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Place Based Developmental Research: Conceptual and Methodological Advances in Studying Youth Development in Context

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Abstract

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It is important to distinguish real culture from ideal culture. The ideal culture represents values that are espoused by a society or a group. The real culture refers to the culture that is actually practiced and evident in behaviors, artifacts, symbolic interactions, and underlying assumptions (Naylor & Naylor, 1997).

Scientists have, for some time, recognized that development unfolds in numerous settings, including families, schools, neighborhoods, and organized and unorganized activity settings. Since the turn of the 20th century, the body of mainstream neighborhood effects scholarship draws heavily from the early 20th century Chicago School of Sociology frameworks (Abbott, 1999) and have been situating development in neighborhood contexts and working to identify the structures and processes via which neighborhoods matter for a range of developmental outcomes, especially achievement, behavioral and emotional problems, and sexual activity. From this body of work, two new areas of developmental scholarship are emerging. Both areas are promising for advancing an understanding of child development in context. First, cultural-developmental neighborhood researchers are advancing neighborhood effects research that explicitly recognizes the ways that racial, ethnic, cultural, and immigrant social positions matter for neighborhood environments and for youths' developmental demands, affordances, experiences, and competencies. This body of work substantially expands the range of developmental outcomes examined in neighborhood effects scholarship to recognize normative physical, emotional, cognitive, behavioral, social, and cultural competencies that have largely been overlooked in neighborhood effects scholarship that espoused a more color-blind developmental approach. Second, activity space neighborhood researchers are recognizing that residential neighborhoods have important implications for broader activity spaces –or the set of locations and settings to which youth are regularly exposed, including, for example, schools, work, organized activities, and hang-outs. They are using newer technologies and geographic frameworks to assess exposure to residential neighborhood and extra-neighborhood environments. These perspectives recognize that time (i.e., from microtime to mesotime) and place are critically bound and that exposures can be operationalized at numerous levels of the ecological system (i.e., from microsystems to macrosystems). These frameworks address important limitations of prior development in context scholarship by addressing selection and exposure. Addressing selection involves recognizing that families have some degree of choice when selecting into settings and variables that predict families' choices (e.g., income) also predict development. Considering exposure involves recognizing that different participants or residents experience different amounts of shared and non-shared exposures, resulting in both under-and over-estimation of contextual effects. Activity space scholars incorporate exposure to the residential neighborhood environments, but also to other locations and settings to which youth are regularly exposed, like schools, after-school settings, work, and hang-outs. Unfortunately, the cultural-development and activity space streams, which have both emerged from early 20th century work on neighborhood effects on development, have been advancing largely independently. Thus, the overarching aim of this monograph is to integrate scholarship on residential neighborhoods, **cultural development**, and activity spaces to advance a framework that can support a better understanding of development in context for diverse groups. In Chapters I - II we present the historical context of the three streams of theoretical, conceptual, and methodological research. We also advance a comprehensive cultural-developmental activity space framework for studying development in context among children, youth, and families that are ethnically, racially, and culturally heterogeneous. This framework actively recognized diversity in ethnic, racial, immigrant, and socioeconomic social positions. In Chapters III – V we advance specific features of the framework, focusing on: (1) the different levels of nested and non-nested ecological systems that can be captured and operationalized with activity space methods, (2) the different dimensions of time and exposures or experiences that can be captured and operationalized by activity space methods, and (3) the importance of settings structures and social processes

for identifying underlying mechanisms of contextual effects on development. Structures are setting features related to the composition and spatial arrangement of people and institutions (e.g., socioeconomic disadvantage, ethnic/racial compositions). Social processes represent the collective social dynamics that that take place in settings, like social interactions, group activities, experiences with local institutions, mechanisms of social control, or shared beliefs. In Chapter VI, we highlight a range of methodological and empirical exemplars from the U.S. that are informed by our comprehensive cultural-developmental activity space framework. These exemplars feature both quantitative and qualitative methods, including method mixing. These exemplars feature both quantitative and qualitative methods, including method mixing. The exemplars also highlight the application of the framework across four different samples from populations that vary in terms of race, ethnicity, gender, age, socioeconomic status, geographic region, and urbanicity. They capture activity space characteristics and features in a variety of ways, in addition to incorporating family shared and non-shared activity space exposures. Finally, in Chapter VII we summarize the contributions of the framework for advancing a more comprehensive science of development in context, one that better realizes major developmental theories emphasizing persons, processes, contexts, and time. Additionally, we offer a place-based, culturally informed developmental research agenda to meet the needs of an increasingly diverse population.

Chapter I. Place-based Developmental Research: Conceptual, Methodological, and Empirical Advances in the Study of Development in Context

Developmental scientists have, for some time, recognized that development unfolds in numerous **settings**, such as schools, extracurricular activities, **hang-outs** (i.e., **places** individuals may engage for recreation and pleasure, often unstructured environments), and residential neighborhoods. Indeed, Bronfenbrenner's Process, Person, Context, Time (PPCT) model of human development, one of the more commonly used developmental theories for studying development in context, recognizes that contextual exposures (e.g., in neighborhoods) intersect with different aspects of person characteristics, social **processes**, and time to influence human development. Since the turn of the 20th century, neighborhood effects researchers have been situating development within neighborhood contexts and working to identify how neighborhoods matter for a range of developmental outcomes (see Leventhal & Brooks-Gunn, 2000; Leventhal, Dupéré, 2019; Leventhal et al., 2009 for reviews). More recently, Raj Chetty and colleagues distributed a series of highly publicized resources, including their *Opportunity Atlas*, which demonstrated long-term impacts of youths' residential neighborhoods on adult earnings (Chetty & Hendren, 2018; Chetty et al., 2016). These impacts have important implications for intergenerational mobility and persistent ethnic, racial, and socioeconomic inequality. Finally, improvements to neighborhoods, communities, and urban environments are central features of global initiatives and calls to action related to child health and well-being, including the Sustainable Development Goals adopted by the United Nations (in 2015 (United Nations, 2023), the UNICEF Child Friendly Cities Initiatives (UNICEF, 2023), and the WHO-UNICEF-Lancet Commission on the future of the world's children (Clark et al., 2020). Thus, neighborhoods

have been and continue to be central to both advancing understanding of development in context and achieving global health and well-being.

Despite the progress in understanding development within neighborhood contexts, tensions exist. As a first example, selection, the idea that families have some degree of choice when selecting their neighborhoods, as well as variables that predict families' choices (e.g., family income), represents a major confound (Leventhal et al., 2009). Similar confounds exist with regards to selection as it relates to developmental contexts, such as schools, extracurricular settings, and hang-outs. Historically, neighborhood researchers have dealt with the selection confound by controlling for key family characteristics (Sampson & Sharkey, 2008) or by relying on experimental or quasi-experimental residential mobility programs (Goering & Feins, 2003; Rubinowitz & Rosenbaum, 2000). Both approaches have drawbacks (Sharkey, 2013). As a second example, many development in context research designs assume that residents in neighborhoods or participants in other settings experience equivalent exposures to their environments (Browning & Soller, 2014; Kwan, 2009, 2012; Kwan et al., 2019), resulting in both the over- and under-estimation of **neighborhood effects** on development (Basta et al., 2010; Spielman & Yoo, 2009). As a third example, a large portion of neighborhood effects scholarship – indeed scholarship on development in context in general – displays developmental color blindness. Although neighborhood researchers have historically recognized that race, ethnicity, and culture matter for neighborhood environments (Sampson et al., 1997), the body of neighborhood effects scholarship has ignored how these determinants affect individual developmental demands, affordances, exposures, experiences, and outcomes (Jackson et al., 2016). The objective of this monograph is to integrate mainstream neighborhood effects frameworks with cultural-developmental and **activity space** frameworks to support research capable of advancing a better understanding of development in context. To this end, the goals of this monograph include: (1) incorporating relevant information about racial, ethnic, and cultural social positions and (2) recognizing that individuals living in the same residential neighborhoods have differential exposures and experiences within neighborhoods as well as in the extra-neighborhood places that they visit (Aber & Nieto, 2000).

To advance a more comprehensive understanding of development in context, we capitalize on the following: (1) the rich theoretical and empirical traditions of mainstream neighborhood effects scholarship (Browning et al., 2008; Leventhal et al., 2015; Sampson et al., 2002); (2) emerging cultural-developmental neighborhood effects scholarship actively addressing the roles of individual social positions (e.g., White, Knight, et al., 2018; Witherspoon, Kim, et al., 2016); and (3) activity space scholarship addressing issues related to exposures and experiences across places, including (but not limited to) the residential neighborhood. Although both cultural-developmental (White, Knight, et al., 2018; Witherspoon, Kim, et al., 2016) and activity space (Browning & Soller, 2014; Kwan, 2009; Matthews & Yang, 2013) perspectives draw from mainstream neighborhood effects scholarship, these two streams have remained largely compartmentalized from one another (Cf., Witherspoon, 2016; Witherspoon, Seaton, & Rivas-Drake, 2016). A framework that unites scholarship from mainstream neighborhood effects, cultural-developmental, and activity space perspectives can support more advanced theorizing. Furthermore, this

framework may be used in conjunction with the development of tools that can be used to test hypotheses that address the roles of race, ethnicity, and culture both in settings or places and for development in diverse populations. See Table 1 for a glossary of terms; bolded terms appear in the glossary.

Mainstream Neighborhood Effects Scholarship

The body of mainstream neighborhood effects scholarship draws heavily from early 20th century Chicago School of Sociology frameworks (Abbott, 1999) that have continued to guide scientists' understandings of developmental changes in context (Browning et al., 2008; Park & Burgess, 1925; Sampson et al., 2002; Shaw & McKay, 1942; Wilson, 1987). Several major themes have emerged from this work. As a first theme, neighborhood structural characteristics – features related to the composition and spatial arrangement of neighborhood residents and institutions (e.g., socioeconomic disadvantage, ethnic/racial compositions, and residential instability) – can function to promote or constrain the types of social processes (e.g., social interactions, neighboring activities, experiences with local institutions, informal social control, social cohesion, **collective efficacy**) that take place in neighborhoods (Sampson et al., 1997). These processes in turn influence development (Leventhal & Brooks-Gunn, 2000). Moreover, prominent neighborhood effects frameworks propose that relevant social processes exist at multiple levels of ecological systems: at the levels of neighborhoods, institutions, social networks, families, and individuals (Browning & Soller, 2014; Sampson, 2012; Sharkey et al., 2012). As a second theme, both neighborhood structural characteristics and social processes can work to qualify the effect of family or other contextual (e.g., school) factors on development (Kirk, 2009; Noah, 2015). As a third theme, evidence from meta-analytic studies generally estimate that neighborhoods have a small, significant effect on a range of outcomes germane to the developmental sciences, from birth to death (Meijer et al., 2012; Metcalfe et al., 2011; Richardson et al., 2015).

Prior mainstream neighborhood effects research has linked a variety of neighborhood characteristics as well as structures and processes with youth outcomes across samples that are diverse on race and ethnicity. For example, the presence of elements of physical disorder (e.g., abandoned buildings, graffiti) is related to higher rates of social aggression in boys and social withdrawal in girls (Caughy et al., 2012). The density of alcohol and tobacco retailors in residential neighborhoods has been linked to higher rates of alcohol use in adolescents (Shih et al., 2015) as well as earlier initiation of tobacco use among adolescents (Abdel Magid et al., 2020). High rates of neighborhood crime and violence are associated with detriments in adolescents' psychological functioning (Daviera, 2019). Neighborhood opportunities for physical activity (e.g., access to parks or green spaces) are related to children's engagement in physical activity (Laxer & Janssen, 2013; Nordbø et al., 2019). Although these findings are consistent, all of these studies used static measures of neighborhood characteristics – either self-reports or **objective** counts of the presence of the characteristics within a fixed spatial area (e.g., a census tract or block group). Given that this strategy does not consider that individuals spend different amounts of time within their residential neighborhoods and experience differing extra-neighborhood exposures across development, estimations of neighborhood effects are likely to be imprecise either through over-estimation (i.e., for individuals who spend limited time in their residential

neighborhoods) or under-estimation (i.e., for individuals who spend substantial time in their residential neighborhood).

Cultural-Developmental Neighborhood Effects Scholarship

Social disorganization perspectives recognize that neighborhood-level racial, ethnic, and cultural characteristics (e.g., % Latinx, %Black) as well as socioeconomic and residential mobility characteristics differentiate neighborhood environments. However, scholars must draw on cultural-developmental theory to recognize that an individual's own racial, ethnic, and cultural social positions can differentiate families and youth (García Coll et al., 1996; Spencer, 1995, 2008). To this end, cultural-developmental researchers are advancing neighborhood effects scholarship that explicitly recognizes the ways that race, ethnicity, and culture matter for neighborhood environments in addition to the ways that race, ethnicity, and culture matter for youths' own developmental **demands**, affordances, experiences, and competencies. In particular, and as it related to individual development, Causadias (2013) asserts that cultural development involves "change and continuity in individual-level cultural processes" (p. 1375). Though salient aspects of cultural development change across the lifespan, common manifestations involve change and continuity in, for example, racial-ethnic self-concepts and identities, exposure to racial-ethnic discrimination, cultural orientations, and bicultural competencies. The bulk of cultural-developmental neighborhood effects scholarship has focused on Latino/a/x/é (hereafter Latinx) and African American families (hereafter Black) and youth (see Pasco et al., 2021 for a comprehensive review). This work seeks to de-compartmentalize neighborhood effects developmental scholarship from the body of cultural-developmental scholarship that includes a specific focus on ethnic and racial minoritized group members (see White et al., 2021 for a comprehensive review of this work).

Although cultural-developmental advances are critical to developing a more accurate understanding of diverse groups' development within the context of broader patterns of racial-ethnic stratification in the U.S. and to understanding groups' adaptations to such macro-contextual forces (White, Nair, & Bradley, 2018), there are major limitations. First, this body of work tends to rely upon design elements that are relatively weak in regard to the selection confound. Furthermore, commonly employed research methods and designs are ones that assume equal exposures to neighborhood environments among all residents and ignore extra-neighborhood exposures where children, youth, and families may encounter a different range of developmental affordances and demands that have important implications for development generally and cultural development specifically (Super & Harkness, 1986; Weisner, 2002). Exposure may be particularly critical for the development of minoritized children, youth, and families. Prior research suggests that parents in these families are accessing extra-neighborhood environments in an effort to ensure that their children can benefit from resources contained therein and are using a range of child management strategies to limit youths' exposures to negative factors in their residential neighborhoods (Jarrett, 1997).

Activity Space Research

In response to concerns regarding the issue of exposure within both mainstream and cultural-developmental neighborhood effects research, emerging literature has deployed the concept of activity space to capture potentially developmentally relevant places and settings more directly. Activity spaces capture the totality of everyday locations of routine activities. Several studies have developed theoretical frameworks and empirical strategies rooted in activity space approaches to conceptualizing and measuring context. The activity space concept affords new opportunities to investigate contextual effects on development. Like neighborhoods, activity spaces exhibit structural features, such as racial or socioeconomic compositions, as well as social processes such as network dynamics, racialized power structures, and shared (or fragmented) cultural orientations. Thus, the activity space framework provides an opportunity to examine development in context that advances beyond the residential neighborhood and focuses on experiences and exposures across places and settings that youth navigate on a daily basis.

Just as cultural-developmental perspectives for neighborhood effects research are partially grounded in social disorganization theory, emerging activity space perspectives are similarly rooted in social disorganization theory. Activity space researchers and theorists are concerned with both the structural characteristics and social processes of geographically defined units that are bound by individuals' routine patterns across time and space (Kwan, 2009). Kwan (2012) recognized an "uncertain geographic context problem" exists when relying solely on geo-coded home residential neighborhoods (p. 959). To ameliorate this problem, Kwan et al. (2019) attempted to minimize, though not eliminate, the potential causal effects flaw and varying exposure estimation by capturing the routine, daily locations that individuals traverse. Upon collecting location information for these routine, daily locations, a spatial area (i.e., activity space) is created that is unique for each individual which can then be precisely geocoded and characterized using the influential indicators identified by social disorganization theory. In addition, the social processes within these activity spaces may be similar or divergent, offering a wonderful opportunity to explore non-static social processes in **place-based** research (i.e., research that comprehensively considers where and when people perform their daily activities (Kwan, 2009), integrates information across these routine daily locations to characterize contextual and environmental experiences and exposures, and combines setting-specific developmental research and activity space scholarship) and link these incongruences in social processes to cognitive, socio-emotional, and behavioral development (Browning et al., 2015). To this end, activity space research seeks to better describe the place(s) to which children, youth and families are exposed, thereby providing more precise estimates of the place-based effects for development.

A major assumption underlying residential neighborhood effects research is that the neighborhood exerts its influence on children, youth, and families through individuals' *exposures* to the characteristics of those environments. However, scholars may be mis-specifying neighborhood effects models by not capturing the totality of exposures by focusing exclusively on an individual's residential neighborhood or by focusing exclusively on any particular setting (Kwan, 2012). Individuals spend a considerable amount of time outside of their residential neighborhoods (Browning, Calder, Ford, et al., 2017; Browning,

Calder, Soller, 2017a,c; Mason & Korpela, 2009; Matthews & Yang, 2013; Vallée et al., 2011; Witherspoon & Hughes, 2014). These places outside of a youth's broader activities spaces expose children, youth, and families to a host of factors that may affect their adjustment and health behaviors (Freisthler et al., 2016; 2015; Kwan, 2012; Matthews & Yang, 2013; Mavoa et al., 2019; Vallée et al., 2011).

Matthews and Yang (2013) introduced the term, *spatial polygamy* to propose that individuals traverse "multiple places in time and space" (p. 1063). Along these lines of spatial polygamy, individuals may cross many boundaries beyond their residential neighborhood and outside of their census tracts or block groups. Residential neighborhoods may be the anchor for children, youth, and families' activities, but they often branch out from this residential location to fulfill their many needs. Families go to different places for different reasons (Kwan, 1999). In these places outside of their residential location, children, youth, and families are exposed to different structural characteristics and social processes that may confer benefits or risks for development. Conceptualizing context as *activity space* affords researchers the opportunity to describe, operationalize, and quantify an area beyond (or possibly including) the residential neighborhood (Browning & Soller, 2014; Burton et al., 2011; Kwan, 2012, 2009; Matthews & Yang, 2013) that is likely to affect development. Furthermore, whereas neighborhood effects research has traditionally viewed the residential neighborhood as a static entity, this framework inherently incorporates time (Cf., White et al., 2014; White, Nair, et al., 2021; White, Witherspoon, et al., 2021). Theorizing place as activity space allows for a dynamic view of context, allowing for varying levels of exposure within and between persons that may differentially impact development.

Ongoing scholarship suggests that activity spaces and places within one's activity space are implicated in children, youth, and families' health (see Rainham et al., 2010; White, Witherspoon, et al., 2021 for a review). To date, research has revealed that activity space characteristics are associated with a host of physical and mental health outcomes (Chaix et al., 2013; Rainham et al., 2012; Vallée et al., 2010, 2011; Witten et al., 2008; Zenk et al., 2011), adolescent substance use (Browning & Soller, 2014; Byrnes, et al., 2015; Mason & Korpela, 2009), and parenting (Freisthler et al., 2016). Initial research of adult residents suggests that activity space characteristics (i.e., primarily size of the activity space) was associated with diminished health behaviors, such as failing to complete preventive cancer screenings (Vallée et al., 2010) and depressive symptoms (Vallée et al., 2011). Furthermore, Freisthler et al. (2016) showed that parents who had smaller activity spaces used more punitive parenting strategies.

The scholarship for adolescents' activity space is burgeoning within the field of substance use. Similar to residential neighborhood effects research, most of this scholarship has been colorblind. On average, the general trend suggests that youth's activity spaces and their residential neighborhoods are geographically distinct (Browning & Soller, 2014; Byrnes et al., 2015; Mason & Korpela, 2009; Zenk et al., 2011). Youth with activity spaces larger or riskier than their residential neighborhoods are exposed to more substance use (i.e., exposure to alcohol outlets), engage in greater substance use (e.g., drinking, marijuana, and tobacco use; Byrnes et al., 2015; Mason et al., 2016), and are exposed to more violence (Browning et al., 2017). These early findings suggest that activity spaces should have important

implications for other aspects of development, including cognitive, linguistic, social, and cultural domains. Furthermore, research incorporating an activity space perspective into exploration of contextual effects is mostly descriptive in nature (e.g., focusing on the size of an activity space) and does not explicitly explore the mechanisms by which these activity spaces matter for children, youth, and family development nor does it address the complex interactions between residential neighborhood, family characteristics, social positions, and activity space characteristics (Kestens et al., 2010).

Although a growing place-based literature moves beyond residential neighborhood to incorporate activity space theories and methods to better capture children, youth, and families' exposures and experiences, this approach is not without its limitations (Chun, et al., 2019; Kwan et al., 2019). Activity space methods have mostly been used by geographers and demographers and have rarely crossed disciplinary lines (Villanueva et al., 2016). Within these disciplines, the measurement of place is usually singular with either self-reports of one's activity locations or the use of geographical positioning systems (GPS) to track and log longitude and latitude coordinates of the spaces that individuals transverse (Chaix et al., 2013; Mavoa et al., 2011). With this information, researchers can link administrative data (e.g., census data) to an individual's activity space to characterize its structural elements. Although this method captures the spatial areas that a developing individual navigates, it is devoid of an individual's perceptions about the social dynamics and processes within that space or one's own experiences when engaged with that space. By incorporating GPS technology with ecological momentary assessment (EMA) deployed on smartphones, scientists can begin to complement the structural information gathered from archival sources with individuals' perceptions of place to better address how, why, and for whom places matters.

Although activity space perspectives are advancing beyond important selection confounds and exposure limitations of mainstream and cultural-developmental neighborhood effects research, this body of work fails to consider racial and ethnic social positions and how such social positions may influence: (1) the shape and size of youths' activity spaces (cf., Villanueva et al., 2012); (2) the degree of shared and unshared places within individuals' families (Witherspoon, 2016, 2017) and peers' activity spaces; and (3) the salience of types of activity space structures and processes (Cf., Mölenberg et al., 2019) for development among different ethnic, racial, and cultural groups.

A Cultural-Developmental Activity Space Framework for Studying Development in Context

Currently, cultural-developmental neighborhood researchers (Rivas-Drake & Witherspoon, 2013; White et al., 2012, 2013, 2014; White, Nair, & Bradley, 2018; Witherspoon & Hughes, 2014; Witherspoon, Seaton, & Rivas-Drake, 2016; Witherspoon, Kim, et al., 2016) and activity-space researchers (Browning & Soller, 2015; Kwan, 2009; Matthews & Yang, 2013; Olsen et al., 2022; Villanueva et al., 2013) are ushering in major advances to the body of neighborhood effects developmental scholarship that began at the Chicago School in the early 20th century. Examining development in context from the perspective of the activity space that is informed by relevant cultural-developmental perspectives recognizing the role of ethnicity, race, and culture in shaping places (Sampson et al., 1997) and

development (García Coll et al., 1996) can address limitations associated with earlier neighborhood and contextual research. For example, our cultural-developmental activity space framework considers exposure directly, a concept that occurs at the juncture of time, place (or context), and structure/process. That is, activity space perspectives incorporate considerations of exposure to various structures and processes in places within youth's activity spaces. It incorporates information about when and where exposures occur, how they vary across time and place, and how long exposure lasts. Additionally, the place and activity spaces structures and processes examined, as well as the developmental competencies and outcomes of interest are informed by cultural-developmental perspectives highlighting the roles of race, ethnicity, immigrant status and culture in places and in development. Ultimately, the strongest promise for advancing an accurate understanding of neighborhood and contextual effects on development will come from incorporating activity space perspectives in cultural-developmental work and incorporating cultural-developmental models into scholarship on activity spaces. Such combined perspectives have the strongest potential to advance a version of research on development that is relevant to a wide range of contexts and populations.

To shape the next decades of research that enhances understanding of development in context, this volume unites a group of diverse scholars who are leaders in the field of place-based research with scholars who are leaders in the field of cultural-developmental neighborhood effects research. As a collaborative interdisciplinary group, we have diverse perspectives on place-based research and use an array of methods (e.g., quantitative, qualitative, and mixed) to capture how place and context matter for diverse children, youth, and families. The goals of the volume are to focus on the rich theoretical foundations that have guided neighborhood and activity space research to-date (Browning, et al., 2008; Browning & Soller, 2014; Browning et al., 2008; Browning, et al., 2015; Kwan, 2009; Matthews & Yang, 2013; Park & Burgess, 1925; Sampson et al., 2002; Shaw & McKay, 1942; Wilson, 1987) and to advance these theories by incorporating more nuanced perspectives that highlight cultural-developmental perspectives for contextual effects on children, youth and families. It is through this volume that scientists can develop novel ways to explore and explain how and why context matters in diverse ways for all children, youth, and families, around the world and across development.

To advance a comprehensive cultural-developmental activity space framework for studying the heterogeneity of development for racially and ethnically diverse children, youth, and families, we situate our discussion within Bronfenbrenner's Process, Person, Context, Time (PPCT) model (Bronfenbrenner & Morris, 2006) with incorporation of cultural-developmental and activity space perspectives. For example, the PPCT model highlights a range of person characteristics; we focus on those highlighted by cultural-developmental perspectives, including race, ethnicity, immigrant status, and culture. Although the PPCT model focuses on individual-level processes, we highlight a range of processes that might take place at multiple levels of the nested ecological systems, from the microsystemic to the macrosystemic levels. Person elements, especially race, ethnicity, immigrant status, and culture are incorporated throughout the volume by highlighting how social positions intersect with time, place, and experiences. We, however, devote specific chapters to highlight how extant theories and perspectives consider elements of culture, development/

time, and place/context to provide common language and definitions. In Chapter II, we provide a roadmap for a more integrated model for cultural development and activity spaces research. In Chapter III, we explain how a cultural-developmental activity space framework can address the different levels of analysis for studying contexts, from **microsystems** to **macrosystems**. In Chapter IV, we describe the different dimensions of time necessary for a comprehensive understanding of development, from microtime to macrotime. In Chapter V, we take into consideration the structures and processes that take place within and between places (in one's activity space) and across time. In Chapter VI, we highlight a range of extant studies informed by a cultural-developmental activity space framework, including qualitative, quantitative, and mixed methods. Finally, in Chapter VII, we offer a summary and set of future recommendations for advancing a comprehensive science of development in context for diverse children, youth, and families.

Chapter II. Theoretical Foundations and Assumptions

Chapter Highlights

- Bioecological perspectives implicate Processes, Person Characteristics, Contexts, And Time (PPCT) in development.
- Researchers need additional frameworks to theorize how contextual settings work.
- **Culturally and contextually informed** frameworks can empower researchers to theorize processes, person characteristics, contexts, and time within macrosystems that privilege some groups above others in a diverse world.
- Researchers need additional tools to actualize the science of development in context beyond consideration of a setting or two.
- Conceptual examples are provided that overlay cultural-developmental and activity space approaches to the study of youth development in context.

In advancing *A Cultural-Developmental Activity Space Framework for Studying Development in Context*, we lean on bioecological theory. Bioecological theoretical language serves to facilitate linkages across various perspectives on cultural development (García Coll et al., 1996; Spencer, 1995, 2008), on neighborhoods (Sampson et al., 1997; Wilson, 1987), and on activity spaces (Browning & Soller, 2014; Kwan, 2009; Matthews, 2011; Smith et al., 2021). Indeed, a comprehensive shared framework and language surrounding general principles and processes can facilitate connections and meaning-making across diverse groups and settings. This chapter provides the theoretical foundation for our approach to studying development in context and highlights ways that, combined, these perspectives can address critical gaps in the developmental sciences and beyond.

Dominant Perspectives on Development in Context: The Process, Person, Context, Time Model

Bronfenbrenner's bioecological theory is commonly employed as a framework for examining development in context (Rosa & Tudge, 2013). The most mature version of Bronfenbrenner's bioecological developmental theory culminated in the Process, Person,

Context, Time (PPCT) model as the appropriate design for studying human development (Rosa & Tudge, 2013). Processes, or "**proximal processes**," are the engines of development (Bronfenbrenner & Morris, 2006, p. 795). Bronfenbrenner and Morris (2006) elaborate that proximal processes are a,

> progressively more complex reciprocal interaction between an active, evolving biopsychological human organism and the persons, objects, and symbols in its immediate external environment. To be effective, the interaction must occur on a fairly regular basis over extended periods of time. (p. 797)

Person characteristics have the capacity to influence the power and direction of proximal processes across time. Bronfenbrenner and Morris (2006) defined three dimensions of person characteristics: ***demand, resource,* and *force characteristics***. Demand characteristics act as an immediate stimulus by inviting or discouraging reactions from persons, objects, and symbols in the immediate environment (Bronfenbrenner & Morris, 2006). Resource characteristics are not immediately discernable, but include variation in mental, emotional, or social resources, and past experiences needed to effectively engage in proximal processes (Bronfenbrenner & Morris, 2006; Tudge et al., 2009). Force characteristics (also called disposition characteristics) as person characteristics that "set proximal processes in motion and/or sustain their operation, such as temperament, motivation, and persistence" (Bronfenbrenner & Morris, 2006, p. 810). Conversely, force characteristics interfere with or prevent proximal processes from occurring (Bronfenbrenner & Morris, 2006).

The environmental context component of PPCT was represented by an arrangement of more or less proximal settings using the metaphor of "a set of nested structures, each inside the other like a set of Russian dolls" (Bronfenbrenner & Morris, 2006, p. 814). Three of these proximal settings are discussed in this section. The most proximal level setting is the *microsystem*. The intermediate level setting is the ***exosystem***. The most distal level setting is the *macrosystem*. Bronfenbrenner and Morris (2006) define the microsystem as "a pattern of activities, roles, and interpersonal relations experienced by the developing person in a given face-to-face setting with particular physical and material features and containing other persons with distinctive characteristics…" (p. 814). They describe the *exosystem* as encompassing "the linkages and processes taking place between two or more settings, at least one of which does not ordinarily contain the developing person, but in which events occur that influence processes within the immediate setting that does contain the person" (Bronfenbrenner & Morris, 2006, p. 818). Lastly, Bronfenbrenner (1993) describes macrosystems, which consist of patterns across systems and include the beliefs, resources and opportunities, obstacles, ways of life and patterned social processes.

The PPCT model recognizes the primary role of *time* and the nuanced ways it can influence development. Specifically, time is described as having "a prominent place within three successive levels," including ***microtime, mesotime,*** and ***macrotime*** (Bronfenbrenner & Morris, 2006, p. 796). *Microtime* highlights the distinction between continuity and discontinuity in the ongoing interactions that take place between the individual and the environment (i.e., proximal processes). Proximal processes cannot function effectively in environments that are temporally irregular (e.g., that are unpredictable or erratic). *Mesotime* refers to the ways that these interactions unfold across broader periods of time such as days

or weeks. This level, however, also includes differentiations across ontological time, such as different developmental periods (e.g., early childhood, adolescence). It captures the ways that individual interactions with the environment and subsequent influences on development may shift across developmental periods. Finally, the concept of *macrotime* is independent of the individual and embodies changes in larger society that can occur both within and across generations, and that can shape, and be shaped by, human development across the life course. At the same time, Bronfenbrenner and Morris (2006) recognize that historical influences on the individual are not necessarily uniform (e.g., period or cohort effects) and can manifest in different ways between individuals experiencing the same societal events (e.g., global pandemic) at the same moment in historical time, but at different developmental periods such as infancy, adolescence, or emerging adulthood (Bronfenbrenner & Morris, 2006)

Dominant Perspectives on Neighborhood Contexts

Bioecological perspectives recognize that context matters for development and highlight that unpredictable or uncertain environments are expected to disrupt development. This perspective, however, provides researchers with few tools to consider how environments work or what might represent unpredictability and uncertainty in any given setting. That is, developmental theory scholars declare that 'context matters!' without inviting them to theorize how or why the context matters. Social disorganization theory, a major theory of neighborhood effects developed from the Chicago School, asserts that three aspects of neighborhood structure impede the development of neighborhood networks, social capital, and positive neighborhood social processes. Specifically, concentrated poverty (i.e., resource deprivation), residential instability, and racial-ethnic heterogeneity (i.e., cultural and linguistic diversity) are theorized to undermine neighbors' abilities to develop neighborhood networks and social capital. A lack of neighborhood social capital, in turn, is expected to undermine the health and well-being of residents and youth as it leads to declines in neighborhood collective efficacy (Sampson, 2011).

Neighborhood collective efficacy is comprised of two underlying constructs: *social cohesion* (neighbors' common values and mutual trust) and *informal social control* (neighbors' willingness to share responsibility for controlling public behavior and work for the good of the neighborhood). Thus, social disorganization and collective efficacy perspectives suggest that specific neighborhood structural features influence neighborhood social processes. These processes impact residents generally, and youth specifically. Of note, social disorganization and collective efficacy perspectives highlight social processes (e.g., social cohesion, informal social control) that occur at the level of the collective environment, whereas PPCT highlights processes that take place between an individual and their environment. We are confident that both setting-level and individual-level processes help to explain links between setting **structures** and youth development. High-quality research on development in context should combine setting-level theories with developmental theories when advancing hypotheses about how or why context matters.

Culturally and Contextually Informed Theorizing

Bioecological perspectives recognize that processes, person characteristics, contexts, and time inform development. However, those perspectives do not guide researchers on how to identify salient processes, person characteristics, or features of contexts and times, in particular across groups that are diverse with regards to race, ethnicity, and cultural backgrounds. In this way, the PPCT model is colorblind. Colorblind approaches to the study of development generally, and the study of development in context specifically, deny racial, ethnic, and cultural differences by emphasizing sameness via "color-evasion" (Neville et al., 2013) and deny racism by emphasizing equal opportunity via "power-evasion" (Neville et al., 2013). Contextual research has also taken on colorblind approaches when it comes to other social positions such as gender (Rose, 1993). Culturally informed developmental theories, however, actively provide researchers with tools needed to theorize development in context for families and youth with different social positions (García Coll et al., 1996; Spencer, 1995, 2008). These perspectives recognize how macrosystems of power and privilege, based on, for example race, ethnicity, gender, immigrant status, and sexuality shape processes, person characteristics, contexts, and time. Simultaneously, culturally informed theories also recognize that Black, Indigenous, and other communities of color cannot be scientifically understood solely as damaged by racism and related systems of oppression, or what Tuck (2009) calls "damage-centered research" (p. 422). Instead, according to Tuck (2009), "desire-based research" paradigms reject "one-dimensional narratives of damage to actively recognize communities' determination to hope, to have vision, to share wisdom, to generate knowledge, and to raise healthy youth despite such systems" (p. 417).

Conducting developmental research within the context of macrosystems that privilege some groups above others in a diverse world requires that researchers actively theorize social positionality vis-à-vis all aspects of PPCT. Culturally and contextually informed theorizing, as defined by White et al. (2015, 2016) and White, Witherspoon, et al. (2021), facilitates this process. This theorizing requires knowledge and understanding about correlates related to social-positional group membership and to contexts. For example, culturally and contextually informed theorizing would recognize that the U.S. Latinx population experiences social position diversity in documentation status and language spoken and contextual diversity in residence in established vs. new immigrant receiving areas. Furthermore, in some cases, social positions may shift across time (e.g., documentation status changes) and in all cases contexts can experience change (e.g., a new receiving area becomes well-established). Culturally and contextually informed theorizing is the process of developing ideas about the ways in which these correlates might intersect with existing knowledge and/or theoretical models of development in context (e.g., Bronfenbrenner & Morris, 2006) and of settings (e.g., Sampson et al., 1997). There are numerous degrees of potential juncture. At one end of the continuum, a scholar may conclude that an existing theoretical model of development in context or settings should explain phenomena among a target bounded group-community (or sub-group-community) in a manner consistent with existing theoretical or empirical work on majority, mainstream, or unspecified group-communities. In such cases, no adjustments to the existing model are needed to accurately explain development in the target group-community. At the opposite end of this continuum,

a scholar may conclude that an entirely new model is needed to explore development in context in an identified group-community. Between these two extremes, a scholar may conclude that specific correlates related to membership in a given group-community have meaningful implications for an existing theory or model of development. As a consequence, the existing theory may not explain development in the target group as accurately as it has previously explained it for another group. Thus, modifications to existing theory are necessary. In sum, the scholar needs to consider the degree to which correlates related to the bounded group-community enhance, impact, or influence developmental knowledge and theory.

Culturally and contextually informed theorizing have important implications for generating research questions and research designs. Phinney (1998) suggests that both within- and between-group designs have utility for understanding development; however, one must keep in mind the research questions being asked and determine if a comparison group is appropriate and who the comparison groups (for between-group designs) should be. It is not appropriate to utilize the "white standard" and normalize the experiences of proportionally decreasing populations in multiple regions of the world that have been historically privileged in the developmental sciences as universal. To this end, Phinney (1998) offers three models that consider "culture" in development. The *universal model* suggests the developmental process being investigated operates similarly across racial-ethnic groups. To the extent that culturally and contextually informed theorizing explain phenomena among a target bounded group-community, then the universal model may be appropriate. On the other hand, if researchers conclude that identified correlates related to membership in a given group-community have meaningful implications for an existing theory or model of development, then the universal model is unlikely to be appropriate. The *inferred ethnic correlates model* recognizes that cultural, racial-ethnic, or community correlates (e.g., racial-ethnic identity, discrimination experience, cultural values, ethnic-racial socialization, acculturation) may be implicated in a theoretical model but does not explicitly measure them (Phinney, 1998). Therefore, any impact of these important cultural variables is inferred based on theory or existing empirical evidence. Finally, the *measured ethnic correlates model* includes cultural variables one deems as important for the developmental process or outcome being considered (Phinney, 1998). Based on theory or extant literature, researchers incorporate these constructs into their own hypothesis testing and research designs.

Perspectives to Support High-Quality Culturally and Contextually Informed Theorizing

Developmental Perspectives—Though a complete rendering of the theories is beyond the scope of this chapter, we highlight a few perspectives that can serve as canonical resources for engaging in culturally and contextually informed theorizing. First, the Phenomenological Variant of Ecological Systems Theory or PVEST (Spencer, 1995, 2008; Spencer et al., 1997) asserts that all humans have a level of vulnerability that is the net of their stressors and resources that are shaped by their social identities. The PVEST perspective also focuses on the meaning-making that occurs because of these realities and experiences to center individual perceptions as an important contributor to development. Specifically, an individual's perceptions of their experiences and exposures in a cultural

context impact their understanding of themselves. This meaning-making unfolds over time, within persons and settings, as well as across environments.

Next, the Integrative Model (García Coll et al., 1996) situates the scientific understanding of the development of youth from minoritized ethnic and racial backgrounds within the three major derivatives of social stratification: *social position, oppression, and segregation* (García Coll et al., 1996). Social stratification filters families and youth into (or out of) certain promoting and inhibiting environments (e.g., neighborhoods, schools, and other settings) which shape systems of socialization and family processes and, ultimately, youth development (White, Knight, et al., 2018). This model suggests that different environments can simultaneously promote and inhibit. Additionally, systems of socialization advance developmental competencies defined as desirable within bounded groups and communities and relative to the environmental demands and affordances that they collectively face (García Coll et al., 1996; White, Knight, et al., 2018).

Neighborhood Perspectives—While mainstream social disorganization theoretical perspectives recognize that structural characteristics such as racial-ethnic concentrations, concentrated poverty, and immigrant concentrations matter for neighborhoods, they focus primarily on subsequent neighborhood-level instability and collective responses to disorder. Subsequent revisions to social disorganization theory—often referred to as the systemic model of social disorganization—highlight private, parochial, and public social control as social processes that mediate the connection between structural characteristics and undesirable outcomes, especially among youth (see Bursik & Gransmick, 1993). However, even these theoretical revisions move toward “lower level” settings. Failure to emphasize the broader or macrocontextual social processes can lead to the mistaken assumption that neighborhoods characterized by high rates of poverty, racial-ethnic minorities, single-parent families, and unemployment are *natural* or *organic* settings of disadvantage or risk, when, in-fact, the disadvantage and risk are inherently tied to systems of privilege and oppression. These systems exist in macro-contexts and filter into more proximal settings such as neighborhoods, activity settings, and interpersonal interactions.

William Julius Wilson (1987) examined the effect of broader macro-economic (i.e., classism) and macro-racial (i.e., racism) shifts in co-concentrating Black and poor populations in urban neighborhoods. His seminal work situated the formation of racially and socioeconomically minoritized residential neighborhoods within broader intersecting systems of oppression, including classism and racism. These systems of oppression (alongside corresponding systems of privilege) work to create and maintain formal and informal policies such as red-lining, white flight, taxes, zoning, and disinvestment. These policies produce “disadvantaged” neighborhood structures – often characterized by high rates of poverty, racial-ethnic minorities, single-parent, female-headed families, and unemployment. Thus, although often overlooked, it is only in the context of broader systems of oppression – like classism, racism, sexism, and nativism – that neighborhoods with high concentrations of poverty, single mothers, and racial-ethnic minoritized populations come to be “disadvantaged” or “risky” contexts for development. Moreover, broader social and institutional programs and policies privilege individuals who are higher socioeconomic status (SES), White, U.S.-born, male, and a part of heterosexual marriages and communities.

Thus, consideration of the role of systems of oppression in the formation of neighborhood structures is critical.

Though social disorganization theory advances a link between structures and processes, it fails to consider that some neighborhoods achieve more nuanced patterns. Social stratification and systems of oppression create and reify structurally disadvantaged neighborhoods, akin to the call by Tuck (2009) to move from "damage-centered" research to "desire-based" research. On the other hand, pluralistic neighborhood theory (Aber & Nieto, 2000) argues that neighborhoods that are structurally disorganized with concentrated disadvantage have resources, strengths, and positive social processes that are cultivated by residents that provide opportunities and are related to wellness rather than dysfunction. This framing moves from a deterministic view and allows for a departure from the narrative that neighborhoods and the people within them are broken. Rather, pluralistic neighborhood theory supports the notion that neighborhoods characterized by poverty, segregation, high turnover, etc. can support residents so that they thrive, survive, and display resilience (Aber & Nieto, 2000). This perspective highlights the duality of neighborhoods—chaos, disadvantage, and risk can coexist alongside organization, safety, and strength. Additionally, pluralistic neighborhood theory asserts that residents may perceive and experience their neighborhoods differently. This assertion is consistent with phenomenological approaches and recognition that diversity in social positions mean that, for example, a White youth may have one set of experiences in a predominantly White neighborhood and a Black youth may have a very different set of experiences in the same neighborhood. Pluralistic neighborhood theory supports a transactional and relational understanding of development in context.

Summary

As a whole, the theories we have presented thus far support several key assumptions of our cultural-developmental activity space framework for studying development in context: (1) Development occurs in multiple contexts and settings that function at different levels of the human ecology (Chapter III) and across different dimensions of time (Chapter IV); (2) Settings matter both in terms of how they are compositionally structured and what processes take place within them (Chapter V); (3) In a diverse world where some groups are privileged above others, researchers must engage additional tools such as active theorizing and reliance on established theories to meaningfully identify specific structures, processes, person characteristics, and times implicated in the development of youth from specific bounded groups and communities; and (4) Developmental competencies are defined relative to what members of the bounded group-community value and relative to the environmental processes (i.e., both in terms of demands and affordances) faced.

Activity Space Framework and Methods

Although all of our developmental theories recognize that multiple and intersecting contexts inform development, most research focuses on one or two settings. Activity space frameworks and methods can empower scientists to actualize the science of development in context beyond consideration of a setting or two and more comprehensively advance the science of development in context. According to Browning and Soller (2014), activity spaces are comprised of "all the locations that individuals come into contact with as a

result of their routine activities" (p. 170). Along similar lines, Cagney et al. (2020) and Ren (2016) conceptualize activity spaces as a series of spatially bound *settings* such as schools, hang-outs, community centers, churches, and neighborhoods. These settings usually include residential areas, since people typically spend a good amount of their time in and near their home (Chambers et al., 2017). However, residential places are not necessarily part of an individual's settings nor are they necessarily a dominant part of an individual's settings. This is particularly the case for individuals who are precariously housed, move between multiple residences, or commute long distances to work or to school.

At their core, activity space frameworks embrace the concept of a "people-based understanding of exposure and context" (Kwan, 2009, p. 1313). In using the term, *people-based,* activity space research emphasizes the immediate local environments in which people spend their time. In this spirit, activity space research aspires to reduce reliance on administrative boundaries (e.g., U.S. census blocks) to define contexts and emphasizes that people and their corresponding mobility routines delineate relevant places. Thinking about place as "people-based" also brings to the fore ideas about agency, selection, and constraints in shaping mobility and exposure. To illustrate, activity space research often considers both how people are influenced by the places that they visit and how their social positions shape what places they travel to and spend time in. Taking a people-based approach to contextual exposure therefore reveals people's mobility patterns, including their access to places and their constraints prohibiting entry. As Golledge and Stimson (1997) proposed, "interactions [are] limited by social, economic, cultural, political, and other constraints, each of which [is] a more or less hidden structure" (p. 2). Thinking about the entirety of places where people visit, play, and learn, consequently, has the potential to capture *the ecology of human development* as proposed by Bronfenbrenner and Morris (2006) in ways that it is not currently being addressed.

Activity space research uses several different analytic methods to assess settings (microsystems) and the collection of settings visited by a developing person (**mesosystems**) (Smith et al., 2021). Across these evolving methods are active debates about the usefulness of different approaches and the differing conclusions that they sometimes produce (e.g., Jones & Pebley, 2014), the limitations of using methods that rely on administrative boundaries to geographically define a place (e.g., Matthews, 2008, 2011; Matthews & Yang, 2013), and the appropriateness of measures for assessing contextual factors (e.g., York Cornwell & Cagney, 2017). Many of the methods that measure the full collection of places visited by a person originate in geography and typically emphasize distance (e.g., span from residential place to farthest point traveled or range between two locations visited), size or extent (e.g., total spatial spread of all locations), and time (e.g., amount or lengths of exposure; see Chapter IV). However, developmental scholars have also explored setting structures (e.g., demographic distributions) or processes (e.g., place attachment or belonging, perceptions of safety; see also (Cresswell, 2014; Lewicka, 2011; Relph, 1976; Tuan, 1977). In Chapter III, we discuss the variety of tools used to assess activity spaces by organizing the tools into two categories: those that focus on individual microsystems within the mesosystem and those that focus on the broader mesosystem, or *collection of microsystems.* We also discuss the strengths and limitations of these tools for developmental

scholars. Finally, although activity space researchers are interested in time and in setting structures and processes, these aspects of the activity space are addressed in detail in Chapters IV and V, respectively.

Instantiating Culturally and Contextually Informed Investigations of Development in Context—In this section we highlight some ways that researchers are beginning to incorporate culturally and contextually informed perspectives on development in context, starting with some examples from neighborhood effects scholarship. We go on to highlight ways in which activity space approaches could substantially enhance this work and advance scientific understandings. We want to acknowledge, however, that several of the examples in this chapter and the broader volume derive from work with adolescent-aged youth. Both neighborhood environments and activity spaces take on special developmental salience during adolescence, as youth mature cognitively and socially, and their worlds expand similarly. Although a body of considerable neighborhood and expanding activity space work has historically focused on adult populations (Cagney et al., 2020 for a recent review), we exclusively focus on the youth developmental range. Furthermore, we strongly suggest that our approach to studying development in context can and should be instantiated across lifespan in alignment with the PPCT model (Bronfenbrenner & Morris, 2006) as well as incorporate systems of privilege and oppression, which have no developmental bounds.

Researchers have begun to instantiate culturally and contextually informed perspectives into models of neighborhood effects on adolescent development. Both neighborhood effects (Sampson et al., 1997) and cultural-developmental (García Coll et al., 1996; Spencer, 1995, 2008) theories recognize that settings that differ along structural characteristics will also differ in the types of social processes that occur within them. In this way, neighborhoods are one of the settings that differentiate the social processes of development (Super & Harkness, 1986; Tseng & Seidman, 2007). The two perspectives, however, also make distinct contributions to the discussion of neighborhood effects on development generally and cultural development specifically. First, neighborhood theory specifically highlights ethnic *homogeneity* in neighborhood environments as promotive of positive social processes and, in turn, development. According to social disorganization theory, ethno-cultural diversity in neighborhoods can undermine residents' ability to coalesce around shared norms and achieve informal social control (Sampson et al., 1997). Therefore, according to the theory, high ethnic concentration (e.g., percent Latinx residents), or neighborhood ethnic homogeneity should benefit the development of all residents because it supports the development of social capital, enhancing the capacity of communities to organize (Sampson et al., 1997). Although empirical support for this hypothesis is limited (see Leventhal & Brooks-Gunn, 2000; Leventhal et al., 2009 for reviews), some work has been consistent finding that high Latinx ethnic concentration levels benefited the development of youth regardless of their own ethnic or racial backgrounds by promoting collective efficacy (Browning et al., 2004). This finding may be attributed to sociocultural similarity that facilitated the capacity of residents to organize and coalesce (Sampson et al., 1997). Social disorganization theory, however, takes a very different approach to racial concentration in neighborhood environments when there are high concentrations of Black residents. To this point, this situation has not typically been conceptualized according to the organizing or

disorganizing capacity of homogeneity and heterogeneity. Rather, social disorganization theory has historically approached high concentrations of Black residents as one of several indicators of concentrated disadvantage.

Although valuable for theorizing about the benefits of high ethnic concentration and the organizing capacity of ethno-cultural similarity, extant neighborhood effects scholarship has shortcomings that can be addressed by cultural-developmental theoretical perspectives. First, cultural-developmental perspectives highlight that racial-ethnic structuring may have different meanings for in- and out-group members and that an important aspect of the social processes of development is the acquisition of culture (Super & Harkness, 1986). In this way, cultural-developmental scholarship problematizes the notion that neighborhood racial-ethnic structuring functions similarly for all residents (i.e., both in- and out-group members) and expands the range of developmental outcomes and competencies that may be influenced by neighborhoods (White et al., . , 2017). Second, the cultural-developmental perspective also problematizes the disparate approaches to theorizing Black concentration and Latinx ethnic concentration in social disorganization theory by highlighting that (1) both ethnic and racial groups experience racialization in the U.S. and (2) that members of both ethnic and racial groups have experiences based on their ethno-cultural ancestry (Umaña-Taylor et al., 2014). Further, cultural-developmental perspectives invite researchers to consider both the developmentally inhibiting aspects of structural inequalities in the form of residential segregation and the developmentally promoting aspects associated with having access to co-ethnic or co-racial communities (García Coll et al., 1996; White, Knight, et al., 2018) and, potentially, sheltering from Whiteness (White, Nair, et al., 2021).

As an example, cultural-developmental neighborhood effects research documents that Latinx neighborhood concentration confers benefits to cultural and linguistic development (Lutz, 2006; Safa et al., 2019; White et al., 2017), social development (Molnar et al., 2003); socio-emotional development (Curci et al., 2021; Lee & Liechty, 2015), and social-cognitive development (Safa et al., 2017; White, Knight, et al., 2018) among Latinx (predominantly Mexican-origin) youths. Black neighborhood concentration has demonstrated benefits for social development (Hurd et al., 2013; Stevenson et al., 2005), socio-emotional development (Hurd et al.,2013), socio-cognitive development (Ochieng, 2011; Stevenson et al., 2005, and birth outcomes (Madkour et al., 2014) among Black youth. Finally, a limited body of work on Asian neighborhood concentration documents some health and cultural-developmental benefits for Asian Americans (Carreon & Baumeister, 2015; Juang & Alvarez, 2011). These cultural, linguistic, cognitive, and social benefits are largely consistent with the developmentally promotive effects of access to the co-ethnic or co-racial community.

There are, however, also developmentally inhibiting aspects of co-ethnic and co-racial concentrations, including learning outcomes, some aspects of social well-being and health, and early aging for Latinx, Black, or Asian Americans (Bennett, 2011; Carreon & Baumeister, 2015; Juang & Alvarez, 2011; Kulis et al., 2007; Seaton et al., 2022). Such costs are consistent with the developmentally inhibiting effects of ethnic-racial residential segregation, with some findings highlighting the importance of examining specific ethno-cultural groups separately relative to each group’s context of reception in the US (Portes & Rumbaut, 2001) as opposed to focusing on broad pan-ethnic categories

(see White, Witherspoon, et al., 2021 for a comprehensive review). Taken together, the works incorporating culturally and contextually informed developmental perspectives reject unidimensional narratives of damage and actively implicate communities' ways of knowing, ways of seeing, and ways of doing in their youths' healthy development (Tuck, 2009).

This body of work incorporating culturally and contextually informed developmental perspectives to address research questions about how the ethnic and racial structuring of neighborhood settings influence development, in focusing on the neighborhood specifically are subject to many of the limitations of traditional neighborhood research already described in Chapter I and are rather limited in regard to advancing a comprehensive understanding of development in context. Because they are focused on residential neighborhoods, this body of work excludes the full range of settings and associated structures and processes that youth navigate in their daily lives. The latter is a shortcoming that integration of activity space approaches can address.

Activity space approaches seek to capture spatial polygamy, i.e., individuals' exposures to multiple places and multiple times (Matthews, 2008, 2011; Matthews & Yang, 2013), by examining the routine locations individuals engage. However, there is a dearth of extant activity space literature that utilizes a cultural-developmental perspective to understand how place and space shape individuals. For example, individuals' activity space profiles may vary structurally and in terms of the social processes that unfold within them. More concretely, in our work (Witherspoon et al., 2021), we have begun to explore how the activity spaces of Latinx and Black families in a new destination context are racialized and how the experiences in these activity spaces may vary vastly for Latinx and Black caregivers and adolescents. For example, from a structural standpoint, the racial-ethnic compositions of Latinx and Black families' activity space locations may be more or less concentrated (i.e., greater proportion of Latinx or Black co-ethnics) or heterogeneous (e.g., more diverse racial-ethnic groups represented). The racial-ethnic structuring of the individual's or family's activity space may be purposely selected by the Latinx caregiver to increase cultural resources and support to potentially ease the acculturation process and reduce family acculturation gaps. On the other hand, these activity spaces may be consequential due to financial constraints that render them in a more socioeconomically disadvantaged activity space with greater proportions of people of color. In spaces such as this, Latinx families (or individual family members) may feel like outsiders or have concerns about xenophobia. This type of structural information can be gathered by linking individuals' activity space profiles with census-based data on racial-ethnic compositions as well as socioeconomic indicators. However, this form of information is not sufficient to capture potential spatial impacts on family functioning and development.

Just as researchers can characterize activity space by its structural elements, the activity space profile can be characterized by its social processes such as level of collective efficacy, connection, as well as weak and strong social ties. These are social processes that are generally thought of when considering neighborhood or place-based effects. However, with a cultural-developmental lens, other social processes or interactions such as discrimination may be considered. Racial-ethnic discrimination is a pervasive experience for people of color in the United States, and other forms of bias and discrimination (e.g., religious)

are experienced in the United States and across the globe (e.g., Merrilees et al., 2018; Sharif et al., 2021). Using activity space approaches, researchers can examine fluctuations in the level of and stress induced by discrimination within one's activity space profile. For example, how does the type and perpetrator of discrimination vary within one's activity space and across time? Also, within a family, how do caregivers' and youths' discrimination experiences vary within their individual activity spaces as well as their shared activity locations? Furthermore, how do these experiences shape behaviors (e.g., academic), practices (e.g., parental monitoring), relationship quality (e.g., conflict, acculturation gap stress), and identity (e.g., racial-ethnic, religious)? These are important questions that a comprehensive, integrated cultural-developmental activity space perspective can answer. We hope that scholars and researchers see the promise of this framework and its approach to understanding development.

Summary—Activity space perspectives and methods, particularly those combined with relevant cultural-developmental perspectives on development and on settings, can support researchers studying how development occurs in multiple contexts and settings simultaneously as well as across multiple dimensions of time. They can be used to capture the structures and processes that take place within the overall activity space, or how these structures and processes fluctuate as youth, caregivers, or families navigate across settings (i.e., microsystems) within their broader activity spaces (i.e., mesosystems). Information about activity spaces – both overall patterns and variability within – can be used to advance a comprehensive science of development in context in a diverse world where some groups are privileged above others.

Chapter III. Conceptual, Methodological, and Cultural-Developmental Perspectives on Contextual Levels

Chapter Highlights

- This chapter contributes to the comprehensive cultural-development activity-space framework for studying development in context by linking key features of activity space approaches to microsystems, mesosystems, exosystems, and macrosystems.
- This chapter describes common approaches used in activity space research to identify individual settings (through survey and passive methods) and to analyze collections of settings (through standard deviation ellipses and the minimum convex polygons), connecting these approaches to concerns of developmental researchers.
- This chapter contributes to a more comprehensive understanding of development contexts by considering individual systems (including nonresidential settings, variations in settings, and interactions across settings) and the embeddedness of settings within social networks (including vicarious exposure to settings and shared exposures across settings).

Our cultural-developmental activity space framework for studying child and adolescent development in context, which integrates residential neighborhood (e.g., Sampson et al., 1997), activity space (e.g., Matthews & Yang, 2013) and cultural-developmental (e.g., García Coll et al., 1996) perspectives from Chapter II requires careful conceptual and methodological attention to the contextual levels (see Noah, 2015, for more in-depth discussions) and to the nested and unnested natures of children's contexts (see Matthews & Yang, 2013 for more in-depth discussions). The most mature version of Bronfenbrenner's bioecological developmental theory culminated in the Process, Person, Context, Time (PPCT) model as the appropriate design for studying human development (Bronfenbrenner & Morris, 2006; Rosa & Tudge, 2013). The context component of PPCT was represented by an arrangement of more and less proximal settings using the metaphor of "a set of nested structures, each inside the other like a set of Russian dolls" (Bronfenbrenner & Morris, 2006, p. 814). The most proximal-level setting was the microsystem, and the most distal-level setting was the macrosystem. In this chapter, we (1) conceptually articulate the different levels of the developmental ecology, (2) provide an overview of core features of activity space frameworks and concepts from geography and sociology that can be integrated in developmental science, and (3) elaborate how these two perspectives can be joined to advance a more comprehensive science of youth development in context. Notably, according to Bronfenbrenner's developmental theory and related neighborhood theory (Bronfenbrenner & Morris, 2006; Browning et al., 2008; Leventhal & Shuey, 2014; Sampson et al., 2002), characteristics of the ecology range from the microsystem to the macrosystem. These characteristics both permit and constrain the variety of processes that take place within settings (McHale et al., 2009). This chapter, however, is largely concerned with elaborating the linkages between Bronfenbrenner's ecological settings (from micro- to macrosystems) and activity space concepts and methods (Bronfenbrenner & Morris, 2006). Chapter IV is concerned with articulating both the structure of these settings and the processes that take place within them.

The Ecology of Human Development

Microsystem, Mesosystem, Exosystem, and Macrosystem Ecologies—

Bronfenbrenner (1979) defined microsystems and mesosystems as closely related aspects of the ecology of human development. The microsystem level has been defined as "a pattern of activities, social roles, and interpersonal relations experienced by the developing person in a given face-to-face setting with particular physical, social, and symbolic features that invite, permit, or inhibit engagement" (Bronfenbrenner & Morris, 1998, p. 1013). Thus, any setting in which a developing individual has face-to-face or face-to-object interactions (e.g., exposure to physical features) is a microsystem. Common examples of microsystems during childhood and adolescence include the home environment, the school or classroom environment, a daycare environment, and extracurricular environments (e.g., dance studio, soccer fields). To recognize that developing individuals spend time in more than one microsystem, Bronfenbrenner and Morris (2006) introduced the concept of the mesosystem, or a "system of two or more microsystems" (p. 817). To capture the interactions of these systems, Bronfenbrenner (1979) encouraged scholars to study development across multiple individual settings.

Contrary to the common “Russian dolls” metaphor represented by nested circles, the mesosystem is not actually a layer outside of the microsystem (Rosa & Tudge, 2013). Rather, in its most complete sense, it represents the totality of a developing person’s microsystems at any given point in developmental time. The mesosystem, therefore, is formed and widened across time, as individuals enter a new microsystem (e.g., transition to elementary school; enroll in a new afterschool program) and it is constricted as individuals stop entering a given setting (e.g., graduate from elementary school; end a sports season). Bronfenbrenner (1979) identified other forces that also influence the mesosystem, such as when individuals are forced into settings (e.g., detention centers) or excluded from other settings (e.g., school suspension, employment termination; COVID-19 school closures)). The mesosystem also contains linkages across settings (Bronfenbrenner & Morris, 2006). These linkages can be thought of as the ecological transitions that occur as a developing youth navigates across microsystems with similar or varying physical and material features (i.e., structures) and similar or varying activities, social roles, and interpersonal relations (i.e., social processes).

Moving beyond the microsystem (i.e., singular settings containing the developing individual) and mesosystem (i.e., multiple settings containing the developing individual), the next two levels of the ecology of human development proposed by Bronfenbrenner and Morris (2006) include the *exosystem* and *macrosystem*. These are depicted as higher order settings that have indirect and more distal (although not necessarily less impactful) influences on development. Bronfenbrenner and Morris (2006) define the exosystem as “linkages and processes taking place between two or more settings, at least one of which does not contain the developing person, but in which events occur that indirectly influences processes within the immediate setting[s] in which the developing person lives” (p. 818). That is, a developing person does not participate directly in an exosystem but is nevertheless impacted by exosystemic structures and processes. Critical to the definition of the exosystem is the proposition that at least one of the settings does not contain the developing person, but rather, situations taking place in that setting influence the microsystems and mesosystems in which the developing individual is embedded. Thus, it is the direct linkages between the setting that does not contain the developing person and the microsystem that allows the exosystem to exist and exert its influence on human development. Conceptually, the macrosystem is defined as a broad constellation of characteristics that, combined, constitute a cultural or subcultural context. This context embraces “the institutional systems of a culture or subculture, such as the economic, social, education, legal, and political systems” (Rosa & Tudge, 2013, p. 247). This constellation includes any structure or grouping whose members share knowledge, beliefs, customs, lifestyles, opportunities and challenges” (Bronfenbrenner, 2005). As such, the macrosystem encompasses both the “blueprint of society” (i.e., the stated values, laws, and regulations) and the *real culture* - the actual practices, norms, and experiences in everyday life (Naylor & Naylor, 1997).

In terms of youth development, the most widely studied exosystem is parents’ work. Even though a developing child may not participate directly in a parent’s work setting, characteristics of that setting and processes that take place within it can influence characteristics and processes taking place within developing youths’ microsystems and, in turn, mesosystems. For example, the work setting can exert additional demands on parents

such as having to take a night shift, working overtime, taking work home, or commuting a long distance. These situations can indirectly influence a child by shaping the interactions parents have with their children in terms of quality. For example, overtime at work can increase parents' stress responses, which may diminish positive interactions (Kikuchi et al., 2020; Masarik & Conger, 2017). As another example, quality of parental interactions may be negatively impacted when they are not able to monitor their children directly due to long hours at work (McHale et al., 2009). Likewise, policy makers or governing boards for programs serving children (e.g., school boards, recreation departments, pediatric practices) represent other notable exosystems for developing children because these entities make decisions about programs that directly impact children's microsystems and mesosystems (Bronfenbrenner & Morris, 2006; Rosa & Tudge, 2013). Of note, school board decisions about mandatory masking during the COVID-19 pandemic represent a more recent example of how exosystems directly impact children's microsystems and mesosystems (Mack, 2022).

Moving beyond the exosystem, the broader societal blueprints and cultural norms can have even more distal, and highly impactful, influences. For example, passage of a new state or federal minimum wage can greatly influence the parental work exosystem and, in turn, a developing child's micro- and mesosystems. Alternatively, cultural meta-narratives that serve to maintain social order (e.g., those that espouse liberty, freedom, independence, race, belonging, conformity, harmony; e.g., Imada, 2012) permeate exo-, meso-, and microsystems in school curricula. Thus, macrosystemic laws/regulations and *real cultures* leverage social position variables (e.g., race, ethnicity, gender, sexuality, documentation status) to create differences in the characteristics and processes that can be found in lower levels of the ecological system. Together, all these ecological forces are important mechanisms that inform developmental pathways of children, families, and societies.

From 'The Ecology of Human Development' to 'Human Development in a Setting or Two'—Bronfenbrenner's ecological systems are theoretically rich, but, in many ways empirically poor. In the developmental sciences, researchers often identify one or two microsystems, and study the systems' implications for development. For example, substantial work focuses on the home microsystem (e.g., Bradley et al., 2019), on the school microsystem (e.g., see Graham, 2018, for a review), or on the extracurricular activity microsystem (see Shulruf, 2010, for a review). Less work examines two microsystems simultaneously (see Gaias et al., 2018, for a review). In the context of this work, researchers are deciding, a priori, which microsystem settings matter for development. From there, researchers may assess the characteristics of the microsystem using objective or archival data or by assessing phenomenological setting data, a perspective that Bronfenbrenner would support. Occasionally, researchers capture and study both objective and phenomenological data for a given setting's characteristics or processes (e.g., Pasco & White, 2020; White et al., 2015; Witherspoon et al., 2016, 2019). To the degree that youth spend substantial time in settings such as hangouts, public transit settings, or with friends or extended family, developmental researchers have essentially ignored these components of microsystems and mesosystems. Indeed, the developmental sciences have long been critiqued for failing to meaningfully capture or operationalize the mesosystem (McIntosh et al., 2008). Activity space frameworks can be used to support developmental researchers'

efforts to identify all the relevant microsystems and better capture mesosystemic influences on youth development.

The a priori researcher selection of microsystems, and by extension, mesosystems, has additional shortcomings related to developmental timing, social positionality (García Coll et al., 1996), and cultural or subcultural norms within macrosystems. Specifically, in conceptualizing the developmental ecology, it is important to note that a microsystem at one developmental stage for an individual's social position and/or under one set of cultural norms *may not* serve as a microsystem at another developmental stage for an individual with a different social position or under a different set of cultural norms. For example, the neighborhood environment, although a salient microsystem for children, adolescents, and adults, may not represent a microsystem for an infant. Policies requiring certain types of parental identification (e.g., driver's license) can limit some children's access to organized after-school activity settings if their parents are undocumented (Díaz McConnell et al., 2020; Simpkins et al., 2013). Engagement in daycare or pre-school microsystems could vary depending on socioeconomic circumstances, region, ethnicity, and cultural norms (Child Trends Databank, 2019). Thus, a priori selection of microsystems and, by extension, mesosystems, can hamper comprehensive scientific understanding of development in context. Activity space frameworks can be employed to address these issues, especially because activity space approaches do not require researchers to make a priori assumptions about which microsystems to study.

Extending beyond the composition of individual levels begins to operationalize the theoretical richness of Bronfenbrenner's ecological systems. Bronfenbrenner (1975) regarded interactions between levels, within levels, and with individual factors crucial to understanding development. These interactions are especially pertinent to the macrosystem level, but the work in developmental sciences has not fully capitalized on the macrosystem's multifaceted contributions across levels. Recent developmental scholarship widely accepts that the macrosystem determines the meaning and significance of a child's social categories (Syed et al., 2018). The seminal work of García Coll et al. (1996) established that social categories like race, ethnicity, gender, and class have little meaning until they are placed within the social hierarchy that is particular to systems of social stratification that exist within macrosystems. In this way, the macrosystem simultaneously shapes the micro, meso, and exosystems of the child. In other words, the macrosystem does not simply serve as a general political and cultural context that is more or less supportive of the development of children with different social positions. It interacts with the individual child's social position and the household's social position to determine the settings included and excluded from a given child's microsystem, mesosystem, and exosystem.

For instance, macrosystemic cultural meta-narratives about American inclusion and exclusion define who experiences marginalization and who is entitled to American support and resources (Causadias et al., 2018). These macrosystemic definitions permeate the developing individual's micro- and meso-systems by not only moderating the effect of these spaces, but also by determining which spaces are included in the systems. The entire domain of the macrosystem effect would include the individual child's social position, the limited shape and content of the child's micro- and meso-systems, and interactions between

the child's social position and individual components of the micro- or meso-systems. In current developmental scholarship, the macrosystem's effect on the shape and content of the lower-level systems is largely absent, but the activity space framework emphasizes this aspect of the macrosystem's influence.

Activity Space Approaches to Contextual Settings

Individual Settings—To measure and analyze the variety of places that people visit, researchers have typically collected information on settings and have matched that information to some administrative unit, such as block groups or census tracts. There are two main ways to capture settings within an individual's activity space: *survey methods* and *passive methods*. Most prominently, activity space researchers have used survey methods. For example, survey questions from the LA FANS survey asked adult respondents about the locations of their routine activities (e.g., work, grocery store, place of worship, and health care facility) and matched these locations to census tract characteristics such as concentrated disadvantage and racial-ethnic composition. Although survey-based approaches can easily be incorporated in interview or survey studies, existing methods rely on selection of settings that are routine, common, and influential. In contrast, passive methods have used trace data from social media platforms (e.g., Twitter; Wang et al., 2018) and GPS estimates from smartphones to identify locations that people visit throughout the day (Browning, Calder, Ford, et al., 2017; Browning et al., 2021; Roy et al., 2021; Sugie & Lens, 2017; Witherspoon et al., 2021; York Cornwell & Cagney, 2017). These approaches match location estimates to administrative units (e.g., census block groups) to analyze contextual characteristics of settings. Notably, GPS estimates from smartphones can also support efforts to consider (or weight) the amount of time spent in a given setting (see Chapter IV).. By taking a ground-up or truly "people-based" approach to considering all places visited, methods that rely on passively collected location estimates address some of the limitations of survey-based measures of settings. However, high-quality data is often challenging to collect from general populations. Moreover, for populations that do not have smartphones and reliable GPS connectivity, the data gathered may be unreliable or selected in ways that influence study conclusions (e.g., Sugie, 2018). Both of these approaches enable researchers to compare the characteristics of an individuals' settings, as defined by census or other data, with the characteristics of their residential neighborhoods and to assess whether the contextual factors of individuals' activity spaces differ by their own demographic characteristics, such as race/ethnicity, social class, and immigrant status (Jones & Pebley, 2014). For example, developmental researchers may be interested in whether subgroups of youth have access to a set of microsystems with similar socioeconomic, cultural, and/or developmental resources (Díaz McConnell et al., 2020; Pasco & White, 2020). Alternatively, these approaches allow developmental researchers to examine whether the influence of one microsystem (e.g., the school) on development, depends on their exposures to other microsystems (e.g., Jackson et al., 2016).

For both survey and passive methods, a primary limitation is the reliance on administrative boundaries to define settings. As Matthews (2011) and Matthews & Yang (2013) have emphasized, administrative units do not correspond well to the lived reality of people's own definitions of their neighborhoods and other settings. They also can obscure insights about

the contextual importance of different places. For instance, findings about racial-ethnic segregation and crime rates of a place depend on the definition of different geographic scales and boundaries (Hipp & Boessen, 2013; Reardon et al., 2008). In a study by Reardon et al. (2008), patterns of racial-ethnic segregation in any given place are obscured when segregation is measured using population-based administrative units, such as census tracts, which vary widely by geographic scale. In response, researchers have used methods that calculate scale-sensitive radii around points of interest to measure local context, such as "egohoods" proposed by Hipp and Boessen (2013) in which they delineated a circular buffer around a central point to define a neighborhood of interest. There are calls to apply these methods to activity spaces referred to as "egocentric local environments" by Matthews (2011).

Collections of Settings—The collection of individual settings represents mesosystem more broadly without consideration of single microsystems within it. Activity space researchers sometimes study the aggregate characteristics of all of the microsystems within individuals' activity spaces (e.g., Sugie & Lens, 2017) and they frequently are concerned with various ways to calculate distances traveled as well as the geographic size and context of the entire aggregation of settings (e.g., Villanueva et al., 2012). Researchers have measured the average distance traveled from residential area (York Cornwell & Cagney, 2017) or the distance traveled between settings ("shortest paths networks," e.g., Schönfelder & Axhausen, 2003; Wang et al., 2018) to understand how the extent of mobility is related to individual demographics and/or residential neighborhood characteristics. At first glance, a developmental scholar may be more interested in aggregate characteristics. However, it is important to observe that measures of distance, and/or size of a developing individual's activity space may be developmentally salient as well, especially as it relates to concepts like social or cultural isolation (White et al., 2017) and time use (Livas-Dlott et al., 2010; see also Chapter IV).

Common methods for understanding the geographic scope of settings are the standard deviation ellipse and the minimum convex polygons. Both of these approaches (see Figure 1) draw a boundary or shape around the collection of settings accessed by individuals (for a discussion of these two methods, see Jones & Pebley, 2014). The minimum convex polygon typically draws a polygon shape around the outermost destinations accessed. This means that the area includes all settings and that it can be used even when there is a minimum of three settings. The standard deviation ellipse (SDE) draws an ellipse shape around an individual's set of settings and has the advantage of being flexible to different approaches, although it works best when there are several settings to measure. As variations of this approach, researchers have used time weighted versions of the SDE (Crawford et al., 2014) and have considered only places that are frequently visited (Huang & Wong, 2016). Both of these variations may be highly relevant to developmental scholars, who are concerned about different aspects of time, including the continuity and developmental salience of different settings (see Bronfenbrenner's PPCT, see Chapter II). Overall, however, activity space researchers typically use both of these measures in their analyses because differences in the specifics of each approach can lead to different conclusions (e.g., Jones & Pebley, 2014).

The SDE and minimum convex polygon approaches emphasize the geographic size of the spatial distribution of settings. That is, these approaches capture the geographic size of one's mesosystem and the degree of experienced mobility across microsystems. Interestingly, these approaches also capture some aspects of the exosystem because they include what activity space researchers call *potential mobility*. The idea of potential mobility reflects the fact that the SDE and minimum convex polygon approaches necessarily bound settings that are both accessed (i.e., microsystems) and not accessed but are within the boundaries of the polygon or the SDE (Järv et al., 2015). As others have pointed out (e.g., York Cornwell & Cagney, 2017), this approach may be best suited to research assessing access to resources such as food stores (Kestens et al., 2010) and not the evaluation of actual contextual exposures to local settings (e.g., a youth went to food store *x*). We also raise the very real complication that geographically close places are not always accessible to people because of factors unrelated to spatial mobility and span. In other words, lack of accessibility may be associated to macrosystem characteristics with informal understandings of "safe" places or formal policies banning access to certain areas (Beckett & Herbert, 2009), and transportation routes connecting some places and not others (McQuoid & Dijst, 2012; see also our extended "Macrosystems" discussion below).

How the Science of Activity Spaces Can Advance a Comprehensive Science of the Ecology of Human Development

Activity space frameworks advance two major principles that are theoretically relevant to the study of child development in context. First, activity space frameworks tell us that individuals go to different places, and they spend different amounts of time in those places. Developmentally, this implies that a developing person has an activity space that is conceptually analogous to the mesosystem and is comprised of the set of that individual's microsystems and connections across microsystems. According to the PPCT model, the developing person's microsystemic and mesosystemic exposures, captured by the activity space, should matter for development. This same activity space principle, however, also implies that people who are important to the developing person – like family members, and friends – each have their own activity spaces. According to the PPCT model, the exosystems created through this process should also matter for human development. Second, activity space frameworks tell developmental scientists that the macrosystem activates social position variables (e.g., race, ethnicity, socioeconomic status, disability status, documentations status) to constrain or liberate the developing person's activity spaces as well as the activity spaces of their family members and friends. According to the PPCT model, these macrosystemic ecological constraints and liberties should also matter for human development.

Individuals' Activity Spaces

Individuals – including a target developing child and important actors in that child's development – have activity spaces. These activity spaces vary in features and characteristics that are important for child development. Findings from activity space literature reinforce the idea that people spend time in a multitude of places, which are often different from their residential settings (Palmer et al., 2013; Zenk et al., 2011). To illustrate, Matthews (2011) finds that low-income families living in an urban area state that their most salient

places are located outside of their residential census tract: only 6% of places were located in their residential census tract, with the remainder in adjacent tracts (20%) and in tracts in other areas of the city. In another example, Palmer et al. (2013) used GPS estimates to find that residential tracts accounted for less than 16% of the total geographic area in which three-quarters of participants spent their time. Activity space research therefore highlights the reality that people spend much of their time in a variety of nonresidential places. Approaching the study of youths' microsystem settings from an activity space framework, therefore, has the potential to reveal numerous and varied settings that extend beyond commonly studied developmental settings of home, school, neighborhood, and extracurricular activities.

Activity space literature also finds heterogeneity in the number and types of places that people visit, as well as the distances they travel to those places. Comparisons across racial-ethnic and socioeconomic groups, however, show considerable continuity between residential and nonresidential contexts. Studies typically find that people who live in more or less socioeconomically advantaged areas travel to places that are similar to their residential places (Jones & Pebley, 2014; Krivo et al., 2013; Wang et al., 2018; York Cornwell & Cagney, 2017; cfcCf., Schönfelder & Axhausen, 2003). Distance, however, is related to greater variation in the types of places visited. As residents from disadvantaged areas travel longer distances to nonresidential settings, they tend to go to places with less disadvantage compared to their residential areas (Krivo et al., 2013). Furthermore, as residents from more advantaged places travel longer distances, they often go to places with more relative disadvantage (Krivo et al., 2013). Studies have also found that race interacts with social class to influence types of exposure to other neighborhoods in salient ways, often replicating residential segregation in people's activity spaces. Specifically, Wang et al. (2018) find that residents of poor Black neighborhoods are less likely to spend time in middle-class or white neighborhoods as compared to residents of poor White neighborhoods.

Even among people who live in similar residential neighborhoods, there is evidence from the activity space literature that there is substantial variation in their nonresidential settings (Matthews & Yang, 2013) and that the contextual characteristics of these places can interact with residential settings in meaningful and measurable ways. Studies examining health-related outcomes, for example, point to evidence of relative deprivation when people from poor neighborhoods are exposed to more advantaged areas. Sharp et al. (2015) found that residents of disadvantaged places who spend time in more advantaged areas report worse self-rated health compared to similar people who spent more time in disadvantaged places. In another example, South and Crowder (2010) document that exposure to relatively richer areas, for women living in poor neighborhoods, is associated with higher rates of premarital childbearing. Other research indicates that the contextual characteristics of nonresidential settings can substitute for lack of resources and opportunities in a person's residential area. For example, Sugie and Lens (2017) found that spending time in job-rich areas can compensate for a lack of job opportunities in a person's residential area and that spending time in these places is positively related to obtaining future employment. The ways in which various settings interact to reinforce, complement, or moderate inequities associated with residential area is a promising avenue for developmental scholars examining youth microsystems and mesosystems.

A Developing Child's Activity Space in the Context of their Social Networks' Activity Spaces

The activity space literature shows that individuals have diverse activity spaces based at least in part on systems of social stratification originating in the macrosystem. Developmental scholars are de facto interested in the developing child's activity space because the activity space is conceptually analogous to the mesosystem (i.e., collection of individual microsystems). Indeed, as discussed in the previous sections, activity space tools can allow a researcher to study the activity space at the level of numerous and varied individual microsystems using survey or passive methods (e.g., Jackson et al., 2016), or at the level of the mesosystem – the collection of settings – operationalized with geographic tools (e.g., Standard Deviation of the Ellipse or SDE). Developmental scholars, however, should also be interested in the activity spaces of the child's family and social network (hereafter, social network). Important actors in the child's social network have their own activity spaces and information about the activity spaces of family members, neighbors, and peers, for example, can further flesh out the ecology of human development in two important ways. These exposures- vicarious exposures and shared exposures-are discussed in the following sections.

First, regarding vicarious exposures, the activity spaces of the surrounding social network in which the child is embedded can capture important exosystems for a developing child. Exposures in these exosystems – or vicarious exposures – can lead to changes in the child's micro- and mesosystems. For example, a developing child may not access microsystems in which they have an opportunity to experiment with vaping. An older sibling, however, may access such settings, and exosystemic structures and processes related to vaping can shape the relevant vaping structures (e.g., the presence of vaping pens in the home) and processes (e.g., opportunities to learn how to vape from a sibling) later encountered in the developing child's micro- and mesosystems. Expanding out from the family/sibling context, consider Charlie, a child who lives in Community *A*. Several neighbors in Community *A* commute to Community *B* for work. In Community *B,* Charlie's neighbors are exposed to park structures that are well-kept and maintained. As a result of this exposure, Charlie's neighbors begin to work together for updated and maintained parks in Community *A*. Community *B* is not a part of Charlie's mesosystem or activity space. However, because Community *B* is a part of his neighbors' activity spaces, Charlie is now able to go to this newly updated park in his own microsystem of Community *A*. Exosystemic vicarious exposures in a developing child's social network, therefore, can impact a child's micro- and mesosystems. Thus, examinations of structures and processes in the activity spaces of a child's social network can explicate vicarious environmental exposures and advance a more comprehensive science of child development in context.

Second, some settings within a social network's activity spaces are shared – spatially and temporally – with the developing child. For example, Park *A* may be one important microsystem within a developing child's activity space *and* within a parent's activity space. In this case, aspects of both the developing child's and parent's exposures to this setting are shared (see Figure 2 for an example). This shared exposure is important for understanding the ways that this particular microsystem functions in youth development. For example,

the presence of a parent may constrain the types of exposures that take place in this park for one child, as compared to the types of exposures that take place for a child who accesses this same park without a parent. Additionally, a child may or may not share activity spaces beyond the school setting with a classmate's activity space (e.g., commuting longer distances to schools may limit classmate's overlap in activity spaces). The degree to which a child and classmate share activity spaces beyond the school setting can have important implications for youth experiences within and outside the school. For example, in Los Angeles, school busing can transport youth from their inner-city low resource school to an upper-middle class school setting with high levels of resources. The degree to which peers in that school setting share activity spaces with the developing youth beyond the school setting can create a level of bonding to the school given the additional shared activity spaces the inner-city youth share with their school peers. Once again, the quality and quantity of these shared exposures are constrained or liberated by both individuals' social positions based on social stratification within the macrosystem. Furthermore, in the example of parent-child shared activity spaces, a parent who is undocumented may not have the resources to travel to some activity spaces of their child (e.g., book a flight to a basketball tournament). Similarly, in the earlier example of shared activity spaces between a child and school peers, social position variables such as family income will impinge on the degree to which the activity spaces of child-peer are shared. In these ways, understanding which microsystems are shared and unshared with members of a developing child's social networks can elaborate the implications of that setting for child development.

Summary—This chapter addressed conceptual, methodological, and cultural-developmental perspectives on the contexts of human development, as represented in Bronfenbrenner's PPCT model. As discussed in Chapter I, shifts related to research on neighborhood effects on child development as well as cultural-developmental perspectives on development in context have highlighted how the activity space framework and methods can better capture the micro-, meso-, exo-, and macrosystem influences on human development. Specifically, the conceptual insights from activity space research have the potential to expand how scholars think about how and why microsystems, mesosystems, exosystems, and macrosystems influence human development. The activity space framework starts from the premise that the places people encounter in the course of their daily routines matter. The collection of these discrete places, or individual *microsystems* in the parlance of Bronfenbrenner's PPCT model, represent a person's developmental mesosystem, an understudied aspect of the ecology of human development (Gaias et al., 2018). Furthermore, many exosystemic influences on human development can be captured by considering characteristics of the activity spaces of members of one's social network (e.g., friends, family, neighbors). Finally, by layering in cultural-developmental perspectives, we were able to highlight how racial, ethnic, gendered, and classed social hierarchies within the macrosystem shape microsystems, mesosystems, and exosystems. Thus, macrosystemic forces partially determine which microsystems youth are or are not exposed to; the size and shapes of their mesosystems; and the sizes and shapes of various exosystems. These forces have implications for the structures and processes encountered within microsystems, mesosystems, and exosystems.

Chapter IV. The Intersection of Time, Place, and Culture in Developmental Science

Chapter Highlights

- This chapter contributes to the comprehensive cultural-development place-based framework by applying microtime, mesotime, and macrotime ideas from PPCT (Bronfenbrenner & Ceci, 1994) and advancing ideas related to cultural-developmental processes across time and space to place-based research.
- This chapter provides a way for researchers to identify and conceptualize time, place, and culture as intersecting influences on development by describing three dimensions: 1) bounded vs. unbounded, 2) static vs. dynamic, and 3) **subjective** vs. **objective**.
- This chapter contributes to a more comprehensive understanding of developmental contexts by offering and considering the important intersections between time, place, and culture and providing methodological recommendations for doing so (e.g., use of longitudinal data, creation of interdisciplinary teams, precise and specific measurement, incorporation of multiple research designs).

Simon Garfield (2016) described time as the most commonly used noun in the English language. We argue that time is inextricably linked with human development. The concept of time underlies the field of developmental science – it drives changes in individual behavior, functioning, and well-being that scientists seek to understand. Similarly, historical context and culture profoundly shape the spaces individuals inhabit and their experiences within them. Despite the fundamental and complicated roles that time and culture play in development, both remain underexplored in place-based developmental research. Although many developmental theories acknowledge the importance of time, place, and culture in their theoretical frameworks, their conceptualizations and empirical examples often put emphasis on one or two of these dimensions while failing to represent time, place, and culture as a fully intertwined set of influences on development.

In this chapter, we put forth a set of conceptual considerations with the goal of providing researchers a starting point from which to better integrate the complexities of time into place-based and cultural-developmental research of childhood and adolescence. Central to the conceptual arguments is the recognition that time, place, and culture are critically bound and, as such, should be considered as intersecting and overlapping entities. To this end, we present a unified conceptual framework that highlights the unique ways time, place, and culture synergistically influence development.

The Challenge of Time

Some of the challenges in positioning time within developmental theory come from the fact that, in many ways, time and development are one and the same. As Garfield (2016, para 14) states, “Time is a lead character in our lives” (para 14)..” The passage of time is one of the drivers of development. With each passing second, change occurs within individuals, cultures, and the places that they inhabit. As such, the nuances of measuring, quantifying,

qualifying, and understanding time are often muddled in developmental science. However, the ways an individual experiences time may vary such that time may pass slowly or quickly depending on the context and duration of an activity. For example, an instructor may say the lecture was delivered quickly whereas from the student's experience, the lecture was slow. Even across longer periods of time or developmental periods, the notion or concept of time may vary. Caregivers often lament that it seemed like yesterday that their adolescent did a particular activity, behaved a certain way, or experienced an event. Conversely, youth often want to accelerate time by having a later bedtime or longing to become an adult. The complexities of time and how it manifests itself within human development are often overlooked in theories of development. An example of this oversight can be found in the early versions of the bioecological model of human development by Urie Bronfenbrenner. Perhaps the most oft-referenced theoretical framework in context-focused developmental research, Bronfenbrenner (1977) positioned the developing child at the center of a series of layers (i.e., microsystem, mesosystem, exosystem, macrosystem) that represent the embedded settings that influence development. These settings range from the most proximal (e.g., family) to the most distal (e.g., opportunity structures; see Chapter II in this volume for additional discussion). Despite centering context as a critical component of human development, this early version of Bronfenbrenner's model did not explicitly discuss elements of time, whether it be time as growth, ritual (e.g., family time, mealtime), or constraint (e.g., childcare hours, wait time, or travel time; see Witten et al., 2008 for a discussion of travel time and implications for physical activity). The concept of time, first mentioned by Bronfenbrenner in 1986, included the concept of the *chronosystem,* which refers to influence of within-person and within-environment passage of time on human development, became a part of the model (Bronfenbrenner, 1986). In the final iteration of the bioecological model, Bronfenbrenner and colleagues describe time as the fourth defining property of the Process, Person, Context, Time (PPCT) model (Bronfenbrenner, 1995; Bronfenbrenner & Ceci, 1994; Bronfenbrenner & Evans, 2000). Time is finally presented as playing an equivalent role to the other key aspects of the model.

Cultural-Developmental Processes Across Time and Space

Oftentimes, the theory of developmental science regarding time and space does not explicitly consider culture. This is particularly true for social identities that are salient in the context of systems of oppression (e.g., racism, classism, sexism) and the structural factors that reinforce social stratification (e.g., segregation). These identities become pronounced in the context of systems of oppression and mechanisms of stratification through the ways in which the systems define individuals (e.g., who is defined as Black and who is defined as Indigenous) and the ways in which individuals actively define themselves in resistance to such systems. These cultural elements often interact with time and space to produce development.

On another front, Phinney (1998) asserts that researchers should consider their research approach and design, particularly as they relate to thinking about the development of racial-ethnic minoritized individuals and families (see discussion in Chapter II). Just as Phinney (1998) delineates three approaches as they relate to studying culture, we argue the same rationale can be applied to how we think of time in research designs. We may

assume that the impact of time on the developmental process under consideration is relative to the individual, and we hypothesize that time is implicated in the process, though we may not measure it (i.e., inferred temporal correlates model). We should actively include elements of time in our design and modeling to examine change in the developmental phenomena (i.e., the measured temporal correlates model). For the latter two models, it is important to consider how time and culture may intersect and/or interact to produce unique developmental systems for youth. For example, the impact of the acculturation process on development or on proximal processes in the family may vary depending on the developmental period during which a youth first enters a new country and the place in the new country where youth reside. Given the importance of culture in the everyday lives of children, youth, and families, below we briefly discuss some of the important cultural-developmental theories and interrogate how they consider time.

Selected Cultural-Developmental Theories

The Integrative Model—The integrative model (García Coll et al., 1996) is a primary cultural-developmental theory used in developmental science to understand minoritized youth development. As discussed in Chapter II, the integrative model centers social stratification and environment as important components that shape a youth's developmental competencies. In this model, time is not explicitly included but is implicitly understood as a developmental process. As an inferred temporal correlates model, the sequencing of the model's components suggests that time – micro or macro – is implicated in development. For example, three major derivatives of social stratification – social position, racism, and segregation – combine to influence the environments in which developing youth and their families engage or those to which they are exposed. Given that these environments may promote or inhibit development, individuals and families adapt to the environment within and across time, dependent on the current demands and affordances of that environment, to create culturally specific and developmentally appropriate responses. This conceptualization aligns with the concept of macrotime put forth by Bronfenbrenner and Morris (2006) where changes in larger society shape human development over the life course.

Developmentally, as youth age, caregivers often allow youth more autonomy. This autonomy may serve to expand their definition of the residential neighborhood over mesotime, particularly as it relates to boundaries. The boundaries of their activity space may increase or decrease based on their needs and use of services and resources as well as their advancement from elementary to high school. Furthermore, the characteristics of these environments serve to promote or constrain development based on environmental exposures and developmental timing. The intersection of time and space can determine whether an environment is promotive or inhibiting. For example, a neighborhood park is often viewed as a resource or asset due to its green space or a gathering area for physical activity, or a place where individuals or families can interact. However, after dusk when most parks officially close, some parks may become grounds for illegal activity. In this sense, the time of day may shape whether the park is a promotive or inhibiting environment for developmental competencies, thus, demonstrating the concept of mesotime, for proximal processes may vary across time of day.

Depending on a youth's developmental status, engagement with and exposure to all aspects of the neighborhood park may vary. For example, toddlers and young children may only be exposed to certain parts of the park (e.g., toddler playground, sandbox/sandpit, swings) with their caregiver for their protection (i.e., shared time and space), whereas adolescents may explore all aspects of the park (e.g., basketball courts, swimming pool, and walking trail) given their developmentally appropriate independence. Furthermore, using the neighborhood park example, neighborhood parks can be well-resourced with park benches, covered pavilions, playgrounds for different age groups or neighborhood parks. On the other hand, neighborhood parks can be abandoned with dilapidated benches and playgrounds with no pavilions. These poor conditions demonstrate the process of neglect and disinvestment in these spaces. Moreover, the features of these two different parks are shaped by the broader environment and SES of the neighborhood. Furthermore, as the integrative model suggests, whether an individual has access to a neighborhood park that is well-resourced or low-resourced is dependent upon and situated within the history of this place, residents' social positions, systems of oppression, and segregation. As the integrative model highlights how social stratification shapes environments that can serve as assets or constraints for minoritized youth's development, it also implicitly addresses the importance of time and timing.

The Phenomenological Variant of Ecological Systems Theory—Inherent in the PVEST model is bidirectional, recursive representation of identity formation with the assumption that with the passage of developmental time (i.e., *meso*time) there are accompanying increases in maturation, access to and engagement with settings, and social cognition that facilitates understanding of stereotypes (Spencer, 1995, 2008; Spencer et al., 1997). Complementing this focus on time, the model explicitly focuses on place by emphasizing neighborhood stressors or dangers that shape adolescents' coping strategies and responses. As this model focuses on time, it also centers culture and place, albeit place-based risk, within the residential neighborhood and through meaning making of experiences over time.

Expansions of Existing Time-Place-Culture Conceptualizations—Despite the numerous strengths inherent in the theoretical models described, we argue that there are fundamental gaps that need to be addressed to have a theoretical model that fully integrates time, place, and culture in conceptualizations of human development. First, there is a need for a meaningful emphasis, both conceptually and empirically, on each of these three components and the role that they play in development. We recognize that the theories described, to varying degrees, address aspects of time, place, and culture. However, the operationalizations of these theories underemphasize different dimensions of time and do not provide proportional consideration of time in relation to place and culture. Furthermore, we argue that none of these theories and their empirical manifestations places an adequate emphasis on and careful attention to each of these dimensions. For example, Bronfenbrenner's PPCT model does address aspects of time, place, and culture. Yet, both place and culture are treated similarly according to the dimension of context and time. Although well-defined and multidimensional in the PPCT model, these dimensions are rarely fully considered in developmental research. We argue that this framework, which

often describes culture as being part of the macrosystem, ignores the ways that culture manifests itself *within the individual* and across the multiple proximal settings the individual encounters. Furthermore, this framework is inherently colorblind and does not explicitly recognize social stratification by race, ethnicity, class, gender, or other social identities. While PPCT largely ignores social stratification and how cultural identity develops within the individual, PVEST focuses on structural factors inherent in stratified societies that work in concert with culture to inform identity development/formation. This model addresses derivatives of social stratification and how youth of color are exposed to particular activity spaces at specific points in time and how the opportunities as well as challenges or risk (i.e., net vulnerability) vary across developmental time and space. We argue that in the PVEST model, culture, context, and place as well as perceived experiences are at the forefront while time, although explicitly mentioned, remains peripheral. To move place-based developmental thinking and research forward, we need a model that recognizes time, place, and culture as intersecting influences on development.

Building on this point, we contend that researchers need to be strategic in identifying and conceptualizing the aspects of time, place, and culture addressed in their research. To facilitate this process, we put forth three dimensions that can be used in the conceptualization process, each of which have implications for the measurement and understanding of these concepts. The first of these dimensions represents the distinction between *bounded* and *unbounded* elements. The majority of setting-based research defines the settings that individuals inhabit as bounded units; families are defined by the people they contain. Schools are defined by the walls of a building or the district. Even neighborhoods, which arguably are more amorphous, are often defined by parameters assigned by government officials or researchers (e.g., census tracts in the U.S. or meshblocks in New Zealand; see Mavoa et al., 2019). The bounded conceptualization of settings can be problematic when it limits our thinking around how individuals understand space and interact with place (Matthews, 2012). For example, individuals have varying degrees of spatial knowledge; long-term residents may have better detailed knowledge of a local place, whereas more mobile residents may have more expansive knowledge covering more areas of a place. Additionally, not all individuals who live within the same neighborhood boundary use that space in the same way; some people may live, work, and access resources all within one geographical location, whereas others may do these things in geographically disparate places. This distinction has led to rapidly expanding theoretical and methodological research on activity spaces (Browning & Soller, 2014; Matthews, 2011; Matthews & Yang, 2013; Siordia & Matthews, 2016). This unbounded conceptualization of place does not explicitly apply boundaries to the settings that individuals inhabit, rather it uses information on where people spend their time (e.g., with travel diaries, GPS trackers, or interviews; e.g., see Mavoa et al., 2011) to quantify exposure to place(s). We encourage researchers to also apply this distinction to aspects of time and culture. For example, time can be conceptualized by bounded (e.g., minutes, days, years) or unbounded (e.g., a grieving period, transitions) units, and it can be chronic, accumulating over time, or acute. Similarly, we can think of culture as being bounded within the individual (e.g., one's cultural identity; one's cultural value orientation/endorsement) or being unbounded and manifesting itself across multiple aspects

of individuals' daily lives dependent on the demands or affordances of the context (e.g., daily rituals, family traditions).

The second dimension that we highlight makes the distinction between conceptualizations that are *static* versus those that are *dynamic*. Developmental researchers have long highlighted the importance of this distinction in conceptualizations of time. Frequently, development, and subsequently time, is conceptualized as linear, uniform, and constant. Individual change is assumed to occur at a uniform rate, in one direction, as time passes in a steady manner. However, developmental scientists have also recognized that dynamic moments of time play a critical role in individual development. For example, developmental transitions, or the periods when children are moving between developmental periods (e.g., from middle childhood to adolescence), often co-occur with major shifts in settings (e.g., changing schools, widening peer groups) and can be times when youth are susceptible to contextual inputs (e.g., Eccles et al., 1993). Similarly, moments of disruption (e.g., change in family structure via divorce or composition such as a new sibling) or change in location (e.g., a residential move) can be salient moments in the developmental process that are dynamic.

These same distinctions can be applied to our conceptualizations of place and culture. For example, conceptualizations of place are often static (Arcaya et al., 2016), making the assumption that if change occurs within a geographic place, it is slow, and its influence is minimal. In fact, places can also be characterized by dynamic moments such as shocks (e.g., a major event such as a mass shooting) or periods of rapid change (e.g., gentrification; new housing development or shopping center; additional play areas in a local park), each of which may have implications for individual development (Matthews & Yang, 2013; Mölenberg et al., 2019). Similarly, we can think about dynamic aspects of culture and how they may influence development. Salient moments in global history (e.g., Black Lives Matter; Stop Asian Hate, Wars in Ukraine and Syria, famine in the South Sudan) and in individuals' personal lives (e.g., seeing an inspirational speaker) can serve as shocks to a culture/identity both at the societal and individual levels.

Finally, we propose the distinction between subjective and objective elements as a critical aspect of time-place-culture conceptualization. Research on racial-ethnic identity has highlighted both subjective and objective elements of culture. For example, the Phinney (2000) model of ethnic identity development and corresponding Multigroup Ethnic Identity Measure integrate both subjective and objective aspects of identity and identity development. The objective elements include the experiences and individual actions and behaviors that facilitate the construction of identity over time. In comparison, the subjective elements of identity include the individual's attitudes and sense of belonging to the individual's ethnic group. By considering both subjective and objective aspects of identity development as PVEST asserts, the researcher can better understand the ways that internal and external aspects of culture shape individual development. As such, we argue that subjective and objective elements should also be regularly integrated into our conceptualizations of place and time. Although there are theories (e.g., Bronfenbrenner's PPCT) and measures (e.g., collective efficacy, systematic social observations) that emphasize both subjective and objective measures of place, there are limited examples of research that explore these

elements in combination (e.g., Pasco & White, 2021; Witherspoon et al., 2019; Witherspoon et al., 2021). Considering both the presence of objective characteristics in a place and how individuals subjectively perceive, and thus interact with, those characteristics to create memories and experiences can advance our understanding of place-based influences on development.

These ideas can also be applied to our conceptualizations of time. In developmental science, time is often thought of as an objective unit (e.g., minute, year). Although we recognize the form may change (e.g., shocks, disruptions) and individual change may happen at different rates, we generally think of time as an influence that exists external to the individual. However, there are also subjective experiences of time, such as perceptions of moments that pass slowly/quickly or stand out as particularly salient in our minds.

Intersections between Time-Place-Culture

A framework that puts proportional emphasis on aspects of time relative to place and culture is, in and of itself, not sufficient to fully represent how these elements intersect to influence human development. Not only can each of these elements have their own unique influence on development, but the elements can also operate in combination to influence the individual. In the sections below, we describe some of the ways that aspects of time, place, and culture may intersect to influence development while paying special attention to the three dimensions introduced above. Our goal is to demonstrate how an analysis of specific combinations of elements (time-place-culture) and aspects of these elements (bounded-unbounded, static-dynamic, subjective-objective) can introduce new ways of thinking about how time-place-culture can influence human development.

Time and Place—Not only do elements of time and place have independent influences on individuals, but their intersection can also play out in several important ways. For example, we propose the idea of ecological transitions, or the periods in time when the developing individual is shifting between salient places and/or experiencing a widening or narrowing of the places with which they interact. More specifically, one's activity space is shifting and changing across micro-, meso-, and macro-time. Expanding our place-based conceptualizations to include an activity space framework inherently includes time and place and will uncover the nuanced ways in which these two important factors shape domains of functioning across the life course. Ecological transitions are similar to developmental transitions in that they both refer to a period of time in which the individual is shifting from one stable mode to another. Developmental transitions place the focus primarily on the passage of time (i.e., mesotime) within the individual, with the recognition that shifts between developmental periods (e.g., from middle childhood to adolescence) can be accompanied by changes in the places that youth spend their time. In contrast to the concept of ecological transitions which places the emphasis equally on aspects of time and place, ecological transitions can co-occur with developmental transitions. The places that the developing child inhabits change as they transition through different developmental periods. For example, as shown in Figure 2, changes in school environments (e.g., preschool to elementary school to middle/junior high school to high school to college) co-occur with developmental periods as school environments are typically structured in this way. These

changes in school environments are accompanied by changes in activity locations and social networks, each of which have implications for development. However, ecological transitions can also occur independent of developmental transitions, motivated by factors that are either external (e.g., parents decide to move the family) or internal (e.g., the development of a new interest motivates spending time in a new or a variety of settings to the developing individual). In this way, the concept of ecological transitions emphasizes the intersection between time and place and highlights these periods as critical moments in the developmental process.

Another way that time and place intersect to affect development is via the changes that occur within places over time. In his PPCT model, Bronfenbrenner and Morris (2006) describe time in terms of three-successive levels: microtime, mesotime, and macrotime. To this framework, we propose the addition of eco-time, or the changes that occur within places (Matthews & Yang, 2013) as those in which the individual is embedded and is indirect contact in their relationships with others. As introduced in the previous section, the passage of time within a place can be thought of as either static or dynamic. In some places, change occurs slowly, and the physical and social characteristics of that place remain relatively stable over time (e.g., a small, rural remote farming town). Alternatively, places may have dynamic moments, such as shocks (e.g., major events such as floods or fires) or periods of change (e.g., influx of opioids into a community, long-term failure of governments to maintain safe water supply). These intersections between time and place can have different implications for the developing individual. For example, stability within a place may lend itself to the development of long-standing relationships and sustained interactions over time. This stability is often lauded as a positive aspect of place in collective socialization models. Conversely, these collective socialization models also propose that in cases of instability, the structural features of places can compromise youth's sense of security and may be detrimental to their emotional well-being.

Time and Culture—Intersections between time and culture can also manifest in important ways. Similar to the intersections between time and place, intersections between time and culture can occur as individuals transition between cultures and cultures change over time. One way that we can conceptualize cultural transitions is as changes in one's perception of, or identification with, a culture over time. This perspective aligns with the large body of research on racial-ethnic identity development. For example, from the model of ethnic identity development by Phinney (1998), aspects of time and culture are integrated to describe ethnic identity development as consisting of three subsequent stages: 1) the period in which identity remains unexamined; 2) a stage characterized by a period of identity search and exploration; 3) a transition into a stage where one's ethnic identity has been accepted and internalized. Theory and research on racial-ethnic identity development has also described how identity exploration and identification with one's culture can change across developmental periods. For adolescents in particular, these periods are characterized by identity exploration and formation (Umaña-Taylor et al., 2014).

Just as places change over time, so do cultures. Cultural change can be slow and steady or marked by shocks, or periods of rapid change. For example, the occurrence of a singular historical event in the U.S., such as the assassination of Martin Luther King, the murder of

George Floyd, the election of Barak Obama as the first Black president, and the election of Kamala Harris as the first multi-racial female vice president or globally such as the earthquakes in Turkey and Syria, tsunami in Indonesia, ,assassination of Jovenel Moȉse (president of Haiti), and decolonization of Asia and Africa from 1945–1960 can serve to bring individuals who share a cultural group closer together and can garner attention and support from individuals outside of the cultural group for the people and culture of that group. However, cultural change does not necessarily need to be marked or motivated by a singular event or occurrence. We can also conceptualize cultural change as occurring more or less rapidly during certain periods of time. For example, generational shifts bring with them changes in population composition and attitudes. Globally, younger generations are more diverse in terms of race, ethnicity, culture, gender, and sexuality than older generations (Parker & Igielnik, 2020). In light of this diversity, younger generations are increasingly rejecting certain labels and identifiers and creating and endorsing a variety of new labels (Levin, 2019). As such, periods of major population change can bring with them both changes in cultures and changes in the ways that individuals relate to and identify with those cultures.

Place and Culture—When we think of what defines a culture we often think of the social behaviors and norms that exist within a group of individuals. Rarely do aspects of place make their way into our conceptualizations of culture (or vice versa). Despite this common oversight in conceptualization, aspects of place and culture are tightly intertwined. For example, neighborhoods are often identified by real or perceived characteristics of the people who live there. There are multiple examples of neighborhoods defined by the characteristics of the residents who inhabit: San Francisco's Castro as an epicenter of queer life and New York City's Washington Heights as a center of Dominican American and Dominican immigrant life. However, even more common across multiple cities and municipalities are neighborhoods defined by the racial-ethnic concentration of certain groups such as Koreatown, Chinatown, and Little Italy. Culture manifests itself within these places through the interactions between the people who inhabit them, the resources that exist within them, and the perceptions that individuals have about them (Roy, 2018). Just as places can develop cultures that define them, individuals can become attached to or identify with these places because of a sense of shared experiences and values, and time (Altman & Low, 1992; Pasco et al., 2021; Proshansky et al., 1983).

The identity of a place can also be influenced by representations and perceptions of that place that exist in broader society. These representations and perceptions are often motivated by the social, economic, and historical circumstances that have shaped settlement and the development of place as well as sociohistorical circumstances that are closely tied to systems of power and privilege (Roy, 2018). For example, Payne et al. (2019) examined modern patterns of pro-White implicit bias across counties and states in the U.S. that varied in terms of the proportion of the population enslaved in 1860. They found that counties and states that were more dependent on slavery had higher levels of pro-White implicit bias today among White residents and less pro-White bias among Black residents (Payne et al., 2019). This finding suggests that the sociohistorical experience of slavery may still play a role in the geographic patterns of intergroup relations that exist today (Kemp, 2011; Pulido

et al., 1996; Walters et al., 2011). This research parallels work on stereotypes of place in which people hold stereotypes about neighborhoods that are directly tied to the racial, ethnic, or religious characteristics of the people who live there. For example, the stereotypes that people hold about minoritized neighborhoods tend to be overwhelmingly negative (e.g., impoverished, crime-ridden, ghetto, rundown; Bray et al., 2015; Bonam et al., 2016; Menon, 2022). The tendency for individuals to hold place-based stereotypes and exhibit implicit biases about neighborhoods has powerful implications for the perpetuation of structural inequality and racial segregation (Charles, 2003) as well as for "damage-centered research" (Tuck, 2009).

In thinking about the ways that culture and identity can manifest within places, we can address how individual culture and identity become more or less salient in different places. For example, prior research has shown the salience of youth's ethnic identity to be higher when they are with individuals who share their racial-ethnic background (Yip, 2005). As such, aspects of one's culture and/or identity may become more or less prominent as individuals spend time with different people and in different places. In fact, this intersection between place and culture may be particularly salient as youth are experiencing ecological transitions, or moments of time when they transition into occupying a new place. Douglass et al. (2014) examined the relationship between transitions in school diversity (as youth moved between schools) and youth's racial-ethnic identity and anxiety. They found that when youth interacted more with groups that were similar to them in ethnicity, they reported lower rates of anxiety. However, among youth who experienced a transition in school diversity, the protective effects of same-ethnicity composition were seen only among youth whose ethnic identity was very important to them. These findings demonstrate that individual identity can vary as youth move across settings and transition between places.

Visual Representations of Time-Place-Culture

In Figure 3, we introduce a visual representation of the intersecting influences that time-place-culture play in individual development, with a focus on time as dynamic. This model positions the developing individual on an expanding spiral. The spiral represents time and the individual's journey around the spiral represents the life course from birth to the transition to adulthood. The widening spiral reflects the individual's occupation of place over time. As the child gets older, the places that they occupy increase in number and diversity. The size of the spiral indicates that individuals have access to more and different types of places as they progress through normative developmental periods. The key developmental periods (e.g., early childhood, middle childhood, early adolescence) are represented as differently shaded sections along the spiral. The varying developmental periods shape the places that individuals inhabit and the behaviors that they engage in within these places. The solid bars between the developmental periods represent the important developmental transitions that occur across developmental periods and indicate that ecological transitions, or transitions between salient places, also occur at these points in time. For example, the transition between middle childhood and early adolescence is often marked by a change in schools and peer groups. Although developmental science has long recognized transitions between developmental periods as critical points in the life course,

much less attention has been paid to changes in the types of places individuals occupy and the ways these transitions may shape changes in individual functioning.

Whereas Figure 3 highlights the dynamic dimension of time, Figure 4 shows how each element of the time-place-culture framework overlaps with the multiple dimensions of time – bounded/unbounded, static/dynamic, and objective/subjective. We use a grid of overlapping circles to highlight how time (orange), place (blue), and culture (green) intersect with each other to impact development. The intersecting space of the three elements is purple to show how these elements are inextricably linked. Also, each element of time, place, and culture is overlayed on each time dimension to signal the importance of considering each of these dimensions when exploring time, place, and culture. Lastly, the dimensions of time are presented on a continuum from left to right to show less abstract and more variable to more abstract /less variable. This conceptual figure is meant to canonize the perspective that intersection of time, place, and culture is complex but can be empirically implemented in variety of ways to provide a holistic portrait of development in context across time.

Some Methodological Considerations

In addition to the important conceptual points outlined for a time-place-culture perspective in developmental science, we offer a few methodological considerations and recommendations. First, developmental research should use longitudinal data to the extent that it is possible. This suggestion includes both short-term and long-term longitudinal studies that capture micro-, meso-, and macro-time. Inherent in this recommendation is the inclusion of the appropriate assessment points to accurately address questions of interest. The determination of assessment points and frequency of assessments should take into account development of the individual as well as development of place.

Second, as a related point, work in this vein needs to consider place in a multifaceted way. Characteristics of places central to individual development that are shaped by culture and that change over time must be explicitly measured. For example, these places may be bounded (e.g., school) or unbounded (e.g., activity spaces), and they must be captured over the developmentally meaningful period of time relevant to questions of interest.

Third, research seeking to incorporate a time-place-culture perspective should include both within and between group designs. Doing so will permit researchers to capture the unique and universal experiences of multiple minoritized populations and their more privileged counterparts. It will also enhance our understanding of how time and place intersect with culture in shaping human development. Lastly, although we have outlined a number of considerations for advancing our conceptualization and measurement of time within place and across culture(s), all studies do not need to do (nor can they do) all things. Building knowledge is incremental and diverse. Interdisciplinary and transdisciplinary collaborative teams are needed to engage in transformative science that explicitly attends to time, place, and culture. Yet, researchers should be more thoughtful at the outset of study design in thinking through these ideas just as Phinney (1998) suggests we do when thinking specifically about culture.

Summary—The goal of this chapter was to present a framework for elevating the concept of time in developmental science generally and specifically as related to culture and place in theories of human development. Key to this perspective is that time, place, and culture are inextricably tied. As such, they should be meaningfully represented in theoretical frameworks of human development and their connections made more explicit than current conceptualizations. Our review of extant theories addressed these gaps and provided exemplars of such work.

In attempting to move towards a theoretical framework that puts emphasis on aspects of time, place, and culture, we argue that researchers need to be cognizant of thinking through how each of these elements are conceptualized and measured within their research designs and questions. To facilitate this process, we proposed three dimensions along which to conceptualize time, place, and culture. They include the distinctions between bounded and unbounded units, static and dynamic experiences, and subjective and objective elements. However, we acknowledge there are other relevant dimensions of time that we did not discuss such as persistence vs. lag (Kwan, 2018) that should be considered in future work as this model is expanded. Nevertheless, by putting forth this novel framework, we seek to promote consistency and clarity in time-place-culture developmental research and provide a starting point from which to advance current thinking about these domains.

The primary focus of this chapter was to expand our conceptualization of time in place-based and cultural-developmental research. Thus, we only briefly considered methodological issues in this chapter. It is our hope that others can build on the ideas proposed to develop methodological strategies for addressing them. There is much work to be done here.

While the word, *time*, is popular in the English language (Garfield, 2016), it remains to be seen if its popularity as a subject of developmental science will come to the forefront like place and culture have before it. Raising its prominence in developmental science in conjunction with place and culture will provide a more integrated and holistic perspective of human development-- one that better reflects the nature of human development in an increasingly complex and dynamic world.

Chapter V. Conceptual, Methodological, and Cultural-Developmental Advances on Structures and Processes in Place-Based Developmental Research

Chapter Highlights

- This chapter contributes to the comprehensive cultural-development activity-space framework for studying development in context by introducing individual-, dyad-, and network-centered conceptualizations of activity space structures and processes.
- These conceptualizations draw on dominant theoretical traditions within the place-based developmental literatures, such as ecological systems theory, social disorganization theory, collective efficacy theory, and approaches to understanding racialized power hierarchies.

- Individual-centered conceptualizations include those comparing outcomes of individuals with different activity space profiles (between-individual) and examining consequences of changes in individuals' activity spaces over time (within-individual).
- Dyad- and network-centered conceptualizations include those assessing consequences of shared or divergent activity space profiles across two-person interactions (e.g., parent-child), groups of individuals (e.g., peer networks), and networks of individuals tied through shared routine activity locations, i.e., **ecological networks**.

The neighborhood literature, upon which our framework for studying child and adolescent development in context partially also is situated has been the focus of critique for many decades. A principal concern is the need for more precise articulation of the mechanisms through which neighborhood contexts operate to influence youth (Sampson et al., 2002). In response to this concern, theoretical work has emphasized the critical distinction between structural characteristics of contexts (i.e., features related to the composition and spatial arrangement of neighborhood residents and institutions) and social processes (i.e., the on-the-ground collective dynamics that link structures with key outcomes) to more thoroughly articulate the nature of neighborhood effects. For instance, whereas a significant body of literature has observed associations between residence in economically disadvantaged neighborhoods and youth wellbeing, a substantially smaller body of literature seeks to identify the process-based mechanisms that account for the developmental impact of living in a poor neighborhood (Leventhal & Dupéré, 2019).

While progress has been made in describing and investigating potential social processes that may more directly explain neighborhood effects on youth (Sampson, 2019), other critiques of the neighborhood approach call into question the utility of extant advances in social process-related thinking (Browning & Soller, 2014). Notably, the increasing recognition of the complexity of everyday exposures and interactions – captured by the concept of "activity space" – challenges the artificially narrow and reductive approach to understanding broader place effects on youth represented by placing singular focus on conventional neighborhood designs (Browning, Calder, et al., 2021; Kwan, 2012; Matthews & Yang, 2013). This chapter briefly describes the development of neighborhood effects research and its emphasis on structures and social processes important for youth development. We then turn to the activity space and mobility concepts as alternative approaches to capturing spatial exposure effects on youth. We extract conceptualizations of developmentally relevant structures rooted in activity space interactions and exposures at the individual, dyad, and network levels and identify key processes through which structures at each level may influence youth outcomes. By emphasizing activity space profiles both within- and between individuals, this approach identifies potentially relevant contextually rooted structures and processes that depart from those emphasized in conventional neighborhood research.

Throughout this chapter, we are concerned with how overarching systems of power, racialization, and oppression shape young people's activity spaces—both the structural features of, and the social processes within, those activity spaces—as well as young people's reactions to them. We therefore analyze both neighborhood effects and activity-space

structures and processes through the lens of racialized power hierarchies. We examine the following lens of inquiry: (1) how we understand the notion of collective efficacy within neighborhood research; how we analyze the effects of racial composition of activity spaces; and (2) how we consider youth and family agency and choice within activity spaces are all shaped by this overarching framework. This lens provides key context for young people's activity space experiences and helps join the cultural-development and activity-space approaches/methodologies, which have largely remained separate in the literature (see Chapter I for a fuller discussion; White, Witherspoon, et al., 2021).

Structures and Processes in Neighborhood Research on Youth Development

We first consider the long research tradition examining structures and social processes at the neighborhood level and their implications for youth development. Neighborhood influences on youth have been a longstanding focus of several social science disciplines, extending as far back as the work of Dubois (1899) and the early 20th century research of the Chicago School of Sociology (Abbott, 1999). The productive period of the early 20th century, however, was followed by a mid-century decline in empirical investigation of neighborhoods. Although ethnographic work on neighborhoods continued throughout this period, the survey research revolution in the 1960s and 1970s led to an increasing quantitative focus on individual-level analyses abstracted from the spatial context (Barton, 1968). This trend was reversed with the seminal work of Urie Bronfenbrenner (1979) and the publication of William Julius Wilson's (1987) *The Truly Disadvantaged*. Bronfenbrenner's ecological systems theory and Wilson's emphasis on the effect of broader macro-economic shifts in concentrating urban neighborhood poverty drew attention to the inevitable embeddedness of youth development in influential social contexts at multiple levels of analysis.

The contributions of Bronfenbrenner and Wilson in stimulating urban neighborhood research cannot be overstated. In fact, reviews of the literature from the last three decades have seen a dramatic increase in "neighborhood effects" research across several disciplines (McBride Murry et al., 2011; Leventhal & Dupéré, 2019; White et al., 2021). Several studies have investigated how neighborhoods that vary in terms of structural characteristics and social processes impact urban residents from diverse ethnic and racial backgrounds (Leventhal & Dupéré, 2019; Sampson, 2012; White, Witherspoon, et al., 2021). Parallel developments in multilevel statistical models accelerated this research trend, with studies increasingly disentangling the impact of individual- and neighborhood-level influences on youth outcomes. The literature focused on youth specifically has also been equally voluminous, with evidence pointing to the independent role of neighborhood structural contexts for outcomes such as racial socialization and racial identity (Bennett, 2006; Caughy et al., 2006; Stevenson et al., 2005), delinquency and crime, teen pregnancy and childbirth outcomes, educational outcomes (Sharkey & Faber, 2014), and physical and mental health (Leventhal & Dupéré, 2019; Seaton & Yip, 2009). The literature ties structural contexts to both costs and benefits for youth. For example, whereas much of this research links concentrated poverty to negative outcomes, research has also documented some positive outcomes of majority-Black or majority-Latinx spaces (Byrd & Chavous, 2009; Curci et al., 2021; Seaton & Yip, 2009). This is emphatically not to argue that structural segregation is

positive, but rather, to highlight aspects of pervasive structural racism in which some activity spaces that act as “racial safe spaces” can be beneficial for young people of color.

A key contribution of this literature has been the development and refinement of models identifying key structures and related social process mechanisms thought to be developmentally relevant. Although a comprehensive review of theoretical approaches to neighborhood effects research is beyond the scope of the current chapter, we highlight prominent contributions to thinking regarding place-based structures and processes. The existing debate regarding the role of neighborhoods in youth wellbeing owes its origin, in part, to the analysis of Chicago neighborhoods by Shaw and McKay (1969). Their detailed spatial analyses highlighted the principal role of neighborhood economic disadvantage, the turnover of residential population, and racial-ethnic compositional heterogeneity as key factors contributing to social disorganization and associated higher levels of crime and delinquency. Neighborhood inequality in these and related structural conditions, exacerbated by the role of systemic racism in shaping patterns of residential segregation, remain a principal focus of researchers interested in the neighborhood context of youth behavioral and mental health (Acevedo-Garcia et al., 2020; Badland et al., 2014; Krysan & Crowder, 2017).

Critical advances in research on the social processes linking these structural conditions with youth outcomes has focused on a range of mechanisms, including informal social interactions rooted in everyday neighborhood activities, experiences within local institutions and organizations, and the extent of mutual trust and willingness to act on behalf of shared goals, or *collective efficacy.* Also, some international literature suggests that complementary social processes such as acceptance of diversity as well as pride, attachment, and connectedness are critical mechanisms to explore to understand how structural conditions impact health and well-being, as these processes can empower community members, support the development of cohesion, and promote positive stewardship of shared spaces (Badland et al., 2014). While extant research on the beneficial effect of informal social interaction has been somewhat mixed, evidence increasingly suggests that high-quality institutions and collective efficacy may have broadly positive effects on developmental processes and outcomes for neighborhood youth and families (Badland et al., 2014). Of course, racialized and power contexts mitigate this. For example, recent literature has highlighted how collective efficacy in predominantly White neighborhoods can lead to violent and sometimes deadly over-policing of Black and Latinx youth in predominantly White spaces (Bell, 2020). Regarding the likelihood of racialized attacks, Lyons (2007) found that neighborhood informal social control was positively associated with racial hate crimes in Chicago (Lyons, 2007). Emerging evidence on the impact of the local institutional context highlights the contribution of viable neighborhood organizations in promoting and reinforcing collective efficacy with respect to the supervision and socialization of youth (Sampson, 2012).

Yet, in considering the role of neighborhood social processes such as collective efficacy for youth outcomes, questions arise regarding the actual exposure processes through which collective efficacy affects youth. In particular, neighborhood effects research has specified the structure-process link at the residential neighborhood level, assuming that resident youth are exposed to the collective efficacy dynamics of their residential neighborhoods at levels sufficient to influence outcomes. Indeed, the vast majority of neighborhood studies,

particularly those theoretical approaches that emphasize socialization, presume an exposure-based or experience-based mechanism translating neighborhood structures and processes into youth outcomes (Browning & Soller, 2014; Sharkey & Faber, 2014). This approach is potentially problematic to the extent that the residential unit employed (i.e., a census tract or block group) does not, in fact, capture an encompassing or highly relevant non-home exposure space for youth. Indeed, emerging evidence indicates that neighborhoods constitute a relatively small proportion of total and non-home time (Basta et al., 2010; Browning, Calder, et al., 2021).

Activity Space Structures and Processes and Youth Development

Activity space frameworks offer important tools for capturing exposure to structures and processes in developmentally relevant places and settings. Like neighborhoods, activity spaces exhibit structural features, such as racial or socioeconomic composition, as well as social processes such as network dynamics, racialized power structures, and shared or fragmented cultural orientations. Yet, understanding the operation of structures and processes from an activity space perspective requires acknowledgment of the complex and variable nature of everyday routine experiences and their consequences for development. Extant approaches to examining the impact of activity spaces on youth have typically linked aspects of ambient contexts to outcomes marked by short-term temporal lags (e.g., same day) or considered average characteristics of activity spaces as measured over a given period (Cagney et al., 2020). Yet, few studies have examined structural and social process compositions of the total *profile* of individuals' activity space exposures, nor has research considered the consequences of distinct or overlapping exposure patterns at the dyad or group level.

We offer a framework for conceptualizing developmentally relevant structures and processes within an activity space approach that takes as a starting point the potential for considerable variability in everyday exposures along consequential dimensions. This within-individual focus draws out the implications of activity space heterogeneity for youth and the potential for the impact of any given space to be conditional on the characteristics of other activity spaces. We then extend the focus on activity space profiles to consideration of interacting exposure patterns across *dyads* (e.g., caregivers and youth with differing or similar activity spaces) and *networks* (e.g., groups of individuals that share activity locations to varying degrees). We illustrate this *relational ecology* perspective on the role of activity spaces in youth development with reference to traditions of research incorporating a more nuanced approach to engagement with the socio-spatial environment.

A Note on Research Examples

The research examples used in this chapter are drawn from a number of literatures, including criminology, racial identity development, education, and health, reflecting both the authors' areas of specialization and the broad relevance of spatial context for collective and individual wellbeing. The examples employed, however, should not be taken to suggest that these substantive areas are the only domains in which activity-space methodologies and considerations should be considered relevant and useful. Critically, the discussion should *not* be read as suggesting any connection between racial identity and crime.

Individual Level

We begin by considering the structural features of activity space profiles at the individual level and the implications of these features for intra-individual processes relevant for youth development. Specifically, we argue that the multiplicity and diversity of activity spaces calls for considering the *within-individual* structure of activity space exposures. Are activity locations compositionally heterogeneous or homogenous with respect to factors such as racial composition and economic status? To what extent does compositional heterogeneity in youths' activity spaces influence key developmental processes? With respect to racial identity, for instance, an individual youth's neighborhood may be highly homogeneous in racial composition while actual experiences across activity locations exhibit substantial diversity, prompting or rewarding "code switching" behaviors or related bicultural competencies, which are extensively documented in the racial socialization literature (Bennett, 2006; Hamm, 2001; Harrison et al., 1990; Safa et al., 2019; Winkler, 2012).

Are adolescents' experiences at an activity location of a given composition dependent on the composition of other activity locations (e.g., home neighborhood)? For instance, significant variation in economic status or aspects of advantage/disadvantage may lead to ecologically dependent experiences of relative deprivation (Owens, 2010). In the following section, we review the still-limited research measuring youths' activity patterns and activity-space compositions. We then discuss studies considering how multiple youth contexts simultaneously shape developmental outcomes—such as studies of both neighborhoods and schools, or home neighborhoods and adjacent neighborhoods—in light of a significant absence of studies assessing the comparative and relative roles of activity space exposures in shaping youth developmental outcomes.

Activity Space and Development

Perhaps the most straightforward approach to thinking about structures and processes within an activity space framework would focus on how the compositions of activity spaces, either in-the-moment or on average (e.g., over the course of week), relate to developmental outcomes. One exemplar investigation using this approach is the Peterborough Adolescent and Young Adult Relationship Study (PADS+) by Wikström et al. (2012). Using a space–time budget methodology designed to assess linkages between routine activities and delinquency (Golledge & Stimson, 1997), PADS+ as well as ensuing studies draw upon similar designs in which features of environments, such as delinquent peers and collective efficacy, relate to both immediate (Wikström et al., 2012) and future (Bernasco, 2019) delinquent activities of youth.

The space–time budget methodology typically asks respondents to retrospectively report where they were and what they were doing during short time blocks over the course of a few days (Hardie & Wikstrom, 2019). However, studies are increasingly relying on GPS data to investigate youths' daily patterns (Browning, Pinchak, & Calder, 2021). Linking GPS points to census crime data, Browning, Calder, Ford, et al. (2017) used GPS data from the Adolescent Health and Development in Context (AHDC) study to examine racial disparities in exposure to violence. Other studies have examined relations between GPS-based activity

patterns and developmental outcomes. For instance, some have used GPS data to assess how specific types of location shape youth behavior, such as associations between exposure to alcohol outlets and drinking behavior (Morrison et al., 2019). However, most studies hypothesize effects of activity space structures and processes focus only on adults, whereas outcomes specific to youth development go largely unexamined (see Cagney et al., 2020 for a comprehensive review). Studies relating direct exposures to immediate outcomes moreover typically focus on a single independent variable of interest, less often considering the comparative relevance of in-the-moment environments to which respondents are exposed. Again, here, it is important to note that young people's activity spaces may be dependent on their parents (Nordbø et al., 2019). Additionally, their activity space, which is associated with their perceptions of the environment and their ability to engage in it, is couched within a broader social structure (Villanueva et al., 2012; Villanueva et al., 2013),). Research has shown that families have a mix of agency and structural constraints in terms of selecting versus being filtered into various settings, such as schools and residential neighborhoods, and that this process is tied to racialized power structures (García Coll et al., 1996).

Relativity of Exposures and Developmental Outcomes

Aside from considering that average exposures are more accurately captured by activity space data, acknowledging the complexity of everyday routines at the individual level also requires attention to the potential interdependence of exposures and their impact on development. Extant research considering multiple contexts simultaneously offers important insights regarding how structural and social process features of contexts may combine to shape youth development. Among the most frequently considered contexts alongside home neighborhoods are youths' school environments (Gaias et al., 2018). Both structural and social process features of schools, such as sociodemographic compositions and school social climate, are important for a host of youth outcomes including educational attainment (Gaias et al., 2018), involvement in delinquency (Kirk, 2009), and psychological well-being (Seaton & Yip, 2009). Some studies have also considered how interactions between youths' contexts relate to development. For example, some research finds that neighborhood and school resources combine additively to benefit well-being both during adolescence (Kirk, 2009) and early adulthood (Deming, 2011). Other studies find evidence of relative deprivation processes however, such that youth from more structurally disadvantaged neighborhoods experience costs to their academic and behavioral outcomes (e.g., lower odds of high school or college graduation) when there is a greater presence of affluent students in their school (Owens, 2010; Pinchak & Swisher, 2022; Shedd, 2015).

Despite efforts to address the interdependence of activity space contexts in their impact on youth development, few studies have attempted to capture activity-space patterns and influences more comprehensively. One important exception comes from Tompsett et al. (2016), who, drawing on GPS data collected from court-involved youth, investigated how time spent with peers beyond the neighborhood of residence restricted the influence of home neighborhood features on delinquency. They found that levels of collective efficacy in neighborhoods of residence had less pronounced associations with delinquency among youth who preferred to spend time with peers beyond their residential neighborhood. In another study drawing on data from the AHDC study, Browning et al. (2018) found

that Black adolescent boys felt less safe in neighborhoods that were relatively higher proportion White than their average activity space exposures. These GPS-data findings affirm previous qualitative and quantitative studies on the ways in which racism, racism stress, and perceptions of racial discrimination affect Black children and youth's experiences and outcomes in a variety of spaces (e.g., Hughes et al., 2016; Seaton & Yip, 2009; Winkler, 2012).

The culturally informed perspectives that we are integrating into an activity space framework could be used to generate studies that consider resiliencies developed by youth of color. For instance, in a series of qualitative studies of Black and "Coloured" (i.e., multiracial European and African or Asian) youth in Cape Town, Lindegaard and Zimmerman (2017) discuss how respondents develop and perform "flexible" cultural repertoires to more safely navigate between culturally and demographically heterogeneous activity spaces compared to youth who tend to perform more rigid repertoires. However, a broad weakness of the field is the scarcity of research considering how youths' cultural repertoires and street efficacy skills (i.e., the ability to effectively avoid confrontation to maintain one's safety) interact with features of both their neighborhoods and activity spaces to shape a broader range of youth outcomes (Sharkey, 2006).

The potential relevance of activity exposures to child and adolescent development motivates future studies and data collection efforts testing not just whether activity spaces or specific locations matter for individuals, but broader theoretical approaches examining the conditions under which these experiences matter most. As Hughes et al. (2016) suggest, "Researchers need to move beyond individual-level frameworks to identify the characteristics of settings in which particular types of identities, socialization experiences, and discrimination experiences coexist to influence development" (p. 5). We therefore turn next to considering how individuals' contextual experiences may be dependent not only on their own activity patterns, but also the activity patterns of significant others, such as parents and peers.

Dyadic Interactions

Addressing the characteristics of activity space engagements at the individual level reveals a range of interesting questions, some of which link back to foundational social scientific concerns. The same can be said of questions that arise when considering relational aspects of activity spaces at the dyad level and associated outcomes. For instance, two actors who spend time with one another will, by definition, share activity spaces at least to some extent. Time outside of each other's presence, however, may involve activity space encounters of varying levels of similarity. Although not co-present, activity space settings may be quite homogenous with respect to social composition and key social processes, leading to relative continuity of activity space characteristics even when separated. In contrast, time apart may be marked by quite distinct activity spaces. Thus, relevant structures and processes may be seen to characterize the specific activity spaces encountered for each individual and the within-individual pattern of activity space encounters for each actor as well as the relationship between activity profiles *across actors*.

The complexity of within-individual relational activity space structures is compounded even further when considering exposures across actors, pointing to the need for theoretically informed focus on key aspects of structures and processes that apply to given developmental outcomes. In what follows, we consider select aspects of between-individual relational activity space structures, drawing on foundational and prominent recent literature. In particular, we consider characteristics of shared (co-present) activity spaces and homogeneity/heterogeneity of activity space exposures when not co-present as factors contributing to key developmentally relevant processes. Relevant dyadic processes include normative expectations, communication patterns, engagement with power hierarchies, conflict, and other dynamics that may be influenced by relational activity space structures. Given the relative dearth of studies directly bearing on these issues, we propose attention to relational activity space structures with reference to two examples: 1) caregiver-youth interactions and 2) "stranger" or weak tie interactions in public space.

Caregiver-Youth Interactions

Perhaps no other relationship has received more social scientific attention than that between caregiver and child. Yet, while the subject of an enormous and diverse literature, relatively few studies have directly focused on the spatial arrangements characterizing interaction patterns within these relationships. A focus on co-presence – or time spent together – is central to many investigations of the caregiver-child relationship, but a simultaneous focus on the contexts of co-presence is less commonly featured. For instance, few studies have assessed the extent to which caregiver-child interactions occur primarily within the home or extend beyond the home setting. Important exceptions do exist. For example, the racial socialization literature regarding caregivers and children discusses issues of race precisely *because* they are co-present in non-home activity spaces that inspire such discussion, such as shopping and entertaining venues, children's extra-curricular activities, car rides through various neighborhoods (e.g., Winkler, 2012). Nevertheless, using GPS data to capture co-presence both within the household and beyond would allow for further investigation of the extent to which caregivers have the opportunity to guide youth in the extension of normative structures established within the household to shared non-home settings. Time in non-home spaces allows for application or adaptation of, for instance, conduct norms largely operating within the confines of the home to other private or public spaces. An extensive literature documents the processes by which families of color in the United States teach children how to successfully "cross borders" between "different sociocultural worlds" (Allen, 2016; Harrison et al., 1990; Stanton-Salazar, 1997, p. 22). The capacity for generalization of normative structures to settings beyond the home is a key developmental goal facilitated by engagement with diverse activity spaces when caregivers and youth are co-present.

Beyond co-presence, activity space experiences occurring when caregivers and youth are separated may also play an important developmental role. For example, the racial socialization literature has suggested that parents' experiences with racial discrimination (presumably in activity spaces outside of the home) influence both the extent to which they discuss racism with their children and the types of messages they send to their children about race (Saleem et al., 2020; White-Johnson et al., 2010). Additionally, activity space settings that vary substantially in composition or the operation of key social

processes may lead to dissonance in attitudes and expectations between caregivers and youth. A longstanding ethnographic literature on parenting in economically disadvantaged neighborhoods highlights parental concerns regarding neighborhood environments that may be both unsafe and present alternative behavioral role models and expectations (Harding, 2009).

Similarly, intergenerational divergence in the cultural content of activity spaces for foreign-born caregivers and their adolescent children has been the subject of extensive inquiry, but with little direct attention to the patterns of space use through which this divergence is shaped. This theme is among the oldest of social scientific concerns, having found prominent initial expression in the book, The *Polish Peasant in Europe and America* by Thomas and Znaiecki (1919). The authors describe a persistent friction between first generation immigrant parents and children raised largely or exclusively in the new U.S. context (Thomas & Znaiecki, 1919). While immigrant parents maintained attachment to the normative order of their origin country, immigrant social structures of the late 19th century urban America were insufficiently robust to reinforce these origin country norms in the next generation. Thomas and Znaniecki (1919) embedded their analysis in an extensive characterization of the urban communities in which immigrants navigated resettlement.

A relational approach to activity space structures provides an opportunity to explore intergenerational dynamics within immigrant families through more precise characterization of divergence in activity spaces, with implications for “acculturation consonance” – or the extent to which the acculturation process is synchronous across generations (Gonzales et al., 2018; Ousey & Kubrin, 2018). Variability in the extent of acculturation consonance across immigrant households rooted in intergenerationally diverging activity spaces may also shed light on differences between families in new and older immigrant destinations. Moreover, older immigrant destinations may potentially provide greater opportunity for immigrant households to find community continuity with more traditional normative structures promoted within the home setting (White, Witherspoon, et al., 2021). These examples offer insight into the ways in which compositional and process-based differences in activity space profiles within an intimate, familial relationship may play a consequential role in youth development.

Cross-Race Interactions in Public Space

An analogous dynamic may be at play in the context of stranger or very weak-tie interactions involving cross-race encounters between youth and others in public space. In the context of highly racially segregated cities – both from the standpoint of residence and activity spaces – interactions between individuals of different races and ethnicities in public spaces may be embedded within largely compositionally homogenous everyday exposures. In urban areas where individuals typically encounter racially isolated settings, cross-race interactions will tend to be less frequent, less familiar, and less trustworthy. These same interactions in urban areas characterized by more prevalent residential and activity space diversity, in contrast, may be less subject to disintegrating dynamics due to the frequency of everyday cross-race encounters, particularly when those encounters feature conditions such as equal status, cooperation, meaningful friendships, and institutional

support (Allport, 1954; Hewstone & Swart, 2011). Familiarity with cross-race encounters under such conditions in the context of everyday routines spanning activity spaces can promote trust among potential interactants and, in turn, a sense of *relational efficacy* – the shared belief that partners in an interaction can mutually coordinate to achieve common objectives and resolve problems (Bandura, 1997, 2001). However, once again, it is important to consider the racialized context and power dynamics of activity spaces and cross-racial interactions. While cross-racial interactions can, in some cases, lead to relational efficacy, in other cases—especially in the context of systems of racial oppression—they can lead to racial discrimination and negative outcomes that actually heighten mistrust (Anderson, 2015). In the context of public space use, these interactions can be fleeting but potentially quite consequential. Broadly diverse activity spaces set the conditions for the successful joint use of public space – standing in line or sharing a common park space as examples. Although such interactions may go unnoticed when uneventful, there are at times when such interactions are sources of microaggressions and racist attacks which cumulate in developmental and health consequences for Black youth.

A more formal representation of dyad-level activity space structures provides an opportunity to embed these observations in a more expansive approach. Specifically, for the purposes of understanding weak-tie, cross-race dyadic interactions, we consider activity space profiles at the dyad level with respect to the degree of *heterogeneity or homogeneity* describing activity space composition for actors in the dyad and the extent to which activity space compositional features are *shared or divergent.* Also, given stratification processes, power structures, and White privilege, in our examples we juxtapose spaces that are predominantly White with spaces that are composed predominantly of communities of color. However, we do not assume that the dyadic actors themselves are of a particular race. For the purposes of the ensuing discussion, we focus primarily on four conditions according to the following typology: (1). homogeneous and shared activity spaces (e.g., both actors have all racially White activity spaces); (2) homogeneous but divergent racial compositions (e.g., one actor has a White activity space while the other has a Black activity space); (3) heterogeneous but shared profiles (e.g., both are exposed to both Black and White activity spaces); and (4) heterogeneous but divergent profiles (e.g., one actor is exposed to White and Asian activity spaces, the other is exposed to Black and Latinx activity spaces). A fifth condition represents a mixed scenario where one actor has heterogeneous exposures and the other homogeneous. Compositional exposures are necessarily unshared in this dyad.

First, we discuss the homogeneous and shared condition that characterizes the majority of dyadic interactions involving White individuals in the U.S.. In fact, survey data shows that White Americans have overwhelmingly White social networks (Cox et al., 2016) and scholars have argued that residential segregation limits children's cross-racial contact even more than it does for adults (Logan et al., 2001; Moody, 2001). The neighborhood literature has focused on the role of Black isolation in segregated neighborhoods in understanding the concentration of negative outcomes in such contexts. For instance, some approaches assume that everyday activity is sufficiently concentrated in such contexts to generate a salient and intersubjectively understood "code of the street" (Anderson, 1999). The code is a set of informal rules governing comportment and social interaction designed to manage the challenges of residing in structurally disadvantaged and segregated Black neighborhoods.

To the extent that the code is shared through common and homogenous activity space engagement (either through actual physical overlap or shared characteristics), it provides a potentially powerful commonly held cultural orientation. Literature on racial identity development, psychological well-being, and academic achievement has shown the role of homogenous and shared activity spaces as protective for Black children and youth in the context of a broader society characterized by anti-Black racism (Tatum, 2017). However, the homogeneous and shared condition is unlikely to characterize most *cross-race* dyads given levels of residential segregation.

Activity space characteristics of members of a dyad may be homogeneous but *divergent.* In this case, for instance, residents of a highly segregated community may come into contact with one another but be otherwise exposed to very different settings with respect to racial composition. For example, cross-race contacts involving a Black youth with otherwise Black-isolated activity spaces and a White adult with otherwise White-isolated activity spaces may be characterized by processes such as high levels of distrust and an elevated risk of antagonism. These process outcomes are likely due to more entrenched and differentiated expectations flowing from more isolated and consistent exposures that are perceived to be mutually violated in the context of the dyadic interaction.

Heterogeneous activity space profiles also may be shared or unshared across members of a dyad. For instance, in the case of heterogeneous but unshared activity space profiles, members of a dyad may experience a limited sense of efficacy with respect to communication and coordinated action at the dyad level. While members of the dyad may have more experience with diversity of setting type, the lack of overlap in compositional diversity limits dyadic efficacy. Finally, heterogeneous but shared activity space profiles might engender uncertainty and distrust but may also form the basis for the development of a shared set of meta-communicative rules that guide interactions. This situation is akin to the "live and let live" neighborhood frame identified by Perry (2017) in her ethnographic study of a racially integrated neighborhood in Milwaukee (see also Jacobs, 1961).

Although the exercise of delineating heterogeneous, shared activity space is tentatively discussed, the discussion highlights a set of structural conditions and potential social process consequences rooted in recognition of activity space complexity. The logic, of course, points to ever more complex multifaceted conditions. For instance, as Anderson (2011) points out, the circumstances of activity space settings in which cross-race encounters occur may also shape their unfolding. Anderson (2011) describes some public spaces as "cosmopolitan canopies." Theses cosmopolitan canopies are spaces that promote trust and fluid cross-race interaction by bringing diverse groups together frequently, institutionalize equitable interaction, and diffuse responsibility for the regulation of the space across a wide variety of actors by deemphasizing formal authorities (Anderson, 2011). In these contexts, Anderson (2011) argues young Black men are spared the intense levels of distrust and scrutiny typically experienced in public space. This is consistent with decades of psychological research in the area of intergroup contact which finds that such contact reduces prejudice when conditions such as equal status, cooperation, and institutional support are met (Allport, 1954; Hewstone & Swart, 2011). In moving from the individual-level consideration of activity space characteristics to the consequences of shared or diverging activity space

profiles at the dyad level, these examples demonstrate the importance of embedding the navigation of activity spaces within interpersonal processes. We next turn to an extension of this approach to the network level.

Ecological Networks

Finally, we consider the extent to which activity spaces and their compositional characteristics are shared or divergent at the network level. The application of social network concepts and methods to youth development has seen a dramatic increase in interest over the last several decades (Moody, 2001). Yet, the role of space has rarely been integrated into network analyses of youth outcomes, leaving a range of questions regarding the spatial nature of group dynamics unaddressed. As with dyads, the degree of co-presence in combination with the characteristics of settings in which peer groups interact are likely to contribute significantly to group dynamics. Here, we consider the role of physical overlap in activity locations among network members as well as compositional homogeneity/heterogeneity at the network level in shaping group-level outcomes. The discussion is necessarily limited given the complexity that consideration of networks introduces. We focus on *ecological networks* – ties through shared activity location – and their utility in understanding peer group dynamics as well as interaction potential among actors who share public spaces but may not be otherwise connected (Browning, Calder, Soller, et al., 2017).

The Ecological and Social Network Embeddedness of Peer Groups

A number of analytical approaches to defining peer groups have been used in the extant literature on networks and youth. For instance, peer groups may be defined based on their pre-existing ties with one another and interaction frequency (Wasserman & Faust, 1994). Alternately, peer groups may be anchored on an “ego” to whom all members are definitionally tied (Wasserman & Faust, 1994). In the latter case, the extent to which given ego ties are themselves tied within the network is variable. In both cases, accounting for the spatial exposures of network members may add insight into the link between compositional or structural characteristics of networks and relevant social processes at the group level. Compositional properties of the network, for instance, may focus on the degree of gender, racial-ethnic or age homogeneity among network members. Structural properties of networks capture aggregate patterns associated with observed ties (or absence of ties) within the network. A classic example is the “density” of ties within the network (Wasserman & Faust, 1994). In its simplest form, density is measured as the number of actual ties within the system divided by the number of potential ties (([n x n-1)/]/2). In the case of an 8-member peer group, 28 ties are possible, but fewer may be realized. Given their potential complexity, quantitative measures of network structure and related constructs are numerous and beyond the scope of the current work. Here, our concern is largely with the insights that may be added by consideration of the spatial context of interaction patterns.

Consistent with our previous emphasis, the nature of locations at which shared activities occur among network members as well as the characteristics of activity spaces encountered when peer group members are not together are both potentially relevant. Structurally well-integrated networks (i.e., high density networks) in which the subjective sense of cohesion or shared identity is strong are thought to efficiently disseminate attitudes and

behavioral orientations. Yet, introducing features of the ecological network – incorporating the locations of interaction between network partners as additional nodes in the network – is a potentially critical conditioning factor in understanding peer group behavioral influence.

Potential Interaction within Ecological Networks

Building on the example of shared public space among strangers, aggregate structural features of the *potential interaction* ecological network may play important roles in shaping social exposures and associated social processes. For instance, neighborhoods characterized by ecological networks that tend to bring people together at higher rates in the context of everyday routines are likely to promote higher levels of aggregate familiarity and associated trust, with implications for neighborhood functioning. While few studies have combined both social and ecological network information, several studies have constructed and investigated versions of an ecological network based on potential interaction. Browning and colleagues (2017b) used survey data from the Los Angeles Family and Neighborhood Study on the locations of routine activities to construct two-mode networks of potential interaction. Neighborhood residents who shared activity locations (i.e., census block groups) were given a tie in the network based on the potential for encountering one another in the context of daily routines. These analyses indicated that the structural density of ecological networks among residents of Los Angeles neighborhoods contributed to higher levels of key social processes including collective efficacy, intergenerational closure among neighborhood parents and youth, and more extensive interaction among neighbors. Similarly, Browning and colleagues (2017)) found protective effects of ecological network density at the neighborhood level on both violent and property crime. Thus, at the network level, shared activity space structures (e.g., quantitative measures of the extent of geographically overlapping routines) promote aggregate level social processes, such as collective efficacy, within the system of potentially interacting individuals and shared locations with consequences for both participating people and places.

Beyond network structural features of ecological networks with respect to ties, emerging research links compositional similarity within ecological networks to aggregate outcomes. Graif et al. (2017) constructed ecological networks based on commuting patterns, demonstrating that neighborhood similarity in violence levels predicted commuting ties. Levy et al.., (2020) estimated ecological networks in the 50 largest U.S. cities from geotagged Twitter data. They demonstrate that, above and beyond the disadvantage level of a focal neighborhood, sending and receiving ties to other disadvantaged neighborhoods compound focal neighborhood vulnerability to high levels of violent crime. These approaches focus attention on previously neglected structural features of context – in this case, network structures rooted in mobility-based ties – and their potentially independent influence on developmentally significant social processes. Although research on ecological networks and youth outcomes remains incipient, emerging data sources such as geographically referenced survey, social media, and cell phone data have led to important advances in this area of inquiry (Browning, Pinchak, & Calder, 2021).

Summary—Over a century of neighborhood research underscores the importance of both subjective and objective contextual exposures to youth development and well-being

(Bronfenbrenner, 1979; Du Bois, 1899). The turn of the 21st century saw a rapid expanse of research relating residential neighborhood conditions to individual-level developmental outcomes, but more recently scholars have begun to direct attention toward how youth's broader activity patterns may explain neighborhood effects or whether activity spaces may be consequential in their own right (Browning & Soller, 2014; Matthews, 2011). Despite interest in the relevance of activity spaces to development across the social sciences as well as increasing availability of technologies necessary to carry out these investigations, activity space theory remains underdeveloped. However, the seminal works by Bronfenbrenner (1979, 1986) and Anderson (1990, 1999) have pointed us in the direction of research questions relevant to youth development and well-being.

This chapter sought to partially correct this gap in research by providing a framework for the investigation of activity spaces from a relational perspective. In contrast to the dominant approach to understanding the impact of context on youth development – the voluminous neighborhood effects research tradition – an activity space approach acknowledges the potential for widely varying patterns of everyday spatial and associated social experiences, even for youth who reside in the same neighborhood. By focusing on urban contexts, variability in routine activity patterns may lead to quite distinct activity space profiles across a number of potentially important features of the social environment. Our discussion focused on key structural and social process features of the urban environment considered in the wide-ranging literature on the developmental consequences of spatial inequality: racial composition, economic disadvantage, associated social dynamics including collective efficacy, social interactions, and conflict.

Our framework highlights the consequences of potentially complex activity space profiles at multiple levels of analysis. At the within-individual level, acknowledgement of activity space heterogeneity calls attention to the social psychological impact and developmental consequences of encountering highly variable spaces with respect to structural characteristics such as racial composition and economic disadvantage. At the dyad level, we considered the intersection of activity space profiles for partners in an interaction, including the role of co-presence in caregiver youth dyads and the impact of potentially widely diverging activity space patterns for strangers or weakly tied individuals encountering one another in public spaces. Finally, we provided an overview of emerging research on variability in jointly encountered activity spaces within ecological networks – ties between multiple persons through shared activity space locations. The discussion is necessarily selective, given the inevitable complexity introduced when considering even within-individual activity space profiles. In this regard, our framework should be viewed as a preliminary and orienting perspective on the types of research questions that a focus on activity spaces makes possible. Although much of the place-based literature may be interpreted from a deficit perspective, we encourage researchers to use our framework to explore activity space structures and processes from a desire-based research perspective (Tuck, 2009) that highlights the hope, resilience, and self-determination of communities who live, grow, and develop within systems of oppression. The field remains in need of additional attention to theoretical development lest the potential offered by new technologies for activity space estimation substantially outpace conceptual resources for understanding and analyzing such data.

Chapter VI. The Study of Youth Development in Context: Methodological and Empirical Exemplars

Chapter Highlights

- This chapter contributes to the comprehensive cultural-development activity-space framework for studying development in context by advancing a set of empirical examples.
- Example one focuses on in-the-moment exposures in time and space in a sample of 51 Black and Latinx adolescents living in Chicago.
- Example two highlights mixed method research and *roving* as a tool for studying youths' activity spaces and conceptualizing community resilience processes in the context of structural risks.
- Example three examines how adolescents' and parents' activity spaces overlap (or not) across place and time.
- Example four describes a large, longitudinal study examining how ethnically and racially diverse adolescents' activity space and eco-network interactions shape biological and psychological processes among youth.

In this chapter we highlight a range of methodological and empirical exemplars incorporating various aspects of our cultural-developmental activity space framework for studying development in context. These exemplars span a range of approaches, including ethnographic, qualitative, cross-sectional, and longitudinal methods. Though no single exemplar encompasses all the considerations in our model, they each contribute unique aspects and can be used to inform future research on youth development in context. Each of the following examples derive from research recently or currently being conducted by members of the PLACE Development Working Group (White et al., 2021)The exemplars featured herein highlight specific cultural-developmental and place-based components but omit other important considerations in the research process that also need to be informed by culturally and contextually relevant perspectives (White et al., 2015, 2016), including sampling, sample retention, and measurement invariance across subgroups of populations (e.g., based on immigrant status; language spoken, race-ethnicity, and other social positions). Conducting research across populations who are diverse on their social positions requires careful attention to these issues and we direct readers to a set of additional resources that inform these other steps of the research process (Knight et al., in press).

Throughout these exemplars we devote specific attention to methodological approaches related to (1) the different levels of analysis for studying contexts, from microsystems to macrosystems (Chapter III); (2) the different dimensions of time necessary for a comprehensive understanding of development, from microtime to macrotime (Chapter IV); and (3) consideration of the structures and processes that take place within and between places (in one's activity space) and across time (Chapter V).

Exemplar One: Exploring How "In-The-Moment" Exposure to Spatial Structures and Processes Shape Youth Mood

Exemplar number one, from Roy et al. (2021), highlights situational exposures in time and space, a key feature of our cultural-developmental activity space framework. Tseng and Seidman (2007) and others (Browning et al., 2017) have described the immediate social and physical environment aspects (objects, people, events) of a setting at a specific point in time as situations. Therefore, in an effort to increase precision in the measurement of contextual characteristics influencing development, we use a strategy for assessing *situational exposures*, or in-the-moment contact with setting structures and/or processes. These authors assessed situational exposures to place-time structures and processes by merging individual GPS data that were collected over a week period from a sample of 51 Black and Latinx adolescents living in Chicago with publicly available data on spatial characteristics. The researchers focused on structures and processes derived from social disorganization theory and related perspectives, including physical disorders (i.e., vacant lot, graffiti), alcohol and tobacco retailors, and crime. They used a cultural-developmental activity space framework to consider, "How many situational exposures do Black and Latinx adolescents encounter within their activity spaces in the course of a week?" and "What is the relationship between situational exposures and changes in Black and Latinx adolescents' mood?

Approach—Data to address these research questions come from a sub-sample of youth participating in the Chicago School Readiness Project, a longitudinal socioemotional intervention trial implemented in Chicago Head Start sites (Raver et al., 2012). The sub-sample included 51 youth from the larger study who participated in an assessment in the spring of 2016 (when on average, youth were in ninth or tenth grade). Youth were asked to carry a GPS-enabled cell phone and respond to five daily ecological momentary assessments (EMA) delivered via phone for a one-week period. The authors used the mobile Ecological Assessment Application (mEMA) to collect EMA and GPS data. The application was programmed to deliver EMAs to participants five times each day. The application also collected GPS coordinates every minute, or whenever the phone moved greater than five meters. Data was collected continuously while the application was open, and the phone was turned on. Youth were compensated $80 for their participation. There were slightly more females (56%) than males who participated in the study. The majority of participants were Black (80%), 18% were Latinx (see Santos, Kornienko, & Rivas-Drake,2017 , for description of this term and rationale for its use), and one participant was bi-racial (2%). Youth ranged in age from 13 to 16-years-old (M = 15.04, SD = .73). On average, participating youth grew up in poverty; youths' average income-to-needs ratio across waves of data collection was .92 (SD = .62) where 1 reflects the federal cutoff for poverty based on family income, size, and composition (U.S. Bureau of the Census, 2019).

The researchers used ArcGIS Version 10.4.1 to conduct all geocoding. After the GPS data were cleaned, the authors used publicly available data from the City of Chicago Data Portal to join a space-time dataset with relevant structure and process data occurring in Chicago within the three months prior and after the data collection period to the primary dataset using a bandwidth of 20 miles -- any characteristic present within 20 miles (32 km) of a

GPS coordinate within the 6-month window was joined to the dataset. The researchers (Roy et al.) chose parameters that were spatially and temporally broad in order to have a large sample from which we could then narrow. They subsequently used the filtering procedures described below to isolate situational exposures. A detailed description of this methodology is beyond the scope of this piece. We refer interested readers to Roy et al. (2021) for additional details.

The researchers focused on five types of structure and process characteristics that have been shown to matter for youth development and for which geospatial information was available in the Chicago Data Portal: vacant lots, locations of graffiti, alcohol retailors, tobacco retailors, and crime. To create our indices of situational exposure we filtered our spatially joined dataset to limit it to exposures that occurred in the three hours proceeding each EMA and within 660 feet (the approximate size of a Chicago city block) of GPS coordinates collected from youth. If there were multiple GPS coordinates that fell within the parameter of a characteristic, only one was chosen as to not overinflate our measure of exposure. A count of exposures was then created within domain to correspond to the three-hour window proceeding each EMA.

Participants also reported on how they felt at the time of each assessment on a 5-point Likert scale (0 = not at all, 4 = extremely). They were asked to report on the following ten mood states: happy, on edge, discouraged, nervous, uneasy, sleepy, difficult to concentrate, sad, hopeless, stressed. An exploratory factor analysis was conducted to explore whether individual mood ratings should be modeled individually or treated as a composite. Results indicated that seven of the indicators loaded on to two factors; one factor composed of on edge, nervous, uneasy, and difficult to concentrate items and a second composed of hopeless, discouraged, and sad items. The means of these individual items were calculated to create two variables representing anxiety ($\alpha = 0.72$) and depression ($\alpha = 0.75$). These two composite variables, along with the stressed items were included in the analyses to address the research questions.

Overall, consistent with our framework, these researchers addressed microtime, or continuity and discontinuity in adolescents' exposures across time and space. The mesotime, or the ways that these exposures unfolded across days and weeks, was captured by their week-long protocol. They were also capturing multiple adolescent microsystems (or individual places), and, across a typical week, likely they were capturing adolescents' mesosystems, or the totality of a developing person's microsystems at any given point in developmental time. Additional cultural-developmental elements could be added, for example, by assessing aspects of cultural-development (e.g., ERI salience in place) or by assessing *in situ* experiences of cultural socialization or exposure to racial discrimination.

Exemplar Two: Neighborhood Roving Provides Mixed Methods Data to Describe a Range of Mainstream and Cultural-Developmental Features of Neighborhood and Extra-Neighborhood Environments in Youths' Activity Spaces

Exemplar two, from Leech (Leech & Adams, 2022), highlights a mixed methods approach to studying youth in the context of their activity spaces, one that actively incorporates Tuck's (2009) call for desire-based research (see Chapter I). Leech developed neighborhood

roving as a thin-slice method to be used in mixed-method studies of neighborhoods and activity spaces as part of a larger study exploring neighborhoods in Indianapolis, IN that are resilient to adolescent violence. Leech called these neighborhoods "**pockets of peace**." Between 2008 and 2012, the average "at-risk" neighborhood in Indianapolis – characterized, relative to social disorgantion theory and to systems of privilege and oppression (Sampson et al., 1997; Wilson, 1987; see Chapter I), by a combination of high rates of poverty, racial-ethnic minorities, single-parent families, and unemployment – experienced about one act of adolescent violence every other month (an average of 5.6 per year). During this period, the total number of charges for adolescent violence in these neighborhoods ranged from 2 to 248. Leech defined pockets of peace as at-risk geographic areas that experienced, on average, no more than one act of adolescent violence each year. Based on these criteria, there were 19 pockets of peace within Indianapolis' 127 areas of concentrated disadvantage. These census block groups, which include the 19 pockets of peace and their 108 comparison groups, became the focus of Leech's research efforts from 2012 to 2017.

First, Leech used an extensive amount of secondary, quantitative data to characterize the 127 neighborhoods. Her final database included variables at the block group or census tract levels detailing information on demographic and socioeconomic structures (U.S. Census Bureau, 2017), juvenile and adult arrests (The Polis Center, Community Profiles: Marion County Juvenile Justice data, 2008–2017), housing characteristics (FFEIC Housing Data, 2015; Office of Policy Development and Research, 2015), and neighborhood institutions (e.g., SAVI indicators for community development corporations, places of worship, libraries, schools, playgrounds, and community centers) (The Polis Center, SAVI Community Assessment, 2008–2017).

Second, the researchers recruited twenty-eight young men aged 16 to 19 to participate in a "cell phone diary" study. Twelve young men were from pockets of peace, and sixteen were from comparison areas. Although these young men completed semi-structured interviews and enrollment and exit surveys, Leech was primarily interested in the information they provided via Ecological Momentary Assessment (EMA). In EMA, participants respond to a pre-programmed survey on a cellular phone at specific times or intervals. In this study, the phones prompted participants to fill out a survey every Thursday and Sunday evening for over three months. The survey asked whether participants had engaged in violence or almost engaged in violence but decided not to. If they answered "yes," participants were asked to answer a series of questions about that situation. If they answered "no," the system directed participants to another module of questions about urban hassles, which required a similar amount of time to complete. The alternative module guarded against underreporting violence as a way of shortening the time spent on the survey.

Finally, the research team collected qualitative data using the "neighborhood roving" method developed by Leech. Three Black men between the ages of 35 and 45 who resided in areas of concentrated disadvantage served as study rovers. Rovers participated in data collection (through participant observation and semi-structured interviews with residents) and later provided input into the data analysis, interpretation, and presentation of results. The roving aspect of data collection is the focus of the current case study, as this aspect can be useful for studying geographically defined contexts that serve as residential neighborhoods for some

youth and as extra-neighborhood places in the broader activity space for other (non-resident) youth.

Methodological Origins of Neighborhood Roving—Roving is not a substitute for or an alternative to ethnography. Instead, it might be thought of as a form of participant observation that combines thin-slice methods (Ambady et al., 2001) and citizen science. Thin-slice observation refers to a process involving the intuitive processing of information with minimal deliberation (Ambady, 2010). Social scientists in various disciplines have begun using thin-slice observations because of robust evidence that very short observations of social settings and interactions correlate strongly with longer, "thicker" social observations, expert ratings, and validated instruments (Murphy et al., 2019; Tackett et al., 2019; Tom et al., 2010).

Scientists applied thin slice observation to a wide variety of research topics (Murphy & Hall, 2021). The method has proven valid in capturing dyadic parent/child interactions and characterizing parenting styles (Frost et al., 2020; James et al., 2012). Physicians can reliably identify clinically relevant mental and physical health traits through thin slice observations (Slepian et al., 2014). Untrained raters can make valid ratings of personality disorder characteristics based on just 30 seconds of information (Friedman et al., 2007).

Specifically, thin-slice observations are intended to provide descriptive information—details about characteristics or behaviors. They lose reliability or validity when used to make inferences or interpretations of value or quality (Murphy, 2005). For example, in the case of parent/child dyads, thin-slice methods are not intended to immediately identify or ascertain positive or effective parent/child relationships. Instead, they are particularly well suited to describe parent/child interactions (e.g., the amount of eye contact, voice tone, and physical touch) that might shed light on the relationship characteristics. These types of descriptive factors can be gauged and reliably coded in very short periods, ranging from 30 seconds to 9 minutes.

However, there are limitations to thin-slice observations. These types of very short observations are not sensitive to small changes over time (Frost et al., 2020). Furthermore, although all of these observations—by definition—are short, longer observations sometimes improve the quality of the data. Again, in the case of observing parent/child interactions, 9 minutes were necessary to capture observations and conclusions that strongly correlated with observations based on the full, 18-minute interactions. Shorter observations resulted in statistically significant but weaker correlations.

Perhaps most importantly, for our cultural-developmental framework, the cultural context and social positions of the observer and the observed affect the accuracy of thin-slice observations. Thin-slice observations are most reliably performed by people who share a culture and/or social position with the person(s) being observed (Ambady et al., 2001). A large body of social psychological research on ingroup advantage based on gender, race, and ethnicity indicates that people form more accurate impressions about others within their social group (Slepian et al., 2014). For example, gender concordance seems to improve the accuracy of thin-slice ratings of social exclusion (Lansu & van den Berg, 2022), while

police officers' ability to make accurate thin-slice observations of peoples' behaviors may be impeded by their workplace culture (Bleakley, 2019).

Neighborhood roving adds citizen science to the thin slice approach to address some of these limitations. Citizen science is becoming more widely recognized as a valuable approach to gathering ecologically valid data while fostering more reciprocal relationships between academia and lay communities (Elliott & Rosenberg, 2019). In neighborhood roving, the research team members conducting the thin slice observations are local, long-term residents of the geographic areas of interest. Integrating these citizen scientists into this role capitalizes on their expertise, shortens the amount of time needed to embed in the context, and minimizes the negative bias or fear that many other observers (casual or academic) of these areas experience.

In roving, citizen scientists are not meant to increase community participation; instead, they are included to improve the science (Thompson, 2016). As Ambady et al.'s (2001) research team noted in their thin slice research, people are the most accurate judges of targets from their own culture.. Because the citizen scientists on our team were observing areas that are a "normal" part of their daily experience, they avoided the deficit- or damage-orientation characteristic of some of the academic neighborhood scientists on the team. Their contributions allowed the larger research endeavor to integrate experimentalism with natural knowledge in a way that is uncommon in neighborhood research (Strasser et al., 2019).

Although they did not use the neighborhood roving technique described here, Moore and Woodcraft (2019) integrated citizen scientists on their team in a very similar fashion. Ten local residents gathered data by conducting *walking ethnographies*, systematic social observations, interviews, and group discussions. They argued that engaging citizens in developing new metrics helped close the gap between expert-led knowledge and lived experience and improve the quality of information available when making policy decisions about that neighborhood. Integrating roving into studies of marginalized and under-resourced neighborhoods is meant to play a similar role.

Neighborhood Roving Data Collection—Roving listeners and roving interpreters are a mainstay within the practice of Asset Based Community Development (ABCD; Calgaro et al., 2020; Lindau et al., 2011; Yowonske & Downey, 2017). In ABCD projects, rovers aim to discover community residents' gifts, passions, and talents and then attempt to find ways to utilize these gifts in community development efforts. People often characterize this work as the practice of deep listening and positive deviance, distinct from neighborhood organizing models that focus on documenting needs and deficits within low-income, predominately minority communities.

Leech and her team systematized the roving process to offer methodological rigor. The approach consists of five steps. First, activity space researchers needed to recruit and train local residents to be neighborhood rovers. Leech recruited local residents who were involved in community development activities but who did not have a formal or informal leadership role in organizations or activism. The training oriented these rovers to the project and

included information and activities on research ethics, interviewing techniques, participant observation, social observation, and jottings. In particular, the training emphasized the distinction between description and inference and helped the rovers to hone their observational skills. Next, activity space researchers need to assign geographic areas. Leech used nearest-neighbor propensity matching to match one comparison area to each pocket of peace. They then provided rovers with two maps at a time, representing geographic pairs. Rovers were blinded as to which area was designated a resilient pocket of peace. Third, rovers spend a short time interacting and observing in each geographic area. The rovers on Leech's team spent about four hours walking around the identified census block groups. They paid particular attention to public areas like parks and schoolyards, commercial outlets, and public transportation stops. During the four hours, rovers engaged with people in public areas or outside of their homes, starting conversations, asking questions, and explaining the purpose of the study. Rovers kept jottings during the observation period and gave people the PI's business card when requested but never collected anyone's contact information. The rovers completed observations of each paired location within forty-eight hours of each other. Fourth, activity space researchers need to conduct semi-structured interviews with the rovers. In Leech's study, a research team member used a semi-structured interview guide consisting of questions and probes to interview the rovers within 24 hours of each observation trip. Each interview began with the interviewer stating, "So, tell me about this area." All interviews occurred before the rover observed the next location. Rovers used and referred to their jottings during the interview. Interviews were tape-recorded and, on average, lasted 50 minutes. Last, activity space researchers need to transcribe the interviews. Interviews were transcribed and uploaded to *Dedoose* (a quantitative and qualitative cloud-based software) for analysis (Dedoose, 2015). In Leech's study, there were over 600 pages of transcribed notes from the interviews with rovers.

Example of Roving Data Uses and Findings—The data we gathered from roving proved useful in several ways. First, it helped to clarify anomalies in Leech's data. For example, in terms of neighborhood structures and census data, there are significantly fewer homeowners in pockets of peace (24.6%) than in other areas of concentrated disadvantage (44.6%). Leech's roving data suggest that resident landlords might help to explain this negative association between rental concentration and adolescent violence. The roving data contains stories about five of these landlords in pockets of peace, similar to the ones detailed below.

> So, I [the rover] asked him, I said, "so what about all the dilapidated, and you know, all the rental properties?" He says, "well, you know, we have some renters. I have a neighbor down there that's renting. And they're involved." And I go, "really?" And he goes, "yea..." And then I'm like, "so who is renting the houses?" He goes, "well, believe it or not, some of us are landlords. I'm actually getting ready to buy that house right there."

> [A local resident said] "like his house, it's a generational house." And I asked him what that meant. He said, well, the house I'm living in actually belonged to my granddad. And after my granddad gave it to my mom, she lived there for a while, then she moved and was using it as a rental property. My family, we were doing the

> apartment thing, and my mom yelled at us ‘cause she had a perfectly fine house to live in.
>
> So, he had to move in and live with the renters. His family, his cousins, the current group of people in his family that live in this area has been there for 30 years.

The first conversation helped the rover on Leech’s team realize that even he had biases and made assumptions about renters in the area. The team coded the roving data for local residents making these types of negative comments. Overall, 78% of codes indicating negative comments or experiences with renters came from people in areas that are not pockets of peace. Residents’ comments outside of pockets echo the typical social disorganization theory depiction of renters as transient and less invested in the neighborhood than homeowners. However, the commentary about renters in pockets of peace revealed a more nuanced view. Sixty-seven percent (67%) of the positive codes were gathered in pockets of peace. Overall, the roving data indicates that the rental experience in pockets of peace is qualitatively different from the experience in other, similar neighborhoods. Thus, this structural characteristic (i.e., percent renters vs. homeowner occupied housing units) means one thing in pockets of peace and something separate in comparison neighborhood settings. The Rover data also hint at important processes in pockets of peace related to intergenerational neighborhood residents, social involvement of homeowners and renters alike, and residents as landlords and neighborhood leaders. Further, cultural-developmental perspectives invite researchers to ask important questions about whether these particular positive social processes are specific to neighborhood settings with high concentrations of racial-ethnic minorities or generalize to more heterogeneous or homogeneously White neighborhood settings.

Additionally, analyzing the roving data unearthed grounded findings that Leech and team could explore further in the EMA, interview, and quantitative data. When the researchers began studying pockets of peace, they thought they might learn a lot about relationships with adults and their importance to youth. They did not expect how often people specifically focused on one-generation removed relationships—and the differences in tone and content when participants depicted these relationships in pockets of peace versus other disadvantaged areas. In pockets of peace, people seemed to appreciate elders for establishing a sense of place identity rather than serving as typical adult mentors or caregivers. Elders—i.e., seniors, grannies, retired folk, anyone over the age of 65—were prominent in all of the roving data. Without prompting, rovers described interactions or gathered stories about elders in 90% of the areas they visited. The information was often general and did not explicitly focus on positive or negative effects on youth. The main point was the elders’ presence in the neighborhood. There were three observations of negative interactions with older people, all outside of pockets of peace. In comparison, rovers gathered 16 testimonies indicating that residents valued elders for contributing to the community. Twelve of these stories (75%) originated in pockets of peace.

> Mr. Greg, he will approach any group of any young men anywhere. And he will, you know, invite them to church and speak to them about Christ or whatever and just get to know them in general.

> It was the time kids got out of school, so it was high traffic till about 5:00 pm. There were a group of old men hanging out [in McDonald's]. I asked Carrie, the manager, why she lets them hang out, and she said, "Well, they spend money, and they have wisdom.
>
> An Asian grandmother, her son, a teen, and a pre-teen were on a stroll to pick up the mail. And the teens would meet friends, and they are chit-chatting, you know, and all of this and the teen guy that they met over there kind of bowed and greeted the grandmother and you know she just smiled, and I was like this is so neat!!! This is so cool that I'm getting to see all of this!
>
> I saw a lot of grandmas bringing children [to the playground] . . . So later, after I watched the playground for a while, I went back over to the boat launch, and there were a couple of granddads with grandsons with fishing rods.

To try to understand these one-generation removed relationships further, Leech and team returned to other data sources. Official statistics reinforce that there is no discernable difference in terms of the presence of elders: 12% of residents in pockets of peace and 9% of residents in the other areas were over the age of 65 and grandparents were serving as primary caregivers of children in nearly all of the neighborhoods studied. On average, 41 grandparents were raising their grandkids in each of the census tracts containing a pocket of peace, and 49 grandparents were raising grandkids in the comparison census tracts.

Instead, the information from the young men pointed us toward the role elders play through storytelling and creating place identity – important and understudied social processes – rather than through instrumental caregiving and mentorship. In some ways, the older men and women in pockets of peace could be considered "other fathers" and "other mothers" rather than old heads or even redeemed old heads (Anderson, 1990; Collins, 2002; Young, 2007). Many of the men do not have stable means, nor do they serve as direct examples of how to live a middle-class lifestyle. Even if they are no longer involved in crime, they are not reformed old heads in the sense that they now have stable families and careers. However, they can tell the tales of when old heads were present. They can paint a picture of the neighborhood that the young men have never seen before. In this neighborhood, not only are there old heads present, but there are stores, basketball tournaments that the police department doesn't sponsor, music wafting from backyards, and chatter on front porches. For example, two of the rovers mentioned Miss Gwen during their interviews. Miss Gwen was happy to tell the young men tales about the neighborhood as it was when she was growing up, "before the highway came." At every chance, Miss Gwen, who is now in her 70s, shares stories about times when "some of the men in the neighborhood would get together and have cookouts and meals and make sure that everybody on this block was taken care of." One of the boys familiar with her narratives explains that the men of old would give out gifts to kids who were getting good grades and would "push people to do better."

Thus, the roving data produced a new hypothesis worthy of further study and demonstrates that neighborhood roving is a methodological tool that can be used by cultural-developmental activity space researchers to identify important structural characteristics and social processes that have been overlooked by mainstream neighborhood effects

scholarship and speak to the strengths and challenges encountered in racially, ethnically, and socioeconomically minoritized and resilient communities. That is, within pockets of peace, the one-generation removed relationships may have a uniquely collective influence that works more directly at the neighborhood level. Elders in these neighborhoods may be contributing to a positive place and cultural identity mainly through banter, colloquial interactions, and general storytelling and that may contribute to low rates of adolescent violence within those spaces. Additionally, these one-generation removed relationships highlight the importance of macrotime changes in neighborhoods that are occurring across generations and shape human development across the life course.

Exemplar Three: Exploring "Shared Space" Across Time among Latinx Immigrants in a New Destination Context[2]

Exemplar three, from Witherspoon and colleagues (Bámaca-Colbert, Kim, Matthews, & Witherspoon, 2022) highlights how activity space methods can be used with dyads, namely Latinx caregivers and adolescents, living in a new destination context. In the last few decades, the United States witnessed a geographic dispersion of Latinx from traditional immigrant destinations to new destinations where Latinx are underrepresented. During 2000–2006, the average Latinx population growth rate in new destinations tripled that of established destinations (Lichter & Johnson, 2009). Despite this important geographic shift, our knowledge on Latinx families and their children is largely based on samples residing in established immigrant destinations (e.g., Los Angeles, New York) and ignores the dispersion of Latinx into new places where they are clearly the numerical ethnic minority (Massey, 2008). Further, research shows that as Latinx families and youth move to new destination areas, opportunities for children do not necessarily increase (Lichter & Johnson, 2021) as cultural and familial assets may not function the same in these new places where Latinx families may lack the support of their co-ethnic communities (Lee & Liechty, 2015; Shell et al., 2013). For Latinx families, raising youth becomes more challenging as youth acculturate, especially in places with varied racial-ethnic compositions. Moreover, in new destinations, adolescent vulnerability may increase due to a lack of protective factors (e.g., support) that families may rely on, so families in new destinations may navigate beyond their residential neighborhood to connect with other co-ethnics (Gardner et al., 2010; McPherson et al., 2001), and thereby expand their activity spaces.

Activity spaces expose families and youth to a host of factors that can shape parenting (Freisthler et al., 2016) and youth behaviors. Caregivers' and youths' exposures may be shared, spatially and temporally. For example, a caregiver and a child could share an exposure spatially if they go to the same location (e.g., library) at different times. However, they can also share an exposure temporally if they go to the same location at the same time. As youth age and gain more autonomy, the proportion of unshared time and space may increase (Larsen et al., 1996). When space is unshared, youth may be at greater risk for maladaptive outcomes because the space and its exposures may functionally differently, depending upon who and what is present. For example, Latinx families may utilize a neighborhood park; however, when they do so at different times and the youth is unaccompanied by a caregiver, the youth may experience this activity space in a different manner that allows for greater opportunity to engage in risk-taking with peers. Further, the

degree to which an activity space is shared or unshared may be dependent on one's social position (e.g., immigrant or documentation status, SES). Despite the importance of shared space and time for youth development, there is a dearth of literature that examines shared activity spaces between caregivers and youth.

The current exemplar, therefore, focuses on Latinx families residing in new destinations as an opportunity to explore adolescents' and caregivers' activity spaces, particularly shared places, and shared time in places. In examining spatially shared activity spaces, we differentiate between residential neighborhoods and extra neighborhood locations as a way to expand substantially beyond work that has focused only on shared time in the home. Doing so, this exemplar highlights the intersection of time, place, and culture, with a particular focus on micro- and mesotime within the microsystem of the family. Using a cultural-developmental activity space framework, the authors considered: (1) what proportion of time adolescents and caregivers spend within their residential neighborhoods, (1) the proportion of time adolescents and caregivers were in "shared space" outside of the residential neighborhood (extra-neighborhood activity spaces), and (3) how shared neighborhood and shared extra-neighborhood activity spaces related to parental monitoring and youth outcomes. Additionally, with a subsample (n = 3 dyads) we explored time matched shared space using a variety of commonly used activity space polygons (see Chapter II) and visualization tools.

Approach—Data for this exemplar focuses on the GPS data collected for seven days to capture caregivers' and adolescents' activity spaces independently. GPS devices were provided to each member of the dyad. These devices collected GPS data for each member of the dyad at 30-second intervals. From these data, we obtained objective data on caregiver's activity spaces and adolescents' activity spaces. We also captured the degree to with the caregiver-adolescent dyads shared activity spaces, either spatially, or spatially and temporally. Project participants received an incentive for carrying the GPS device for the duration of the study; the dyad was entered into a drawing to win a tablet if both members of the dyads completed this portion of the project. Participants were recruited through our partnerships with nine community agencies, advertising at local locations frequented by our population, attendance at community events, and snowball sampling. Eligibility criteria included self-identification as Latinx, adult caregiver and adolescent (aged 11 – 17 years), and either English- or Spanish-speaking. In this study, the residential neighborhood was geographically defined as a 500 m buffer around the dyads' residence.

Therefore, the exemplar sample included self-identified Latinx families. Caregivers identified as Puerto Rican (39%), Mexican (15%), Dominican (10%), and "Other" (36%; Ecuadorian, Guatemalan, Peruvian, biracial, Hispanic, or non-specified). Caregiver ages ranged from 27 – 67 years (M = 42, SD = 9.38). Fourteen percent of caregivers were born in the US. On average, immigrant caregivers lived in the US for 17.14 years (M = 12.28; Range = < 1 – 65 years) and lived in their current residential neighborhood for 5.69 years (M = 7.08; Range = < 1 – 35 years). Most caregivers were mothers (76%) or fathers (10%). The majority of caregivers were married or cohabitating (47%); 29% were unmarried or cohabitating; 23% were separated or divorced. On average, caregivers lived in homes with approximately 2 adults (M = 2.09, SD = 1.26; Range = 1 – 7) and 3 youth (M = 2.67, SD

= 1.29; Range = 1 – 7). Most caregivers rented their home (77%) and had a car (57%). Fifty-five percent of the caregivers were employed; most were full-time workers (60%). Most caregivers (68%) reported not receiving public assistance, but many (69%) reported receiving food stamps. The average supplement was $303.57 (SD = 151.49) and $351.14 (SD = 183.76), respectively. The average total income was $12,545.68 (SD = 12,219.85); average family income was $20,413.85 (SD = 17,538.56). The median household income of the sample is below the city average.

Adolescents were mostly female (53%) and 13.79 years old (SD = 2.07). Youth were in 5th – 12th grades, with most youth in high school (49%; 9th –12th grade). Youth self-identified as Puerto Rican (44%), Mexican (14%), Dominican (10%), White (1%), and Biracial or "Other-identified" (31%; e.g., Puerto Rican & Black; Puerto Rican & White; Puerto Rican & Dominican; Ecuadorian). Fifty-seven percent of the youth were born in the US. Of those born in another country, on average, youth had been in the US for 4 years (M = 4.22, SD = 4.07) and immigrated to the US when they were 9 years old (M = 9.46, SD = 5.46). The majority of the youth reported living in only 1 home (71%) and 1 city (77%), suggesting very low levels of residential mobility.

Findings—Latinx caregivers and youth in this new destination area spent a considerable portion of their time together within in their residential neighborhoods. On average, caregivers and youth spent 50% of their time (as logged by the GPS device) in their residential neighborhoods; however, it is important to note that members of these dyads spent from zero percent of their own time within their neighborhood to 100% of their own time in their residential neighborhoods (M = 50.03, SD = 33.07; Range = 0 – 100%). When we examined proportion of time spent in the residential neighborhood, there were differences between caregivers (M = 47.18, SD = 32.53; Range = 0 – 100%) and adolescents (M = 52.88, SD = 34.10; Range = 0 – 100%) such that adolescents spent proportionally more of their time within their neighborhoods than caregivers.

When we examined the dyads total extra-neighborhood activity space by exploring the proportion of shared space outside the residential neighborhood, we found a similar trend. On average, dyad members spent almost two-thirds of their time (as logged by the GPS device) in a location that the other dyad member also spent time (M = 60.0, SD = 33.81; Range = 2.61 – 100%), which does not take into account whether the adolescent and the caregiver were in the same location at the same time. When we examined proportion of time spent in locations that the other dyad member also spent time, there were considerable differences between caregivers (M = 54.61, SD = 33.57; Range = 2.61 – 99.48%) and adolescents (M = 65.38, SD = 33.47; Range = 0 – 100%) such that adolescents spent a larger proportion of their total time in a setting that the caregiver also spent time (again, not accounting for whether or not the adolescent and caregiver were in the shared location simultaneously). These sets of findings demonstrate that for the Latinx families in a new destination area, adolescents and caregivers were both spending considerable time in their residential neighborhoods and there was great overlap in their extra-neighborhood activity spaces, or the routine locations that they frequent over the 7-day reporting period outside of their residential neighborhoods. As stated, however, this particular approach did not account

for whether the shared places (in residential neighborhoods or in extra-neighborhood locations) were temporally shared (i.e., simultaneously in the same locations) or not.

When examining how shared space and proportion of time in shared space (whether or not that time was simultaneous) was associated with Latinx parenting practices (i.e., parental monitoring as measured by knowledge, control, solicitation, and disclosure; Kerr & Stattin, 2000) among our 60 dyads, we found no significant correlation between shared space and parental monitoring ($r = -0.018 – 0.19$, $ps > .05$). For proportion of time in shared places, we found no significant association with parental monitoring ($r = -0.063 – -0.11$, $ps > .05$), although the results were in the hypothesized direction such that a greater proportion of time spent in shared places was associated with less use of parental monitoring strategies. Conversely, when examining how shared space and time spent in shared places were associated with youth's problem behavior (i.e., substance use), shared space was marginally associated with substance use, $t(55) = 1.85$, $p = .07$, such that youth who had less shared space with their caregiver were marginally more likely to report substance use. The proportion of time spent in shared places, however, was not associated with substance use.

Another approach to examining shared activity spaces is to utilize time matched methods. We believe the time matched "shared space" representation is a better operationalization of shared space because it only includes the overlapping days and times for the dyad. That is, it only recognizes a place as shared if was shared both spatially *and* temporally. In this exemplar, spatial overlap was determined by matching the latitude and longitude (to 2 decimal points). This is the best practice as it allows for potential inaccuracies in the GPS logging. The GIS tool called *Intersect,* which computes the geometric intersection of two layers and then creates a new layer with only the features that are common between the two areas, was used to create shared space between two input polygons (Intersect, 2022). In this study we use three common activity space polygons: path buffer, standard deviation of the ellipse (SDE), and convex hull to represent the dyad's shared environment (i.e., space and time). The time match was determined by day and time, where time equals hour and minute. This approach is more concise than other methods. Below we share descriptive findings for three Latinx dyads comprised of adolescents of varying ages and gender as well as caregivers of different types (e.g., grandmother, father, mother).

Dyad 1 consisted of a 13-year-old girl and her grandmother who spent almost half of their time in their residential neighborhood. Further, almost all of the adolescent's time and space was spent within the shared environment with her grandmother. More specifically, 69.92% - 99.8% of the dyad partner's time was shared with the other dyad member and 83.41% - 99.52% of the dyad partner's time activity space was shared with the other dyad member. Dyad 2 consisted of a 16-year-old girl and her dad. The dyad's shared space was 97% of the adult's activity space and 5% of the adolescent's activity space. The adolescent traveled greater distance; however, the amount of time spent within shared space was much closer (88% vs 82%) within the dyad. Said differently, more of the caregiver's activity space (48.34% - 100%) and time (77.46% - 88.19%) was spent within the shared environment (space and time) compared to the adolescent's activity space and time (2.28% - 17.58% and 74.82% - 82.82%, respectively). Dyad 3 consisted of a 17-year-old boy and his mother who

spent the majority of their time in the neighborhood (95% and 92%, respectively). Only a small amount of the mother's activity space was within the shared environment (0 – 5%), whereas almost all of the teenage boy's activity space was. (97.05% - 100%). Almost all of the adolescent's time (90.18% - 99.99%) was shared with his mother. Together, these illustrations show how the shared environment varies for Latinx dyads in a new destination area. We hypothesize that this variability is meaningful and should be further explored.

Overall, consistent with the cultural-developmental activity space framework, the collaborators are addressing levels of place by focusing on *shared* space and time as well as addressing microtime as these experiences unfold over their 7-day GPS protocol. The linkages among shared space and time and parenting behaviors and youth outcomes were not robust in this exemplar study with 60 Latinx dyads. However, we did demonstrate the complexity of these associations given the differential associations between proportion of shared space and proportion of time together with parenting and youth outcomes. There were fewer findings for parenting monitoring, although the nonsignificant findings were trending in the hypothesized direction. This extends the only study to our knowledge, Freisthler et al. (2016), which showed the impact of activity space size on parenting behaviors. It is possible that shared activity space metrics inform other parenting strategies not included. Further, percentage of shared space but not time together was associated with adolescent substance use. Past research has linked activity space characteristics to substance use (e.g., Byrnes et al., 2015); however, there are no known studies of dyadic, shared activity spaces among families that have demonstrated links between shared activity spaces and youth outcomes. This exemplar is a step in that direction to further specify place-based effects on youth outcomes. Our second set of descriptive analyses show how an alternative, more precise method for capturing shared time-space can be used to approximate the shared environment of dyads. We recommend that researchers employ such a strategy to examine the intricate links between place and youth development.

Given that shared/unshared activity spaces may be shaped by one's social position and the broader environment, what may be particularly fascinating is to continue to explore how the structures and processes of activity spaces influence caregivers and adolescents conjointly and separately impact domains of functioning for the dyad (e.g., relationship quality, acculturation processes and gaps, family ethnic socialization) and youth (e.g., racial-ethnic identity, mental health, and academic behaviors).

Exemplar Four: The Adolescent Health and Development in Context Study

Exemplar number four, from Boettner et al. (2019) involves a large, longitudinal data collection effort known as the *Adolescent Health and Development in Context (AHDC)* study. AHDC collects data on a large-scale sample of youth aged 11 to 17 years in Franklin County, Ohio. The study emphasizes the interplay of social, psychological, and biological processes in shaping youth development. In particular, it highlights data collection supporting an assessment of the span of everyday urban exposures and eco-network interaction (i.e., the structure of shared routine activity locations) among urban youth.

The exemplar authors' collection of rich, multi-contextual data on youth—particularly, detailed, geo-coded data on the activity spaces of contemporary adolescents—significantly

advances research on youth well-being by providing more comprehensive data on the social contexts of youth development, and data of unprecedented geographic and temporal (see Chapter III for a thorough discussion of time) resolution with which to measure the spatial and social exposures youth experience. These data enable more rigorous tests of hypotheses regarding the role of social contexts in youth development and facilitate application of new methodological approaches to the measurement of developmental contexts.

The exemplar authors' core research questions are integrated by a central theme: the contextual embeddedness and interdependence of developmentally relevant processes within and across various "levels" of context (see Chapter II for a thorough discussion of contextual levels) Illustrative questions include: (1) To what extent do residential neighborhood characteristics (e.g., racial composition) shape the features of activity spaces youth experience? For instance, are residentially segregated Black or White youth isolated from neighborhoods of differing racial composition in their day-to-day routines? (2) Do characteristics of youth activity spaces—the actual spatial and social exposures youth experience in their daily routines—influence behavioral and health outcomes net of other contexts such as immediate residential areas and schools? (3) To what extent does day-to-day variability in exposure to potentially stressful environments explain within-individual variability in risky behavior and emotional well-being?

Approach—The *AHDC* project offers a number of advances over prior data collections focused on youth development. First, *AHDC* collects data on comprehensive contexts including family and the household, residential, school, social network, and other formal and informal "activity space" settings (e.g., churches, recreation centers, businesses, and "hang out" locations). Second, we use smartphone-based EMA to collect real-time data over a seven-day period on behavioral settings, including social network partner presence, adult supervision, activities, mood/affect, and behaviors. The smartphones also collect, store, and facilitate delivery of GPS data that track the travel paths of youth. We developed an innovative recall-aided interactive space-time budget software application for collecting continuous space/time data over 5 of the 7 days covered by the EMA week (Boettner et al., 2019). The application inputs the youth's GPS and EMA data for each selected day, aiding recall of locations, activities, network partners and behaviors over the course of the day. Third, we collect community survey data on the social climates of neighborhoods and routine activity spaces of Franklin County residents. In combination with a variety of additional administrative data resources, the community survey data allow us to estimate characteristics of the social climate of the study space at high resolution (Carter et al., 2022) and link these and other detailed information on the settings to which youth are exposed with survey and EMA data on their characteristics and experiences. Finally, we also collect biomeasure data – including hair and salivary cortisol – to study stress and immune function.

The study is also unique relative to the focus on a concept that we have labeled the *ecological network* (Browning & Soller, 2014). Ecological networks describe ties between people and the locations of their routine activities, capturing the extent to which people share activity space locations. Ecological networks are aggregate patterns of shared local spatial exposure among residents in a particular neighborhood and capture linkages taking place between multiple settings both containing and not containing the developing person.

Neighborhood residents who share an activity setting may be understood as "tied" within the ecological network. In advancing the ecological network, we hypothesize that the extent to which residents intersect in space as captured by characteristics of neighborhood-based ecological networks is consequential for youth behavior. Specifically, we emphasize the process by which structural patterns of the web of interconnectedness resulting from neighborhood residents' routine activities may influence neighborhood-based familiarity and trust, social ties, the emergence of shared expectations for beneficial action (collective efficacy), and patterns of public space use.

Select Findings—AHDC has provided rich data upon which to extend prior work on the role of eco-networks in shaping neighborhood and individual youth outcomes. Prior findings offer evidence consistent with the expectation that eco-network density yields benefits for neighborhood social organization. Data on routine activity locations for residents of 65 neighborhoods in LA County, for instance, indicate that greater interconnectedness among neighbors through shared activity locations (including those located beyond residential neighborhood boundaries) is associated with elevated levels of neighborhood collective efficacy (Browning, Calder, Soller, et al., 2017). Similarly, overlapping routines among neighbors were associated with reduced crime in Columbus, OH neighborhoods (Browning, et al., 2017). Finally, eco-network density was associated with individual-level youth behavioral health among youth in Los Angeles, indicating that patterns of eco-network structure are influential even when individual resident youth outcomes are considered (Browning et al., 2015).

AHDC data have extended these findings to consider the implications of racial residential segregation for understanding eco-network ties. For instance, in work focused on identifying clusters of individuals based on eco-network ties, Xi et al. (2020) found evidence that *caregivers* of AHDC youth residing in the same higher-proportion Black neighborhoods were less likely to share the same cluster of routine activity locations than those residing in lower-proportion Black neighborhoods. Similarly, independent cluster analyses of AHDC youth residing within the same neighborhoods also demonstrate that higher-proportion Black neighborhood community members are less likely to share the same routine activity cluster.

In the context of prior findings on the role of eco-network interconnectedness in promoting both positive neighborhood social climate and individual youth outcomes, these AHDC-based findings illuminate segregation-based eco-network structural differences that may contribute to a range of neighborhood-rooted inequalities in youth wellbeing. Beyond the residential neighborhood, Xi et al. (2020) found that Black AHDC caregivers demonstrated weaker levels of attachment to the identified routine activity clusters as measured by the probabilities of cluster assignment. Consequently, Black caregivers likely encounter both their residential neighbors and the members of their routine activity clusters with lower frequency than White caregivers, leading to lower levels of familiarity and a weaker basis for establishing trust within these collectivities.

The outcomes of eco-network analyses of AHDC youth are consistent with findings from AHDC-based analyses of individual-level mobility patterns. For instance, investigation of patterns of time allocation to the home, residential neighborhood (census tract), and outside

neighborhood spaces indicates that youth, in general, spend comparatively little time in their home neighborhood (about 6% of waking time or a little less than an hour a day) vs. outside neighborhood spaces (roughly 34% of waking time). Youth from economically disadvantaged (and disproportionately Black segregated) neighborhoods spend significantly less time in their home neighborhood than other youth and greater amounts of time at home and in outside neighborhood spaces (Browning et al.,2021). Outside neighborhood time is heavily driven by the locations of schools for these youth. Disadvantaged neighborhoods are less likely to have a neighborhood school located within their boundaries, requiring youth to travel further to school. Youth residing in disadvantaged neighborhoods are also opting out of local schools when they are available in search of higher quality educational opportunities, also leading to greater exposure to outside neighborhood spaces. Less time within the shared space of the neighborhood limits the extent to which eco-network ties will be observed. Moreover, outside neighborhood time may be somewhat idiosyncratic, driven by the availability of spots in non-neighborhood schools or exigencies related to other dominant non-neighborhood activity locations (e.g., caregivers place of employment, location of relatives, etc.).

Additional evidence points to the comparatively high level of heterogeneity in exposure to neighborhood racial composition experienced by Black youth and Black-segregated youth, in particular. AHDC data have been used to explore the characteristics of extra-neighborhood exposures among Black youth. Contrary to decades of theorizing suggesting that Black-segregated youth are “socially isolated” from non-segregated contexts (Wilson, 1987), AHDC Black youth residing in high proportion Black neighborhoods exhibited among the highest levels of heterogeneity in the racial composition of neighborhoods encountered in the course of everyday routines. Indeed, these youth spent nearly 40% of their non-home time (nearly 2.5 hours on average) in neighborhoods that are less than 30% Black. Thus, youth living in Black segregated neighborhoods spent more time in low proportion Black (largely White) neighborhoods than they did in their own residential neighborhoods. Exposure to low proportion Black neighborhoods was largely driven by organizational resources seeking, including school destinations but also commercial and social service organizations. These data shed light on the complexity of urban mobility for contemporary Black youth and better understanding of the consequences of mobility patterns on both the individual and eco-network levels.

Summary—Overall, the four examples highlight activity space data that span a range of methods, including qualitative, quantitative, and mixed. These are a sampling of empirical methods that can be used to better understand development in context. They can be used to identify and capture the range of salient structural and process features of residential and extra-residential neighborhood environments that comprise youth’s activity spaces. The examples highlighted aspects of contextual levels, time, structures and processes, and social positionality, all key features of our cultural-developmental activity space framework for studying child and adolescent development in context.

Chapter VII. Conclusions and Future Directions for Place-Based Research

The purpose of this monograph was to advance place-based scholarship by integrating neighborhood effects frameworks, activity space approaches, and cultural-developmental models. Providing this synthesis will enhance our understanding of development in context by using sophisticated conceptualizations of settings and context rooted in an understanding of social stratification, particularly as it relates to race, ethnicity, and culture, and systems of oppression and privilege in U.S. society. Furthermore, such an integrated approach recognizes the heterogeneity in exposure to and experiences of neighborhoods and extra-neighborhood places (i.e., activity spaces).

One quantitative measure of the heterogeneity in exposure as it relates to neighborhoods is the Child Opportunity Index or (COI; Acevedo-Garcia et al., 2014). The COI is a composite score of neighborhood characteristics and resources in the 100 largest metro areas in the United States (COI, 2022). It shows massive racial-ethnic disparities and inequities in neighborhood conditions that adversely impact developmental outcomes. For example, Acevedo-Garcia et al. (2020) reported the COI for White, Latinx, and Black children is 73, 33, and 24, respectively. Internationally, global initiatives such as the UNICEF Child Friendly Cities (UNICEF, 2023) and the WHO-UNICEF-Lancet Commission on the Future of the World's Children (Clark et al., 2020) center the importance of neighborhoods' and communities' revitalization as a means to improve the health and well-being of the world's children and youth. The global attention to place-based effects for lifespan development and child health (Smith et al., 2021) makes it critically necessary for the field to advance, both conceptually and methodologically, our understanding of these processes and identify comprehensive solutions to enhance the well-being of global youth. Place-based approaches to the study of development-in-context, or research that comprehensively considers where and when people perform their daily activities (Kwan, 2009) and integrates information across these routine daily locations to characterize contextual and environmental experiences and exposures, is globally relevant. This approach combines setting-specific developmental research (with a focus on any settings that are relevant for any broader context) and activity space scholarship to advance a more comprehensive and global science of development in context.

Given the deep theoretical, empirical, and methodological traditions of residential neighborhood effects research and the broad and expansive reach of ecological models such as PPCT (Bronfenbrenner, 1986), in each of the chapters of the monograph we attempted to build upon these traditions to elucidate how a cultural-developmental perspective can be used to usher place-based research into the coming decades poised to explore and answer important questions about how, for whom, and under what conditions do exposures to places and experiences in places dynamically impact development across the lifespan and within many domains of functioning. These types of investigations are increasingly important given the racial-ethnic and other demographic changes occurring globally. For example, children of color currently comprise the majority of the U.S. youth (Poston, 2020). Furthermore, by 2043, the U.S. will be a majority-minority nation, meaning that racial and ethnic minoritized groups will surpass White Americans as the majority group. From a global perspective, population growth varies across countries and regions, with the majority of the world's

projected population increase by 2050 coming from eight countries in south Asia as well as north, east, west, and central Africa (United Nations, 2022). With this diversification of the U.S. and across the globe, it is imperative that we understand development in context by focusing on multiple levels of influence, assessing time and its effects on development in nuanced ways, and examining the multiple structures and processes occurring in places that impact development. Each chapter in this monograph focuses on these issues and one chapter offered exemplars on how to use the proposed conceptualizations and methodological approaches discussed in the monograph to advance our understanding. Below, we summarize some of the major conclusions and recommendations for future research to set forth an agenda for the next decade of place-based research.

In Chapters I and II of the monograph we provided an overview of mainstream neighborhood effects, cultural-developmental, and activity space research to highlight what we have learned from these bodies of work and to identify the tensions and gaps in this scholarship. Through this approach, we offer the critical components of a comprehensive cultural-developmental activity space research framework that carefully considers development in context. In Chapter II, we drilled down more on the theoretical underpinnings of place-based scholarship, provided operationalizations of constructs to offer a shared understanding of the language, situated our ideas within a critical developmental lens, and defined the major components of our new framework. In doing this, it is important for us to acknowledge that we have not been exhaustive in our examples in terms of developmental stage, setting structures, setting processes, or developmental domains. More work is needed. Scholars must still grapple with the overarching ideas to determine how to handle unique situations such as the impact of COVID-19 on place-based scholarship. This historical and global shock constrained mobility, limited or changed exposures, increased isolation, impacted perceptions of time, reorganized structures and processes, and amplified disparities. Thus, our framework provides an additional tool for scholars to utilize to advance understanding of complex developmental processes in diverse cultures around the globe.

Chapter III asserts that the activity space perspective can better approximate Bronfenbrenner's PPCT by helping to expand how researchers, scholars, and practitioners conceptualize and understand micro-, meso-, exo-, and macrosystems of development. More specifically, using an activity space perspective, we recognize that individuals encounter and utilize multiple places for various reasons. People encounter, over the course of their days, numerous settings that may vary in composition and function. These places, as part of their daily routines, matter for development. The collection of these individual microsystems represents an activity space and is akin to the mesosystem. We recommend that scholars begin to focus more concretely on these mesosystem influences and experiences and move beyond just focusing on home or school microsystems. Furthermore, activity space perspectives push us to consider not only the individual's activity space, but also the individual's social network and their activity spaces as important actors and predictors of outcomes. We recommend that future research not only consider friends/peers within a particular context (i.e., school) and their compositional factors, but also consider other network members across contexts (e.g., neighborhood peers/friends, coworkers, family members) and their activity space characteristics. These potential exosystem influences for

human development may uncover interesting links and clarify mixed findings regarding social network effects. Finally, when integrating a cultural-developmental perspective with an activity space framework, scholars can interrogate and better understand how social position factors like race, ethnicity, class, and gender shape settings, contexts, and individuals as well as families, friends, and others' activity spaces in various national contexts. For example, considering social stratification and marginalization, activity space research can further contextualize and elucidate how fluctuations in experiences of discrimination within places/microsystems contribute to a discrimination milieu across one's activity space, which may have implications for development in multiple domains of functioning. As Chapter III focused on the complementary nature of place-based research and cultural-developmental perspectives, Chapter IV discussed how consideration of time in place-based approaches can advance developmental science.

Chapter IV adeptly problematizes time showcasing how it is central to developmental science and one of the most commonly used words in the English language, yet how operationalizing, conceptualizing, and measuring time is often challenging. Time is inherent to development; it is also elusive. Prominent developmental theories often overlook time or give it only a cursory nod. For example, it took almost 20 years (1977 to 1995) for time to become a central player in Bronfenbrenner's ecological theory – one of the most influential developmental theories to date. Furthermore, often when developmental science theorizes time or space/place, rarely is culture explicitly considered. Notable exceptions include the PVEST and the integrative model. Yet, to borrow language from Bronfenbrenner (1995), only meso- and macrotime are considered. Microtime is almost tangential or inconsequential or not even explicitly considered. In this chapter, we assert that time, place, and culture should be simultaneously examined in an intersecting way to advance place-based research. We offer multiple dimensions of time – dynamic vs. static, unbounded vs. bounded, subjective vs. objective – and suggest to readers that each facet of time must be considered at the outset of a study design to appropriately capture the nuanced impact of place across time within a specific cultural context.

Methodologically, we urge developmental scientists to use longitudinal data, short and long-term, to capture micro-, meso-, and macrotime. Even though we recognize that collecting longitudinal data may be expensive and time consuming, data can be collected at differing intervals, for various durations, using accelerated designs. Relatedly, as scholars collect information about individuals at multiple time points, a similar strategy should be used when assessing place (e.g., Mölenberg et al., 2019). The various exposures and experiences within places and activity spaces may vary based on season, time of day, year, etc. Incorporating a cultural-developmental place-based developmental science perspective requires scholars to think of time and change when thinking of place, space, and setting (Matthews & Yang, 2013). Last, we urge scholars to utilize a culturally anchored methodology (Hughes & Seidman, 2002) and to consider research elements related to within or between group designs (Phinney, 1998). It is our view that time, place, and culture are inextricably linked and must be considered together to advance our knowledge base for a place-based developmental science. To do this, incremental, complementary empirical studies are needed that build and expand theory. As time must be more clearly articulated and assessed in developmental science, a greater understanding is needed regarding the mechanisms through

which place impacts development. Chapter V tackled this issue by focusing on the structures of and processes in places that impact child, youth, adult, and family outcomes.

Central to articulating the effect of place on outcomes is delineating the ways in which exposures to and experiences in places influence development. Using a cultural-developmental place-based perspective, Chapter V advanced the notion that systems of power, racialization, and oppression shape individuals,' and particularly youths' daily, routine exposures and interactions (i.e., activity spaces). Given the heterogeneity of activity patterns, variations in activity spaces within and across individuals, and multiple social experiences within and across places, we caution developmental scientists and place-based researchers to consider the structure and processes of activity spaces at the individual level, dyadic level, and network level. Following tenets of social disorganization theory, segregation hypotheses, and the integrative model, we offer as a starting point for scholars to critically examine and explore how structural features of activity spaces, such as racial-ethnic composition (or immigrant composition) or economic disadvantage, collectively and independently shape exposures and experiences in activity spaces and youth outcomes. Further, following collective socialization theories and eco-network perspectives (Browning & Soller, 2014), we urge scholars to consider collective efficacy, social interactions, and even intergroup conflict as important mechanisms to explain place-based effects on youth development. Inherent to all of these suggestions is a critical consideration of how time, the macrosystem, and culture shape the totality of the experiences of the populations involved.

Taken together, through this monograph, we theorized, conceptualized, problematized, and operationalized place-based developmental science from a global perspective. With a collaborative network of multidisciplinary scholars, we offer a contemporary perspective for place-based research rooted in historical traditions complemented by expanding definitions of place (i.e., activity space) and ever-advancing methodologies to explicate the nuanced and complex interactions between time, place, and culture. Overlaying a cultural-developmental perspective to place-based effects research we are poised to chart a new agenda for developmental research that can be critically consumed by researchers and practitioners in diverse places across the globe.

As the world's demography and patterns of diversity shift, it is imperative that our conceptualizations, theories, and methods grow and diversify to seriously consider how social stratification along race, ethnicity, gender, and class (as well as other social positions, e.g., religion) shapes individuals, settings, and cultures. Further, with advances in online technology and social media and youth's increasing use of it (Abi-Jaoude et al., 2020; Christian et al., 2017; Kranzler & Bleakley, 2019), new online cultures and social networks are created. Indeed, individuals are able to experience cultures beyond geographic borders and nation states (Ferguson et al., 2015). Thus, it behooves place scholars to consider these online spaces as contexts of development and apply our comprehensive cultural-developmental activity space framework to understand levels of influence, time-place-culture intersections, and the structures and processes of these spaces that may be implicated in development. As we move in this domain, some scholars have developed methods to utilize digital footprints from social media to explore activity patterns and zones with spatiotemporal data (Liu et al., 2019). Furthermore, where in geographic space and

whether that space is shared or unshared and with whom, may intersect with digital contexts of development. Cultural-developmental informed theorizing and practices for place-based research open the doors of developmental science to answer lingering questions and offer pathways forward to elucidate development in context.

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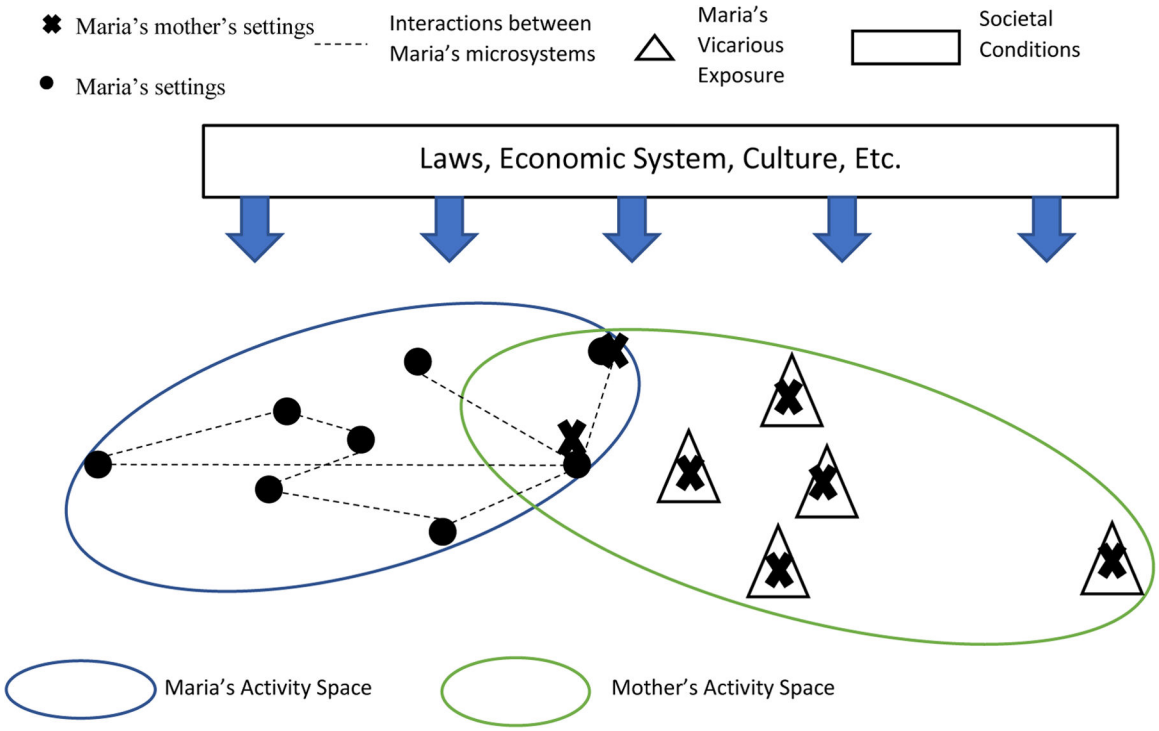

Figure 1.
Convex polygons of activity space

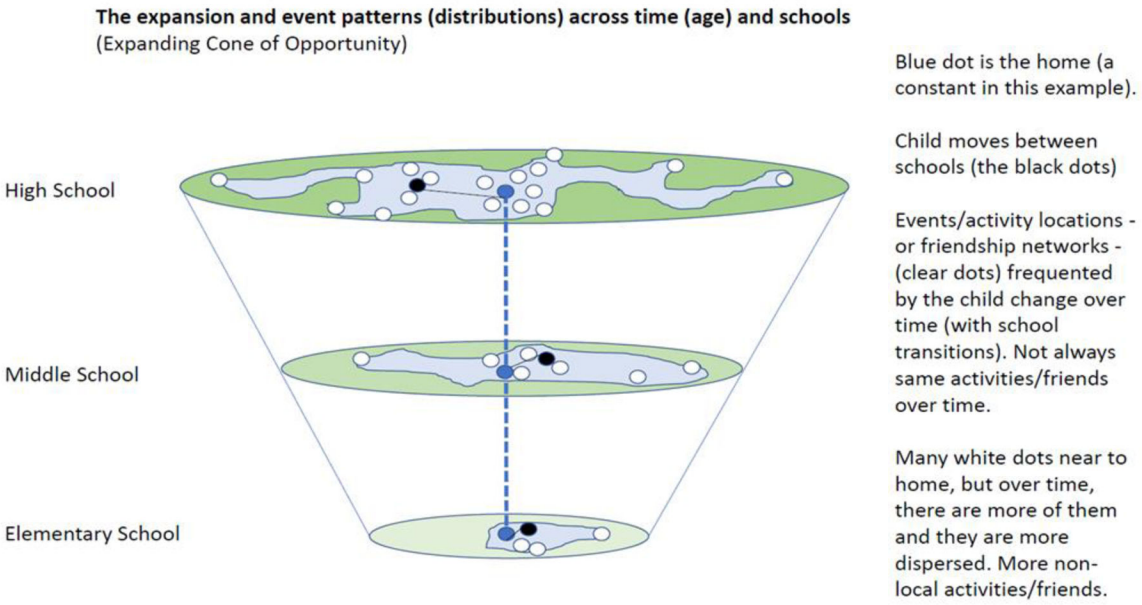

Figure 2.
Transitions-school environments
Note. Between ages 0–5, the home (blue dot) could be a single point and spatiotemporal origin of the child's lifespace.

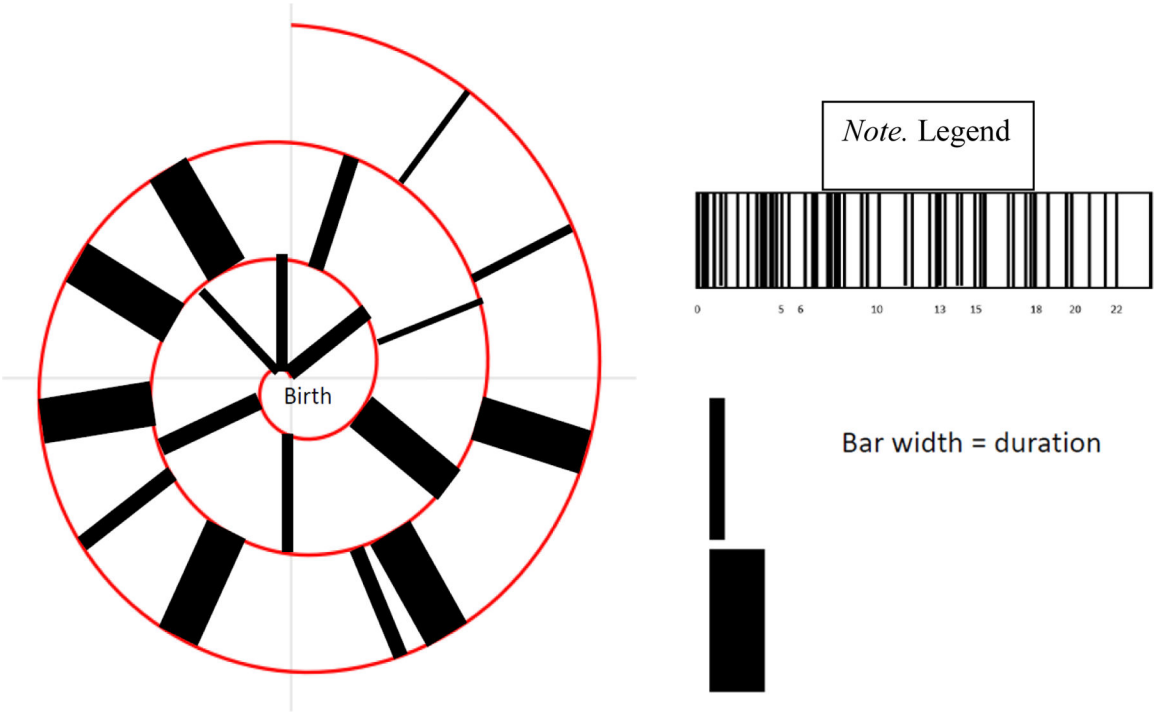

Figure 3.
Conceptual model: Time-Place-Culture

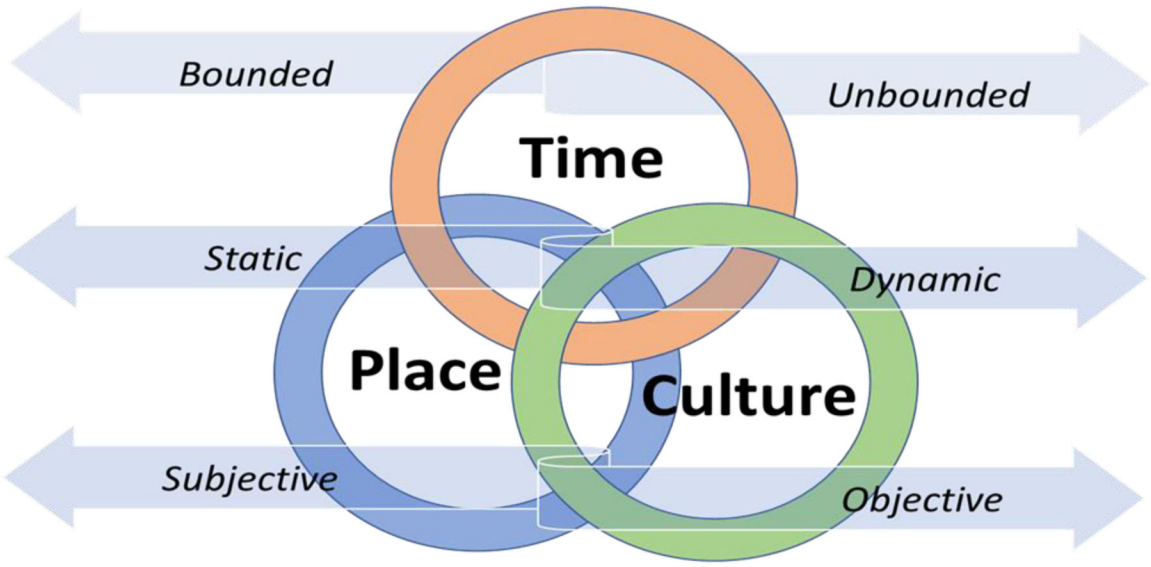

Figure 4.
Multi-dimensional Time-Place-Culture

Table 1

Glossary

Term	Definitions
Administrative boundary	A border of a geographic area defined under the jurisdiction of some independent entity (e.g., government, police, etc.)
Activity space	"all the locations that individuals come into contact with as a result of their routine activities" (Browning & Soller, 2014, p. 170)
Collective efficacy	A construct comprised of two underlying constructs: *social cohesion* (neighbors' common values and mutual trust) and *informal social control* (neighbors' willingness to share responsibility for controlling public behavior and work for the good of the neighborhood)
Ecological networks	The ties between people and the locations of their routine activities, capturing the extent to which people share activity space locations; aggregate patterns of shared local spatial exposure among residents in a particular neighborhood and capture linkages taking place between multiple settings both containing and not containing the developing person (Browning & Soller, 2014)
Microsystem	The first level of the nested ecology of human development consisting of "a pattern of activities, roles, and interpersonal relations experienced by the developing person in a given face-to-face setting with particular physical and material features and containing other persons with distinctive characteristics of temperament, personality, and systems of beliefs" (Bronfenbrenner & Morris, 2006, p. 814)
Mesosystem	The second level of the nested ecology of human development, comprised of "the linkages and processes taking place between two or more settings containing the developing person" (Bronfenbrenner & Morris, 2006, p. 817)
Exosystem	The third level of the nested ecology of human development encompassing "the linkages and processes taking place between two or more settings, at least one of which does not ordinarily contain the developing person, but in which events occur that influence processes within the immediate setting that does contain that person" (Bronfenbrenner & Morris, 2006, p. 818)
Macrosystem	The highest level of the nested ecology of human development consisting "of the overarching pattern of micro-, meso-, and exosystems characteristic of a given culture, subculture, or other broader social context, with particular reference to the developmentally instigative belief systems, resources, hazards, lifestyles, opportunity structures, life course options, and patterns of social interchange that are embedded in each of these systems" (Bronfenbrenner, 1993, p. 25).
Contextually informed	The process of developing ideas about the ways in which variables related to place – particularly places that are defined and made salient in the context of macrosystems that privilege some places above others in a diverse world (e.g., predominantly white neighborhoods or schools over neighborhoods or schools comprised of communities of color) – intersect with extant knowledge and theory about context and about development.
Culturally informed	The process of developing ideas about the ways in which variable (or correlates) related to membership in a group – particularly group memberships defined and made salient in the context of macrosystems that privilege some groups above others in a diverse world – intersect with extant knowledge and theory about development. Culturally informed theorizing is the process of developing ideas about the ways in which these correlates might intersect with existing knowledge and/or theoretical models of human development.
Cultural development	"the individual domain of functioning that develops through the gradual process of acquisition, production, and participation in social-level cultural experiences; is concerned with change and continuity in individual-level cultural processes and how they organize and relate to other developmental domains" (Causadias, 2013, p. 1376)
Hang out	Places individuals may engage for recreation and pleasure, often unstructured or unsupervised
Neighborhood effect	The impact of neighborhood characteristics on an outcome.
Objective	An indicator or characteristics measured independently. Examples include independent observation of a characteristic, aggregate sociodemographic characteristics from the U.S. Census.
Person - Demand	Act as an immediate stimulus, by inviting or discouraging reactions from persons, objects, and symbols in the immediate environment (Bronfenbrenner & Morris, 2006)
Person - Resource	Those that are not immediately discernable, but include variation in mental, emotional, social resources, and past experiences needed to effectively engage in proximal processes (Bronfenbrenner & Morris, 1998; Tudge et al., 2009)

Term	Definitions
Person - Force	Also called disposition characteristics, they include person characteristics that "set proximal processes in motion" (Bronfenbrenner & Morris, 2006, p. 810) and/or sustain their operation, such as temperament, motivation, and persistence. Conversely, they interfere with or prevent proximal processes from occurring (Bronfenbrenner & Morris, 2006, p. 810)
Place	Any location to which an individual is exposed or experiences.
Place-based research	Research that comprehensively considers where and when people perform their daily activities (Kwan, 2009) and integrates information across these routine daily locations (e.g., schools, neighborhoods, hang-outs, jobs, organized activities) to characterize contextual and environmental experiences and exposures. This type of research combines setting-specific developmental research (e.g., residential neighborhood effects, school effects, organized activities effects, work effects) and activity space scholarship to advance a more comprehensive science of development in context. Our definition of place-based research is distinct from place-based education research, which is often focused on an explicit connection between schools and the communities they serve (Yemini et al., 2023).
Pockets of peace	areas of concentrated disadvantage (including elevated levels of the percent of residents in poverty, unemployed, single parent, nonwhite, and receiving public assistance) that experience low rates of adolescent violence (Leech & Adams, 2022)
Processes	Generally, social processes involve "an integrated constellation of community practices, a dynamic system composed of organized and causally connected practices, meanings, behaviors, and mental processes that are constantly renegotiated by the community and its members" (Causadias, 2013, p. 1377; Rogoff, 2003). Social processes can happen at the level of the individual interacting with individuals, objects, and symbols in their immediate environment (see proximal processes). But they can also happen at higher levels of the social world. For example, neighborhood-level social processes involve on-the-ground collective neighborhood dynamics that link neighborhood structures with lower-level processes and development.
Proximal processes	A "progressively more complex reciprocal interaction between an active, evolving biopsychological human organism and the persons, objects, and symbols in its immediate external environment. To be effective, the interaction must occur on a fairly regular basis over extended periods of time" (Bronfenbrenner & Morris, 2006, p. 797).
Setting	An environment in which the individual is embedded. Settings are similar to contexts. Examples include schools, neighborhoods, afterschool programs, childcare center.
Structures	Features related to the composition and spatial arrangement of neighborhood residents and institutions
Subjective	A perceived indicator or entity, filtered through one's point of view.
Time - Microtime	"Refers to continuity versus discontinuity in ongoing episodes of proximal processes" (Bronfenbrenner & Morris, 2006, p. 796)
Time -Mesotime	"The periodicity of these episodes across broader time intervals" (Bronfenbrenner & Morris, 2006, p. 796)
Time -Macrotime	"Focuses on the changing expectations and events in the larger society, both within and across generations, as they affect and are affected by, processes and outcomes of human development over the lifecourse" (Bronfenbrenner & Morris, 2006, p. 796)