Cultural Snapshots: A Method to Capture Social Contexts in Development of Prejudice and Stereotyping

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Abstract

The scientific identification of how social environments transmit intergroup biases is a transparently complex endeavor. Existing research has examined the emergence of intergroup biases such as racial prejudice and stereotypes in many ways, including correlations between racial diversity and children's prejudice, content analyses of features in the media, or experiments testing the influence of selected variables with unknown prevalence in children's environments. Yet, these approaches have left unanswered how the social environments that children engage with cause them to

acquire racial prejudice and stereotypes. We provide a review of the existing literature on socialization of racial prejudice and stereotypes and then present a methodological approach that can be used to quantify and test causal relations between the features of children's social environments and intergroup biases. We provide examples of how this method has and can be used alongside a discussion of unique considerations when applied to child samples.

1. Introduction

Social and developmental psychologists have worked for decades to better understand the causes and consequences of prejudice and stereotyping in childhood (see Levy & Killen, 2008). We present a critical review of research on the role of the social environment in children's acquisition of prejudice and stereotyping, and we identify fundamental, unanswered questions in the field. We then introduce a new methodological approach that can be used to answer these questions. The majority of empirical studies have focused on within-child factors (e.g., age, racial identification, cognitive milestones) rather than the social environment to explain the acquisition of biases. Alternatively, some studies have focused on broad macro factors (e.g., school demographics or neighborhood diversity) that typically can only be examined with a correlational design. Accordingly, many fundamental questions remain unanswered with respect to how the social environment *causes* children to acquire prejudice and stereotypes; these questions can be addressed with the methodology we present.

Reflective of extant research on the development of intergroup biases, we focus on the development of racial prejudice and racial stereotyping. In this context, *racial prejudice* is a negative evaluation of people based on their race whereas *racial stereotypes* are beliefs (or cognitive representations) about the characteristics of people based on their race. Given the societal consequences of racial prejudice and stereotyping, it is critical for scientists to identify the specific features of the social environments that communicate and maintain such racial biases. Equally important is understanding *how* those features influence the development of prejudice and stereotypes. More specifically, social scientists have yet to identify the specific aspects of children's environments that (a) communicate that race is an important category to attend to, (b) communicate the cultural status of different groups, and (c) cause children to develop attitudes and beliefs about those groups.

To address these unanswered questions we describe a method called *cultural snapshots*. This method requires scientists (1) to code a large representative sample of recordings of social environments and (2) carefully apply experimental methods to examine how those social environments shape children's prejudice and stereotypes. Cultural snapshots can be used to examine how specific features of the social environment cause children to acquire or resist prejudice and stereotypes and enable scientists to examine if and how children are socialized to develop biases toward any social group (e.g., gender, age, sexual orientation). We focus on how cultural snapshots can be used to understand racial prejudice and stereotyping in childhood.

2. How does socialization of prejudice and stereotyping occur?

2.1 What is the "social environment"? An expanded view of socialization

Our framework and method are grounded in several scholarly traditions in psychology. First, we build on Bronfenbrenner's ecological approach to human development (Bronfenbrenner, 1977) and emphasize that a child's social environment includes proximal features, such as those involved in interactions with parents or peers, and more distal features, such as those present in societal and institutional norms. This approach allows for a wide range of variables to be features of a child's social environment, ranging from (for example) their parents' egalitarian statements to the occupational inequality they see in their city or on TV. Importantly, features of the social environment may convey prejudice and stereotypes explicitly (e.g., racist words) or implicitly (e.g., teachers smiling only at White children; Bigler & Liben, 2006, 2007). Thus, a child's social environment includes explicit and implicit information about social groups and that information may be communicated by a parent or teacher, or may be communicated through their school or even their broader culture. We aim to incorporate this broad definition of the social environment into the cultural snapshots methodology that offers a method to sample from and manipulate the many different types of information available to children, including a child's broader culture.

Second, we take the view (from cultural psychology; Fiske, Kitayama, Markus, & Nisbett, 1998; Markus & Kitayama, 2010) that a child's understanding of their world dynamically interacts with the information and regularities that they see, hear, touch, smell, and taste in that world. We thus assume that features of the social environment shape children's cognitions

and behaviors via perception. Yet, our approach assumes children are "active" perceivers. Children actively make choices about what information they perceive, their goals, and beliefs alter how they perceive information, and they shape their own environments on the basis of these perceptions (see also Aboud & Amato, 2001; Bigler & Liben, 2007). This approach acknowledges that while children may be aware of some of the contingencies they perceive, cultural transmission can also happen (and occurs frequently) without awareness. Nonetheless, our emphasis in this review is on how prejudice and stereotypes are represented in children's social environments, and whether those specific representations collectively influence children's intergroup biases.

A final definitional point is that we adopt contemporary approaches to race in psychology that characterize race, prejudice, and stereotyping not as something people *have* or *are*, but rather as something people *do* (Markus & Moya, 2010). This means that racial prejudice and stereotypes (and race itself) reflect dynamic patterns of ideas, practices, and materials that are systematically embedded in social environments common to a large collective. Put differently, racial prejudice and stereotypes reflect cultural structure (Salter, Adams, & Perez, 2018). Prejudice and stereotyping are not merely something in children's minds, but are perpetuated by features (e.g., practices, artifacts, discourse, educational systems, and laws) of their collective social environment. Cultural snapshots enable scientists to capture the explicit and implicit features associated with race (and other groups) in collective social environments. This approach to thinking about prejudice and stereotyping supports an expanded view of how socialization perpetuates racial biases.

Socialization has been thought of as the manner through which attitudes, values, beliefs, and behavior patterns of the larger culture are transmitted and negotiated (Bigler & Liben, 2007; Leaper & Friedman, 2007; Maccoby, 2015; Tsai, Louie, Chen, & Uchida, 2007). In the case of race, socialization involves the ways in which children acquire "social meaning and consequence of ethnicity and race" (Brown, Tanner-Smith, Lesane-Brown, & Ezell, 2007, p. 14). Studies of racial socialization have traditionally focused on the process by which older generations teach younger generations about race and ethnicity, focusing on explicit socialization practices such as conversations about racial heritage (reviewed by Hughes et al., 2006). In the fields of intergroup relations, stereotype development, and cultural psychology, however, researchers have recently begun framing socialization as a mechanism by which people learn about groups, not only from parents

and older generations, but also from peers, media, and social policies (Bigler & Liben, 2007; Bussey & Bandura, 1999; Castelli, De Dea, & Nesdale, 2008; Chiu, Gelfand, Yamagishi, Shteynberg, & Wan, 2010; Leaper & Friedman, 2007; Tsai et al., 2007). In this framework, the social transmission of prejudice and stereotypes need not be goal-oriented or intentional (though it can be) and can happen by way of subtle patterns that children observe anywhere in their social environments (Bigler & Liben, 2006; Castelli et al., 2008; Hilliard & Liben, 2010). The cultural snapshots method takes this latter approach by highlighting pathways for the socialization of prejudice and stereotyping through patterns of cues in children's social environments.

2.2 How have researchers studied children's racial socialization?

Children can be socialized through a wide variety of processes. The literatures on racial socialization, however, can be roughly divided into parental socialization, school/neighborhood socialization, and cultural socialization, as described next.

2.2.1 Parental socialization

Numerous studies have examined the ways in which parents socialize their children's race-based beliefs and behaviors. The majority of these studies have focused on African-American parents and usually feature self-report measures such as open responses, Likert scales on the frequency of specific behaviors, and binary response options assessing whether or not parents have engaged in a specific behavior (Priest et al., 2014). A review of these studies shows that a majority of African-American parents engage in explicit socialization practices with their children. These practices range from initiating conversations about cultural heritage to taking their children to Black barbershops or churches (Lesane-Brown, Brown, Caldwell, & Sellers, 2005). Parents report that they engage in socialization practices both to instill pride in children by providing them with information about their unique racial culture and heritage and to protect children by preparing them for racial prejudice and discrimination (Hughes et al., 2006; Lesane-Brown et al., 2005). More generally, large-scale survey data suggest that socialization messages are typically provided by parents from a wide variety of racial minority backgrounds, including parents who identify as Hispanic, Asian, Native Hawaiian/Pacific Islander, American-Indian, and multiracial (Brown et al., 2007).

In contrast, we know relatively little about the ways in which White children are socialized with regard to race. Some studies suggest that racial socialization occurs less often in White families than minority-race families (Hughes et al., 2006). When racial socialization does occur in White families, it often serves to promote colorblind ideologies, where parents teach their children that race does not matter and they should not attend to race (Loyd & Gaither, 2018; Pahlke, Bigler, & Suizzo, 2012; Vittrup, 2018). Majority-race (White) parents often promote colorblind ideologies with the goal of teaching their children egalitarian values; however, this approach is not typically successful (Vittrup, 2018). In one study where almost all White mothers adopted colorblind approaches to socialization, children remained unaware of their mothers' egalitarian views on race and did not seem to adopt their parents' egalitarian racial attitudes (Pahlke et al., 2012). Although research on White parents' socialization practices is limited, these studies suggest that, at least in their homes, racial minority and White children likely receive very different racial socialization messages. While racial minority children receive messages that serve to promote racial pride and identity, educate them about racial barriers and prepare them for bias, White children are unaware of their parents' attitudes and beliefs about race and uneducated about social inequalities related to race because of the "colorblind" socialization message they receive.

Beyond specific socialization practices, it does seem that both racial majority and minority children learn from their parents some racial biases or other racial beliefs that may inoculate them against others' racial biases. A recent meta-analysis of 131 studies (including 58 studies on racial bias) suggests that children's intergroup attitudes correlate moderately with parents' intergroup attitudes (Degner & Dalege, 2013). Additionally, recent work has started to examine implicit biases in addition to explicit biases. For example, White mothers' implicit biases (but not explicit biases) have been found to align with their children's explicit biases (Castelli, Zogmaister, & Tomelleri, 2009), though there are only a handful of studies examining the relation between implicit biases in parents and children. Minority parents who engage in positive socialization practices (that communicate ethnic pride and racial history) may generate beliefs in their children that buffer them against societal biases. For example, Neblett et al. (2008) found that adolescents whose parents frequently communicated messages about racial pride and self-worth in combination with messages about barriers experienced by African-Americans had higher well-being and self-esteem and a better coping response to discrimination.

Despite large literatures on (a) parental socialization practices and (b) parent–child correlations in racial attitudes, there is very little research that examines the connection between specific parental practices in racial socialization and children's prejudice and stereotyping. This latter piece is a critical missing component in understanding if and how parental socialization *influences* children's race-based cognitions and behaviors. For example, one possible explanation for the association between parent and child racial attitudes is that parents and children inhabit similar home and neighborhood environments, and the effect of their shared environment may account for their similarity in attitudes.

2.2.2 School/neighborhood socialization

The impact of racial socialization through schools and neighborhoods has received less attention than parental socialization. Specific socialization practices in these settings remain unclear, even as it is quite clear that school and neighborhood environments are associated with children's racial cognitions. For example, studies suggest that preschool children who live in racially diverse environments exhibit less outgroup stereotyping than preschool children in racially homogenous environments (Rutland, Cameron, Bennett, & Ferrell, 2005). The role of diverse schools and neighborhoods becomes even more pronounced as children get older, and this age-based effect could be driven by emerging beliefs in race essentialism. Specifically, children who grow up in racially diverse (vs racially homogenous) neighborhoods exhibit less race essentialism as they age and this trend is correlated with age-based decrements in outgroup stereotyping (Pauker, Xu, Williams, & Biddle, 2016). Exposure to racial diversity at school has similar effects: one study found that a group of White elementary school children who attended a racially diverse school were less racially biased than a similar group of White children who attended a racially homogenous school (McGlothlin & Killen, 2010; essentialism was not measured in this study). These studies suggest that exposure to individuals from different racial groups is associated with children's beliefs about race, yet the messages communicated in diverse vs homogenous schools/neighborhood remain somewhat unclear.

One possibility is that messages of colorblindness are less prevalent in diverse schools and neighborhoods. The colorblind approach to handling racial diversity promotes the avoidance of discussions about race and is often featured in schools in the United States (Apfelbaum, Pauker, Sommers, & Ambady, 2010; Lewis, 2001; Schofield, 2007). Although this school-based socialization practice may be common, studies suggest that exposure to

colorblind ideologies do not increase egalitarian beliefs (as they purport), but instead, lead children to ignore instances of racial discrimination (Apfelbaum et al., 2010). To our knowledge no studies have examined whether colorblind approaches are more prevalent at racially homogenous schools and whether adoption of colorblind approaches accounts for increased racial biases at homogenous schools. The lack of causal evidence for how homogenous vs diverse environments shape children's beliefs is only one unresolved piece of a complex puzzle.

Another critically important piece is the concrete practices through which schools and neighborhoods might communicate race-based beliefs, ideologies, and norms to children. Research on normative patterns of race-based behavior rarely refers to the specific practices that convey those norms, but instead focuses on how children respond to abstract norms produced in specific schools or psychological laboratories. This research suggests that children quickly adopt appropriate, normative behaviors (Nesdale & Dalton, 2011; Nesdale & Lawson, 2011). In these studies, children are randomly assigned to a team that is explicitly described as "friendly" and as "liking kids on other teams" or to a team described as "not friendly" and "doesn't like kids on other teams." Children's resulting behavior toward peers on "another team" tended to be consistent with their own team norm (Nesdale & Dalton, 2011; Nesdale & Lawson, 2011). One study directly tested how explicitly communicated norms influence children when they pertain to racial groups. In this study, a small group of middle school students at five different schools was trained to confront instances of prejudice at their school. After 5 months, the close friends of these "trainers" also engaged in more tolerant behavior, such as having discussions about discrimination and standing up for peers who are teased (Paluck, 2011). This study suggested that norms surrounding prejudice can spread through peer groups. Collectively, existing studies suggest that normative beliefs that are explicitly communicated by ingroup members can cause children to behave in ways that are consistent with such beliefs. However, explicit communication of normative beliefs (i.e., telling children that their ingroup is either "friendly" or "not friendly") may not represent the way that norms are typically communicated. If such communication is typical, it will be important to identify what sorts of explicit statements are frequently encountered by children. If such communication is not typical, it will be important to determine how children *typically* learn ingroup norms toward outgroups and other races.

With respect to other means of communicating norms, more subtle forms of communication may be especially effective. For example,

Castelli et al. (2008) had children view interactions in which a White adult made positive verbal statements while directing either friendly or unfriendly nonverbal behaviors toward a Black adult. Children expressed more negative attitudes toward the Black adult in the video—as well as a new Black adult that they had not seen before—after seeing the Black adult receive friendly nonverbal behavior than after seeing the Black adult receive unfriendly nonverbal behavior. Although there are few such experiments on racial socialization, studies with generic (minimal) groups replicate the findings of Castelli and colleagues. Children in these studies behave less prosocially toward members of novel groups who received negative nonverbal behaviors (vs positive nonverbal behaviors) from an adult (Skinner, Meltzoff, & Olson, 2017). Moreover, children apply more positive academic stereotypes to novel groups to the extent they see those groups receiving positive nonverbal behaviors from a teacher (Brey & Pauker, under review). These studies suggest that simply observing adults' subtle behaviors toward different races may socialize children to have specific racial attitudes and stereotypes; however, further research is needed to uncover the kinds of subtle behaviors children frequently encounter in their schools and neighborhoods, or simply to identify whether children systematically encounter *any* subtle patterns in the interactions they observe.

In general, existing research suggests that socialization in schools and neighborhoods is a likely cause for children's beliefs and behaviors about race. This conclusion is supported by several findings noted previously. First, children in racially diverse vs racially homogenous environments systematically differ in race essentialism, stereotyping, and bias. Second, children's beliefs about outgroups, including racial outgroups, seem to coincide with explicitly communicated norms about outgroups. Finally, norms that are communicated more subtly (e.g., via nonverbal behavior) seem to influence children's racial prejudice and stereotypes. As with research on parental socialization, however, there is a lack of knowledge about the concrete socialization practices that are (a) frequently encountered by children *and* (b) shape the cognitions and behaviors of those children.

2.2.3 Cultural socialization

Children also encounter socialization messages through concrete sources—such as stories/books, games, and television—that are distributed widely throughout a population. To model the influence of such "cultural messages," researchers often generate stories, games, or videos and subsequently

measure children's race-based cognitions and behaviors. For example, one study had 9–14-year-old Black and Latino children read science stories that featured either a similarities message (all people are the same), a uniqueness message (everyone is unique), a combination message (people are unique in some ways and similar in some ways), or no message. These messages did not change children's attitudes toward their own group, but the combination message did increase tolerance toward Whites (Levy et al., 2005). Other studies have examined the role that stories play in modeling positive behavior toward low-status or stigmatized individuals (Vezzali, Stathi, Giovannini, Capozza, & Trifiletti, 2015), or in giving children experience with outgroups through extended contact (Cameron & Rutland, 2006). In both types of studies, children exhibit more positive attitudes toward stigmatized groups after experience with the stories. These studies show that children pick up on beliefs and behaviors that are subtly modeled or endorsed in storybooks. Notably, these studies are uninformative with respect to whether the specific behaviors provided in experiments are common to the books that children encounter, and if those behaviors faithfully represent the contexts in which they emerge in real stories.

In addition to storybooks, children also encounter racial socialization messages (both implicit and explicit) through other mass media, such as television programs, advertising, movies, and (increasingly) the internet. Mass media include many different types of implicit information about race. For example, television programs can include implicit messages about race through the inclusion (or not) of minority characters, the roles, contexts, and behaviors that differ between White and non-White characters, and the responses those characters receive from other characters. The presentation of characters from most racial minority groups (i.e., Asian, Latina(o), Native American) is limited and often stereotypical (Mastro & Greenberg, 2000; Tukachinsky, Mastro, & Yarchi, 2015; Williams, Martins, Consalvo, & Ivory, 2009). Perhaps due to attention toward a lack a diverse media representation in the 1980s, television programs increased inclusion of African-American characters. However, there is often little variability in the roles Black actresses and actors play; they are often stereotypical (Mastro, 2009; Tukachinsky et al., 2015). Some media programs intended for child audiences, such as *Sesame Street* or *Different and the Same*, stand apart from traditional media because they intentionally featured diverse characters, race-relevant storylines, explicit conversations about race, and

cross-race friendships (see Graves, 1999). Intervention studies reveal that short-term exposure to episodes of *Sesame Street* (e.g., four viewings) had mixed results on children's prejudice reduction, but long-term exposure (e.g., 2 years of regular viewing; an entire video series) improved children's racial attitudes (Bogatz & Ball, 1971; Gorn, Goldberg, & Kanungo, 1976; Graves, 1999; Persson & Musher-Eizenman, 2003). It is unclear from this research what aspects of these programs were most effective in changing attitudes and whether implicit messages about race (such as lack of diversity, interracial tension, and stereotypic role assignment) influence children's attitudes. Media programming, therefore, has the potential to promote positive messages about intergroup relations, but most programming does not communicate such messages. In fact, general media consumption has been shown to have detrimental consequences for racial minority children and adolescents (Martins & Harrison, 2012; Ward, 2004).

Less is known, however, about if and how implicit messages about race in stories and mass media (such as lack of diversity and stereotypic role assignment) influence children's attitudes, or about the concrete environmental features that drive cultural differences and similarities in race-based cognition and behavior.

2.2.4 Summary: Racial socialization through parents, schools, neighborhoods, and cultures

Parents, teachers, peers, schools, neighborhoods, and media may each play a role in socializing children's race-based cognitions and behaviors. Existing studies suggest that children of different races (i.e., White vs non-White) receive different messages in the home, and children of the same race also differ in the racial messages they receive. Yet environments outside of the home ensure that many different children are exposed to the same messages. These shared environments include classrooms and neighborhoods at the local level and include storybooks and mass media at the regional or cultural level. A limited number of laboratory experiments have highlighted specific environmental features (e.g., nonverbal behaviors in interracial interactions) capable of influencing children's race-based cognitions and behaviors. Larger scale correlational studies have also examined the relationship between environments (e.g., diverse vs homogenous) and children's race-based cognitions. Much has been learned about the role of social environments in children's race-based cognition and behavior but as described next, much remains to be known.

2.3 Evaluation of research on racial socialization

2.3.1 What information typically causes children to develop prejudice and stereotypes?

Findings from laboratory experiments suggest that children's stereotypes and biases about social groups are sensitive to patterns of nonverbal behavior (Brey & Pauker, under review; Castelli et al., 2008; Skinner et al., 2017), to themes and characters in storybooks (Cameron & Rutland, 2006; Vezzali et al., 2015), and to cultural patterns, such as the race and gender of American presidents (Bigler, Arthur, Hughes, & Patterson, 2008). Despite this evidence, and despite decades of research on the socialization of racial cognition (reviewed earlier), little is known about the information that children *typically* perceive and that causes those children to develop stereotypes and prejudices. Experimental studies have manipulated features of children's environments without reference to whether those features are systematically perceived by children and without reference to the contextual noise that naturally accompanies those features. For example, studies that present children with videos of intergroup interactions featuring manipulated nonverbal behaviors enable scientists to draw conclusions about how children interpret those decontextualized nonverbal behaviors (e.g., Brey & Pauker, under review; Castelli et al., 2008; Skinner et al., 2017). However, these studies leave open two critical questions: First, do children systematically encounter the manipulated pattern in their typical environments? Second, *how* do children interpret such behaviors when they encounter them in their daily lives? For example, children are often familiar with the individuals they observe (e.g., a teacher or TV character), observe intergroup behaviors in specific contexts with specific perceptual qualities and are not usually asked to immediately evaluate the individuals they saw in an interaction.

Among studies that do identify the concrete behaviors and messages that children consistently encounter, there is little research connecting those specific messages to their influence on children. For example, research on biases in media has demonstrated the presence of racial biases and stereotyping, but it is unclear whether and how this information influences children's attitudes about race.

2.3.2 Beyond explicit socialization: Implicit socialization

Developmental psychologists recognize that racial socialization is likely to occur through many channels (Quintana, 1998; Umaña-Taylor et al., 2014), yet as illustrated in research on racial socialization, much of the existing work has focused on explicit verbal channels and parental socialization.

Explicit statements and parental socialization practices are readily accessible to researchers through interview or survey measures, after all, simply by asking parents to report on the kinds of socialization practices they use with their children or by asking adolescents to reflect on the kinds of socialization they encountered as children. Such self-report and/or retrospective methods have a few shortcomings that may lead to an inaccurate or incomplete picture of socialization. For example, parents may report how they would like to socialize their children or may "conveniently" forget the practices they employ that are socially undesirable (e.g., expressly prohibiting children from having cross-race friends). Similarly, measures that ask participants to remember how they were socialized may be inaccurate (e.g., participants may misremember). But perhaps most important to this review is that self-reports and retrospective measures are unlikely to capture subtle patterns or experiences (including less explicit parental socialization practices) that may influence children's beliefs and attitudes about race, and cannot capture all of the perceptually rich elements of the contexts in which those patterns or experiences were encountered.

Beyond these measurement limitations, prevailing social norms in the United States prohibit discussions of race (Apfelbaum, Norton, & Sommers, 2012), which suggest that socialization may often occur outside of verbal communication. In fact, classic theories in social and developmental psychology suggest that much of children's learning happens outside of explicit socialization. For example, children are adept at observing others and learning through observation, as demonstrated by Bandura over 40 years ago (Bandura, 1976). These studies show that much of children's racial socialization may happen by watching the behaviors of parents or teachers, TV characters, neighbors, and even strangers that they encounter in daily life. More recent studies have departed from Bandura's specific model and suggest that children give more importance to nonverbal than verbal cues in their evaluations of other people and races (Castelli et al., 2008). Such findings suggest that nonverbal behaviors and other subtle cues may be particularly influential in guiding children's attitudes toward members of different races.

Finally, broader perceptual patterns represented in a child's social environment likely also impact children's prejudice and stereotypes. These patterns include racial bias in television programming or media sources, racial segregation in schools or neighborhoods, correlations between status (i.e., wealth or education) and racial group membership, and so on. All of these patterns provide children with some information about racial dynamics. However, to date, few studies have examined how these types of broad

patterns (where there is no particular socialization agent or no intention of socialization) impact children's acquisition of biases.

In general, existing studies have made progress in identifying many sources of children's racial socialization. However, a review of the literature demonstrates that the field lacks a framework for capturing the features of social life that children frequently perceive and for capturing the causal influence of these feature patterns on children's racial prejudice and stereotypes. A better understanding of the scope and impact of these patterns may address some of the critical questions in the field about how and when children learn racial prejudice and stereotypes, why implicit and explicit biases diverge for White children in the United States, the role of cultural context in children's racial attitudes, and how socialization agents can combat prevalent racial biases and instead work to promote egalitarian values.

3. Cultural snapshots: A method for examining socialization

The concept of socialization includes several defining features that we aim to incorporate into our approach to the development of intergroup behavior. First, socialization occurs by virtue of children seeing and hearing the activities of adults and peers—by perceiving people and their activities, children learn what to think and how to behave. Such socialization may occur through direct feedback, vicarious feedback, modeling, and so on, but in each case, children must perceive other people. Second, children are socialized into commonly held beliefs and behaviors. Hence, through socialization, children develop similar thoughts and behaviors, including thoughts and feelings about specific group identities. These two features of socialization raise the question that inspired this chapter: what do children collectively perceive that causes them to develop similar prejudices and stereotypes about social groups?

Empirical answers to this question remain somewhat unclear but the cultural snapshots paradigm provides a means for generating those answers. Specifically, cultural snapshots provide a means for (a) examining the social patterns that children collectively perceive and (b) examining if those social patterns cause children to develop similar beliefs about social groups. *Social patterns* are the behaviors, artifacts, and utterances that are perceived over time by at least several people. Social patterns can thus be understood as collections of what Sperber (1996) calls *public representations*—events that exist in

the physical world external to minds, are derivative of the human minds that generate them, and represent concepts to the people that observe them. For example, one public representation might include a Caucasian woman frowning at an Asian woman. A broader social pattern of similar public representations could be Caucasian people frowning at Asian people. We can measure and manipulate such social patterns via cultural snapshots, as described below.

3.1 What are cultural snapshots?

Cultural snapshots are recorded samples of public environments commonly encountered by many people. These may be samples from mass media (e.g., TV, webpages, magazines; de Vreese, Boomgaarden, & Semetko, 2011; Han & Shavitt, 1994; Kim & Markus, 1999; Lewis & Hill, 1998; Tsai et al., 2007; Weisbuch & Ambady, 2009; Weisbuch, Pauker, & Ambady, 2009), social media (e.g., blogs or Facebook updates; Huang & Park, 2013; Schwab & Greitemeyer, 2015; Weisbuch, Ivcevic, & Ambady, 2009), or personal recordings, such as cell phone video, images, or written descriptions of commonly encountered public spaces or situations (i.e., physical space sampling or situation sampling; e.g., Kitayama, Markus, Matsumoto, & Norasakkunkit, 1997; Miyamoto, Nisbett, & Masuda, 2006; Morling, Kitayama, & Miyamoto, 2002; Savani, Morris, Naidu, Kumar, & Berlia, 2011). The cultural snapshots methodology permits experimental manipulations of social patterns in their natural, and perceptually rich contexts. Specifically, the method includes (1) a content analysis to create a numerical index of one or more social patterns among these snapshots and (2) a true experiment in which participants are randomly assigned to observe sets of snapshots (from the content analysis) that either do or do not include the identified social pattern.

In one such study, we were interested in whether television shows may contain a pattern of pro–White nonverbal bias (Weisbuch, Pauker, et al., 2009). We hypothesized that televised nonverbal behavior may contain a pattern in which Black characters are treated more negatively than White characters. We took a representative sample of cultural snapshots from 11 popular television shows frequently encountered by our population (i.e., U.S. American adults) that contained both a Black main character and a White main character matched on gender, age, and status within the show. We refer to these characters as *target* characters. In order to quantify how each target was treated, we randomly selected three episodes of each show from the 2006 season and created a set of a priori rules by which

to select clips from the episodes. In this study, we divided each episode into three equal sections and selected the first instance within each section in which a target character interacted with other *partner* characters. We then repeated this procedure for each episode and each target character yielding 270 clips in total (nine clips/character). These clips were edited to remove the target character and leave only the interaction partners. Naïve coders then rated how positively the interaction partners behaved toward the unseen character in each clip. Consistent with our hypothesis, Black target characters were treated more negatively than their White counterparts.

Content analyses and research on socialization practices are typically concluded once a reliable pattern has been identified (Bjornstrom, Kaufman, Peterson, & Slater, 2010; Dixon, 2017; Mastro & Greenberg, 2000; Smith & Granados, 2009; Smith, Pieper, Granados, & Choueiti, 2006). However, the mere presence of a pattern does not necessitate it has an influence, so cultural snapshots studies include both the identification of social pattern and examination of its causal influence. Hence, the next step in the cultural snapshots approach is to conduct an experiment to model the effect of a particular social pattern. For example, we tested the effects of pro-White nonverbal bias on racial attitudes by creating experimental conditions from the 270 television show clips we had collected (Weisbuch, Pauker, et al., 2009). The pro-White condition featured clips in which Black target characters were treated negatively by their interaction partners and clips in which White target characters were treated positively by their interaction partners. We then created a condition to *reverse* the prevalent cultural pattern—a pro-Black condition—by selecting clips in which Black target characters were treated positively by their interaction partners and clips in which White target characters were treated negatively by their interaction partners. Participants were randomly assigned to view one of these sets of silent television show clips and then complete a measure of racial attitudes. Those in the pro-White condition had stronger pro-White implicit associations and explicit attitudes suggesting that this particular pattern may play a role in communicating racial prejudice.

Cultural snapshots thus integrate extant research methods in a paradigm that allows scientists to draw conclusions about the influence of social patterns on cognition, as this paradigm includes several features essential to those conclusions, as described below.

3.2 Features of cultural snapshots

Cultural snapshots can be compared to other methodologies. In the racial socialization literatures reviewed earlier, methods included content analyses, self-reported parental socialization practices, prevalent (surveyed) beliefs about race, correlations of children's interracial bias with school/neighborhood characteristics, parent–child correlations in interracial bias, and true experiments. Despite these varied methods, questions fundamental to understanding the socialization of intergroup bias remain unanswered, including the specific environmental features that cause children to adopt intergroup biases, the role of the social environment in the development of implicit biases, and *how* the social environment leads to similar racial biases among children across a large region. These unanswered questions have not gone completely unnoticed, and two methods are typical among scientists aiming to address them. We briefly view these approaches and then elaborate advantages of the cultural snapshots approach.

One existing method is to experimentally manipulate a feature thought to be central to the development of prejudice and stereotypes. For example, Bigler, Brown, and Markell (2001) ingeniously depicted group status differences in a poster in children's classrooms and found that children picked up these status depictions and only high-status children developed strong ingroup preferences. While this type of experimental approach provides a clear picture that environmentally depicted status differences, for example, *can cause* differences in children's attitudes, we do not know if and how such patterns (certain groups associated with higher status and others with lower status) are depicted in children's everyday environment.

The second methodological approach typically compares two groups with different social environments. Some studies compare children who reside in different countries with different social structures and historical contexts. In studies conducted in Israel, for example, young children use religion (Arab vs Jewish) as among the most meaningful categories, but this rarely occurs in countries in which religious divisions are less salient (Bar–Tal, 1996; Diesendruck & HaLevi, 2006). American children are also more likely to essentialize and group others by race, whereas Israeli children are less likely to do so (Diesendruck, Goldfein-Elbaz, Rhodes, Gelman, & Neumark, 2013). Additionally, other work compares groups who differ in the social-ecological niches they occupy, such as directly comparing the pattern of bias exhibited by majority, high-status groups to that exhibited by minority, low-status groups. Racial and ethnic minority children tend to show weaker

ingroup preferences (e.g., Aboud, 1988; Aboud & Skerry, 1984; Ramsey & Myers, 1990; Spencer, 1984) and intergroup bias, including implicit and indirect bias (e.g., Dunham, Chen, & Banaji, 2013; Dunham, Newheiser, Hoosain, Merrill, & Olson, 2014; McGlothlin & Killen, 2010; Newheiser & Olson, 2012; Setoh et al., 2017). This pattern is consistent with the results based on experimental work (e.g., Baron & Dunham, 2015; Bigler et al., 2001), which provides nice corroboration that children pick up on status differences and that children's own status position impacts how they interpret information presented in their social environment.

Again, however, the picture provided by such work, while essential, leaves out critical information about the features that are typically seen by children and that *cause* consistent cultural differences. Thus, we argue that in order to understand the development of prejudice and stereotyping, researchers need to refocus attention on the child's social environment itself and how and in what ways the social environment seeds or starves such biases (see Over & McCall, 2018).

3.2.1 Causality

Studies with known groups can be used to identify correlations between social environments and children's intergroup biases. Content analyses can be used to identify social patterns. And observational studies can be used to identify correlations between patterns in social environments and children's intergroup biases. Experiments, however, are the prototypical scientific method for identifying causal influences on cognition, including influences on children's intergroup biases. Accordingly, a key component of the cultural snapshots paradigm is the random assignment of children to different social patterns. Cultural snapshots have this approach in common with existing work but critically, and as elaborated in Section 3.2.2, existing work does not present or manipulate real social patterns for child participants. In contrast, with a large participant sample and sufficient control, scientists can use cultural snapshots to evaluate whether specific patterns frequently seen by children cause them to develop intergroup biases.

Experimental control is important to these endeavors but is challenging to combine with the ecologically valid features of cultural snapshots. Specifically, scientists should aim to isolate the social pattern of interest so that experimental manipulations are not confounded with irrelevant features. This often means carefully selecting sets of snapshots. For example, Weisbuch and colleagues (Weisbuch, Pauker, et al., 2009) focused on a social pattern in which TV characters' nonverbal behavior was more

positive toward White than Black target characters. In this study, one set of snapshots depicted the real social pattern (experimental condition) and the other set did not (control condition). To ensure that the two sets did not differ with respect to personal idiosyncrasies of target characters, each target character was represented in *both* sets of clips. The same Black target character was depicted as the recipient of negative nonverbal behavior in a clip for the experimental condition but as the recipient of positive nonverbal behavior in a clip for the control condition. This same "selection" approach could be used to control features beyond character identity. For example, an equal number of clips in each condition could depict work settings, could come from comedic scenes, and so on. With a large enough stimulus sample presented in each set, this approach is practical and achieves experimental control with minimal sacrifices in ecological validity.

Another approach to maintaining experimental control is to edit the snapshots. For example, we recently found that in popular magazines, images of men were located higher on the page than were images of women (Lamer & Weisbuch, in preparation). The resulting experiment drew from images in the content analysis, but rather than *selecting* specific pages for each condition, we used the same pages for both conditions. However, we digitally edited the pages to move each image to a high or low position on the page. Specifically, the experimental condition included pages with images of men in a high page position and images of women in a low page position. The control condition used identical magazine pages but with images of men in a low position and images of women in a high position.

In sum, properly executed cultural snapshot experiments make it possible for scientists to draw conclusions about the causal influence of social patterns on children's intergroup biases.

3.2.2 Generalization

A second characteristic of cultural snapshots is that they record social patterns in their natural ecology. This feature may seem trivial to practiced experimentalists but actually speaks to fundamental assumptions of experimentation in psychological science. Influential theories in vision science (e.g., Gibson, 1979), judgment and decision making (e.g., Brunswik, 1956), and developmental psychology (e.g., Bronfenbrenner, 1977) commonly emphasize that human perception and cognition operate on (and adjust to) stimuli in complex and confounded environments. For example, Brunswik noted that most naturally occurring stimuli are statistically associated with many other stimuli such that any *real* social setting is saturated with numerous correlated

variables. Brunswik (1956) and other ecologically minded psychologists (Gibson, 1979; Gibson & Pick, 2000; McArthur & Baron, 1983) note that human minds adapt to functionally relevant information embedded within naturally confounded environments. Accordingly, the correlated nature of social settings may be essential to the influence of any given feature on children's prejudice and stereotyping.

Social environments not only include naturally correlated features but also a tremendous amount of perceptual noise that is irrelevant to those features. As elaborated by ecological psychologists, *attunement* (Gibson, 1979; Gibson & Pick, 2000; McArthur & Baron, 1983) refers to processes through which organisms learn (over moments or millennia) to distinguish functionally relevant stimuli like human anger and interracial conflict from the perceptual noise in which they appear. Attunement to any stimulus or pattern may generalize to new settings but this is not a given, such that a stimulus may not be selected for processing in the same way across different patterns of noise. Robbing stimuli of their natural environments may thus lead to conclusions that reflect what is *possible* rather than what is *typical*, even in reference to basic visual processes (e.g., Biederman, Mezzanotte, & Rabinowitz, 1982; Brunswik, 1956). Conversely, the manipulation of variables within their natural settings can provide critical insights into how people naturally process and are influenced by social patterns.

Consistent with these ecological approaches, cultural snapshots enable scientists to manipulate social patterns in the settings that those patterns naturally appear. Moreover, most experimental manipulations with cultural snapshots utilize many different snapshots. For example, in the gender/magazine experiments noted previously, each participant saw about 80 real magazine pages that either did or did not model the social pattern that occurs in popular American magazines. These characteristics ensure that experiments meet the principles of *representative design* that exhort scientists to generalize the results of studies only to those circumstances or objects which were sampled. This idea is analogous to more common exhortations for participant sampling, but applies to the materials used in experiments. Just as a participant sample with only 2–3 children is unlikely to represent the broader population of children, a stimulus sample with only 2–3 TV clips is unlikely to represent all TV clips possible. This problem is exacerbated when experimenters generate simplistic stimuli from the ground-up and intend to generalize study results to the rich social contexts common to human experience.

In summary, properly executed cultural snapshot experiments make it possible for scientists to generalize their conclusions about the causes of intergroup biases from laboratory experiments to the social environments more commonly encountered by children. While some adjustments may need to be made from previous cultural snapshots studies with adults, cultural snapshots can be used (and has been used) with child populations. The labor intensive part of the cultural snapshots methodology (sampling the cultural pattern and completing the content analysis) is conducted by the researchers and coded by adult coders (see Table 1). Once the cultural pattern of interest has been coded, the researcher would create a set of cultural snapshots that strongly depicts the cultural pattern and a set that does not include the pattern (or includes a reverse of the typical cultural pattern). Adjustments may need to be made in the number of snapshots that children compared to adults see in the experimental conditions. For example, adult cultural snapshot studies examining popular television have used approximately 60 TV clips per experimental condition (Weisbuch, Pauker, et al., 2009), whereas work conducted with 4–8-year-olds have used 20 TV clips per experimental condition (Pauker, Weisbuch, Lagerwaard, McCaslin, & Ambady, 2013). Children are given a filler task to complete while viewing the snapshots (e.g., how much did you like the clip?), and the appropriate number snapshots for a given experiment will depend on the medium of the snapshots (e.g., TV clips, pictures) and the child's ability to sit through their presentation and maintain attention. Finally, cultural snapshots are a methodology that samples from children's social environment, codes for a cultural pattern, and then provides the materials for experimental conditions. It does not specify what dependent variables can or should be used, and thus provides considerable flexibility for the researcher to pick appropriate dependent variables (and ways to measure them that are valid and reliable for their target age). In theory, cultural snapshots could be used with children ranging in age from 3 years through adolescence, but children's ability to process the cues that make up the cultural patterns may vary with age as described next and should be taken into consideration in study design.

3.3 Child development and cultural snapshots

One purpose of this review is to describe how cultural snapshots can be applied to understand how *children* are influenced by patterns they see. Cultural snapshots were developed as a means to examine implicit socialization, so to the extent that children's beliefs and biases are more sensitive to

Table 1 Guidelines for using cultural snapshots methodology

Step		Description	Example	Additional criteria
Content analysis	Identify cultural pattern of interest	Identify a pattern that the researcher hypothesizes to exist across shared environments	Nonverbal bias toward White and Black people	
	Identify human population	Identify the population exposed to this hypothesized pattern	U.S. children (4–8 years old)	
	Identify environment	Identify an environment that is *commonly* and *frequently* encountered by the population of interest	Televised media that target 4–8-year-olds	*Commonality*—The proportion of people in the population that encounter these environments *Frequency*—How often those people frequently encounter the identified environments
	Identify exemplars	Identify the population of exemplars that define the environments	Scripted television programs that include both White and Black characters	A priori *criteria*—Set criteria that allow a large and representative sample of exemplars (e.g., sample of scripted programs from a variety of genres, TV and cable networks, and air dates)
	Identify time and location	Identify a representative sample of times and locations to ensure that cultural snapshots can be used to estimate perceived culture	Three 10-s video samples from each of three episodes for each character	*Representative samples*—Select a sample of stimuli that are representative of the exemplars (e.g., select one clip from each 1/3 of an episode to ensure that clips are representative of the entire episode; select episodes from the beginning, middle, and end of the season to make sure clips are representative of the entire season)

	Identify and code variables of interest	The variable(s) of interest are defined by the research question and should be coded with an eye toward potential confounding variables	Nonverbal emotion expressions toward White vs Black characters	*Operationally define key variables*—The variables need to be defined clearly so that human coders (typically adults) can achieve acceptable interrater reliability *Measure confounding variables*—Account for other variables that might explain the cultural pattern (e.g., explore the extent to which verbal behavior was confounded with and explained nonverbal behavior by having some coders rate just the verbal transcripts)
Experiment	Generate experimental conditions	Select (or edit) snapshots such that there is one condition containing snapshots consistent with the culturally prevalent pattern and another set without that pattern or with a reverse pattern	Pro-White condition (contains 20 clips coded as depicting positive nonverbals toward White characters and negative nonverbals toward Black characters)	*Representative design*—The specific cultural pattern under investigation should not be isolated from the "noise" surrounding it. An emphasis should be placed on leaving the environment as unchanged as possible *Multiple exposures*—The precise cultural snapshots presented to participants will vary but we recommend a large number of snapshots balanced with the age of the child (and their ability to sit through seeing the snapshots) to model extended exposure to perceived culture
	Test exposure to pattern on outcome variables of interest	Identify variables of interest (specific to your research question) and test after exposure to experimental condition	Implicit associations between race and valence measured by the child-IAT	

socialization than are adult beliefs and biases, the method is even more well suited for child than adult populations. Child development provides an excellent setting for scientists to identify the cognitive structures necessary for people to learn from and conform to (or not) the prevalent social patterns of their culture. Yet quantifying and testing cultural snapshots with children require researchers to consider additional constraints. We detail a few of those considerations next.

3.3.1 Feature integration

Social environments contain complex arrangements of cues and noise that make it difficult for people to detect subtle cultural patterns within and across environments. For example, a single scene contains lower-level cues such as brightness, spatial coordinates, and scene complexity as well as higher-level social cues such as the characters present, their social identities, the scene category (e.g., work, home), and the emotions being displayed. So that a social pattern is impactful, not only must a child distinguish meaningful cues from noise (as already noted), but they must also encode the recurrence of these cues across settings and over time. A child may encode, for example, that emotion covaries with race across different television shows with different characters, film styles, and plot content.

    This may seem like a daunting task even for an adult, but humans—young and old—are surprisingly perceptive of subtle repeated patterns. By the time they are six, for example, children develop the ability to identify the presence or absence of simple features (e.g., color, shape) that rival the ability of adults (Trick & Enns, 1998). Identifying the conjunction of features (e.g., a shape of a particular color) proves somewhat more difficult for children and their ability to successfully identify when two features cooccur in object search tasks increases steadily between the ages of 6 and 10 (Ristic & Enns, 2015; Trick & Enns, 1998). Research suggests that children begin to integrate cooccurrence between emotion and objects such that by 12–18 months, children make inferences about the desirability of an object by observing adults' emotion toward that object (Hornik, Risenhoover, & Gunnar, 1987; Repacholi & Metzoff, 2007). Children are more likely to play with a toy if they have observed a parent or other adult behave positively toward it (e.g., smile at it; Klinnert, Emde, Butterfield, & Campos, 1986), and children can even develop *generalized* attitudes in this manner. For example, preschool-aged children exhibited more negative attitudes toward Black people after observing one White person display uneasy (vs comfortable) nonverbal behavior toward one black person (Castelli et al., 2008).

Regardless of the type of pattern being tested, it is important to consider children's ability to attend to and glean meaning from it when designing a cultural snapshots study. Some patterns may be too complex until children develop the necessary social-cognitive skills to perceive them. The patterns might include too many cues, for example, or have to be noticed across settings that occur infrequently. Some patterns may be too subtle for young children to perceive and more complex combinations of cues may only influence or have a larger influence on older children. Cultural snapshots allow researchers to test children's ability to attend to and glean meaning from cultural patterns by testing the influence of ecologically valid patterns that children actually see situated within the noise that those patterns typically appear. The types of patterns examined, however, need to take the cognitive constraints of the targeted age range of children into consideration.

3.3.2 Ability to detect relevant environmental features

An environmental feature may be relatively simple, such as the location of an object, or it could be more complex, such as the perceived race or emotion of a target. Not only do children need to be able to integrate features over time to detect a social pattern, but children must also be able to accurately identify the critical cue in order for a pattern to be influential. For example, in order for children to be able to detect a pattern of nonverbal bias, they must be able to accurately identify the race of the target and subtle nonverbal behavior of the expressers.

Research suggests that children can detect lower-level cues, such as feature saturation, hue, and location within the first few months of life (e.g., Keating, McKenzie, & Day, 1986; Teller, Civan, & Bronson-Castain, 2004). The ability to identify more complex social cues, such as race, emotion, or eye gaze, also emerge relatively early in childhood (i.e., within the first several years of life). For example, by 4 months, infants show preference for and enhanced neural processing of faces looking at (vs away from) them (Farroni, Csibra, Simion, & Johnson, 2002). By 7 months, infants can recognize whether an emotion is positive or negative (Grossmann, 2010). In middle childhood, children learn to distinguish between the way two different people are feeling or thinking in the same situation (i.e., interpretive theory of mind; Carpendale & Chandler, 1996; Lagattuta, Sayfan, & Blattman, 2010) and are able to evaluate how people feel about each other (i.e., theory of social mind; Abrams, Rutland, Pelletier, & Ferrell, 2009). During middle childhood, children also begin to develop a more complex understanding of emotion such that they begin to differentiate among discrete emotions such as anger and fear (Nowicki & Duke, 1994). Finally, mental representations of race emerge

by the age of 4 though these race conceptualizations are not very complex and seem to be based primarily on skin color even among 6- and 8-year-olds (Dunham, Stepanova, Dotsch, & Todorov, 2015).

In sum, even young children are capable of processing many subtle social cues, and potentially developing intergroup biases from patterns involving those cues. In particular, young children may not have terribly complex beliefs about race and other social groups but it does appear that simple implicit biases emerge early (Dunham, Baron, & Banaji, 2008; Qian et al., 2016; Setoh et al., 2017). Implicit biases are associations between a given race (or gender, age, etc.) and valence (positive–negative). Such associations may also be present in the social environment, as between racial identity and emotion expression, and elaborated cognitive structures may not be necessary to translate those environmental associations into cognitive associations. Hence, patterns of subtle social cues in the environment may influence the implicit biases of even the youngest children (e.g., 3–4 years old) and cultural snapshots provide a way to test this.

4. Cultural snapshots: Testing theory-driven hypotheses about racial socialization

Theories of childhood prejudice and stereotyping (Aboud, 1988; Bigler & Liben, 2006; Nesdale, 2004; Rutland, Killen, & Abrams, 2010) either emphasize the importance of the social environment or acknowledge that the social environment plays a role. Consistent with this idea, research reviewed earlier indicates that parents, schools, neighborhoods, and cultures provide children with information about racial groups. Children's racial beliefs and biases appear to be related to those of their parents and certain characteristics of schools and neighborhoods (e.g., diversity) seem to reliably predict racial biases. Yet fundamental questions about the socialization of interracial biases—and intergroup biases more generally—remain unanswered. Cultural snapshots provide a means for answering those questions, and hypotheses can be derived from extant theory.

4.1 What environmental features typically cause intergroup biases in children?

What are the features of social environments that typically cause children to adopt intergroup biases? This question seems fundamental to understanding how intergroup biases are socialized in children, yet comprehensive answers remain elusive to empirical inquiry. The question can be further broken

down into components. For example, studies of racial socialization (reviewed earlier) identify parents' self-reported socialization practices but it is not clear (1) how those practices are implemented (specific words, subtle behaviors, etc.), (2) how those patterns are contextualized (perceptual noise, setting), and (3) whether children's intergroup biases are influenced by the implementation of socialization practices *in context*. Other studies answer one of those three components but leave the other questions unanswered. For example, children's social biases appear to be influenced by the patterns of nonverbal behavior they see (Brey & Pauker, under review; Castelli et al., 2008; Skinner et al., 2017) but because these experiments include materials generated by experimenters it is not clear that those patterns exist in children's typical social environments. Moreover, the complex perceptual contexts encountered by children may either (a) render a given pattern ineffective or (b) be necessary for a social pattern to effectively influence children's intergroup biases. Standard experiments rarely identify the frequency and contexts of social patterns and rarely include natural context in manipulations of social patterns. Hence, standard experiments do not allow for conclusions about how children's intergroup biases are typically socialized.

Fortunately, developmental theories are rich with analyses of how the social environment may socialize children into specific intergroup biases. Bigler and Liben's (2006, 2007) Developmental Intergroup Theory (DIT) provides what may be the most thorough and expansive description of the socialization of intergroup biases. According to this theory, prejudice and stereotyping toward outgroups can develop when (a) groups are psychologically salient and (b) children begin to categorize others by these salient group dimensions. Bigler and Liben propose that the act of categorizing others along a salient dimension, such as race, immediately initiates cognitive processes that results in the development of prejudice and stereotypes. Indeed, when provided with salient categories, children, like adults, form rapid preferences based on arbitrary group distinctions, such as those based on summer camp groups (Sherif, Harvey, White, Hood, & Sherif, 1961) or t-shirt color (Bigler, Jones, & Lobliner, 1997; Dunham, Baron, & Carey, 2011; Patterson & Bigler, 2006). For example, Dunham et al. (2011) found that assignment into a group based on t-shirt color led 5-year-olds to prefer other kids with their same shirt color, give more resources to those kids, and expect reciprocity from them. While this research tells us that children readily form group-based attitudes and beliefs from salient categories, it does not describe how social environments make those categories salient.

Unlike other theories, DIT provides specific postulates about why some categories (e.g., race) become a salient basis for categorization in the first place.

DIT suggest that specific features in the environment cause a particular dimension (e.g., race, gender, eye-color, height) to become psychologically salient to children. First, features that are easy to see and distinguish may become salient (*perceptual discriminability*). Second, the extent of the majority/minority balance on the dimension will influence which becomes a basis for categorization (*proportional group size*). Finally, the manner in which cultural elders speak about and act in relation to people with the feature should influence the degree to which a dimension becomes a basis for social categorization. In this way, categories may be marked explicitly (via labels) or implicitly (via segregation) in the social environment (*explicit use* and *implicit use*, respectively). Thus, unlike other theories DIT emphasizes the specific features in the social environment that leads to the psychological salience of any certain category and the downstream operation of prejudice and stereotyping.

We can thus use cultural snapshots to test the extent to which these features naturally exist in children's social environments and whether they lead to the psychological salience of particular categories (e.g., race) over others. For example, research has consistently shown that gender is prioritized earlier in development than race: children's gender bias and stereotypes are stronger, less variable, and emerge earlier (Hailey & Olson, 2013; Kinzler, Shutts, & Correll, 2010; Pauker, Williams, & Steele, 2016; Shutts, Banaji, & Spelke, 2010). Cultural snapshots provide a way to test, informed by theory, why certain categories may be prioritized. For example, it is possible to identify a public environment encountered by many children (children's TV), take a representative sample of recordings from that public environment (see Section 3; see also Weisbuch, Lamer, Treinen, & Pauker, 2017), and then code for the variables of interest that defines the social pattern. Therefore, it would be possible to code whether: (1) the genders of characters on children's television are easier to see than are the races of those characters (*perceptual discriminability*); (2) gender imbalance is stronger than race imbalance (*proportional group size*); (3) gender is explicitly labeled more often than races (e.g., characters mentioning, "boys gather over here" but not saying, "Whites gather over here"); and (4) gender is implicitly marked more often than race (e.g., teachers looking at boys more than girls but looking equally at students of different races). For a thorough test of a given postulate (e.g., explicit use), a thorough empirical test would include codes for several variables (e.g., audible statements, bathroom door signs,

statements written in school materials) rather than only one such variable (e.g., audible statements). Moreover, steps must be taken to ensure that the variables are coded without bias and are clearly defined so that coders can achieve acceptable levels of interrater reliability (see Weisbuch, Ivcevic, et al., 2009; Weisbuch, Pauker, et al., 2009).

This first step (content analysis) provides information about the prevalence of theoretically important features in a public environment frequently encountered by American children. The next step would be to select or edit snapshots based on the patterns that were identified in the content analysis. Hence, one set of snapshots would include the cultural pattern (e.g., gender is explicitly labeled more than race) and the other would not (e.g., gender and race are labeled to the same extent). Finally, children would be randomly assigned to see one set of snapshots before they completed relevant measures (e.g., category salience). Dependent measures (such as category salience) could be any measures shown to be reliable and valid for the target age range.

Cultural snapshots can thus be used to test theory-based answers to outstanding questions about why certain social categories are prioritized over others. DIT not only includes postulates about why certain categories become salient but also includes postulates regarding how children develop stereotypes and category-based associations. According to DIT, once a social category has attained salience in a child's mind, other aspects of the social environment shape the content and severity of prejudice and stereotypes. Namely, explicit patterns and/or implicit patterns contribute to the specific instantiations of prejudice and stereotypes that children develop. For example, children may perceive adults explicitly commenting on the characteristics of certain groups (*explicit attributes*; "Mexicans are too lazy to get good jobs") or may perceive covariation between a given group and a given attribute (*implicit attributes*: seeing lazy Mexican persons on TV programs). Cultural snapshots could be used to examine whether certain attributes covary with race in children's social environments and whether such covariation influences children's racial stereotypes.

A more basic question suggested earlier regards how children learn to associate race with social status. From our perspective, two questions must be asked. First, how is the association between race and status conveyed in children's social environments (if at all)? Second, do perceptions of these environmental associations *cause* children to develop status-specific racial stereotypes or attenuate ingroup biases in racial minority children? Cultural snapshots can thus be used to identify why children develop specific racial

stereotypes or stronger or weaker prejudice. The first step would be to collect a representative sample of children's TV recordings and code for the occurrence of White people in high-status occupations and racial minority groups in low-status occupations. The second step would be to randomly assign child participants to see one set of snapshots that depicts the cultural pattern (White people in high-status occupations and racial minority groups in low-status occupations) or another set of snapshots that depicts a reverse cultural pattern (racial minority groups in high-status occupations and White people in low-status occupations), and then measure children's stereotypes or group preferences with established measures. A researcher may also choose to use a neutral set of snapshots depicting no cultural pattern, instead, as a control group, depending on the question of interest. Regardless, cultural snapshots could be used to examine endless possibilities of different race–attribute covariations in a child's environment.

4.2 How does implicit socialization occur?

Cultural snapshots provide a method to examine how implicit socialization occurs by allowing scientists to measure and manipulate subtle patterns. These subtle patterns can include spatial cues (e.g., racial segregation in classrooms and cafeterias), low-level perceptual cues (e.g., brighter backgrounds for TV scenes with White vs Black characters), nonverbal cues (e.g., differences in physical distance between same race and different race interaction partners), and verbal cues (e.g., frequent or rare use of labels to describe racial groups). But importantly, it allows for measuring *patterns* that may be crucial to implicit socialization.

4.3 How are group norms communicated?

We have illustrated how cultural snapshots might be used to answer outstanding questions regarding the socialization of prejudice and stereotypes, and previously derived theory-based answers from DIT. Yet at least one critical aspect of children's social environments is not explicitly theorized about in DIT: the influence of social norms on children's prejudice and stereotyping. Other developmental theories do highlight the importance of group norms and children's reasoning about these group norms in shaping the prejudice and stereotyping (e.g., Abrams, Rutland, & Cameron, 2003; Nesdale, 2004). For example, according to Nesdale's (2004) social identity development theory (SIDT), individuals are motivated to conform to their group's norms to ensure their continued acceptance and belonging

in that group. SIDT makes specific predictions about how social norms influence the acquisition and expression of prejudice and stereotypes and outlines the conditions under which true outgroup prejudice (as opposed to simply ingroup preference) should emerge (Nesdale, Maass, Durkin, & Griffiths, 2005). Specifically, SIDT suggests that ingroup preferences among 3–6-year-olds is simply ingroup preference and does not typically involve outgroup negativity. SIDT predicts that children will only transition to outgroup negativity if they, for example, identify with a social group that endorses a norm of racial prejudice.

An important missing link in the literature relevant to SIDT regards *how* group norms are communicated. Experimental manipulations of these group norms are typically explicit (e.g., by saying things like "this group believes in including everyone") even though it is not clear that norms are typically communicated in this manner. Alternatively (or in addition) norms may be communicated through statements that convey the norm without stating it directly (e.g., shunning group members who exclude others). If over time, group members engage in such behavior consistently, communication of norms could occur without ever being explicitly stated. Cultural snapshots could be used to test this and related ideas. For example, children may conclude that the group norm is to be inclusive after perceiving ingroup members behave more positively (smiles, less interruptions) toward peers who had been inclusive than toward peers who had excluded people. It would be possible to use cultural snapshots to (1) quantify the extent if and how school children treat "includers" more or less positively than "excluders" and (2) examine whether seeing this pattern *causes* other children to believe that the norm at this school is to be inclusive. For example, researchers could ask children at a school to nominate peers who are particularly inclusive or exclusive. Then researchers could collect snapshots of these nominated peers interacting with other students. These snapshots could then be coded for the amount of positive nonverbal behavior directed toward "includers" vs "excluders." Finally, a researcher would design an experiment to examine whether seeing a prevalent cultural pattern (i.e., "includers" are treated more positively than "excluders") affects children's perceptions of peer norms.

4.4 Summary

In this section, we illustrated how existing theories might use cultural snapshots to address unanswered questions in research on children's prejudice

and stereotypes. Theories that emphasize the role of specific social patterns in children's intergroup bias can use cultural snapshots to identify how those patterns are typically instantiated in children's environments and if those typical instantiations shape children's intergroup biases. Theories that emphasize the role of social norms in children's intergroup biases can use cultural snapshots to examine the prevalence and influence of social patterns that communicate norms. These theories also provide hypotheses about specific features to focus on when coding cultural snapshots.

Importantly, other factors, such as children's cognitive development, are important to the development of prejudice and stereotyping. In fact, the importance of cognitive development to children's development of prejudice and stereotyping is emphasized in several influential theories (Aboud, 1988; Bigler & Liben, 2006; Nesdale, 2013). Although we have emphasized the contribution of the experience of social patterns to children's prejudice and stereotyping, we have also tried to illustrate how cognitive development may interact with social patterns to produce prejudice and stereotypes. For example, the development of feature integration abilities and emotion identification abilities is likely to be critical to the influence of social patterns on children, and in Section 3.3 we elaborate on these cognitive developmental processes. Clearly, children's cognitive development will impact the extent to which children pick up on cultural patterns and the manner in which they interpret these patterns. A major contribution of cultural snapshots, however, is to allow for researchers to systematically examine how prejudice and stereotypes are represented in, communicated through, or formed by children's social environments. Thus, cultural snapshots place an emphasis on identifying the features of social environments that typically cause children to adopt intergroup biases, but certainly leaves room for examining how endogenous characteristics of the child may interact with how children interpret and process these cultural patterns.

5. Flexibility of cultural snapshots

Throughout this chapter, we have given examples of how cultural snapshots have and are being used to measure patterns of nonverbal behavior. However, cultural snapshots are quite flexible in that this approach can be used to quantify the patterns of any type of measurable cue, such as how visually complex city scenes are (Miyamoto et al., 2006), where targets appear along the vertical dimension (Hegarty, Lemieux, & McQueen, 2010; Lamer & Weisbuch, in preparation), how frequently targets are in

speaking roles (Smith & Granados, 2009), or where targets are looking (Maass & Suitner, 2011). In terms of race-relevant social patterns, cultural snapshots have been used to quantify the frequency of racial minority characters (Mastro & Stern, 2003; Wilkes & Valencia, 1989), the way White and Black football players' success is talked about by sports announcers (Rada, 1996), and representations of perpetrators and victims on the basis of race (Bjornstrom et al., 2010; Dixon, 2017; Dowler, 2004; Oliver, 1994).

Furthermore, cultural snapshots can be applied to study how numerous different types of culturally derived messages are transmitted within a culture. For example, Weisbuch and Ambady (2009) used a cultural snapshots approach to quantify how women's ideal body weight messages are transmitted within culturally shared environments. The authors measured how slim- and average-weight female television show characters were treated to discover a consistent proslim bias that subsequently caused female perceivers to hold slimmer personal and cultural body ideals. In another study, Miyamoto and colleagues used cultural snapshots to examine how holistic and analytic attentional patterns are afforded by Japanese and U.S. cultural environments (Miyamoto et al., 2006). They found that city scenes in Japan contained more elements and were rated as more ambiguous than city scenes in the United States. In an experimental study, seeing city scenes from Japan subsequently led perceivers from both the United States and Japan to adopt a more holistic attentional pattern than did seeing city scenes from the United States. We have also used cultural snapshots to understand the subtle transmission of gender stereotypes in 5–10-year-old girls (i.e., through messages conveyed in children's television; Lamer, Dvorak, Biddle, Pauker, & Weisbuch, in preparation) and attitudes about alcohol consumption in underaged college students (Weisbuch, Treinen, Zad, & Lagerwaard, 2016). Accordingly, cultural snapshots could be used to examine unanswered questions about the development of children's prejudice and stereotypes. For example, cultural snapshots could be used to examine how perceived public regard for women and men vary based on how frequently female and male characters speak in kids' television shows or how often women and men are featured performing household chores (see also Halim, Ruble, & Tamis-Lemonda, 2013). Cultural snapshots could also be used to examine, for example, how children learn (a) the cultural value of older adults based on how often older adults are interrupted while speaking, (b) antigay attitudes from the depictions of characters in video games, or (c) associations between athletic ability and a lack of intelligence from nonverbal behavior directed at athletes when in the classroom vs on the field/court.

6. Conclusion

Cultural snapshots provide an important methodological tool for developmental and child psychologists to better gage the influence of social environments on the childhood development of prejudice and stereotypes. There has been a dearth of research quantifying the concrete features and patterns present in children's environments, children's ability to process those features and patterns, and the socializing influence of those features and patterns on children's beliefs. This lacuna is understandable because it is typically difficult to measure (and even harder to manipulate) a child's social environment in a way that models what children actually see and experience in their everyday lives. *Cultural snapshots* provide an empirically established solution for both measuring and manipulating features of the social environment. This methodology holds great promise for researchers as a tool to address some of the limitations of the past research and reinvigorate interest in understanding aspects of a child's social environment that contributes to the development of prejudice and stereotyping.

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Further reading

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