, 2012; F (33, 33) = 5.16, p<.001, 95% CI [.61, .90]). For quantitative descriptive analyses, total physical disorder scores were created for each photo by

summing across the items. For mixed methods analyses, total scores of each photo were recoded as binary scores [(0) = *no*/*none*/*light* for *absence of physical disorder* and (1) = *yes*/*moderate*/*heavy* for *presence of physical disorder*].

Physical Decay

Researcher's assessment of physical decay was coded based on the condition of the streets, sidewalks, residential units and front yards, commercial/business units, and recreational/community service facilities in the photos. Researchers coded seven items for condition [ranging from 0 = *well-kept/good*, to 2 = *poor/deteriorated*] and two items were coded for the presence of poor or badly deteriorated residential units and front yards [(0) = *no* and (1) = *yes*]. The ICC was .80, which is considered excellent (Hallgren, 2012; F (16, 16) = 4.67, p<.001, 95% CI [.44, .93]). For quantitative descriptive analyses, total physical decay scores were created for each photo by summing across the items. For mixed methods analyses, total scores of each photo were recoded as binary scores [(0) = *no*/*well-kept*/*good* for *absence of physical decay* and (1) = *yes*/*fair*/*poor* for *presence of physical decay*].

Street Safety

Researcher's assessment of street safety includes the presence of traffic calming measures, speed or vehicle limiting signs, speed reducing humps, crosswalks and bike lanes (Odgers et al., 2012). Researchers coded eight items for the presence of street safety measures in each photo [seven items were coded (0) = *no* and (1) = *yes* and one item coded percentage of the sidewalk present in the photo (0) = *0%-25%*, (1) = *26%-50%*, (2) = *51%-75%*, and (3) = *76%-100%*]. The ICC was .89, which is considered excellent (Hallgren, 2012; F (9, 9) = 8.90, p<.01, 95% CI [.55, .97]). The item related to the

percentage of the sidewalk present in the photo had no variability in adolescents' photos, so it was dropped. For quantitative descriptive analyses, total street safety scores were created for each photo by summing the remaining seven items. For mixed methods analyses, total scores were recoded as binary scores [(0) for sums equal to 0 for *lack of street safety* and (1) for sums greater or equal to 1 for *presence of street safety*].

Sociocultural Symbols

Researchers coded [(0) = *no* and (1) = *yes*] the presence of culturally relevant Latino symbols present in pictures with six items (e.g. Mexican flags, Mexican murals) in residential and community services areas and the presence of culturally relevant Latino commercial/businesses were with 14 items (e.g. Latino meat markets, Latino grocery stores, immigrant services). These items were adapted from prior work (Roosa et al., 2008) in combination with researchers' observations in adolescents' neighborhoods and have demonstrated evidence of construct validity (Pasco & White, 2019). The ICC was .93, which is considered excellent (Hallgren, 2012; F (31, 31) = X, p<.001, 95% CI [.86, .97]). For quantitative descriptive analyses, total sociocultural symbol scores were created for each photo by summing across all 20 items. For mixed methods analyses, total scores of each photo were recoded as binary scores [(0) for sums equal to 0 as *absence of sociocultural symbols* and (1) for sums greater or equal to 1 as *presence of sociocultural symbols*].

Data Analytic Plan

The first aim was to describe quantitative levels of physical disorder, physical decay, street safety, and sociocultural symbols in adolescents' photos of their neighborhoods according to researcher observations. I examined mean scores on these

neighborhood environmental features across the full sample of photos, and by several aspects of the research design. First, I expected that levels of physical disorder, physical decay, street safety, and sociocultural symbols, may vary according to the photo elicitation assignments (positive vs. negative). Second, because, in most cases, adolescents took more photos than they discussed in the semi-structured interviews, I explored whether levels of physical disorder, physical decay, street safety, and sociocultural symbols varied by their choice to discuss them (or not). This comparison offers some context for understanding potential similarities and differences between the full sample of photos taken by adolescents and coded by trained observers (N = 301) and the subsample of photos that were actually discussed by adolescents during semi-structured interviews (n = 96).

The second aim was to describe how Mexican-origin adolescents subjectively characterized neighborhood environmental features present in photos of their neighborhoods. From the semi-structured qualitative interviews, I drew on a specific question of "what do you see here?" This question is the first question of many photo elicitation protocols and invites adolescents to put the photo in their own words and highlight what they think is important about the photo (Richardson & Nuru-Jeter, 2011). I produced two codebooks to facilitate this description. First, I developed a *corroboration codebook* to facilitate comparisons between researchers' observations and adolescents' phenomenological narratives. The *corroboration codebook* was based completely upon theory-related material (Bernard, Wutich, & Ryan, 2016) and codes the narrative for adolescents' references to physical disorder, physical decay, street safety, and sociocultural symbols (the same features coded by researchers). Second, I developed an

expansion codebook. This codebook relied upon a combination of inductive and deductive approaches to theme identification. Across a series of weekly meetings, I met with members of the research team to discuss initial independent tagging of excerpts based on inductive and deductive approaches, including linguistic connectors, transitions, and metaphors/analogies (Guest & MacQueen, 2008; Bernard, Wutich, & Ryan, 2016). We used this process to develop thematic codes and an expansion codebook.

Once I developed a full draft of both the *corroboration* and *expansion codebooks*, I proceeded with examination of trustworthiness, or dependability or confirmability of the codebooks (Shenton, 2004). This process involved interrater reliability testing in Dedoose (Dedoose, 2018), continued team meetings to examine coding discrepancies, further codebook refinement, and additional interrater reliability tests until each theme from each codebook had a kappa coefficient greater than or equal to .80. Any kappa coefficients below .80 resulted in independent coding of that theme by the researcher and undergraduate research assistant and all disagreements were resolved using a team-based approach. In addition to describing the themes and their frequency in adolescent narratives, I created a qualitative code-by-code matrix to examine how qualitative themes from the *corroboration codebook* (i.e., physical disorder, physical decay, street safety, and sociocultural symbols) co-occurred with themes from the *expansion codebook.* This qualitative code-by-code matrix facilitated exploration of the degree to which adolescents layer meaning-making on top of researcher-driven deductive themes and are cuing (or not) into neighborhood environmental features that researchers identify as important.

The third aim was to compare and contrast researchers' observations and adolescents' narratives on neighborhood environmental features in adolescents' photos.

First, I developed a mixed methods corroboration matrix. This matrix quantified the degree to which researchers' observations of physical disorder, physical decay, street safety, and sociocultural symbols were corroborated (or not) by adolescents' narratives using the corroboration codebook. I used this matrix to quantify *sensitivity* and *specificity* of researchers' observations relative to adolescents' narratives. I borrow these terms from public health, wherein the former indicates agreement about the presence of some phenomenon and the latter indicates agreement about the absence of some phenomenon (Trevethan, 2017). In the current context, sensitivity refers to the probability that the researchers' score indicated a neighborhood environmental feature (e.g., physical decay) was present in a photo in which the corresponding adolescent narrative also indicated the presence of that environmental feature. Specificity, on the other hand, refers to the probability that the researchers' score indicated a neighborhood environmental feature was absent in a photo in which the corresponding adolescent narrative also indicated the absence of the same feature. High sensitivity suggests high corroboration on the presence of a given neighborhood environmental feature, such that both the researchers' scores and qualitative coding of adolescent narratives indicated the presence of some neighborhood environmental feature in the photo. High specificity suggests high corroboration on the absence of a given environmental feature, such that both the researchers' scores and qualitative coding of adolescent narratives indicated the absence of some neighborhood environmental feature in the photo.

To further address Aim 3, I also developed a mixed methods expansion matrix. This matrix quantified the degree to which researcher observations of physical disorder, physical decay, street safety, and sociocultural symbols in the photos were expanded by

adolescent narrative codes from the expansion codebook. Finally, I created a joint display of quantitative with qualitative results to highlight key examples of corroboration (e.g., high sensitivity or high specificity), lack of corroboration (e.g., low sensitivity or low specificity), and expansion. Joint displays are used to facilitate integration across qualitative and quantitative data in mixed methods research (Fetters, 2019). The table displays exemplars of researchers' observations (quantitative), alongside adolescents' narrative themes (qualitative), and offers meta-inferences across the qualitative and quantitative findings.

Results

Aim 1: Researchers' Observation of Neighborhood Environmental Features

The first aim was to describe neighborhood environmental features, including physical disorder, physical decay, street safety, and sociocultural symbols based on data derived from researchers' observations of the photos. Descriptive characteristics are presented in Tables 4a – d. Descriptive data on all researcher observations need to be interpreted within several caveats of the data. For example, the theoretical ranges are often substantially higher than the observed ranges. This is because photos often contain a small portion of the neighborhood, not the entire neighborhood. Thus, it is unlikely that a single photo, for example, had both residential and commercial units. Additionally, the systematic social observational protocol facilitates researchers' ability to omit photos that do not did not contain critical elements to code physical disorder, physical decay, or street safety. This means that across Table 4a-d, the number of photos (*n*) for each neighborhood environmental feature varied. This effectively reduced the denominator for mean calculations. For sociocultural symbols, however, I took an inclusive approach

because these symbols could exist in a variety of places and residents may have to create space for these symbols in their U.S. neighborhoods. This effectively inflated the denominator for mean calculations, but it ensured that sociocultural symbols were not overlooked. Thus, what is important to observe about the data presented in Table 4a-d is that it demonstrates variability on these neighborhood environmental features across adolescents' photos and within Latino neighborhoods. For example, researchers' physical disorder scores of adolescents' photos ranged from 0 to 4 with a mean of .97. Researchers' physical decay ratings ranged from 0 to 9 with a mean of 2.25. Researchers' street safety ratings ranged from 0 to 5 with a mean of 1.00. Researchers' ratings of sociocultural symbols ranged from 0 to 4 with a mean of .17. Adolescents discussed 96 of the photos during their semi-structured interviews. Mean scores on neighborhood environmental features for the discussed photos were similar, defined as within $\frac{1}{3}$ *SD*, to means for all photos.

Next, I examined scores on neighborhood environmental features of discussed photos by photo assignment type (positive assignment vs. negative assignment; see Table 4a-d). The mean for physical disorder was about 1 *SD* lower in photos taken in response to the positive assignment ($M = 0.42$) versus photos taken in response to the negative assignments ($M = 1.49$). The means on physical decay were similar in both photo assignments, 1.37 for the positive and 1.93 for the negative assignment (approximately $\frac{1}{3}$ of a *SD* difference). The mean of street safety was about $\frac{7}{10}$ of a *SD* higher in photos taken in response to the positive ($M = 1.67$) versus negative ($M = 0.60$) assignments. The mean of sociocultural symbols was about $\frac{3}{5}$ of a *SD* higher in photos taken in response to

the positive (M = 0.36) versus negative (M = 0.02) assignments. Thus, with the exception of decay, which was present in adolescents' photos regardless of photo assignment, adolescents took pictures featuring more disorder during their negative photo elicitation assignments and took pictures featuring more street safety and sociocultural symbols during their positive photo elicitation assignments.

Aim 2: Adolescents' Narratives

The second aim was to describe how Mexican-origin adolescents characterized neighborhood environmental features present in photos of their neighborhoods. I did this by using two codebooks to code adolescent narratives, a *corroboration codebook* and an *expansion codebook*.

Corroboration Codebook

First, I developed a *corroboration codebook* to facilitate later, mixed-methods, comparisons between the researchers' observations of the photos and adolescents' narrative descriptions of the photos. The *corroboration codebook* (Appendix B) coded adolescents' narratives for neighborhood environmental features that were intentionally matched to those assessed by researchers using the SSO protocol. First coders coded for each *corroboration codebook* theme in adolescents' narratives, including physical disorder, physical decay, street safety, and sociocultural symbols. Frequencies for each corroboration theme are in Table 5. Because adolescents sometimes talked about, for example, the absence of a neighborhood environmental feature in their picture, I used code weights to distinguish among narratives. After thematic coding, therefore, coders applied code weights for whether the adolescent's narrative was indicating that the neighborhood environmental feature was present (code weight = 1) or absent (code

weight = 0) in their photo. For all *corroboration codebook* themes, test of IRR for both the themes and the code weights produced a kappa coefficient greater than .80, which is considered *almost perfect* (Bernard & Ryan, 2010). Overall, themes from the corroboration codebook occurred in 54 of the 96 narratives (56%), suggesting that about half the time, adolescents had cued into the same types of environmental features to which neighborhood researchers also attend.

First, the *physical disorder* theme involved adolescents' referencing signs of physical disorder including, for example, garbage, litter, broken glass; graffiti in public areas; or boarded up, abandoned, or burnt out units. This theme was coded in 32% of all adolescent photo narratives. The prevalence of this theme differed substantially by photo assignment. Among narratives coded as physical disorder, 6% occurred in the context of the positive photo assignment and 94% occurred in the context of the negative photo assignment. For example, Jennifer (16 years) made reference to public areas having "more graffiti" and Alejandro (14 years) said, "People leave the trash out instead of putting it in the bin." In all adolescent narratives coded with the physical disorder theme, adolescents were indicating that physical disorder was present in the photo. There were no narratives in which adolescents described the absence of signs of physical disorder in their photos. Therefore, code weights were not needed for physical disorder.

Second, the *physical decay* theme involved adolescents' referencing signs of poor conditions, including for example cracks, holes, or broken or uneven pavement; outgrown weeds; or poor or deteriorated condition of units or lots. This theme was coded in 17% of all adolescent photo narratives. Similar to the finding regarding the similarity of researcher-observed levels of physical decay across photo assignments (Table 4), the

overall prevalence of the physical decay theme in adolescent narratives also did not differ by photo assignment. Among the narratives coded as physical decay, 50% occurred in the context of the positive photo assignment and 50% occurred in the context of the negative photo assignment. For example, Valeria (14 years) described some houses in her photo, "Pretty much looks like it too umm it's just really cluttered and messed up and dirty and it's just one of the many houses over there by like this – and some are worse than this too." Among all adolescent narratives coded for the physical decay theme, approximately 50% of the time, adolescents were indicating that the photo lacked physical decay. For example, Sofia (16 years) described one photo she took, noting "I see grass, nice grass, I see apartments that are like nice." By indicating the grass and apartments were nice, she was cuing in on the lack of poor or deteriorated conditions. Taking this code weighting into perspective, among the narratives that were coded with this theme *and* a code weight indicating the presence of physical decay (code weight = 1), approximately 11% occurred in the context of the positive photo assignment and 89% occurred in context of the negative photo assignment. Among the narratives that were coded with this theme and a code weight indicating the absence of physical decay (code weight = 0), 100% occurred in the context of the positive photo assignment. This suggests that adolescents are cuing into both the presence and the absence of physical decay and that they were highlighting spaces that did not have physical decay in the context of photo assignments emphasizing neighborhood strengths.

Third, the theme *street safety* involved adolescents' referencing traffic calming measures, crosswalks or signs signaling to watch for pedestrians, bike lines, outdoor lighting illumination, and sidewalks. This theme was coded in 9% of all adolescent

narratives. Among the narratives coded as street safety, 67% occurred in the context of the positive photo assignment and 33% occurred in the context of the negative photo assignment. For example, Vanessa (16 years old) described a crosswalk in one of the photos she took: “It’s like a crossway to get from here to get to the other side of the street”. Although adolescents highlighted aspects of street safety in their photos, they also highlighted instances of the absence or lack of street safety. For example, Emily (17 years) noted a lack of outdoor illumination in one of her photos: “it’s dark, you can’t see anything.” Taking the code weighting into perspective, among the narratives that were coded with this theme *and* a code weight indicating the presence of street safety (code weight = 1), 100% occurred in the context of the positive photo assignments. Among the narratives that were coded with this theme *and* a code weight indicating the absence of street safety (code weight = 0), approximately 25% occurred in the context of the positive photo assignment and 75% occurred in context of the negative photo assignment.

Lastly, the *sociocultural symbols* theme involved culturally-relevant symbols and resources that cater to the needs and preferences of the in-group (García Coll et al., 1996; Yoshikawa, 2011). Central characteristics of this theme include Latino flags, murals, and statues; signs in Spanish; Latino markets, restaurants, bakeries, bars, businesses; immigrant services; Latino religious affiliations; Mexican business services; community centers with Latino affiliation; cross or crucifixes (because Catholicism is a central part of Latino culture). This theme was coded in 12% of all adolescent narratives. Among narratives that were coded with this theme, 83% occurred in the context of the positive photo assignments and 17% occurred in the context of the negative photo assignment. For example, in narratives coded with this theme, adolescents mentioned Latino-affiliated

community centers in their photos. Adolescents also spoke about Latino murals and art. For example, one exemplar comes from Valeria, 14 years, “this is a painting that’s on there and, it’s not really new, I guess it’s fairly new, within the last few years. But it’s, it’s at the Mercado just right there.” Lastly, there were no narratives in which adolescents described the absence or lack of sociocultural symbols. Thus, code weighting was not needed for this theme.

Expansion Codebook

The next codebook I developed was the *expansion codebook* (Appendix C) to identify themes that emerged from the adolescents’ narratives that did not correspond directly to those coded in the corroboration codebook. I identified six themes, including, negative valence and valuation, positive valence and valuation, social and institutional resources, heat resources, neighborhood risks, and avoiding neighborhood risks. Frequencies for each expansion theme are in Table 5. Based on the amount of variability within adolescent narratives, we added code weights for the social and institutional resources and heat resources themes. Within these two themes the code weights were used to indicate whether adolescent’s narrative was indicating that the neighborhood environmental feature was present (code weight = 1) or absent (code weight = 0) in their photos. For all *expansion codebook* themes, test of IRR for the themes produced a kappa coefficient greater than .80, which is considered *almost perfect* (Bernard & Ryan, 2010). Kappa coefficients for the code weights for social and institutional resources and heat resources were .71 and 1.00, respectively, which is considered *substantial* and *almost perfect*, respectively (Bernard & Ryan, 2010). Overall, themes from the expansion codebook occurred in 65 of the 96 narratives (68%), suggesting that adolescents had

often cued into neighborhood environmental features that were not assessed in researchers' observational protocols.

First, the *negative valence and valuation* theme was coded when adolescents' description of the photo added negative valence, meaning, or significance. Central characteristics to this theme included adolescents describing negative emotions or feelings, experiences, or events in relation to their description of the photo. This theme was coded in 24% of all adolescent narratives. The prevalence of this theme differed substantially by photo assignment. Among narratives coded as negative valence and valuation, 13% occurred in the context of the positive photo assignment and 87% occurred in the context of the negative photo assignment. For example, after telling interviewers that her photo was of graffiti in her neighborhood, Jennifer (16 years) went on to say, "I don't think it looks nice. I don't like the way it looks." Another adolescent, after telling the interviewer that his photo was of political campaign signs in his neighborhood, went on to say that these signs were telling him "to go away and we don't want you here, or what you have to say matters" (Diego, 16 years).

Second, the *positive valence and valuation* theme was coded when adolescents' description of the photo added positive valence, meaning, or significance. Central characteristics to this theme included positive emotions or feelings (e.g., feeling welcomed, happy, safe); affection, nostalgia, or positive memories towards a place. This theme was coded in 21% of all adolescent narratives. The prevalence of this theme differed substantially by photo assignment. Among narratives coded as positive valence and valuation, 85% occurred in the context of the positive photo assignment and 15% occurred in the context of the negative photo assignment. For example, Adriana (16

years), described one photo she took, “this is my street, and, you know, once I enter, you know, I feel more safe…” Another adolescent, Emily (17 years) describes her feelings toward a community center featured in one of her photos,

> You’re gonna go and feel like welcomed and you know good like you know you’re gonna walk in a good place. And you know yeah it’s like really good to have around like it’s like a really major thing like around here that’s like I don’t know I think it’s like a really good blessing to just even have it like you know.

Third, the social and institutional resources theme included adolescents’ description of the presence or absence of social and/or institutional resources. Central characteristics of this theme include institutions such as parks, pools, schools, libraries, hospitals, non-Latino affiliated churches, community centers and organizations; non-Latino murals and art; and informal social control. This theme was coded in 32% of all adolescent narratives. Among narratives coded as social and institutional resources, 61% occurred in the context of the positive photo assignment and 39% occurred in the context of the negative photo assignment. For example, Diego (16 years) made a reference to, “This is just one small corner of a park. Because catching the whole park would be impossible” and Juan (14 years) highlighted, “It’s, um, a library.” Although adolescents highlighted aspects of social and institutional resources in photos, they also sometimes pointed out the absence or lack of social and institutional resources. For example, Osvaldo (16 years) noted seeing people swim in a nearby canal because of “the community pool being closed” in his photo. Taking the code weighting into perspective, among the narratives that were coded with this theme *and* a code weight indicating the presence of social and institutional resources (code weight = 1), approximately 71%

occurred in the context of the positive photo assignment and 29% in the context of the negative photo assignment. Among the narratives that were coded with this theme *and* a code weight indicating the absence of social and institutional resources (code weight = 0), approximately 29% occurred in the context of the positive photo assignment and 71% occurred in context of the negative photo assignment.

Fourth, the heat resources theme included adolescents' description of the presence or absence of environmental resources in the context of an extreme desert climate. Central characteristics to this theme include arid city resources such as shade or any covers or shelter against the sun, trees, access to drinking water, bodies of water (e.g., canals, ponds, lakes; but not pools) and access to air conditioning. This theme was coded in 7% of all adolescent narratives. Among narratives coded as heat resources, 71% occurred in the context of positive photo assignments and 29% in negative photo assignment. For example, Osvaldo (16 years) described that "this is a canal nearby" and Sofia (16 years) highlighted "a lot of palm trees" in their photos. Although in the majority of the photos, adolescents were highlighting the presence of heat resources, they also sometimes pointed out the absence of resources to deal with living in an arid city. For example, Diego (16 years) noted the lack of shade of in one of his photos, "I pass by that area every day and it's just something I don't really wanna look at and just barely any shade there for, for people." Taking the code weighting into perspective, among the narratives that were coded with this theme *and* a code weight indicating the presence of heat resources (code weight = 1), approximately 83% occurred in the context of the positive photo assignment and 17% occurred in the context of the negative photo assignment. There was one narrative that was coded with this theme and a code weight

indicating the absence of heat resources (code weight = 0; “barely any shade”) and it occurred in context of the negative photo assignment.

Fifth, the neighborhood risks theme included adolescents’ description of photos that referenced social factors that are inhibiting for adolescent development. Central characteristics to this theme include signs of social disorder (e.g., public intoxication, public drug or alcohol use, gangs, homeless people); mention of crime towards a victim or being concerned about crime happening; and stray animals. This theme was coded in 17% of all adolescent narratives. Among narratives coded as neighborhood risks, 12% occurred in the context of the positive photo assignment and 88% occurred in the context of the negative photo assignment. For example, Angela (16 years) described gang activity in the photo “there’s like other gang members and they’re like, they get mad when they see [other gang signs], I guess and they, they like fight in the streets.” Another exemplar came from Gabriela (15 years) who described an experience with stray dogs in relation to her photo,

> Umm, well basically I-I took this picture because um, this is the street actually where um, my grandmother, it happened to be an accident where uh, she got, she got bitten by 2 dogs, pit bulls, and. Um, you don’t see it anymore but um, there was blood, from the dogs on the street where the cops shot them, unfortunately.

Lastly, the avoiding neighborhood risk theme included adolescents’ description of strategies or actions to reduce exposure to risks in the neighborhood. Central characteristics to this theme include avoiding places or situations because of gangs, violence, or not feeling safe; staying in places that are familiar and safe; and strategizing routes to avoid risky or unsafe places or situations. This theme was coded in 8% of all

adolescent narratives. The prevalence of this theme differed substantially by photo assignment. Among narratives coded as avoiding neighborhood risk, 12% occurred in the context of the positive photo assignment and 88% in the context of the negative photo assignment. For example, Valeria (14 years) described how she quickly took a photo, "here is someone who got pulled over by the sheriff and I didn't stay long enough to actually figure out what was happening but I just wanted to take a picture and leave". Valeria was avoiding a potentially risky situation by describing that she did not stay to learn what was occurring with law enforcement and left as soon as she took the photo.

Qualitative Code-By-Code Matrix

I created a qualitative code-by-code matrix to examine how qualitative themes from the *corroboration codebook* co-occurred with themes from the *expansion codebook* and examined the degree to which adolescents were layering (or not) over references to neighborhood environmental features (i.e., corroboration themes). Table 6, a 5 X 7 table, shows cell percentages, such that the number in each cell represents the percentage of narratives that were coded with a given corroboration theme and expansion theme. If all expansion themes and all corroboration themes were randomly distributed across the narratives, the expected percentages in each cell would be approximately 3%. When adolescents referenced physical disorder in their photo narratives, the most common was no expansion (18%). This suggests that in photos where adolescents described physical disorder, they sometimes did not add anything further. In narratives in which expansion themes co-occurred with the physical disorder theme, negative valence and valuation and social and institutional resources were the most common (9% and 7%, respectively of the total narratives). For example, Jennifer (16 years) expands on the idea that there is

physical disorder in her picture by adding negative valence and valuation: “There’s a lot of graffiti in that particul- particular area, of where I live, and I don’t think it looks nice. I don’t like the way it looks.” Jennifer is cuing into graffiti, a sign of physical disorder, and adds a description of negative feelings towards the graffiti.

Physical decay co-occurred most commonly with negative valence and valuation (6%) and positive valence and valuation (5%). In one exemplar, Emily (17 years) mentions a part in her neighborhood and that there are “weeds and like, you know ugly grass” (indicating the presence of physical decay) and “it doesn’t look good” (which pairs it with negative valence and valuation):

> Well, this is my walk well I mean my walk basically like out of where I live. And it’s usually trash there like, and a bunch of like weeds and like, you know ugly grass. And I mean, I don’t I actually don’t like it like I mean I-I actually wanna walk I don’t know why I look down and that’s just the thing that I do I look down and when I look down I honestly don’t wanna see that, you know. And I don’t know I just don’t think is good to have the neighborhood all dirty and you know nasty, it doesn’t look good, you know.

The majority of narratives that mentioned the absence of physical decay co-occurred with positive valence and valuation. For example, Diego (16 years) mentioned a nearby resource in his photo, describing that it is “a nice place to look at” (indicating the absence of physical decay) and that “it is a good place to go” (which pairs it with positive valence and valuation):

> This is a picture of, kind of library more computer lab, um, area. I’m not really sure when this was build, but I do remember this being built around my

> neighborhood, and it's actually really a nice place to look at especially considering its right next to [that really busy highway]… I've been in there and like well, a couple times when we didn't have internet access at home, and this is really a good place to go.

The street safety theme co-occurred as expected across the majority of the expansion themes, including negative valence and valuation, heat resources, and neighborhood risks themes at 3% each. This suggests that street safety did not tend to co-occur with any particular expansion theme. The sociocultural symbols theme co-occurred with positive valence and valuation the most (7%). For example, in the following exemplar, Sofia (16 years) describes a mural in the photo, "It's like faces. Um, like the Aztecs-az-Aztecs, um yeah, paintings" (indicating the presence of a sociocultural symbol) and "Um, the colors are nice on it." (which pairs it with positive valence and valuation).

There were narratives where no corroboration theme were coded. In these narratives, adolescents were not cuing into any of the neighborhood environmental features that researchers observed. The themes that occurred most commonly in narratives with no corroboration theme were social and institutional resource (22%) and negative valence and valuation (11%). This suggests that about 1/5 of the time that adolescents were highlighting social and institutional resources, they were not addressing any environmental signs and symbols related to physical disorder, physical decay, street safety, or sociocultural symbols. Similarly, about a tenth of the time that adolescent narratives were mentioning negative valence and valuation, they were not addressing any environmental signs and symbols related to physical disorder, physical decay, street

safety, or sociocultural symbols. Lastly, there was no corroboration or expansion theme mentioned in 9% of the total narratives. In these narratives, adolescents did not cue into any neighborhood environmental features or offered any codable expansions.

Aim 3: Mixed Methods

The third aim was to compare and contrast researcher's observations of neighborhood environmental features in adolescents' photos to adolescents' corresponding photo narratives. I did this by comparing and contrasting whether a given neighborhood environmental features (e.g., physical disorder) was present or absent in a photo according to researchers' objectivity and adolescents' phenomenology. Thus, this mixed methods analyses relied on the binary coding of researcher data described in the measures section, such that continuous data were re-coded into present versus absent. It also relied on a combination of thematic coding and code weights to determine whether a given neighborhood environmental feature was present or absent in adolescents' narratives. Specifically, the absence of a given neighborhood environmental feature from an adolescent narrative could have occurred in one of two ways. First, the narrative could have been coded with a theme (e.g., physical decay) and with a code weight indicating the absence of that theme (e.g., physical decay = 0). In this case the adolescent narrative directly referenced the neighborhood environmental feature, but indicated that it was absent from the photo. The second way a neighborhood environmental feature was considered absent from the adolescent narrative was if a given neighborhood environmental feature theme (e.g., physical decay) was not applied to the narrative at all. In this case, the neighborhood environmental feature was not what the adolescent focused on in response to the question, "What do you see here?" It was important to capture both

types of "absence" from adolescent narratives because it elucidated the degree of overlap between researchers' observations and adolescents' narratives and allowed meaning-making across two distinct data sources. I created two matrices, a mixed methods corroboration matrix and a mixed methods expansion matrix. Lastly, I created a joint display to highlight key examples of corroboration, lack of corroboration, and expansion.

Mixed Methods Corroboration Matrix

The mixed methods corroboration matrix (Table 7) quantified the degree to which researcher's observation of physical disorder, physical decay, street safety, and sociocultural symbols were corroborated (or not) by adolescents' narratives and serves as the basis for calculating sensitivity and specificity. Sensitivity, which is one form of corroboration, refers to the probability that the researcher indicated a given neighborhood environmental feature was present among photos in which adolescent narratives indicated the feature was present. Specificity, a second form of corroboration, refers to the probability that the researcher indicated a given neighborhood environmental feature was absent among photos in which adolescent narratives also indicated that neighborhood environmental feature was absent. Low sensitivity or specificity scores signaled a lack of corroboration between adolescents and researchers.

In this study, high sensitivity or specificity was defined as 75% or greater and low sensitivity or specificity as 74% or less. Researchers' observations of physical disorder had high sensitivity, but low specificity relative to adolescent narratives. For sensitivity, researcher indicated that physical disorder was present in 94% of photos in which the corresponding adolescent narrative referenced the presence of physical disorder. For specificity, researchers indicated that physical disorder was absent in 57% of photos in

which physical disorder was absent in the corresponding adolescent narratives. Researchers' observations of physical decay had high sensitivity, but low specificity. For sensitivity, researchers indicated that physical decay was present in 83% of photos in which the corresponding adolescent narrative referenced the presence of physical decay. For specificity, researchers indicated that physical decay was absent in 34% of photos in which physical decay was absent in the corresponding adolescent narrative. Researchers' observations for street safety had high sensitivity, but low specificity. For sensitivity, researchers indicated that street safety was present in 100% of photos in which corresponding adolescent narratives referenced the presence of street safety. For specificity, researchers indicated that street safety was absent in 45% of photos in which street safety was absent from the corresponding adolescent narrative. Researchers' observations for sociocultural symbols had high sensitivity and specificity relative to adolescent narratives of sociocultural symbols. For sensitivity, researcher indicated that sociocultural symbols were present in 75% of photos in which adolescents described sociocultural symbols as present in their narratives. For specificity, researcher indicated that sociocultural symbols was absent in 96% of photos in which sociocultural symbols were absent from the corresponding adolescent narrative.

Overall, sensitivity tended to be high and, with the exception of sociocultural resources, specificity tended to be low. With the exception of sociocultural symbols, however, it was common for physical disorder, physical decay, and street safety to be absent from adolescent narratives, even though researchers identified these neighborhood environmental features in adolescents' photos.

Mixed Methods Expansion Matrix.

The mixed methods expansion matrix (Table 8) quantified the degree to which researcher observations of physical disorder, physical decay, street safety, and sociocultural symbols in adolescents' photos were expanded upon by adolescent narratives. Table 8 presents row percentages, such that cells represent the proportion of adolescent narratives that were coded with one or more expansion themes in photos where a researcher indicated a specific neighborhood environmental feature was present. Row percentages do not sum to 100% because a given photo narrative could have been coded with more than one expansion theme.

Among all photos in which researchers coded the physical disorder as present in the photo, the most common findings were that adolescents did not offer any additional expansions (42%), or that they expanded with any expansion theme, most commonly negative valence (28%), social and institutional resources (26%), or neighborhood risks (21%). Among all photos in which researchers coded the physical decay as present, the most common findings were that adolescents expanded with social and institutional resources (34%), followed by no expansion (26%), or expansion with negative valence and valuation (25%) or positive valence and valuation (23%). Among all photos in which researchers coded the street safety as present, the most common findings were that adolescents expanded with social and institutional resources (38%), followed by no expansion (31%), positive valence and valuation (23%) and then a three-way tie between negative valence and valuation (15%), neighborhood risks (15%), and avoiding neighborhood risks (15%). Among all photos in which researchers coded sociocultural symbols as present, the most common expansion was positive valence and valuation

(50%), followed by no expansion (33%), and social and institutional resources (25%). Notably, adolescents never expanded upon researchers' observations of sociocultural symbols with the themes of heat resources or avoiding neighborhood risks.

Overall, social and institutional resources were a common expansion theme across each of the neighborhood environmental features. Negative valence and valuation was the most common expansion theme among photos where physical disorder and physical decay were present. Positive valence and valuation was most common expansion theme among photos where street safety and sociocultural symbols were present.

Mixed Methods Joint Display

Finally, I created a joint display of quantitative with qualitative results to highlight key examples of corroboration, lack of corroboration, and expansion quantified in Tables 7 and 8. This joint display was used to facilitate integration across researchers' observations (quantitative) and adolescents' narrative themes (qualitative). In the joint display (Table 9), I highlighted the two forms of corroboration (derived from my sensitivity and specificity analyses), alongside instances of expansion themes.

In Row 1, I provide an exemplar of the high sensitivity, or high degree of corroboration around the presence of physical disorder and decay between a researcher and adolescent, and provide an example of how an adolescent expanded on these features by adding negative valence. Specifically, there was corroboration, as both the researcher's observation and Valeria's (14 years) narrative of the photo indicated that physical decay and physical disorder were present in the photo, suggesting that both the adolescent and the researcher cued into physical disorder and physical decay in this picture. For example, Valeria described a house in the photo, "umm it's just really

cluttered and messed up and dirty and it's just one of the many houses over there by like this – and some are worse than this too." Valeria adds negative valence and valuation by describing that the house "looks really trashy". Overall, the researcher and Valeria both identified physical disorder and physical decay, two important neighborhood environmental features. However, Valeria expands beyond researcher's observation by describing her feelings toward the neighborhood environmental features.

In Row 2, I provide an exemplar of high sensitivity, or corroboration around the presence of sociocultural symbols between a researcher and adolescent, and provide an example of how an adolescent expanded upon this feature by adding positive valence. Specifically, there was corroboration as both the researcher and Lucia (17 years) identified sociocultural symbols as present. For example, Lucia describes the mural as, "I see two worlds coming together. Um, you know there's uh Hispanic and like the umm American culture in a way". Lucia adds positive valence & valuation by referencing the woman in the mural, "And I feel like umm the you know the painting of the woman is like kind of like the epitome of like, of a beautiful Mexican woman." Overall, the researcher and Lucia both identified sociocultural symbols, a salient neighborhood environmental feature. Lucia also expands beyond the researcher's observation by describing her positive feelings toward the symbol.

In Row 3, I provide an exemplar of high sensitivity of physical disorder and high specificity for sociocultural symbols, such that both the researcher and the adolescent agreed on the presence of physical disorder and the absence of sociocultural symbols. This particular example also demonstrates the less common case where the researcher and the adolescent agreed on the absence of physical decay. In addition, this example

demonstrated how an adolescent expanded on these features by layering multiple types of meaning over these features, including negative valence and valuation, social and institutional resources, neighborhood risks, and avoiding neighborhood risk. There was corroboration such that the researcher and Angela (16 years) both identified the presence of physical disorder in the photo. For example, Angela described graffiti on a wall, "all these like people, started coming in, like, drawing, tagging on the walls and like, they come and clean it and then other people come and tag on it." Angela adds negative valence and valuation and neighborhood risk by describing gangs fighting, "And it's just like, unwelcoming, cuz like, then there's like other gang members and they're like, they get mad when they see it, I guess and they, they like fight in the streets and it's scary". Lastly, Angela adds avoiding neighborhood risk by not watching the gang fight, "I'm not sure but I was coming from school and they were just fighting like in the street and I just went home." Overall, the researcher and Angela both identified the presence of physical disorder. The researcher did not observe physical decay and sociocultural symbols and Angela also did not mention those features in her description of the photo. Angela expands beyond features of physical disorder and focuses on how the gang signs made her feel and avoiding a gang fight by going home.

In Row 4, I provide an exemplar of the low specificity, or lack of corroboration around the absence of physical disorder, physical decay, and street safety between a researcher and adolescent and what an adolescent might focus on when they are not focused on features that are important to researchers. Though the researcher observed physical disorder, physical decay, and street safety, Osvaldo highlighted on other aspects of his photo, focusing instead on positive valence and valuation: "Free of choice, you

choose what you want, freedom of religion in the constitution. You have the right to choose what you want" and social and institutional resources "…the school doesn't mind if there's a church nearby." Overall, Osvaldo did not cue into the neighborhood environmental features that the researcher observed. Osvaldo's narrative focused on the church and school in the photo and how he values that both institutions coexist together.

In Row 5, I provide an exemplar of low specificity, or lack of corroboration regarding the absence of physical disorder, physical decay, and street safety between a researcher and adolescent, and what an adolescent might focus on when they are not focused on features that are important to researchers. Although the researcher identified physical disorder, physical decay, and street safety as present, Adriana (16 years) focused on other aspects of this photo, adding negative valence and valuation ("I get scared when there's one person cuz like I was scared cuz that, cuz its lonely"), absence of social and institutional resources ("no one outside their houses really"), and neighborhood risks ("someone could easily probably get kidnapped here"). Skipping over environmental features that a researcher might focus on, Adriana focused on how she felt while walking in the neighborhood, the potential risks that can happen when no one else is around.

Discussion

The current study utilized a convergent mixed methods design (Fetters, 2019) to examine how researchers' assessments of neighborhood environmental features, including their assessments of physical disorder, physical decay, street safety, and sociocultural symbols, compared with Mexican-origin adolescents' neighborhood phenomenologies. The work, which was situated specifically within predominantly Latino neighborhood contexts, addressed important gaps in understanding the

overlapping and distinct aspects of researchers' objectivity and adolescents' phenomenology of neighborhood environmental features. Addressing additional gaps in prior work assessing overlap in researchers' and participants' evaluations of neighborhoods (e.g., Robinson & Oreskovic, 2013; Colabianchi et al., 2014), my study design offered a high degree of spatial concordance between researchers' and adolescents' evaluations. Using quantitative methods, I found that researchers observed varying degrees of physical disorder, physical decay, street safety, and sociocultural symbols across adolescents' neighborhood environments. Using qualitative methods, I found that adolescents observed these same neighborhood features about half the time, layered additional meaning on top of these same neighborhood features (i.e., physical disorder, physical decay, street safety, and sociocultural symbols), and often observed different environmental features altogether. Using mixed methods, I found that, in the context of high spatial concordance, there was considerable overlap between researchers and adolescents in terms of agreement on the presence of physical disorder, physical decay, street safety, and sociocultural symbols. Additionally, adolescents often expanded upon researchers' observation of physical disorder, physical decay, street safety, and sociocultural symbols, especially with references to positive and negative affect. The current study underscores the importance using mixed methods to understand the shared and unique aspects of researchers' objectivity and adolescents' phenomenology in adolescent neighborhood effects research.

Researchers' Objectivity and Adolescents' Neighborhood Photos

For aim one, researchers identified varying levels of physical disorder, physical decay, street safety, and sociocultural symbols across adolescents' neighborhood photos.

First, based on researcher objectivity, adolescents took pictures featuring higher levels of promoting characteristics (García Coll et al., 1996), including street safety and sociocultural symbols, during their positive photo assignments. Second, based on researcher objectivity, adolescents took pictures featuring higher levels of physical disorder, an inhibiting characteristic that involves the presence of garbage or graffiti in public areas and abandoned units, during their negative photo assignments. Interestingly, however, according to researchers' quantitative scores, physical decay, another inhibiting characteristic, was equally present in photos taken under both positive and negative photo assignments. This signals that signs of physical decay, including poor conditions of sidewalks, streets, units, or lots, were likely ubiquitous in these Latino neighborhoods, even when adolescents were highlighting positive things about their neighborhoods. Though often studied together, or as a composited inhibiting factor (Ross & Mirowsky, 1999), physical decay and physical disorder may be distinct. For example, neighbors may be able to come together to prevent or address many aspects of physical disorder (e.g., trash and graffiti in public areas). They may not, however, have any resources to maintain infrastructure, like streets, sidewalks, and public buildings. Thus, physical decay, in particular, may be a prevalent sign of social stratification and local government disinvestment in Latino neighborhoods (García Coll et al., 1996) because addressing prominent features of decay requires local government resources and investments. These findings suggest that physical decay is a salient aspect in adolescents' neighborhoods and may need to be considered as distinct from physical disorder.

Overall, systematic social observation protocols employed by researchers conveyed that Latino neighborhoods are not uniform and have varying levels of

neighborhood environmental features. Further, findings suggest that, with the exception of physical decay which was ubiquitous, the prevalence of the promoting and inhibiting features helped to distinguish pictures that adolescents took under the positive and negative photo assignments. Lastly, these findings support cultural developmental perspectives that both inhibiting and promoting characteristics simultaneously exist in Latino neighborhoods (García Coll et al., 1996), even when assessment relies on researcher assessment protocols.

Adolescents' Phenomenology of Neighborhood Photos

For aim two, I developed two codebooks, a *corroboration codebook* and an *expansion codebook*. The *corroboration codebook* coded adolescents' narratives for neighborhood environmental features that were intentionally matched to those assessed by researchers using the observational protocol (Odgers et al., 2012; Pasco & White, 2019), including physical disorder, physical decay, street safety, and sociocultural symbols. Each of these themes were present in about half of adolescents' narratives, illuminating that adolescents are frequently, but not always, tuning into the promoting and inhibiting characteristics in their neighborhoods that researchers also think are important. The corroboration codebook also highlighted ways in which adolescents described neighborhood environmental features in their own words. Future research may consider how some of adolescents' terms could be included in future measures and implementation. For example, it might be important to capture how adolescents describe the absence of physical decay, including ways in which adolescents describe maintenance, investment or upkeep (e.g., mentioning nice grass or nice apartments) in their neighborhoods.

The *expansion codebook* was used to code adolescent narratives for themes that did not correspond directly with researchers' quantitatively coded environmental features. The themes in the *expansion codebook* included: negative valence and valuation, positive valence and valuation, social and institutional resources, heat resources, neighborhood risks, and avoiding neighborhood risks. Negative valence and valuation included negative emotions, experiences or events, whereas positive valence and valuation included positive emotions, affection, or positive memories towards a place. The negative valence and valuation theme is consistent with a qualitative study that described that Black youth felt like "no one cared" about their neighborhood because of the presence of neighborhood disorder, especially vacant properties (Teixeira, 2015). Furthermore, Teixeira described that Black youths' narratives also included feelings of fear and sadness, similar to my theme of negative valence and valuation. The positive valence and valuation theme is similar to past research that shows that cultural resources and positive social processes (e.g., informal social control) can be beneficial to adolescents of color (Feinauer & Whiting, 2012; Pasco & White, 2019; Sampson et al., 1997).

Negative and positive valence and valuation, in particular, highlight the affective component of adolescents' phenomenology that are important to consider when assessing neighborhood environments and may be missed when developmental scientists rely exclusively on researcher observations or other objective data (Bass & Lambert, 2004). For example, when adolescents mentioned themes of physical disorder and physical decay, they commonly layered negative valence and valuation on top of their observations of these particular neighborhood environmental features. When adolescents observed sociocultural symbols in their pictures, they commonly layered on positive

valence and valuation. This suggests that adolescents are layering negative (e.g., sad, unwelcomed, scared) and positive (e.g., happy, welcomed) affect on top of observing inhibiting and promoting characteristics in their neighborhoods.

Heat resources captured the presence or absence of environmental resources in the context of an arid desert climate in the southwest U.S. These heat resources, including access to shelter against the sun, water, and air conditioning, were salient to Mexican-origin adolescents as they navigated their predominantly Latino neighborhoods. Lack of access to these heat resources is a form of environmental racism, the idea that ethnic-racial minoritized populations are disproportionately exposed to pollutants and have unequal access to environmental resources (Pulido, 2000). Indeed, prior work shows that more affluent/more predominantly White spaces have more resources and programs to manage heat (Madrigano et al., 2018; Pulido, 2000), and are more likely to be "heat-ready" in the context of continued global warming (Hayhoe et al., 2018). In addition, there were no notable co-occurrences between heat resources or any corroboration theme. This suggests that adolescents were cuing into whether or not there were heat resources, even if they did not mention any other aspect of neighborhood environmental features (e.g., physical decay, street safety). Therefore, developmental scholars may need to consider which youth have access to these heat resources, the strategies youth use to navigate such challenges, and examine how accessibility to heat resources influence youth well-being.

Though they were not included in my observational protocol, substantial research has documented the influences of social and institutional resources, like parks, libraries, and schools, for youth development. Prior work has used both objective and subjective

approaches to capturing social and institutional resources (Odgers et al., 2009; Spilsbury, 2005). My findings highlight that adolescents were cueing into whether or not there were social and institutional resources, even if they did not mention other aspects of neighborhood environmental features. Prior research suggests that youth of color are aware of available resources in their neighborhoods (Hill & Witherspoon, 2011) and are just as cognizant of resources their neighborhoods lack (Winkler, 2010). For example, in a qualitative study, Winkler (2010) described how Black youth would travel outside of their neighborhoods, to predominantly white suburbs, to access leisure activities (e.g., bowling, indoor pools, movie theatres) that either did not exist in their own neighborhoods or existed but were of lower quality. My findings are consistent with prior literature, as Mexican-origin adolescents found social and institutional resources (their presence or absence) as an important aspect to highlight in their descriptions predominantly Latino neighborhoods. Furthermore, future research utilizing systematic social observation protocols may consider including social and institutional resources because adolescents are cuing into whether such resources exist or not.

Numerous quantitative studies have examined how neighborhood risks, social factors that are inhibiting for adolescent development, influence youth outcomes (e.g., Nebbitt & Lombe, 2010; White, Roosa, & Zeiders, 2012) and have found that neighborhood risks are usually associated with maladaptive outcomes. In addition, an important theme that emerged related to risks that adolescents describe in their neighborhoods was avoiding neighborhood risk. The theme, avoiding neighborhood risk, included adolescents' strategies or actions to reduce exposure to risks in their neighborhoods. This theme is consistent with quantitative literature on street efficacy, the

perceived ability to avoid dangerous and unsafe places or situations, among Latino and Black adolescents (Sharkey, 2006). Adolescents who have a high degree of street efficacy are less likely to engage in violence or engage with delinquent peers. Similarly, Mexican-origin adolescents in the current study described ways in which they keep themselves safe and away from trouble in their neighborhoods. Such strategies may be important for understanding variability in the links between objective assessments of neighborhood risk and youth outcomes.

Adolescents in the current study are situated in concentrated Latino neighborhoods. The expansion codebook emphasized the aspects of concentrated Latino neighborhoods that adolescents deemed were important and that researchers should also consider important. Some of these themes – especially social and institutional resources, neighborhood risks, and avoiding neighborhood risks – have received attention in prior developmental work that used different methods and approaches. Finally, the corroboration and expansion codebooks advanced understanding of Mexican-origin adolescents' lived experiences in predominantly Latino neighborhood environments. Prior work recommends that objective neighborhood data should not be used without subjective data from individuals living within the neighborhood (Bass & Lambert, 2004) and my findings also highlight that it is important for future research to incorporate adolescents' phenomenology (e.g., subjective data) when examining neighborhood effects on youth development.

Mixed Methods: Comparing and Contrasting Researchers' Objectivity and Adolescents' Phenomenology

The third aim of this project was to compare and contrast researchers' objectivity and adolescents' phenomenology. I explored this aim using three tools (Fetters, 2019). First, a mixed methods corroboration matrix quantified the degree to which researchers' objectivity relative to neighborhood environmental features were corroborated (or not) by adolescents' phenomenology of neighborhood environmental features. Next, I used a mixed methods expansion matrix to quantify the degree to which researchers' objectivity relative to neighborhood environmental features in adolescents' photos were expanded upon by adolescents' phenomenology. Finally, I used a joint display to highlight key examples of the data quantified in the corroboration and expansion matrices. My findings address the overreliance on subjective reports that only capture researcher-driven neighborhood constructs (Cokley, 2007) by incorporating adolescents' own narratives of their neighborhood photos.

Corroboration/Low Corroboration Between Researchers' Objectivity and Adolescents' Phenomenology

I examined the overlapping and unique aspects of researchers' objectivity and researchers' phenomenology with two types of corroboration, sensitivity and specificity (Trevethan, 2017). Sensitivity referred to the probability that the researcher indicated a given neighborhood environmental feature was present among photos in which adolescents' narratives indicated the feature was present. Specificity referred to the probability that the researcher indicated a given neighborhood environmental feature was absent among photos in which adolescents' narratives also indicated the feature was

absent. Low sensitivity or specificity indicated low corroboration between the researcher and adolescent. I found that there was high sensitivity, or a high degree of corroboration between the researcher and the adolescent regarding the presence of physical disorder, physical decay, street safety and sociocultural symbols. This means that when adolescents were describing the presence of these neighborhood environmental features in their photos, researchers were also highly likely to independently observe the same features.

With the exception of sociocultural symbols, there was low specificity, or low degree of corroboration, regarding the absence of neighborhood environmental features. Specifically, researchers frequently identified signs of physical disorder, physical decay, and street safety in adolescents' photos, when adolescents, themselves, did not mention those features in their narrative descriptions of the photos. This suggests that researchers' objectivity and adolescents' phenomenology were relatively corroborative about the presence of these neighborhood environmental features, but that researchers were cued into signs of physical disorder, physical decay, and street safety when adolescents were not seeing those as the most important features in their neighborhood photos. These findings address prior work that have attempted to understand the shared and unique aspects of objective and subjective approaches to assessing neighborhood environments (e.g., Orstad et al., 2017; Plunkett et al., 2007).

Using a research design that minimized the influence of discordant neighborhood spatial operationalizations, I found a high degree of agreement between researchers' objectivity and adolescents' phenomenology on the presence of physical disorder, physical decay, street safety, and sociocultural symbols. Prior research, however,

suggests that there was low agreement between objective and subjective assessments, suggesting that objective and subjective measures are not interchangeable (Orstad et al., 2017; Plunket et al., 2007). That work, however, does not take into account the unexamined differences in researchers' and respondents' spatial operationalizations of the residential neighborhoods. My findings suggest far more nuance. In the current study, where there is a high degree of spatial concordance between the researcher and adolescent, there was relatively high agreement about the presence of environmental features between researchers and adolescents, but low agreement about the absence of the same environmental features. Thus, when it concerned the *absence* of neighborhood environmental features, this mixed-methods study is consistent with prior literature finding low agreement (Orstad et al., 2017; Plunket et al., 2007). However, when it concerned the *presence* of neighborhood environment features, my findings contrast prior research that found that subjective neighborhood assessments had stronger associations to youth outcomes than objective assessments, suggesting that objective and subjective measures are unlikely interchangeable (Hadley-Ives et al., 2017). My findings suggest, to the degree that researchers can align their spatial operationalizations with adolescents' own neighborhood spatial operationalizations, it may be possible to achieve higher levels of overlap between objective and subjective approaches relative to the presence of neighborhood environmental features. Furthermore, to the extent that a research team hoped to have a high degree of overlap between researcher objectivity and adolescent phenomenology, to make these two assessment types more interchangeable, they may reconsider using reverse coded items (e.g., My neighborhood *does not* have graffiti or strewn trash in public areas) in their protocols, as items assessing the lack of some

environmental feature (e.g., disorder, decay) may introduce greater discrepancies. Additionally, the findings suggest that Mexican-origin adolescents frequently under emphasize or tune-out some neighborhood environmental signals of physical decay, physical disorder, and street safety to highlight others (e.g., social and institutional resources, neighborhood risks).

For sociocultural symbols, however, there was high sensitivity and specificity such that there was high researcher and adolescent agreement for both the presence and absence of sociocultural symbols. My findings for sociocultural symbols contrast prior work that suggests that objective and subjective assessments of sociocultural resources may have different implications for adolescent development (Juang & Alvarez, 2011). For example, in a study with Chinese youth, greater subjective access to the co-ethnic community was associated with more experiences of discrimination whereas findings for objective access to the co-ethnic community were not significantly associated with experiences of discrimination (Juang & Alvarez, 2011). Perhaps the contrasting findings may be due to lack of spatial concordance versus assessment differences. More research is needed to explicate researchers' objectivity and adolescents' phenomenology of sociocultural symbols, especially in systematic social observation protocols.

Adolescents' Phenomenological Expansions of Researchers' Objectivity

Findings from the expansion matrix emphasized the importance of adolescents' phenomenology, or perceptions, and how adolescents' meaning making processes are important to consider (Spencer, 2007) in the context of concentrated Latino neighborhoods. Social and institutional resources were a common expansion theme, such that adolescents expanded beyond researchers' observations of physical disorder,

physical decay, street safety, and sociocultural symbols to make specific references to, for example, public parks, libraries, schools, pools, and non-Latino affiliated community centers. This mixed method finding substantiates those from aim 2 where I found that adolescents cued into social and institutional resources regardless of whether or not they cued into other neighborhood environmental features (e.g., physical disorder, physical decay). Similar findings for social and institutional resources occurred across two distinct data sources (i.e., expansion with systematic social observations and layering with adolescents' narratives) and thus, reinforce that adolescents consider social and institutional resources as important features in their neighborhoods.

Negative valence and valuation was the most common expansion theme among photos in which researchers' objectivity indicated physical disorder and physical decay was present. This suggests that adolescents are expanding upon what researchers typically observe and indicating that physical disorder and decay are associated with negative feelings (e.g., unwelcomed, sad, unsafe). Positive valence and valuation was the most common expansion theme among photos in which researchers' objectivity indicated street safety and sociocultural symbols as present. This suggests that on top of what researchers typically observe, adolescents are expanding beyond these signs and symbols and indicating that they are associated with their positive feelings (e.g., welcomed, happy, safe). My findings regarding negative and positive valence and valuation convey the meaning that adolescents are ascribing to the signs and symbols in their neighborhoods (Pasco & White, 2019) and the meaning they attach depends on whether such environmental features are promoting or inhibiting (García Coll et al., 1996).

These mixed methods findings highlight the importance of adolescents' phenomenology. In addition, these findings address prior recommendations that objective neighborhood data should not be used without subjective data from the individuals living within the neighborhood (Bass & Lambert, 2004; Len Chung et al., 2013) because systematic social observations may miss important information only obtained from adolescents' phenomenology. The use of the mixed methods design facilitated meaning-making across two distinct data sources that illuminated the affective components associated with neighborhood environmental features, especially physical disorder and physical decay. One source of difference in findings in extant research (e.g., Plunket et al. 2007; Hadley-Ives et al., 2000) may reflect the affective components of neighborhood environmental features. Future research that relies on objective approaches, in particular, should consider affect and phenomenology when making meaning of research findings.

Summary and Future Directions

By using a convergent mixed methods research design, I addressed how researchers' objectivity relative to neighborhood environmental features compared and contrasted with Mexican-origin adolescents' neighborhood phenomenologies. In the current study, I found that, in the context of high spatial concordance (i.e., adolescents' photos), there was high corroboration between researchers' objectivity and adolescents' phenomenology regarding the *presence* of physical disorder, physical decay, sociocultural symbols and street safety. However, there was low corroboration regarding the *absence* of physical disorder, physical decay and street safety even in the context of high spatial concordance. Furthermore, Mexican-origin adolescents expanded upon what researchers highlight as important in the neighborhood with themes that described

affective meaning, social and institutional resources, and identifying and dealing with neighborhood risk. Overall, with the mixed methods research design, I addressed and highlighted gaps in extant neighborhood theory, constructs and measures. First, while physical disorder and physical decay are often composited as an inhibiting factor (Ross & Mirowsky, 1999), my findings research suggest that physical decay should be considered separately from physical disorder. In terms of neighborhood constructs and measures, my findings highlight the importance of attending to neighborhood features that both researchers and adolescents find important as well as affective components from adolescents' phenomenology (Bass & Lambert, 2004).

The contributions, however, must be considered alongside important limitations. By using a mixed methods design I gathered data from two distinct data sources: quantitative scores of neighborhood environmental features using a systematic social observation protocol and qualitative semi-structured interviews. However, the current study was limited in terms of number of participants. Despite the limited number of participants, the current study included 301 total photos and 96 narratives describing the strengths and challenges of concentrated Latino neighborhoods. The goal of the study was exploratory, such that the overall goal was to understand the unique and shared aspects of researchers' objectivity and adolescents' phenomenology of the neighborhood environments. In the current study, I did not examine inferential statistics, even in the quantitative aim (aim 1). Instead, I examined effect size comparisons using a standard deviation metric. There has been recent push in the psychological sciences to focus on effect sizes rather than null-hypothesis significance testing (Cumming, 2014). Thus, my

work addresses this call, particularly with my quantitative data source (i.e., scores on neighborhood environmental features using the systematic social observation protocol).

Lastly, mean scores on sociocultural symbols derived from researchers' observations suggest a low prevalence of sociocultural symbols in adolescents' neighborhood photos, but this may be an artifact of my observational protocol. Prior research examining physical disorder, physical decay, and street safety have established *where* these neighborhood environmental features exist and dictate that these features should only be coded in pre-determined spaces (e.g., physical decay should be coded relative to streets, sidewalks, residential units and front yards, businesses, or community service areas; Odgers et al., 2009). Therefore, photos that did not include streets, sidewalks, residential units and front yards, businesses, or community service areas, were not coded relative to physical decay. Sociocultural symbols, however, were minoritized symbols that may exist in a variety of places and residents may have to create or seek-out space for these symbols in their U.S. neighborhoods. Thus, I did not want to limit the areas in which sociocultural symbols could possibly be captured. In maintaining a broad and inclusive approach, however, I inflated the denominator used to calculate mean scores on sociocultural symbols, which resulted in low means, or deflated prevalence. Thus, mean scores on researchers' observations of sociocultural symbols should be interpreted cautiously and compared to the prevalence of the sociocultural theme in adolescents' photo narratives. For example, compared to the other positive neighborhood environmental feature (i.e., street safety), references to sociocultural symbols was more frequent in adolescents' narratives.

Overall, the current study shows the usefulness of a convergent mixed methods design because it allowed for direct comparisons across distinct data sources. Moreover, the findings show that both quantitative and qualitative data were necessary to address the study aims (Creswell & Plano Clark, 2017). I intentionally avoided elevating either objective or subjective approaches to examining neighborhood environments. Consistent with my findings, I recommend that researchers approach their decisions with careful attention to shared and unshared aspects of researcher objectivity versus adolescent subjectivity and to carefully consider what approach best addresses research questions and hypotheses. Furthermore, future studies should continue to include consideration of adolescents' phenomenologies when developing study designs, questions, constructs, and measures. Lastly, findings bring attention to strengths and challenges of concentrated Latino neighborhoods that Mexican-origin adolescents consider important and researchers should deem important as well.

Dissertation Conclusions

This work bridges important gaps in research examining the promoting and inhibiting characteristics of neighborhood environments for ethnic-racial minoritized families and youth (García Coll et al., 1996). Collectively, these studies capture phenomenological perspectives (both parents' and youths') and utilize methods adept to displaying the strengths and challenges Mexican-origin parents and youth may encounter across diverse neighborhood environments. Specifically, these studies convey that Mexican-origin families and youth are not passive participants of their neighborhood environments and adapt to the environment in ways that promote healthy family

processes and adolescent development despite forces of social and racial stratification (White et al., 2018).

Historically, neighborhood researchers have examined Latino neighborhoods from a deficit perspective (Sampson et al., 1997) and relied on researcher-selected measures that do not take into account the sociocultural and historical backgrounds (Cokley, 2007). The current studies addressed limitations to prior research and illuminated ways in which Latino families and youth perceive their neighborhood environments. In study 1, findings suggest that mothers' perception of social and cultural cohesion in the neighborhood supported mothers' cultural socialization practices, and in turn adolescents' ERI affirmation. Similar findings were observed for ERI resolution, but only for adolescents whose mothers were born in the U.S. Findings for ERI exploration were somewhat equivocal. Altogether, these findings suggest that Mexican-origin mothers might rely on positive neighborhood social processes for their parenting practices, which then may benefit adolescents' ERI resolution and affirmation over time. In study 2, I utilized a convergent mixed methods design to examine the overlapping and unique aspects of objective and subjective approaches to assess neighborhood environments. My findings suggest that, in the context of high spatial concordance, there was a high degree of overlap between researchers' objectivity and adolescents' phenomenology in terms of the presence of physical disorder, physical decay, street safety, and sociocultural symbols. In addition, adolescents often layered additional meaning on top of observing physical disorder, physical decay, street safety, and sociocultural symbols, especially with references to positive and negative affect. Overall, findings from study 2 suggest that about half the time, adolescents observed the same

neighborhood environmental features that researchers identified, but also adolescents often highlighted other neighborhood features that researchers should plan to consider in future work, from both objective and subjective assessments, if possible.

Overall, these studies emphasize the need to use culturally – and contextually – informed theorizing and methods to understand the lived experiences of Mexican-origin families and youth living in diverse neighborhood environments (White et al., 2015; White et al., 2016). Furthermore, this work illuminates the ways in which racial and social stratification exists in Latino neighborhoods and how Mexican-origin families and youth are aware of these forces. Future research should continue to explicate the promoting nature of Latino neighborhoods. Most importantly, policy-makers and government entities should invest in improving the lives of ethnic-racial minoritized families and youth to combat ethnic and racial inequities.

REFERENCES

Acock, A. C. (2005). Working with missing values. *Journal of Marriage and Family, 67*(4), 1012–1028. doi:10.1111/j.1741-3737.2005.00191.x

Azmitia, A., & Brown, J. R. (2002). Latino immigrant parents' beliefs about the ''path of life'' of their adolescent children. In J. M. Contreras, K. A. Kerns, & A. M. Neal-Barnett (Eds.), *Latino children and families in the United States* (pp. 77–106). Westport, CT: Praeger Press.

Bass, J. K., & Lambert, S. F. (2004). Urban adolescents' perceptions of their neighborhoods: An examination of spatial dependence. *Journal of Community Psychology, 32*(3), 277–293. doi:10.1002/jcop.20005

Bernard, H. R., Wutich, A., & Ryan, G. W. (2016). *Analyzing qualitative data: Systematic approaches*. SAGE publications.

Brown, A., & Lopez, M. H. (2013). *Mapping the Latino Population, By State, County and City*. 24.

Browning, C. R., Soller, B., Gardner, M., & Brooks-Gunn, J. (2013). "Feeling disorder" as a comparative and contingent process: Gender, neighborhood conditions, and adolescent mental health. *Journal of health and social behavior*, *54*(3), 296-314. doi: 10.1177/0022146513498510

Cokley, K. (2007). Critical issues in the measurement of ethnic and racial identity: A referendum on the state of the field. *Journal of Counseling Psychology, 54*(3), 224–234. doi:10.1037/0022-0167.54.3.224

Colabianchi, N., Coulton, C. J., Hibbert, J. D., McClure, S. M., Ievers-Landis, C. E., & Davis, E. M. (2014). Adolescent self-defined neighborhoods and activity spaces: Spatial overlap and relations to physical activity and obesity. *Health & Place, 27*, 22–29. doi:10.1016/j.healthplace.2014.01.004

Coll, C. G., Lamberty, G., Jenkins, R., McAdoo, H. P., Crnic, K., Wasik, B. H., & Garcia, H. V. (1996). An integrative model for the study of developmental competencies in minority children. *Child Development, 67*(5), 1891. doi:10.2307/1131600

Cozby, P. C., & Bates, S. C. (2012). *Methods in Behavioral Research* (11th ed.). New York: McGraw-Hill.

Cumming, G. (2014). The New Statistics: Why and How. *Psychological Science*, *25*(1), 7–29. doi:10.1177/0956797613504966

Curran, P. J., West, S. G., & Finch, J. F. (1996). The robustness of test statistics to nonnormality and specification error in confirmatory factor analysis. *Psychological methods*, *1*(1), 16. doi: 10.1037/1082-989X.1.1.16

Dedoose Version 8.0.35 (2018). Web application for managing, analyzing, and presenting qualitative and mixed method research data. Los Angeles, CA: SocioCultural Research Consultants, LLC www.dedoose.com.

Del Giudice, M., Ellis, B. J., & Shirtcliff, E. A. (2011). The adaptive calibration model of stress responsivity. *Neuroscience & Biobehavioral Reviews*, *35*(7), 1562-1592. doi: 10.1016/j.neubiorev.2010.11.007

Deng, S., Lopez, V., Roosa, M. W., Ryu, E., Burrell, G. L., Tein, J. Y., & Crowder, S. (2006). Family processes mediating the relationship of neighborhood disadvantage to early adolescent internalizing problems. *The Journal of Early Adolescence*, *26*(2), 206-231. doi: 10.1177/0272431605285720

Enders, C. K. (2010). *Applied missing data analysis*. Guilford Press.

Enders, C. K. (2013). Dealing with missing data in developmental research. *Child Development Perspectives*, *7*(1), 27-31. doi:10.1111/cdep.12008

Ennis, S. R., Ríos-Vargas, M., & Albert, N. G. (2011). *The Hispanic population: 2010*. US Department of Commerce, Economics and Statistics Administration, US Census Bureau.

Erikson, E. (1968). *Identity: Youth and crisis*. New York: Norton.

Feinauer, E., & Whiting, E. F. (2012). Examining the sociolinguistic context in schools and neighborhoods of pre-adolescent Latino students: Implications for Ethnic Identity. *Journal of Language, Identity & Education*, *11*(1), 52–74. doi:10.1080/15348458.2012.645398

Fetters, M. D. (2019). *The Mixed Methods Research Workbook: Activities for Designing, Implementing, and Publishing Projects* (Vol. 7). SAGE Publications, Incorporated.

Fuller, B., & García Coll, C. (2010). Learning from Latinos: Contexts, families, and child development in motion. *Developmental Psychology*, *46*(3), 559–565. doi:10.1037/a0019412

Goldman-Mellor, S., Margerison-Zilko, C., Allen, K., & Cerda, M. (2016). Perceived and objectively-measured neighborhood violence and adolescent psychological distress. *Journal of Urban Health*, *93*(5), 758–769. doi:10.1007/s11524-016-0079-0

Gonzales, N. A., Coxe, S., Roosa, M. W., White, R. M. B., Knight, G. P., Zeiders, K. H., & Saenz, D. (2011). Economic hardship, neighborhood context, and parenting: prospective effects on Mexican-American adolescent's mental health. *American Journal of Community Psychology*, *47*(1–2), 98–113. doi:10.1007/s10464-010-9366-1

Guest, G., & MacQueen, K. M. (Eds.). (2008). *Handbook for team-based qualitative research*. Rowman Altamira.

Hadley-Ives, E., Stiffman, A. R., Elze, D., Johnson, S. D., & Dore, P. (2000). Measuring neighborhood and school environments perceptual and aggregate approaches. *Journal of Human Behavior in the Social Environment*, *3*(1), 1–28. doi:10.1300/J137v03n01_01

Hallgren, K. A. (2012). Computing inter-rater reliability for observational data: An overview and tutorial. *Tutorials in Quantitative Methods for Psychology*, *8*(1), 23–34. doi:10.20982/tqmp.08.1.p023

Hayhoe, K., D.J. Wuebbles, D.R. Easterling, D.W. Fahey, S. Doherty, J. Kossin, W. Sweet, R. Vose, and M. Wehner, 2018: Our Changing Climate. In *Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II* [Reidmiller, D.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, K.L.M. Lewis, T.K. Maycock, and B.C. Stewart (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, pp. 72–144. doi: 10.7930/NCA4.2018.CH2

Hernández, M. M., Conger, R. D., Robins, R. W., Bacher, K. B., & Widaman, K. F. (2014). Cultural socialization and ethnic pride among Mexican-origin adolescents during the transition to middle school. *Child Development*, *85*(2), 695–708. doi: 10.1111/cdev.12167

Hill, N. E., & Witherspoon, D. (2011). Race, ethnicity, and social class. In M. K. Underwood & L. H. Rosen (Eds.), *Social development: Relationships in infancy, childhood, and adolescence* (pp. 316-346). New York, NY: Guilford Press.

Hill, T. D., & Maimon, D. (2013). Neighborhood Context and Mental Health. In C. S. Aneshensel, J. C. Phelan, & A. Bierman (Eds.), *Handbook of the Sociology of Mental Health* (pp. 479–501). doi:10.1007/978-94-007-4276-5_23

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, *6*(1), 1-55. doi:10.1080/10705519909540118

Hughes, D., Hagelskamp, C., Way, N., & Foust, M. D. (2009). The role of mothers' and adolescents' perceptions of ethnic-racial socialization in shaping ethnic-racial identity among early adolescent boys and girls. *Journal of Youth and Adolescence*, *38*(5), 605–626. doi: 10.1007/s10964-009-9399-7

Hughes, D., Rodriguez, J., Smith, E. P., Johnson, D. J., Stevenson, H. C., & Spicer, P. (2006). Parents' ethnic-racial socialization practices: A review of research and directions for future study. *Developmental Psychology*, *42*(5), 747–770. doi:10.1037/0012-1649.42.5.747

Hurd, N. M., Sellers, R. M., Cogburn, C. D., Butler-Barnes, S. T., & Zimmerman, M. A. (2013). Racial identity and depressive symptoms among Black emerging adults: The moderating effects of neighborhood racial composition. *Developmental Psychology*, *49*(5), 938–950. doi:10.1037/a0028826

IBM Corp. (2016). IBM SPSS Statistics (Version 24.0) [Macintosh]. Armonk, NY: IBM Corp.

Institute of Medicine. (1997). *Improving Health in the Community: A Role for Performance Monitoring*. Retrieved from https://www.nap.edu/read/5298/chapter/1.

Juang, L. P., & Alvarez, A. N. (2011). Family, school, and neighborhood: Links to Chinese American adolescent perceptions of racial/ethnic discrimination. *Asian American Journal of Psychology*, *2*(1), 1–12. doi:10.1037/a0023107

Knight, G. P., Carlo, G., Streit, C., & White, R. M. B. (2017). A model of maternal and paternal ethnic socialization of Mexican-American adolescents' self-views. *Child Development*, *88*(6), 1885–1896. doi:10.1111/cdev.12939

Kulis, S., Marsiglia, F. F., Sicotte, D., & Nieri, T. (2007). neighborhood effects on youth substance use in a southwestern city. *Sociological Perspectives*, *50*(2), 273–301. doi:10.1525/sop.2007.50.2.273

Lee, M.-J., & Liechty, J. M. (2015). Longitudinal associations between immigrant ethnic density, neighborhood processes, and Latino immigrant youth depression. *Journal of Immigrant and Minority Health*, *17*(4), 983–991. doi: 10.1007/s10903-014-0029-4

Len Chung, H., Slocum, C., & Proverbs, T. (2013). Objective and perceived community factors: Exploring responses to context. *American Journal of Health Behavior*, *37*(6), 763–768. doi:10.5993/AJHB.37.6.5

Leventhal, T., & Brooks-Gunn, J. (2000). The neighborhoods they live in: The effects of neighborhood residence on child and adolescent outcomes. *Psychological Bulletin*, *126*(2), 309–337. doi:10.1037//0033-2909.126.2.309

Leventhal, T., Dupéré, V., & A. Shuey, E. (2015). Children in Neighborhoods. In R. M. Lerner (Ed.), *Handbook of Child Psychology and Developmental Science* (pp. 1–41). doi:10.1002/9781118963418.childpsy413

Leventhal, T., Dupéré, V., & Brooks-Gunn, J. (2009). Neighborhood influences on adolescent development. In R. M. Lerner & L. Steinberg (Eds.), *Handbook of Adolescent Psychology.* Hoboken, NJ: John Wiley & Sons.

Madrigano, J., Lane, K., Petrovic, N., Ahmed, M., Blum, M., & Matte, T. (2018). Awareness, risk perception, and protective behaviors for extreme heat and climate change in New York City. *International Journal of Environmental Research and Public Health*, 15(7), 1–11. doi: 10.3390/ijerph15071433.

McLellan, E., MacQueen, K. M., Neidig, J. L. (2003). Beyond the qualitative interview: Data preparation and transcription. *Field Methods, 15,* 63-84. doi: 10.1177/1525822X02239573

Molnar, B. E., Cerda, M., Roberts, A. L., & Buka, S. L. (2008). Effects of neighborhood resources on aggressive and delinquent behaviors among urban youths. *American Journal of Public Health*, *98*(6), 1086–1093. doi:10.2105/AJPH.2006.098913

Molnar, B. E., Gortmaker, S. L., Bull, F. C., & Buka, S. L. (2004). Unsafe to play? Neighborhood disorder and lack of safety predict reduced physical activity among urban children and adolescents. *American Journal of Health Promotion*, *18*(5), 378–386. doi:10.4278/0890-1171-18.5.378

Muthén, L.K. and Muthén, B.O. (1998-2017). Mplus User's Guide. Eighth Edition. Los Angeles, CA: Muthén & Muthén

Nair, R. L., White, R. M. B., Roosa, M. W., & Zeiders, K. H. (2013). Cultural stressors and mental health symptoms among Mexican Americans: A prospective study examining the impact of the family and neighborhood context. *Journal of Youth and Adolescence*, *42*(10), 1611–1623. doi:10.1007/s10964-012-9834-z

Nebbitt, V. E., & Lombe, M. (2010). Urban African American Adolescents and adultification. *Families in Society: The Journal of Contemporary Social Services*, *91*(3), 234–240. doi: 10.1606/1044-3894.4000

Nicotera, N. (2008). Children speak about neighborhoods: Using mixed methods to measure the construct neighborhood. *Journal of Community Psychology*, *36*(3), 333–351. doi:10.1002/jcop.20197

Noah, A. J. (2015). Putting families into place: Using neighborhood-effects research and activity spaces to understand families: Neighborhood-effects research. *Journal of Family Theory & Review*, *7*(4), 452–467. doi:10.1111/jftr.12119

Odgers, C. L., Caspi, A., Bates, C. J., Sampson, R. J., & Moffitt, T. E. (2012). Systematic social observation of children's neighborhoods using Google Street View: A reliable and

cost-effective method: SSO in street view. *Journal of Child Psychology and Psychiatry, 53*(10), 1009–1017. doi:10.1111/j.1469-7610.2012.02565.x

Odgers, CL., Bates, CJ., Caspi, A., Sampson, RJ and Moffitt, TE. (2009). Systematic social observation inventory – tally of observations in urban regions (SSO i-Tour). Adaptlab publications: Irvine, CA.

Orstad, S. L., McDonough, M. H., Stapleton, S., Altincekic, C., & Troped, P. J. (2017). A systematic review of agreement between perceived and objective neighborhood environment measures and associations with physical activity outcomes. *Environment and Behavior, 49*(8), 904–932. doi:10.1177/0013916516670982

Pasco, M. C., & White, R. M. B. (2019). A mixed methods approach to examining Mexican-origin adolescents' use of ethnic-racial labels in neighborhood contexts. *Journal of Adolescent Research, 35*(4), 489-520. doi:10.1177/0743558419868220

Pate, R. R., Colabianchi, N., Porter, D., Almeida, M. J., Lobelo, F., & Dowda, M. (2008). Physical activity and neighborhood resources in high school girls. *American Journal of Preventive Medicine, 34*(5), 413–419. doi:10.1016/j.amepre.2007.12.026

Peugh, J. L. (2010). A practical guide to multilevel modeling. *Journal of school psychology, 48*(1), 85-112. doi: 10.1016/j.jsp.2009.09.002

Phinney, J. S. (1990). Ethnic identity in adolescents and adults: Review of research. *Psychological bulletin, 108*(3), 499. doi: 10.1037/0033-2909.108.3.499

Plunkett, S. W., Abarca-Mortensen, S., Behnke, A. O., & Sands, T. (2007). Neighborhood structural qualities, adolescents' perceptions of neighborhoods, and Latino youth development. *Hispanic Journal of Behavioral Sciences, 29*(1), 19–34. doi:10.1177/0739986306295038

Portes, A., & Rumbaut, R. G. (2001). *Legacies: The story of the immigrant second generation*. Berkely, CA: University of California Press.

Portes, A., Fernandez-Kelly, P., & Haller, W. (2005). Segmented assimilation on the ground: The new second generation in early adulthood. *Ethnic and racial studies, 28*(6), 1000-1040. doi: 10.1080/01419870500224117

Priest, N., Walton, J., White, F., Kowal, E., Baker, A., & Paradies, Y. (2014). Understanding the complexities of ethnic-racial socialization processes for both minority and majority groups: A 30-year systematic review. *International Journal of Intercultural Relations, 43,* 139–155. doi:10.1016/j.ijintrel.2014.08.003

Pulido, L. (2000). Rethinking environmental racism: White privilege and urban development in Southern California. *Annals of the Association of American Geographers*, *90*(1), 12–40. doi: 10.1111/0004-5608.00182

Richardson, D. M., & Nuru-Jeter, A. M. (2012). Neighborhood contexts experienced by young Mexican-American women: Enhancing our understanding of risk for early childbearing. *Journal of Urban Health, 89*, 59–73. doi: 10.1007/s11524-011-9627-9

Robinson, A. I., & Oreskovic, N. M. (2013). Comparing self-identified and census-defined neighborhoods among adolescents using GPS and accelerometer. *International Journal of Health Geographics*, *12*(1), 57. doi:10.1186/1476-072X-12-57

Roosa, M. W., Liu, F. F., Torres, M., Gonzales, N. A., Knight, G. P., & Saenz, D. (2008). Sampling and recruitment in studies of cultural influences on adjustment: A case study with Mexican Americans. *Journal of Family Psychology*, *22*(2), 293–302. doi:10.1037/0893-3200.22.2.293

Roosa, M. W., White, R. M. B., Zeiders, K. H., & Tein, J.-Y. (2009). An examination of the role of perceptions in neighborhood research. *Journal of Community Psychology*, *37*(3), 327–341. doi:10.1002/jcop.20298

Ross, C. E., & Mirowsky, J. (1999). Disorder and decay: The concept and measurement of perceived neighborhood disorder. *Urban Affairs Review*, *34*(3), 412-432. doi:10.1177/107808749903400304

Sampson, R. J., Raudenbush, S. W., & Earls, F. (1997). Neighborhoods and violent crime: A multilevel study of collective efficacy. *Science, 277*, 918-924. doi: 10.1126/science.277.5328.918

Satorra, A. (2000). Scaled and adjusted restricted tests in multi-sample analysis of momento structures. *In Innovations in multivariate statistical analysis* (pp. 233-247). Springer, Boston, MA.

Sharkey, P. T. (2006). Navigating dangerous streets: The sources and consequences of street efficacy. *American Sociological Review*, *71*(5), 826–846. doi: 10.1177/000312240607100506

Shenton, A. K. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education for Information*, *22*(2), 63–75. doi:10.3233/EFI-2004-22201

Singer, A. (2004). *The rise of new immigrant gateways*. Washington, DC: Center on Urban and Metropolitan Policy, The Brookings Institution.

Spencer, M. B. (2007). Phenomenology and Ecological Systems Theory: Development of Diverse Groups. In W. Damon & R. M. Lerner (Eds.), *Handbook of Child Psychology*. doi:10.1002/9780470147658.chpsy0115

Spilsbury, J. C., Korbin, J. E., & Coulton, C. J. (2012). "Subjective" and "Objective" views of neighborhood danger & well-being: the importance of multiple perspectives and mixed methods. *Child Indicators Research, 5*(3), 469–482. doi: 10.1007/s12187-012-9165-3

Stevenson, H. C., McNeil, J. D., Herrero-Taylor, T., & Davis, G. Y. (2005). Influence of perceived neighborhood diversity and racism experience on the racial socialization of Black youth. *Journal of Black Psychology*, *31*(3), 273–290. doi:10.1177/0095798405278453

Supple, A. J., Ghazarian, S. R., Frabutt, J. M., Plunkett, S. W., & Sands, T. (2006). Contextual influences on Latino adolescent ethnic identity and academic outcomes. *Child Development*, *77*(5,), 1427–1433.

Syed, M., Walker, L. H. M., Lee, R. M., Umaña-Taylor, A. J., Zamboanga, B. L., Schwartz, S. J., … Huynh, Q.-L. (2013). A two-factor model of ethnic identity exploration: Implications for identity coherence and well-being. *Cultural Diversity & Ethnic Minority Psychology*, *19*, 143–154. doi:10.1037/a0030564

Taylor, R. D. (2000). An examination of the association of African American mothers' perceptions of their neighborhoods with their parenting and adolescent adjustment. *Journal of Black Psychology*, *26*(3), 267-287. doi: 10.1177/0095798400026003001

Teixeira, S. (2015). "It Seems Like No One Cares": Participatory photo mapping to understand youth perspectives on property vacancy. *Journal of Adolescent Research, 30*(3), 390–414. doi: 10.1177/0743558414547098

Trevethan, R. (2017). Sensitivity, specificity, and predictive values: foundations, pliabilities, and pitfalls in research and practice. *Frontiers in Public Health*, *5*, 307. doi: 10.3389/fpubh.2017.00307

Umaña-Taylor, A. J., & Fine, M. A. (2004). Examining ethnic identity among Mexican-origin adolescents living in the United States. *Hispanic Journal of Behavioral Sciences, 26*(1), 36–59. doi:10.1177/0739986303262143

Umaña-Taylor, A. J., & Guimond, A. B. (2010). A longitudinal examination of parenting behaviors and perceived discrimination predicting Latino adolescents' ethnic identity. *Developmental Psychology*, *46*(3), 636–650. doi:10.1037/a0019376

Umaña-Taylor, A. J., & Guimond, A. B. (2012). A longitudinal examination of parenting behaviors and perceived discrimination predicting Latino adolescents' ethnic identity. *Journal of Latina/o Psychology, 1*(S), 14–35. doi:10.1037/2168-1678.1.S.14

Umaña-Taylor, A. J., & Yazedjian, A. (2006). Generational differences and similarities among Puerto Rican and Mexican mothers' experiences with familial ethnic socialization. *Journal of Social and Personal Relationships, 23*(3), 445–464. doi:10.1177/0265407506064214

Umaña-Taylor, A. J., Alfaro, E. C., Bámaca, M. Y., & Guimond, A. B. (2009). The central role of familial ethnic socialization in Latino adolescents' cultural orientation. *Journal of Marriage and Family, 71*(1), 46–60. doi:10.1111/j.1741-3737.2008.00579.x

Umaña-Taylor, A. J., Quintana, S. M., Lee, R. M., Cross, W. E., Rivas-Drake, D., Schwartz, S. J., … Ethnic and Racial Identity in the 21st Century Study Group. (2014). Ethnic and racial identity during adolescence and into young adulthood: An integrated conceptualization. *Child Development, 85*(1), 21–39. doi:10.1111/cdev.12196

Umaña-Taylor, A. J., Zeiders, K. H., & Updegraff, K. A. (2013). Family ethnic socialization and ethnic identity: A family-driven, youth-driven, or reciprocal process? *Journal of Family Psychology, 27*(1), 137–146. doi:10.1037/a0031105

White, R. M., Burleson, E., & Knight, G. P. (2016). Future prospects for studying ethnic and racial minority youths and families in diverse rural and nonrural contexts. In Rural ethnic minority youth and families in the United States (pp. 267-286). Springer, Cham.

White, R. M. B., Knight, G. P., Jensen, M., & Gonzales, N. A. (2018). Ethnic socialization in neighborhood contexts: Implications for ethnic attitude and identity development among Mexican-origin adolescents. *Child Development, 89*(3), 1004–1021. doi:10.1111/cdev.12772

White R. M. B., Knight, G. P., & Roosa, M. W. (2015). Using culturally informed theory to study Mexican American children and families. In Y.M. Caldera and E. W. Lindsey (Eds.), Mexican American children and families: Multidisciplinary perspectives (pp. 27-43). New York, NY: Routledge Press.

White, R. M. B., Liu, Y., Nair, R. L., & Tein, J.-Y. (2015). Longitudinal and integrative tests of family stress model effects on Mexican origin adolescents. *Developmental Psychology, 51*(5), 649–662. doi:10.1037/a0038993

White, R. M. B., Nair, R. L., & Bradley, R. H. (2018). Theorizing the benefits and costs of adaptive cultures for development. *American Psychologist, 73*(6), 727–739. doi:10.1037/amp0000237

White, R. M. B., & Roosa, M. W. (2012). Neighborhood Contexts, Fathers, and Mexican American Young Adolescents' Internalizing Symptoms. *Journal of Marriage and Family*, *74*(1), 152–166. doi:10.1111/j.1741-3737.2011.00878.x

White, R. M. B., Roosa, M. W., Weaver, S. R., Nair, R. L., & Murry, V. M. (2009). cultural and contextual influences on parenting in Mexican American families. *Journal of Marriage and Family*, *71*(1), 61–79.

White, R. M. B., Zeiders, K. H., & Safa, M. D. (2018). Neighborhood structural characteristics and Mexican-origin adolescents' development. *Development and Psychopathology*, *30*(5), 1679–1698. doi:10.1017/S0954579418001177

White, R. M. B., Zeiders, K. H., Knight, G. P., Roosa, M. W., & Tein, J.-Y. (2014). Mexican origin youths' trajectories of perceived peer discrimination from middle childhood to adolescence: Variation by neighborhood ethnic concentration. *Journal of Youth and Adolescence*, *43*(10), 1700–1714. doi:10.1007/s10964-014-0098-7

Winkler, E. N. (2010). "I learn being black from everywhere I go": Color blindness, travel, and the formation of racial attitudes among African American adolescents. In H. Beth Johnson (Ed.), *Sociological Studies of Children and Youth* (pp. 423–453). Emerald Group Publishing Limited. doi: 10.1108/S1537-4661(2010)0000013019

Wright, D. B., & Herrington, J. A. (2011). Problematic standard errors and confidence intervals for skewness and kurtosis. *Behavior research methods*, *43*(1), 8-17. doi: 10.3758/s13428-010-0044-x

Yoshikawa, H. (2011). *Immigrants raising citizens: Undocumented parents and their young children*. New York, NY: Russell Sage.

APPENDIX A

TABLES & FIGURES

Table 1 Summary of Descriptives and Correlations for Study Variables

Variables	1.	2.	3.	4.	5.	6.	7.	8.	9.	*M*	*SD*	α	S	K
1. Neighborhood social and cultural cohesion (5th)	-	.21**	.18**	-.02	-.02	.004	-.03	.02	.09	2.95	.75	.82	.26	-.23
2. Cultural Socialization (5th)	.23**	-	.68**	.063	.10	.03	.073	.07	.09	3.00	.54	.75	-.41	-.14
3. Cultural Socialization (7th)	.22**	.66**	-	.13**	.17**	.10	.097	.09	.10	3.13	.51	.77	-.63	.11
4. ERI Exploration (7th)	.04	.18**	.17**	-	.48 **	.53**	.36**	.38**	.28**	3.75	.72	.73	-.33	-.47
5. ERI Exploration (10th)	-.07	.17**	.13**	.42**	-	.29**	.51**	.27**	.37**	3.77	.76	.81	-.40	-.08
6. ERI Resolution (7th)	.05	.14**	.13**	.54**	.28**	-	.38**	.52**	.34**	4.30	.73	.74	-1.13	.91
7. ERI Resolution (10th)	.03	.17**	.12**	.30**	.53**	.33**	-	.35**	.52**	4.31	.67	.86	-.75	-.21
8. ERI Affirmation (7th)	.03	.15**	.13**	.41**	.23**	.53**	.28**	-	.47**	4.54	.53	.70	-1.46	2.33
9. ERI Affirmation (10th)	.04	.18**	.17**	.21**	.39**	.28**	.53**	.39**	-	4.61	.53	.78	-1.78	3.52
M	2.79	3.01	3.19	3.73	3.74	4.31	4.27	4.51	4.60					
SD	.83	.52	.50	.73	.77	.73	.70	.57	.52					
α	.84	.74	.76	.73	.81	.74	.86	.70	.78					
Skewness	.25	-.44	-.61	-.31	-.29	-1.17	-.73	-1.55	-1.61					
Kurtosis	-.29	-.21	.10	-.48	-.33	1.15	-.21	2.65	2.68					

Notes. Descriptive and correlation analyses were conducted in SPSS using listwise deletion. ERI = Ethnic-Racial Identity; S = Skewness; K = Kurtosis. Mothers' descriptives and correlations are below the diagonal (N = 749) and fathers' descriptives and correlations are above the diagonal (n = 579). **p < .01

Table 2 Intraclass Correlation Coefficients

Variable	ICC for Mother-Adolescent Sample	ICC for Father-Adolescent Sample
Neighborhood Social and Cultural Cohesion (5th)	.004	.059
Cultural Socialization (7th)	.038	.000
ERI Exploration (10th)	.000	.049
ERI Resolution (10th)	.043	.049
ERI Affirmation (10th)	.021	.049

Note. ICC = intraclass correlation coefficient. ERI = ethnic-racial identity.

Table 3 Preliminary Multi-group Structural Equation Models

Model	χ^2 Difference Test H_0: The model constraints do not lead to misfit H_1: The model constraints lead to misfit	Statistical Conclusion	Conceptual Conclusion
Mother-Adolescent Dyad			
Adolescent Gender	$\Delta \chi^2 (7) = 6.595$, $p = .433$	Constraints do not lead to misfit	No adolescent gender differences in the model
Adolescent Nativity	$\Delta \chi^2 (7) = 5.872$, $p = .555$	Constraints do not lead to misfit	No adolescent nativity differences in the model
Mother Nativity	$\Delta \chi^2 (7) = 17.777$, $p = .013$	Constraints lead to misfit	Mother nativity differences somewhere in the model
a path free, remaining constrained	$\Delta \chi^2 (6) = 16.551$, $p = .011$	Constraints lead to misfit	Allowing a path to be estimated freely did not address misfit
b path for resolution free, remaining paths constrained	$\Delta \chi^2 (6) = 6.533$, $p = .366$	Constraints do not lead to misfit	Allowing b path for resolution to be estimated freely did addressed misfit
b path for affirmation free, remaining paths constrained	$\Delta \chi^2 (6) = 17.438$, $p = .007$	Constraints lead to misfit	Allowing b path for affirmation to be estimated freely did not address misfit
c path for exploration free, remaining paths constrained	$\Delta \chi^2 (6) = 17.795$, $p = .007$	Constraints lead to misfit	Allowing c path for exploration to be estimated freely did not address misfit
c path for resolution free, remaining paths constrained	$\Delta \chi^2 (6) = 17.563$ $p = .007$	Constraints lead to misfit	Allowing c path for resolution to be estimated freely did not address misfit
c path for affirmation free, remaining paths constrained	$\Delta \chi^2 (6) = 16.415$, $p = .012$	Constraints lead to misfit	Allowing c path for affirmation to be estimated freely did not address misfit
Household Structure (one-parent vs. two-parent families)	$\Delta \chi^2 (7) = 6.084$, $p = .530$	Constraints do not lead to misfit	No household structure differences in the model

Father-Adolescent Dyad			
Adolescent Gender	$\Delta \chi^2 (7) = 12.343$, $p = .090$	Constraints do not lead to misfit	No adolescent gender differences in the model
Adolescent Nativity	$\Delta \chi^2 (7) = 5.772$, $p = .567$	Constraints do not lead to misfit	No adolescent nativity differences in the model
Father Nativity	$\Delta \chi^2 (7) = 8.618$, $p = .281$	Constraints do not lead to misfit	No father adolescent nativity differences in the model

Table 4a-d. Descriptive Characteristics of Neighborhood Environmental Features Based on Researcher Observation

4a.

Researcher-observed physical disorder		Total photos taken	Photos Discussed During Semi-Structured Interview with Adolescents		
			Photos	Positive photo assignment	Negative photo assignment
	n	301	96	45	51
	M	0.97	0.99	0.42	1.49
	Median	1	1	0	2
	SD	1.05	1	0.69	0.96
	Theoretical Range	0-9	0-9	0-9	0-9
	Observed Range	0-4	0-3	0-3	0-3

4b.

Researcher-observed physical decay		Total photos taken	Photos Discussed During Semi-Structured Interview with Adolescents		
			Photos	Positive photo assignment	Negative photo assignment
	n	203	65	35	30
	M	2.25	1.63	1.37	1.93
	Median	2	1	1	1
	SD	2.08	1.82	1.66	1.98
	Theoretical Range	0-15	0-15	0-15	0-15
	Observed Range	0-9	0-8	0-6	0-8

4c.

Researcher-observed street safety		Total photos taken	Photos Discussed During Semi-Structured Interview with Adolescents		
			Photos	Positive photo assignment	Negative photo assignment
	n	72	22	12	10
	M	1	1.18	1.67	0.6

Median	1	1	1	0.5
SD	1.16	1.5	1.83	0.7
Theoretical Range	0-10	0-10	0-10	0-10
Observed Range	0-5	0-5	0-5	0-2

4d.

		Photos Discussed During Semi-Structured Interview with Adolescents		
Researcher-observed sociocultural symbols	Total photos taken	Photos	Positive photo assignment	Negative photo assignment
n	298	95	45	50
M	0.17	0.18	0.36	0.02
Median	0	0	0	0
SD	0.51	0.56	0.77	0.14
Theoretical Range	0-20	0-20	0-20	0-20
Observed Range	0-4	0-4	0-4	0-1

Note. n = number of photos in which it was possible to code the neighborhood environmental feature in the photo. Adolescents took a total of 301 photos. The research team was able to code observed physical disorder in all 301 photos. However, for remaining features, some photos did not contain critical elements to code that feature. For physical decay, the photo needed to contain street, residential, business or community service area features. Only 203 photos contained such features. For street safety, the photo needed to have street features. Only 72 photos contained street or related features where the research team could observe elements of street safety. For sociocultural symbols, the photo needed to contain any street, residential, business, community service, or visible features where the researcher can identify whether a symbol existed (e.g., a photo of a building, traffic sign, or billboard could be coded for sociocultural symbols). The research team was able to observe elements sociocultural symbols in 298 photos.

Table 5. Corroboration and Expansion Theme Frequency in Adolescents' Photo Narratives

Theme	Total (*N*=96)	Positive Photo Assignment	Negative Photo Assignment
Corroboration Themes			
Physical Disorder	31 (32%)	2 (6%)	29 (94%)
Physical Decay	16 (17%)	8 (50%)	8 (50%)
Street Safety	9 (9%)	6 (67%)	3 (33%)
Sociocultural Symbols	12 (12%)	10 (83%)	2 (17%)
Expansion Themes			
Negative Valence & Valuation	23 (24%)	3 (13%)	20 (87%)
Positive Valence & Valuation	20 (21%)	17 (85%)	3 (15%)
Social & Institutional Resources	31 (32%)	19 (61%)	12 (39%)
Heat Resources	7 (7%)	5 (71%)	2 (29%)
Neighborhood Risk	16 (17%)	2 (12%)	14 (88%)
Avoiding Neighborhood Risk	8 (8%)	1 (12%)	7 (88%)

Note. Total column is the proportion of each theme out of the 96 total narratives (a column percent). Positive and negative photo assignments are based from the proportion within each theme (a row percent).

Table 6. Qualitative Analysis of Corroboration by Expansion Themes Matrix

Corroboration Themes from Adolescents' Narratives	Expansion Themes from Adolescents' Narratives						
	Negative Valence & Valuation *k* = 23	Positive Valence & Valuation *k* = 20	Social & Institutional Resources *k* = 31	Heat Resources *k* = 7	Neighborhood Risk *k* = 16	Avoiding Neighborhood Risk *k* = 8	No Expansion Theme *k* = 32
Physical disorder *k* = 31	9%	2%	7%	0%	4%	3%	18%
Physical decay *k* = 16	6%	5%	4%	4%	2%	2%	4%
Street safety *k* = 8	3%	1%	1%	3%	3%	1%	3%
Sociocultural symbols *k* = 12	1%	7%	2%	1%	2%	1%	4%
No Corroboration Theme *k* = 42	11%	5%	22%	3%	7%	4%	9%

Note. *k* = number of excerpts coded with the specific theme out of 96 narratives. These do not sum to 96 because individual narratives can be coded with multiple themes.

Table 7. Mixed Methods Researcher and Adolescent Corroboration Matrix

		Adolescents' Narratives About Neighborhood Environmental Features (from the *corroboration* codebook)	
Researchers' Assessments of Neighborhood Environmental Features (from the SSO protocol):		Present in Narrative	Absent in narrative
1. Physical Disorder	Present (*n* = 57 of 96)	**29**	28
	Absent (*n* = 39 of 96)	2	**37**
2. Physical Decay	Present (*n* = 44 of 65)	**5**	39
	Absent (*n* = 21 of 65)	1	**20**
3. Street Safety	Present (*n* = 13 of 22)	**2**	11
	Absent (*n* = 9 of 22)	0	**9**
4. Sociocultural Symbols	Present (*n* = 12 of 95)	**9**	3
	Absent (*n* = 83 of 95)	3	**80**

Note. There are 96 total photos discussed, *n* = number of photos in which it was possible to code the neighborhood environmental feature in the photo (See Table 1 for further explanation). SSO = systematic social observations. Bold indicates corroboration between researcher and adolescent. Table shows corroboration and lack of corroboration between researchers' scores on neighborhood environment features and *corroboration codebook* themes from adolescents' narratives. The *corroboration* codebook codes adolescent narratives for neighborhood environmental features, including physical disorder, physical decay, street safety, and sociocultural symbols.

Table 8. Mixed Methods Researcher and Adolescent Expansion Matrix

Researcher's Assessments of Neighborhood Environmental Features 1 – 4 (from the SSO protocol):	Expansion Themes						
	Expanded with NV *k* = 23 of 96	Expanded with PV *k* = 20 of 96	Expanded with SIR *k* = 31 of 96	Expanded with EER *k* = 7 of 96	Expanded with NR *k* = 16 of 96	Expanded with ANR *k* = 8 of 96	No expansion *k* = 32 of 96
1. Physical Disorder present in photo (*n* = 57 of 96)	16 (28%)	9 (16%)	15 (26%)	4 (7%)	12 (21%)	5 (9%)	24 (42%)
2. Physical Decay present in photo (*n* = 44 of 65)	11 (25%)	10 (23%)	15 (34%)	1 (2%)	5 (11%)	4 (9%)	16 (26%)
3. Street Safety present in photo (*n* = 13 of 22)	2 (15%)	3 (23%)	5 (38%)	1 (8%)	2 (15%)	2 (15%)	4 (31%)
4. Sociocultural Symbols present in the photo (*n* = 12 of 95)	1 (8%)	6 (50%)	3 (25%)	0 (0%)	2 (17%)	0 (0%)	4 (33%)

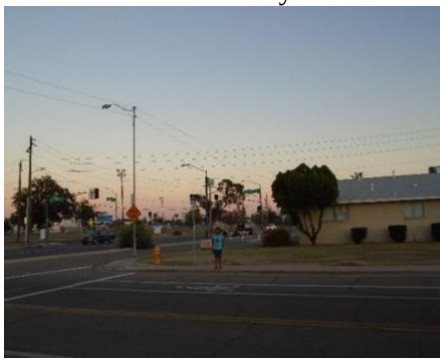
Note. There are 96 total photos discussed, *n* = number of photos observed. *k* = number of excerpts from qualitative codebook that were coded as that specific theme. NV = negative valence & valuation, PV = positive valence & valuation, SIR = social and institutional resources, EER = heat resources, NR = neighborhood risk, ANR = avoiding neighborhood risk. Table highlights the degree to which adolescents expand a narrative that was not identified by researcher's assessment, themes are from *Expansion* codebook. Expansion themes rely upon inductive and deductive approaches to theme identification that emerges from the semi-structured interviews. Row percentages do not sum to 100% because a given photo narrative could have been coded with more than one expansion theme.

Table 9. Joint Display of Merged Researcher's Observation and Adolescents' Narrative of Photos

	Researcher's Observation		Adolescents' Narrative			
Row 1: Corroboration for presence of physical disorder and physical decay	Scores	Summary	Confirmation Theme?	Expansion Theme?	Exemplar Quote	Meta-Inference
	Physical disorder: Present Physical decay: Present Street safety: Could not be coded Sociocultural Symbols: Absent	Physical disorder included the residential unit appearing burned out, boarded up, or abandoned and the presence of trash. Physical decay included the deteriorated condition of the residential unit and front yard.	Physical disorder Physical decay	Negative valence & valuation	"umm it's just really cluttered and messed up and dirty and it's just one of the many houses over there by like this – and some are worse than this too… I was trying to take a picture there's – right here it's kinda like a lot and it's just really trashy like that and there's mattresses and furniture and just all this clutter over there. And it just looks really trashy." Valeria, 14 years	*Corroboration & Expansion*: Both the researcher and adolescent cued into physical disorder and physical decay in this photo. In addition, the adolescent narrative added negative valence & valuation by describing the area as looking trashy.

	Researcher's Observation		Adolescents' Narrative			
Row 2: Corroboration for the presence of sociocultural symbols	Scores	Summary	Confirmation Theme?	Expansion Theme?	Exemplar Quote	Meta-Inference
	Physical disorder: Absent Physical decay: Absent Street safety: Could not be coded Sociocultural symbols: Present	Sociocultural symbols included the presence of the Latino-affiliated mural.	Sociocultural symbols	Positive valence & valuation	"I see two worlds coming together. Um, you know there's uh Hispanic and like the umm American culture in a way … I think it's you know like kind of umm, a mix of the both worlds. And I feel like umm the you know the painting of the woman is like kind of like the epitome of like, of a beautiful Mexican woman." Lucia, 17 years	*Corroboration & Enhancement*: Both the researcher and adolescent identified sociocultural symbols in this photo. In addition, the adolescent narrative added positive valence & valuation by referencing beauty.

	Researcher's Observation		Adolescents' Narrative			
Row 3: Coroborration for presence of physical disorder and absence of physical decay and sociocultural symbols 	Scores	Summary	Confirmation Theme?	Expansion Theme?	Exemplar Quote	Meta-Inference
	Physical disorder: Present Physical decay: Absent Street safety: Could not be coded Sociocultural symbols: Absent	Physical disorder included the presence of graffiti.	Physical Disorder	Negative valence & valuation Social & institutional resources Neighborhood risk Avoiding neighborhood risk	"It's three different gang signs. And it like shows bad on our neighborhood cuz like, I don't know, it didn't used to be like that, so like all of a sudden, like, all these like people, started coming in, like, drawing, tagging on the walls… And it's just like, unwelcoming, cuz like, then there's like other gang members and they get mad when they see it, I guess and they, they like fight in the streets and it's scary… A fight cuz of something, I don't, I'm not sure but I was coming from school and they were just fighting like in the street and I just went home." Angela, 16 years	*Corroboration & Enhancement*: Both the researcher and adolescent cued into physical disorder (graffiti) in this photo. In addition, the adolescent added negative valence and valuation (graffiti looks bad in the neighborhood), social and institutional resources (school), neighborhood risk (reference to gang signs), and avoiding neighborhood risk (referencing going home instead of watching the gang fight).

	Researcher's Observation			Adolescents' Narrative		
Row 4: Low corroboration for absence physical disorder, physical decay, and street safety 	Scores	Summary	Confirmation Theme?	Expansion Theme?	Exemplar Quote	Meta-Inference
	Physical disorder: Present Physical decay: Present Street safety: Present Sociocultural symbols: Absent	Physical disorder included the presence of graffiti. Physical decay included cracks in the sidewalk and street. Street safety included the presence of the crosswalk, bike lane, and outdoor lighting.	None	Positive Valence & Valuation Social & Institutional Resources	"…the school doesn't mind if there's a church nearby. Free of choice, you choose what you want, freedom of religion in the constitution. You have the right to choose what you want. They're not forcing anything. They're willing enough to let the s-let the children walk outta this gate to the church where the little ice cream woman will be and that those would be open if the kids wanna come in." Osvaldo, 16 years	*Lack of Corroboration & Enhancement*: Though the researcher identified physical disorder, physical decay, and street safety in this photo, the adolescent was not focused on any of those things. Instead, the adolescent was focused on social and institutional resources (school, church) and his positive valence and valuation (valuing freedom and choice).

	Researcher's Observation		Adolescents' Narrative			
Row 5: Low corroboration for absence of physical disorder, physical decay, and street safety	Scores	Summary	Confirmation Theme?	Expansion Theme?	Exemplar Quote	Meta-Inference
	Physical disorder: Present Physical decay: Present Street safety: Present Sociocultural symbols: Absent	Physical disorder included the presence of trash. Physical decay included the presence of cracks on the street and sidewalk. Street safety included the presence of outdoor lighting and sidewalk.	None	Negative Valence & Valuation Absence of Social & Institutional Resource Neighborhood Risk	"Um, well this is the neighborhood that I was talking about to get to the railroad where it's really lonely…I see only one person and you know it's a guy, and when I, when I was like um riding down here uh you know I get scared when there's one person cuz like I was scared cuz that, cuz its lonely I would be scared they'd do something to me or you know someone, like someone could easily probably get kidnapped here cuz there's like no one outside their houses really" Adriana, 16 years	*Lack of Corroboration & Expansion:* Though the researcher identified physical disorder, physical decay, and street safety in this photo, the adolescent was not focused on any of those things. Instead, the adolescent was focused on the absence of social & institutional resources (lack of informal social control), neighborhood risk (potential of a kidnapping occurring), and her negative valence and valuation (lonely, scared).

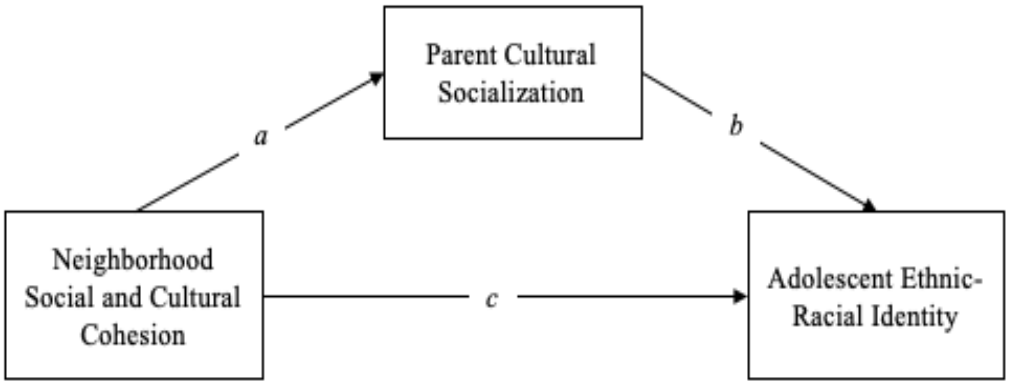


Figure 1. Conceptual model describing the association among neighborhood social and cultural cohesion, parents' cultural socialization, and adolescent ERI.

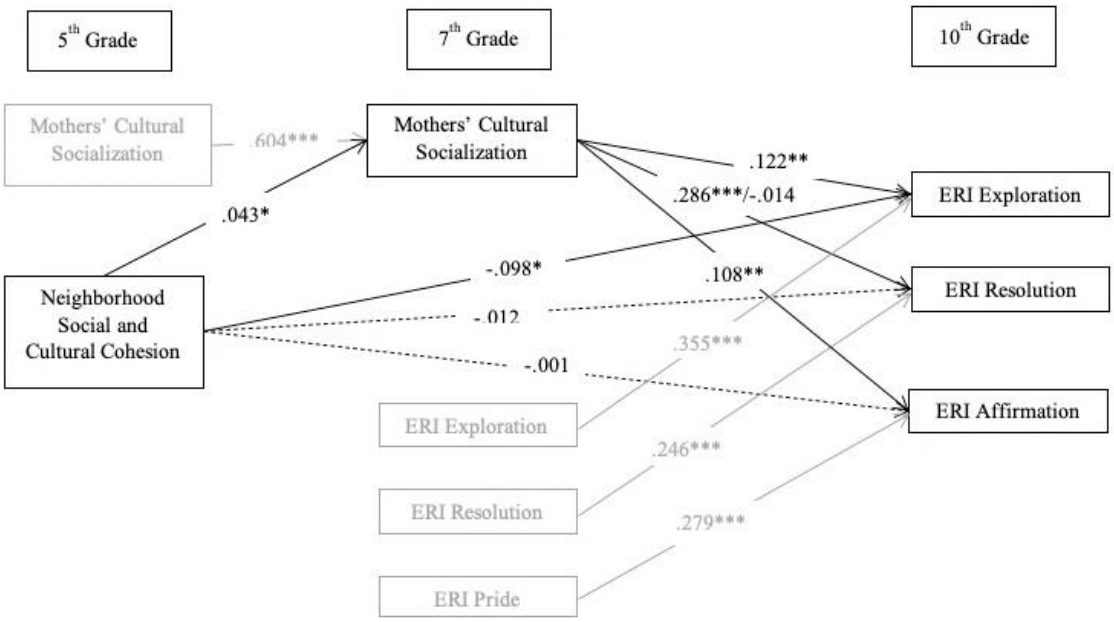


Figure 2. Test of hypothesized model for the association between 5th grade neighborhood social and cultural cohesion and 10th grade ethnic-racial identity via 7th grade mothers' cultural socialization (*N*=749). ERI = Ethnic-Racial Identity. Solid lines represent significant paths ($p < .05$) and dotted lines represent non-significant paths. Covariates are in grey. The value before the slash (/) is the estimate for U.S.-born mothers and the value after the slash (/) is the estimate for Mexico-born mothers. Unstandardized coefficients reported. Model fit: $x_2(34) = 78.288$, $p<.01$; CFI = .969; TLI = .934; RMSEA= .059; SRMR = 0.075. *$p<.05$, **$p<.01$, ***$p<.001$

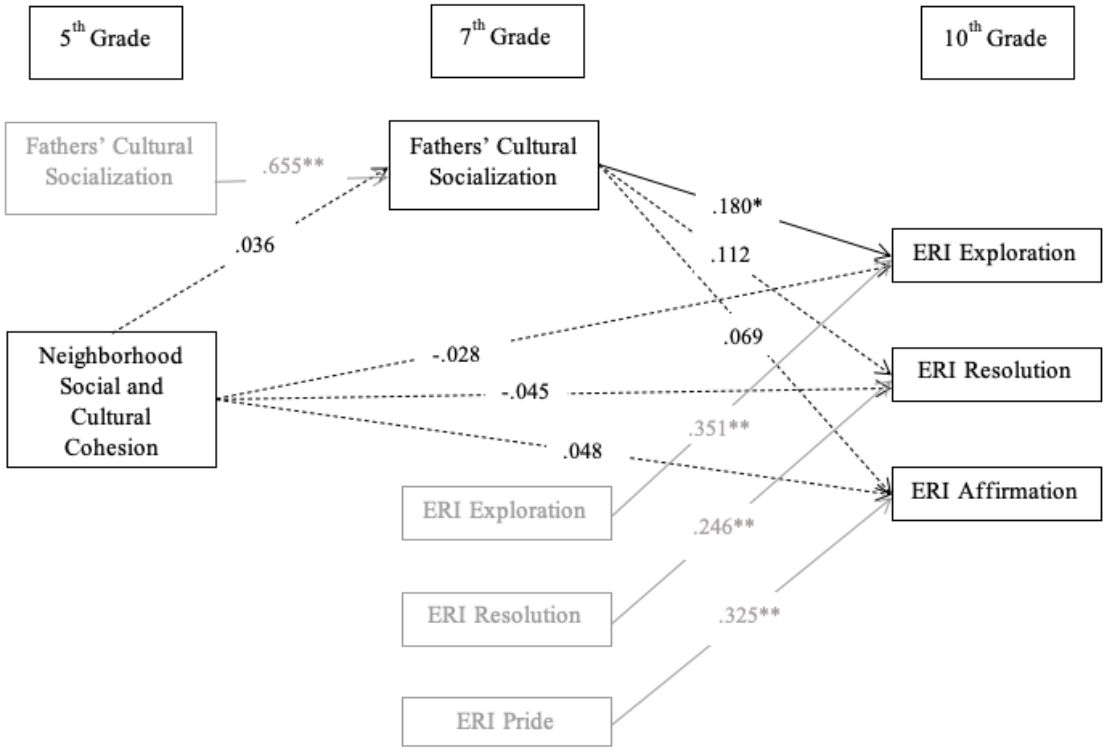


Figure 3. Test of hypothesized model for the association between 5th grade neighborhood social and cultural cohesion and 10th grade ethnic-racial identity via 7th grade fathers' cultural socialization (n=579). ERI = Ethnic-Racial Identity. Solid lines represent significant paths (p< .05) and dotted lines represent non-significant paths. Covariates are in grey. Unstandardized coefficients are reported. Model fit: $x_2(12) = 47.272$, p<.01; CFI = .966; TLI = .897; RMSEA= .071; SRMR = 0.063. *p<.05, **p<.01, ***p<.001

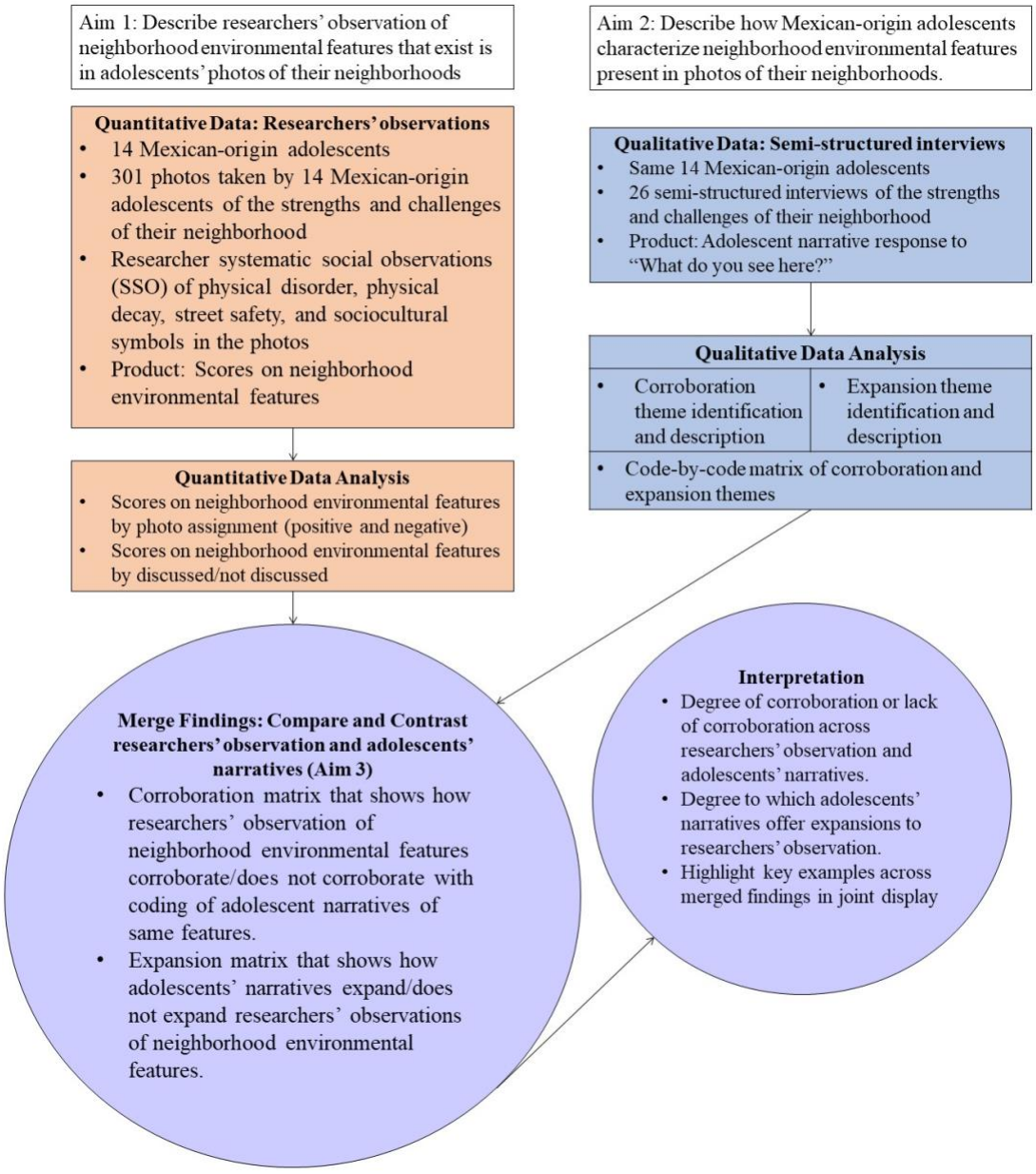


Figure 4. Diagram of a convergent complementary mixed methods design of researchers' observation and adolescents' narratives of neighborhood environmental features in concentrated Latino neighborhoods.

APPENDIX B

CORROBORATION CODEBOOK

Corroboration Codebook

Instructions: The confirmation codebook codes adolescent narratives for neighborhood environmental features that are intentionally matched to the features assessed in researchers' systematic social observations. For the purposes of Michelle's Dissertation project, we have selected all adolescent text that is in response to Question 1, "What do you see here?" We will be coding at the level of the response. Only code themes based on participants' narrative (e.g., P10), not interviewer (e.g., I03). For example, if the interviewer mentions trash in public areas but the participant does not describe anything about trash in public areas, then a theme should not be applied. However, you may use interviewer text to provide context cues to adolescents' responses.

Theme	Physical Disorder	
Pneumonic	PDS	
Detailed description	Physical disorder includes visible cues indicating a lack of order, uncertainty, and neighborhood problems. Signs of physical disorder include activities and circumstances in which norms are violated and/or criminal activities without specific victims (Ross & Mirowsky, 1999)	

Includes	• Mention of:
	  ○ Garbage or litter or broken glass or clothes or papers on the street, sidewalk, or public space
	  ○ Graffiti or tagging in public areas, or mention that graffiti has been painted over
	  ○ Boarded up or abandoned or burned out houses, businesses, buildings, or cars
	  ○ Abandoned cars, cars with broken windows, and/or run down cars
	  ○ Faded or vandalized signs or signs that cannot be read due to be vandalized	

Does not include	• Any mention of the condition of the streets, residential units, commercial buildings, or vacant lots (coded as Physical Decay) • Poor, deteriorated buildings, residential units, buildings or cars (coded as Physical Decay) • Unkempt sidewalks, front yards, community storefronts (coded as Physical Decay)	
	Present (Code Weight = 1)	Absent (Code Weight = 0)
Typical Examples	• "Oh well that's where they throw the trash and they don't like just go like go take it somewhere else" • "I see. Trash, and glass. Like, like alcohol glass"	• It's really nice over there, it's green and not a lot of trash
Atypical Examples	• "They might see it as just a tear-down" • "People never clean up there" • "There's two areas that are just empty right by each other"	•

	• There's a lot of stuff outside in that area and no one picks it up	
Close but no	• "so that's why like all the leaves are there and it's like not raked or anything so yeah" (coded as Physical Decay)	

Theme	Physical Decay	
Pneumonic	PDE	
Detailed description	Physical decay includes the condition, and particularly the level of deterioration, of the physical environment in the neighborhood at the institutional (e.g., sidewalks) or private (e.g., residential units) level (Ross & Mirowsky, 1999).	
Includes	• Mention of : o Cracks, potholes, or broken curbs on some, most, or all of the street o Holes, cracks, crumbling or uneven pavement, or outgrown weeds along some, most or all of the sidewalk o Any residential units where front driveways/porches/balconies are poorly kept or cluttered with personal effects o Poor or deteriorated condition of residential units, residential front yards, business/commercial buildings, social service/recreational facilities, or vacant lots in poor or badly deteriorated condition	
Does not include	• Abandoned or burned out buildings or houses (coded as Physical Disorder) • Faded or vandalized signs or signs that cannot be read due to be vandalized (coded as Physical Disorder) • Garbage, broken glass, or graffiti (coded as Physical Disorder) • Personal effects and furniture in alley ways (coded as Physical Disorder because alley ways are used for trash)	
	Present (Code Weight = 1)	Absent (Code Weight = 0)
Typical Examples	• "That's why like all the leaves are there and it's not like raked or anything" • "It's really dusty it's old" • The sidewalk has a lot of cracks so it's hard to ride your bike.	• Maintenance, investment, or upkeep of physical environment at the institutional or private level. • The houses in that neighborhood look nice, each house has plants and flowers. • "I see painter painting my middle school that I used to go to"
Atypical Examples	• "I took the picture of the tree how it's kind of misshapen and like deformed" (because the tree was in front of a house and had not been cleared up after a storm)	

Close but no	• "People never clean up there" (coded as Physical Disorder)
	• Mention of an empty field, lot, space without positive or negative reference to quality or other aspects of decay or disorder like glass, weeds, good/poor maintenance, etc.
	• Reference to "dirt" alone and without reference to disorder or decay; the condition is unknown without co-occurrence of aspects disorder or decay
	• Mention of conditions or quality of indoor facilities
	  o "You know the indoor gym you know brand new bleachers like everything's just like brand new and stuff"
	  o "You could still hear the little machine cleaning it [pool] but there's not one there to open the door"

Theme	Street Safety	
Pneumonic	STS	
Detailed description	Street safety includes visible signs, measures, and objects that protect residents to navigate their neighborhood	

Includes	• Mention of :
	  o Traffic calming measures
	  o Speed or vehicle limiting signs
	  o Speed notices
	  o Speed humps with speed signs
	  o Speed reducing humps
	  o Signs controlling/limiting traffic (i.e., no trucks allowed, right turn only, no parking)
	  o Crosswalks or signs signaling to watch for pedestrians (i.e., school crossing, blind pedestrians)
	  o Bike lanes (sign or painted markers)
	  o Stop signs or stop lights present
	  o Outdoor lighting illumination
	  o Sidewalks	

Does not include	• Advertisement signs • Lights inside business or commercial buildings • Trains or railroads • Bus stops	
	Present (Code Weight = 1)	Absent (Code Weight = 0)
Typical Examples	• "I really wanted to show would be more like the sidewalk and the uh cement"	• It's hard to cross the street since there isn't a light there
Atypical Examples	• "Um right there are the light posts, right there in, in the apartments are the light posts and, and the, the cables um when there is something like a storm or something they resist, they don't fall down or something bad happens."	• Mentioning not being able to see at night or because it is dark • "It's like you know it's dark, you can't see anything, and this was around like 6:30 I think"

		• It gets really dark at night because there aren't really any lights on the streets
Close but no	• "little kids are standing at is like a bus stop and they're waiting for the bus to get there in like the mornings"	

Theme	Sociocultural Symbols	
Pneumonic	SCS	
Detailed description	Culturally-relevant Latino symbols and resources that cater to the needs and preferences of the in-group (García Coll et al., 1996; Leventhal et al., 2009; Yoshikawa, 2011)	
Includes	• Mention of: o Latino flags, Latino murals, Latino statues o Signs in Spanish o Latino markets, restaurants, bakeries, bars, businesses o Immigrant services o Latino religious affiliation (e.g., churches, Virgin de Guadalupe, crosses or crucifixes o Mexican business services (e.g., stores where you can purchase and/or send items in/to Mexico) o Community centers with Latino affiliation (*consult with MCP to identify community center) o Crosses or Crucifixes (because Catholicism is a central part of Latino culture)	
Does not include	• American flags • Box stores (e.g., Target, Walmart) • Parks	
	Present (Code Weight = 1)	Absent (Code Weight = 0)
Typical Examples	• "It's at the Mercado just right there" • "That photo's like showing a Mexican sombrero and then like these big hands and um the color and that guy and yeah." • "it's a mural… and like, stone carvings" (because these are Mexican/Aztec stone carvings/cultural insider)	• I feel like there are not a lot of Mexican restaurants around here and no one really speaks Spanish.
Atypical Examples	• Mention of neighborhoods being predominantly Latino • "It's a mural on the side of the building"	• There's not a lot of churches that offer bilingual services
Close but no	• Mention of churches, music, or art with no Latino affiliation • Mention of a community center with no Latino affiliation	

APPENDIX C

EXPANSION CODEBOOK

B. Expansion Codebook

Instructions: The expansion codebook codes adolescent narratives using the themes below that were developed through inductive and deductive theme identification strategies. For the purposes of Michelle's Dissertation project, we have selected all adolescent text that is in response to Question 1, "What do you see here?" We will be coding at the level of the response. Only code themes based on participants' narrative (e.g., P10), not interviewer (e.g., I03). However, you may use interviewer text to provide context cues to adolescents' responses. Code the excerpts for the following themes in this codebook.

Theme	Negative valence and valuation
Pneumonic	NV
Detailed description	Adolescents' description of the photo adds negative valence, meaning, or significance to the description of the photo. Adolescents describes negative emotions or feelings with the description of the photo. Adolescents may describe a negative event in relation to the photo. They may describe negative experiences when describing the photo.

Includes	• Mention of negative feelings including:
	  o Unwelcoming
	  o Unsafe
	  o Scary
	  o Sad
	  o Unhappy
	  o Lonely
	• Negative experiences associated with the description of the photo.
	• Negative meaning based on the description of the photo.

Does not include	• Mention of positive feelings including welcoming, safe, or happy.
	• Mention of the presence physical disorder
	  o Garbage or litter or broken glass or clothes or papers on the street, sidewalk, or public space
	  o Graffiti or tagging in public areas, or mention that graffiti has been painted over
	  o Boarded up or abandoned or burned out houses, businesses, buildings, or cars
	  o Abandoned cars, cars with broken windows, and/or run down cars
	  o Faded or vandalized signs or signs that cannot be read due to be vandalized
	• Mention of the presence of physical decay
	  o Cracks, potholes, or broken curbs on some, most, or all of the street
	  o Holes, cracks, crumbling or uneven pavement, or outgrown weeds along some, most or all of the sidewalk
	  o Any residential units where front driveways/porches/balconies are poorly kept or cluttered with personal effects

Typical Examples	• "That area just doesn't make me feel welcomed here"

	• "Telling me to go away and we don't want you here, or what you say matters" • "I see a big, **ugly** field that has a **boring**, **sad** looking field" o (bolded to emphasize the descriptive words is what is being coded as NV) • "It's unsafe for them" • "It shows bad on our neighborhood" • "But really makes me unhappy about it cuz it looks like it was really fun at its time and now it's just sitting there • "I don't think it looks nice. I don't like the way it looks"
Atypical Examples	• Feeling sad that neighbor was in the hospital who was shot from a drive by shooting in the neighborhood, then that would be an atypical example • "I was actually holding the camera when I was scared"
Close but no	• Feeling sad because neighbor is in the hospital due to illness

Theme	Positive valence and valuation
Pneumonic	PV
Detailed description	Adolescents' description of the photo adds positive valence, meaning, or significance to the description of the photo. Adolescents describes positive emotions or feelings with the description of the photo. Adolescents may describe a positive event in relation to the photo. They may describe positive experiences when describing the photo.

Includes	• Mention of positive feelings including:
	  o Welcomed
	  o Happy
	  o Safe
	• Helpful
	• Attractive, beauty/beautiful
	• Affection or positive memories towards a place
	• Family nostalgia
	• Neighbors as family

Does not include	• Mention of negative feelings including unwelcoming, unsafe, scary
	• Mention of the *lack or absence* of physical disorder
	  o Garbage or litter or broken glass or clothes or papers on the street, sidewalk, or public space
	  o Graffiti or tagging in public areas, or mention that graffiti has been painted over
	  o Boarded up or abandoned or burned out houses, businesses, buildings, or cars
	  o Abandoned cars, cars with broken windows, and/or run down cars
	  o Faded or vandalized signs or signs that cannot be read due to be vandalized
	• Mention of the *lack or absence* of physical decay

	○ Cracks, potholes, or broken curbs on some, most, or all of the street ○ Holes, cracks, crumbling or uneven pavement, or outgrown weeds along some, most or all of the sidewalk ○ Any residential units where front driveways/porches/balconies are poorly kept or cluttered with personal effects
Typical Examples	• "They're very welcoming with you" • "Free, nice, happy" • "This is the church my parents got married" • "It just makes me happy, you know, just like cruising around and stuff" • "I really like how it looks like and it looks really nice" • "I think it's like a really good blessing to just even have it" [community center]
Atypical Examples	• "They're like second grandparents to me, since my family does live here, they're kind of like grandparents to me in way?" • "It's really dusty it's old but it looks really fun" • "That's a good place to take pictures" • "I ended up liking it" (referring to community center) • "There's a picture of hands, students, **beautiful** paint and **beautiful** art" • "Free of choice, you choose what you want, freedom of religion in the constitution. You have the right to choose what you want. They're [school] are willing enough to let the children walk outta this [school] gate to the church where the little ice cream women will be and that those [church] would be open if the kids wanna come in"
Close but no	

Theme	Social & institutional resources*
Pneumonic	SIR
Detailed description	Adolescents' description of presence or absence of social and/or institutional resources.
Includes	• Churches (not specified or affiliated as Latino) • Parks • Pools • Schools • Library • Athletic field • Gymnasium • Bus stops • Town Hall • Hospitals or clinics • Non-Latino Community centers or organizations * (check in with Michelle to see the name of the community center)

	• Non-Latino murals, art • Informal social control: neighbors work together to supervise the behavior of youth, willingness of neighbors to intervene for the common good of the neighborhood and to keep youth out of trouble, confronting those who are exploiting or disturbing public space	

Does not include	• Signs of social disorder
	  ○ Violence, drugs, homelessness
	• Mention of street safety measures
	  ○ Traffic calming measures
	  ○ Speed or vehicle limiting signs
	  ○ Speed notices
	  ○ Speed humps with speed signs
	  ○ Speed reducing humps
	  ○ Signs controlling/limiting traffic (i.e., no trucks allowed, right turn only, no parking)
	  ○ Crosswalks or signs signaling to watch for pedestrians (i.e., school crossing, blind pedestrians)
	  ○ Bike lanes (sign or painted markers)
	  ○ Stop signs or stop lights present
	  ○ Outdoor lighting illumination
	  ○ Sidewalks
	• Mention of sociocultural symbols
	  ○ Latino flags, Latino murals, Latino statues
	  ○ Signs in Spanish
	  ○ Latino markets, restaurants, bakeries, bars, businesses
	  ○ Immigrant services
	  ○ Latino religious affiliation (e.g., churches, Virgin de Guadalupe, crosses or crucifixes
	  ○ Mexican business services (e.g., stores where you can purchase and/or send items in/to Mexico)
	  ○ Community centers with Latino affiliation \
	  ○ Crosses or Crucifixes (because Catholicism is a central part of Latino culture)
	• Mention of someone being hospitalized	

	Present	Absent

Typical Examples	• There is a park at the end of the street. • Neighbors looking out for one another	• There are no parks around, I have to go to the next city for a pool • "Someone could easily get kidnapped here cuz **there's like no one outside their houses really**" (The bolded text suggests a lack of informal social control)
Atypical Examples	• "Light posts and cables don't fall so bad things don't happen" (The part of that is coded as SIR is that there care cables present and do not fall on the nearby area)	• "I wish they had playground there like a nice somewhere so they could kinda hang out and you could kinda like see what you're doing too…"
Close but no		• The following is a close no but no for the absence of SIR because murals/paintings already exist and have been coded and the adolescent is expressing wanting more: "If there was more of that [murals, paintings] like in other spots where you could actually pass by it and things like that, you know it would be really nice'

Theme	Theme Name	Theme Weighting	Description
1	SIR	1	The text coded with the SIR theme involves the adolescents' description of the presence of social and/or institutional resources.
		0	The text coded with the SIR theme involves the adolescents' description of the absence of social and/or institutional resources.

Theme	Heat Resources*
Pneumonic	EER
Detailed description	Adolescents' description of the presence or absence of environmental resources in the context of arid desert climate

Includes	• Arid city resources
	• Mention of shade
	  ○ Bus stops with shade
	  ○ Covers
	  ○ Shelters

	• Trees • Green space • Access to drinking water (e.g. water fountains) • Bodies of water (e.g., canals, ponds, lakes) • Access to air conditioning	
Does not include	• Institutional or social or cultural resources • Churches • Parks • Pools • Schools • Athletic field • Gymnasium • Bus stops • Latino and Non-Latino Community centers or organizations • Latino and Non-Latino murals • Informal social control	
	Present	Absent
Typical Examples	• "I see grass, nice grass" • " I see apartments and rocks, and a **plant** and **trees**" (bolded words are being coded for EER)	• "I don't really wanna look at and just barely any shade there for, for people"
Atypical Examples	•	•
Close but no	• "I see people treating it like an animal but I think dogs can be very therapeutic and they should be treated more than just being chained up to a tree." (The adolescents' description is not referring to a tree being present or absent)	

Theme	Neighborhood Risks
Pneumonic	NR
Detailed description	Adolescents' description of photos that includes social factors that are inhibiting for adolescent development.

Includes	• Signs of social disorder
	  ○ Public intoxication, selling illegal drugs, public drug or alcohol use, harassment, gangs, gang fights in the streets
	  ○ Homeless people when they are described in the context of risk, not in the context of wanting better resources or infrastructure for homeless people
	• Mention of crime towards a victim or concerned of crime happening towards a victim
	• Stray animals
	• Shootings
	• Robberies
	• Extreme neighborhood problems

Does not include	• Institutional or cultural resources

	• Street safety measures
	• Informal social control
	• Mention of the presence physical disorder
	  o Garbage or litter or broken glass or clothes or papers on the street, sidewalk, or public space
	  o Graffiti or tagging in public areas, or mention that graffiti has been painted over
	  o Boarded up or abandoned or burned out houses, businesses, buildings, or cars
	  o Abandoned cars, cars with broken windows, and/or run down cars
	  o Faded or vandalized signs or signs that cannot be read due to be vandalized
	• Mention of the presence of physical decay
	  o Cracks, potholes, or broken curbs on some, most, or all of the street
	  o Holes, cracks, crumbling or uneven pavement, or outgrown weeds along some, most or all of the sidewalk
	  o Any residential units where front driveways/porches/balconies are poorly kept or cluttered with personal effects
	  o Poor or deteriorated condition of residential units, residential front yards, business/commercial buildings, social service/recreational facilities, or vacant lots in poor or badly deteriorated condition

Typical Examples	• "The homeless, or the street, the gangsters" • "It's three different gang signs" • "They (gangs) fight in the street" • "Someone could easily probably get kidnapped here"
Atypical Examples	• Pit bulls and describing animals as "vicious" o "there's so many stray dogs roaming around and they could be vicious" • Police shooting dogs in the street • Seeing blood in public areas (e.g., streets) • Specified underage cigarette smoking (if age not specified, do not include) • "My mom took me here um she drove me here and it's like right down the street. umm and like the it's funny cuz like her and her friends, uh they called it =location= that you know where that picture is and um they would used to get drunk and just you know just do dumb stuff" (public intoxication is still NR even though it co-occurs with a positive memory/experience)
Close but no	• "There's a homeless person right there, and he doesn't have really a good place" (not coded as NR because respondent is problematizing the lack of resources for homeless person, not as an aspect of risk in the neighborhood) • "It's like a main, not a main main street, but like a lot of cars go by there and they go by fast" (this is coded as Street Safety in Confirmation Codebook)

	• "Here is someone who got pulled over by the sheriff" (close but no because no specified victim)
	• Mention of the lack of street safety
	  o Traffic calming measures
	  o Speed or vehicle limiting signs
	  o Speed notices
	  o Speed humps with speed signs
	  o Speed reducing humps
	  o Signs controlling/limiting traffic (i.e., no trucks allowed, right turn only, no parking)
	  o Crosswalks or signs signaling to watch for pedestrians (i.e., school crossing, blind pedestrians)
	  o Bike lanes (sign or painted markers)
	  o Stop signs or stop lights present
	  o Outdoor lighting illumination
	  o Sidewalks
	• Mention of smoking cigarettes (unless specified that youth were underage)

Theme	Avoiding Neighborhood Risks
Pneumonic	ANR
Detailed description	Adolescents' description of strategies or actions to reduce exposure to risks in the neighborhood
Includes	• Avoiding places or situations because of gangs, violence, or not feeling safe • Staying in places that are familiar and safe • Strategizing routes to avoid risky or unsafe places or situations • Avoiding law enforcement (e.g., sheriff)
Does not include	• Institutions or physical features of risks o Presence of gangs, graffiti, violence
Typical Examples	• " I don't wanna go to that little awenet (awning) thing" • "I've always backed away from, cuz, I dunno, a lot of history of my family bout dogs being – attacking 'em."
Atypical Examples	• "I just stayed inside" • "I'm not sure but I was coming from school and they were just fighting like in the street and I just went home" • "I didn't stay long enough to actually figure out what was happening but I just wanted to take a picture and leave, cuz I didn't wanna take a picture of anything that had someone that's just what I did
Close but no	• "I have never really like seen gang members cuz I'm not like part of that" (cannot determine if this was a conscious effort to avoid gangs) • "They (gangs) fight in the street" (Coded as Neighborhood Risks)