

Bilingual Latina Siblings Supporting Siblings: Shared Reading as a Context for Supporting Cognitive Self-Regulation

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Abstract

To explore the ways in which Latinx older siblings support younger siblings during shared reading, researchers investigated the following question with three Latinx families in the U.S.: *How are older siblings modeling and intentionally supporting focal children's cognitive self-regulation in the context of shared reading?* Analyses of video recorded interactions across six visits revealed that older siblings intentionally supported focal children's cognitive self-regulation by fostering autonomy and choice through the use of verbal and nonverbal cues to guide attention, using prosody to engage their sibling, and to initiate reading beyond resistance, and vicarious modeling of metacognitive processes by engaging in self-corrections and demonstrating positive affect during shared reading interactions. Findings highlight the importance of older siblings, particularly sisters, as key figures in the sociocultural context of development for Latinx younger siblings in the U.S.

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The research literature on parent-child shared book reading has focused primarily on the developmental and academic benefits of shared book for young children (e.g., Bus et al., 1995; Dowdall et al., 2020; Hindman et al., 2014). Given that siblings can be key socialization agents (Campion-Barr, 2017; Dunn, 1989; Maynard, 2019) in ways that impact cultural beliefs (Weisner, 1987) siblings may play a unique role in modeling cognitive self-regulation skills in the context of shared reading. Shared book reading serves as an informal context for older siblings to engage in proximal and playful interactions with younger siblings (Dunn, 2015; Vygotsky, 1978). These interactions may support children's cognitive development (Shahaeian et al., 2018) by providing opportunities for joint attention and behavior in service of the goal of sharing in storybook reading (Doyle & Bramwell, 2006; van Kleeck et al., 2003). This shared sibling literacy context may be particularly important for Latinx children from culturally and linguistically diverse backgrounds, as school-aged older siblings navigate both the home and school environment and may incorporate school practices into shared reading interactions with siblings at home (Williams & Gregory, 2001). Latinx older siblings navigate multiple language systems when transitioning between home and school and engaging in shared reading interactions at the intersection of home and school practices.

In contrast to the narrative of parents as primary models of children's skill development, Latinx families may endorse sibling roles in cultivating younger children's skill development as part of their cultural value systems (Calzada et al., 2013; Gregory et al., 2004; Updegraff et al., 2005). A sole focus on parents as primary drivers of children's early cognitive development may obscure the cultural specificity of how these developmental processes unfold among Latinx families. Given the importance of siblings in Latinx families, the role of older siblings as brokers of shared reading practice across and home and school contexts (Kibler, Palacios, et al., 2020; Kibler, Paulick, et al., 2020; Pollard-Durodola et al., 2016; Volk & de Acosta, 2001), and the importance of shared reading in supporting cognitive self-regulation (Davidse et al., 2014; Shahaeian et al., 2018), it is necessary to understand how processes of cognitive self-regulation unfold within the specific cultural context of Latinx families in the United States. In the current study, we explore the following question: *How are older siblings modeling and intentionally supporting focal children's cognitive self-regulation in the context of shared reading?*

Theoretical Orientation: Siblings as Sociocultural Contexts for Cognitive Self-Regulation

Cognitive self-regulation refers to a child's capacity to leverage cognition, attention, and memory in pursuit of a goal (Blair, 2002; Bronson, 2000). Cognitive self-regulation skills may consist of attention, impulse control, problem-solving, and self-monitoring behavior, skills that are foundational for learning and excelling in reading. During preschool children are increasingly shifting from externally mediated to internally mediated self-regulatory processes. This shift is marked by increasing autonomy of choices in activities and selection of effective strategies to carry out goals, monitor their progress, engage in corrections, obtain help as needed and defy distractions (Bronson, 2000). Moreover, adults play a crucial role in supporting this shift by intentionally providing appropriate materials, opportunities for choice, and modeling of relevant cognitive self-regulatory strategies that allow children to actively practice and observe new strategies that support the development of cognitive self-regulation (Bronson, 2000).

Shared book reading in particular is a context for proximal social interaction (Vygotsky, 1978) that places demands on cognitive self-regulation skills. Shared book reading interactions and the talk around the story that is used to guide children through the story draw on cognitive self-regulation skills such as attention and management of emotions, thoughts, and behavior in response to the prompts and expectations of the reading teacher (Bus & van Ijzendoorn, 1995; Doyle & Bramwell, 2006; van Kleeck et al., 2003). Literature has established correlations between shared book reading and cognitive self-regulation skills such as short-term memory (Davidse et al., 2014). Researchers have also found that early cognitive skills mediated the association between shared reading and reading achievement outcomes (Shahaeian et al., 2018). When considering the types of interactions that involve shared reading and give rise to cognitive self-regulation, older siblings are likely instigators of learning in the context of shared reading interactions.

Interactions with siblings generally involve play and conflict resolution, which requires children to rely on cognitive self-regulation skills such as theory of mind in order to be receptive to the thoughts and emotions of the other sibling (Dunn, 2015). When siblings participate in these proximal interactions, older siblings contribute expertise and provide younger siblings with appropriate levels of challenge (Vygotsky, 1978). Older siblings may model cognitive self-regulation by establishing environments for informal learning. Consequently, focal children's learning can manifest as observing and focusing, sharing in participation, and demonstrating leadership in a task (Paradise & Rogoff, 2009). Furthermore, shared book reading may be endorsed in the

home as a valued family activity and serve as a context for informal learning (Paradise & Rogoff, 2009).

Interactions with older siblings are a regular characteristic of Latinx home life, as Latinx families practice shared caregiving roles in accordance with the cultural belief of *familismo* (Calzada et al., 2013; Updegraff et al., 2005). Routine social interactions such as those between older and younger siblings are culturally rooted (Weisner, 2002, 2015), meaning that the content of sibling interactions is specific to ethnically minoritized families and their culturally driven approach to making meaning of those interactions. Older siblings in linguistically minoritized families regularly participate in cultural/language brokering to bridge linguistic and cultural differences amongst family members (Eksner & Orellana, 2012). The cultural and language brokering that older siblings in linguistically minoritized families use in the home is dependent on metacognitive processes and may play a significant role in shared reading of books in English, Spanish, or both languages. Since processes of developing cognitive self-regulation during shared book reading are culturally mediated (Weisner, 2002), it is necessary to understand how older siblings in ethnically minoritized families model cognitive self-regulation skills in unique cultural contexts.

Shared Book Reading in Ethnically and Linguistically Minoritized Families

Family Roles in Shared Book Reading. Despite the significance of shared book reading for fostering children's cognition, the literature on shared reading interactions in ethnically minoritized families and more specifically Latinx families is scarce. The existing literature suggests that shared reading in ethnically and linguistically minoritized families may be specific to sociocultural context, particularly with regard to family roles in shared reading that involve siblings (Barza, 2014; Pollard-Durodola et al., 2016). The evidence also indicates that older siblings in Spanish speaking Puerto Rican families support younger siblings' early literacy, including word identification, concepts of print, and comprehension (Volk & de Acosta, 2001). More recent work indicates that older siblings implement practices such as taking over reading and helping to facilitate decoding during shared reading in both Spanish and English in Latinx families (Kibler, Palacios, et al., 2020). Older siblings also leveraged warm and responsive interaction styles to support younger children in participating more actively in reading tasks (Hill et al., 2020). Given the evidence that shared reading interactions in ethnic minority and Latinx families are unique to sociocultural context, there is a need to build on the scarcity of literature on Latinx children's shared reading interactions.

Supports for Cognitive Self-Regulation During Shared Book Reading. The extant research literature demonstrates that shared book reading contributes generally to children's cognition (Dexter & Stacks, 2014; Korat et al., 2008; Tompkins, 2015), with some evidence indicating benefits for cognitive self-regulation skills (Davidse et al., 2014; Shahaean et al., 2018). In the growing literature on Latinx parental involvement in Latinx shared book reading (Casper, 2009; Cline & Edwards, 2013), there is evidence that shared book reading among Latinx children and families builds cognition, particularly in the context of shared book reading interventions (Baker et al., 2014; Jiménez et al., 2006; Wessels & Trainin, 2014). However, there is a need to implement a more naturalistic, culturally situated approach to looking at shared book reading and cognitive self-regulation in the home environment. In implementing a naturalistic, culturally situated approach, examining sibling participation in shared reading in the home context is a critical component, as siblings may play an important cultural role in Latinx families (Calzada et al., 2013; Updegraff et al., 2005). In the next section, we address literature on older sibling supports for cognitive self-regulation, with attention to the occurrence of the phenomena in Latinx families.

Older Sibling Support of Younger Siblings' Cognitive Self-Regulation

The research literature has highlighted older siblings' contributions to younger siblings' social and interpersonal skills related to cognitive self-regulation (Jones & Doolittle, 2017). Younger siblings' interactions with older siblings are documented as having implications for social and emotional skills such as effortful control, internalizing and externalizing behaviors, disruptive behavior, prosocial skills, conduct problems, and co-construction (Backer-Grøndahl & Nærde, 2017; Buist et al., 2017; Buist & Vermande, 2014; Daniel et al., 2018; Dirks et al., 2015; Harper et al., 2016; Hill & Palacios, 2020; Morgan et al., 2012; Pike & Oliver, 2017; Smorti & Ponti, 2018). Yet research largely overlooks how older siblings also influence the cognitive components of informal shared reading interactions. Research that has considered the association between older siblings' and younger siblings' self-regulation skills demonstrates that at age four, focal children engage in internal state language (referencing cognitions and goals) with older siblings at a greater frequency than focal children do with younger siblings (Leach et al., 2015). Similarly, having older siblings was associated with superior self-awareness and social understanding (Taumoepeau & Reese, 2014), and with greater perspective taking among boys (Sang & Nelson, 2017). Evidence has also demonstrated a positive association between having an older sibling

and focal child's working memory (Hill & Palacios, 2020). Notably, gender played an important role such that having an older sister contributed to higher kindergarten working memory in the younger child.

The existing literature on older sibling roles in cognitive self-regulation or related skills presents numerous limitations. Many of these studies solely rely on questionnaires and interview responses, or observations in contexts of play rather than reading, which provides a limited perspective of older-younger sibling interactions. Due to the significance of cognitive self-regulation for shared book reading and the contribution of older siblings to children's cognitive self-regulation, additional research is needed to understand the processes through which older siblings model cognitive self-regulation during shared reading interactions. Processes of fostering cognitive self-regulation during shared book reading seem to vary based on the cultural belief system and overall sociocultural context of linguistically and ethnically minoritized families (Barza, 2014; Pollard-Durodola et al., 2016). It is important to note that much of the evidence examining the role of older siblings on younger siblings' cognitive development has been collected in contexts outside of the U.S. Given the unique socio-cultural contexts that Latinx children face in the U.S., exploring how shared book reading among Latinx siblings supports young siblings' cognitive self-regulation will provide an important contribution to the literature.

The Present Study

Older sibling interactions may take place in the social context of shared reading, presenting opportunities for cultivating younger siblings' cognitive self-regulation. We hypothesize that sibling interactions may be an especially important context that facilitate the development of younger Latinx siblings, especially given Latinx families' sociocultural orientation toward shared caregiving (Calzada et al., 2013; Updegraff et al., 2005) and cultural/linguistic brokering (Eksner & Orellana, 2012). Yet the focus of much research on home-based support for the development of early cognitive self-regulation centers parental interactions reinforcing Western hegemonic cultural frames of family processes. Furthermore, research on older siblings has not fully delved into the contribution of older siblings to younger siblings' cognitive self-regulation development. Therefore, it is necessary to advance understanding of cognitive self-regulation in Latinx children, considering shared reading as a potential setting. In the present study, we take a qualitative approach to explore the following question: *how are older siblings modeling and intentionally supporting focal children's cognitive self-regulation in the context of shared reading?*

Method

Participants and Procedures

For the present study, we utilize data from a larger study of Latinx children and families living in a suburban/rural region of a South-Atlantic U.S. state. The broader study was designed to examine the home experiences of young Mexican and Central American preschoolers growing up in a small immigrant enclave experiencing substantial growth in their immigrant population. Purposeful sampling strategies were employed to maximize the number of Spanish-speaking families with young children, ages two to four, who were recruited to participate in the study ($N=87$). Bilingual researchers received training to collect surveys, as well as English and Spanish language assessments in the home context.

Additionally, intensive ethnographic observations of a small subset of families ($n=15$), throughout six visits to the family home, were undertaken for children whose English and Spanish language scores were in the top and bottom 25th percentile (Woodcock-Muñoz Picture Vocabulary and Letter-Word Identification subtests; Schrank et al., 2010; Woodcock et al., 2005). In nine of these families, the older siblings were present with the focal child during a shared book reading task in which we asked families to engage. We reviewed fieldnotes for all nine families and identified three families that met the following criteria: (1) older sibling were present for more than one visit, (2) focal child was engaged with the older sibling in reading, and (3) reading practices engaged in by the older sibling and focal child were evident in more than one visit.

The first family, the Flores family, includes focal child Vanesa (age 5) and her older sister Fabiola (age 8). Vanesa participated in Head Start and was in kindergarten at the time the study began. Mrs. Flores was born in Honduras and lived in the U.S. for 12 years, and reports having some secondary education. The sisters in the Hernández family were of similar age, including Carolina (age 5) and Juliana (age 8). Carolina was also a graduate of Head Start and was enrolled in kindergarten at study onset. Mrs. Hernández, who was born in Mexico and lived in the U.S. for 7 years, reports completing college. Finally, the focal child in the Lopez family, Alma, was 4 years old and her older sister, Ofelia, was 10 years old at study onset. Alma did not attend formal childcare and was not yet enrolled in school. Mrs. Lopez, who was born in Mexico and lived in the U.S. for 13 years, reports having completed elementary school. See Table 1 for additional descriptive information for the three focal families.

Data Collection

Each of the six ethnographic observations for each family occurred during consecutive weeks, were 2 hr in duration, and included audio and video

Table 1. Descriptive of Information for Three Focal Families.

	Flores (Family 1)	Hernández (Family 2)	Lopez (Family 3)
Focal child	Vanessa	Carolina	Alma
Focal child gender	Female	Female	Female
Focal child age (in years)	5	5	4
Focal child preschool childcare	Head Start	Head Start	Home care
Focal child grade	Kindergarten	Kindergarten	Not yet in school
English language assessment rankings relative to overall sample	High	High	Low
Sibling	Fabiola	Juliana	Ofelia
Sibling(s) gender(s)	Female	Female	Female
Sibling(s) age(s) (in years)	8	8	10
Family information			
Mother birth country	Honduras	Mexico	Mexico
Mother years in United States	12	7	13
Mother's education	Some secondary	Completed college	Completed elementary
Mother reports reading to focal child in Spanish/English	3–6 times/week 3–6 times/week	1–2 times/week 1–2 times/week	1–2 times/week daily

Note. All names are pseudonyms.

recording. The analysis focused on the shared book reading task (approximately 30 min each visits, 180 min per family), during which families were provided with books in English or Spanish and told to use the books as they would like (“*usen como quieran*”). As such, families were free to select books with which they felt comfortable engaging. During three visits (home visit 1, 3, and 5) families were provided the following books in Spanish: *Chica Chica Bum Bum ABC* (Martin et al., 2000), *Oso Pardo, Oso Pardo ¿Qué Ves Ahí?* (Martin et al., 2002), and *La Primera Luna Llena de Gatita* (Henkes, 2006); in the other three visit (home visit 2, 4, and 6), English-language texts were provided to families: *A to Z* (Boynton, 1984); *Panda Bear, Panda Bear, What Do You See?* (Martin & Carle, 2006); and *Harold and the Purple Crayon* (Johnson, 1983). These books were selected by the researchers based on similar genre and text features across both languages, including alphabet books, books with repeated refrains and rhyming, and longer narrative texts. A wordless book—*The Lion and the Mouse* (Pinkney,

2009)—was provided as an option. It is important to note that one of the families brought out their own texts—*La Oruga Muy Hambrienta* (Carle, 2011) in Spanish and *Bebé Goes to the Beach* (Elya & Salerno, 2011), which is both in English and Spanish.

To collect the ethnographic observations, researcher assistants were trained to be “passive participants” (Spradley, 1980, p. 59) and to take ethnographic field notes (Emerson et al., 1995). Importantly, given the cultural and/or socioeconomic differences between the researcher assistants and the participating families, researcher assistants received training on identifying their own potential biases. As part of the fieldnotes, researcher assistants were expected to describe actions, language, and activities reflective of occurrences during each visit and to separately mark interpretations and inferences to distinguish from descriptive observation. All fieldnotes were reviewed by lead author, Dr. Palacios, who identifies as a Latinx bilingual immigrant; she discussed each set of fieldnotes with the research assistants to revise notes for accuracy and to correct any potential instances of bias or unjustified interpretations. Additionally, as co-authors, we acknowledge our own diverse racial, ethnic, and country of origin backgrounds (see Kibler, Palacios, et al., 2020 for positionality statement) and consistently checked our data analyses to ensure we were guided by our conceptual frameworks and analytic approach.

Data Analysis

As indicated earlier, fieldnotes were examined to identify families for which the (1) older sibling participated in more than one visit, (2) the focal child was engaged with the older sibling in reading, and (3) reading practices engaged in by the older sibling and focal child were evident in more than one visit (Table 2 lists all instances in which the siblings were present together by family). We identified events for video transcription as occurring when the older sibling was noted as entering and exiting an interaction around reading that included the focal child and occasionally included the mother. Videos of these interactions were transcribed and supplemented with audio recording when ambient noise did not permit video transcription (see Appendix A for transcription conventions). The authors (2020) previously identified excerpts from the transcripts of all six visits with families 1, 2, and 3. We initially applied codes to excerpts that had previously been identified as rich social interactions featuring transcultural literacy practices of fluency and decoding (Kibler, Paulick, et al., 2020). Given the importance of these sibling interactions in supporting younger siblings’ early literacy, we were interested in taking a developmental lens to examine the extent to which these interactions

were also supporting cognitive self-regulation. We returned to the full transcripts to gain a broader understanding of the sibling interactions that took place before and after each translingual literacy practice.

Transcripts were coded for older siblings' behaviors indicative of cognitive self-regulation. These codes focused on *modeling* and *intentional support* of cognitive self-regulation practices. Vicarious modeling involved behavior by the older sibling that did not directly involve the younger sibling, but which the younger sibling was able to observe; intentional support involved interactions between the older sibling and their younger sibling. The self-regulation practices were informed by Bronson's (2000) developmental model of cognitive self-regulation, which describes the role of the model in fostering younger children's self-regulation. According to Bronson (2000), cognitive self-regulation in preschool and kindergarten consists of exercising gradually greater amounts of agency over executive functions such as avoiding distractions and managing attention as well as engaging in problem-solving strategies. As children progress to primary school, cognitive self-regulation takes on a more complex and less explicit form permitting "conscious voluntary control of thinking and learning" (p. 231), such as implementing strategies and self-monitoring in pursuit of a goal. Specifically, we developed codes from categories of behavior under "Developmental Milestones of Self-Regulation in Preschool and Kindergarten Children and Major Environmental Supports" (p. 218) as well as milestones and supports for primary school children (p. 238). Although the model conceptualizes supportive practices as the "role of the adult," we examined the extent to which these practices were part of the repertoire of behaviors demonstrated by older siblings (i.e., "Provide developmentally appropriate play materials and activities that support: Appropriate choice" (p. 238)) during reading time. We conceptualized these practices as intentional supports for cognitive self-regulation.

We also coded for older siblings' vicarious modeling of cognitive self-regulation using the milestones for cognitive self-regulation (i.e., "Consciously aware of self and growing metacognitive awareness of own thinking processes—which increases the child's ability to consciously control and direct: goal setting and choice of task or activity" (Bronson, 2000, p. 238)). We focused specifically on interactions in which the developmental progressions on the part of the older sibling improved their ability to model complex self-regulatory behaviors for their younger sibling. Modeling of cognitive self-regulation by older sibling permits the younger sibling to benefit from observational or vicarious learning without direct performance (Schunk & DiBenedetto, 2020).

Initially, two coders independently applied codes. Coders then reviewed the transcripts of the other coder to identify discrepancies in coding and

assess the rationale of application of discrepant codes and arrive at a consensus. Consensus was reached when both raters had provided a rationale for selection of the respective code. When we could not arrive at a consensus for application of a code, we consulted the first author for expertise on self-regulation. Once the transcripts were coded for older siblings' intentional support and vicarious modeling of self-regulation behaviors, we coded each excerpt for the type of reading practice that was simultaneously co-occurring with the self-regulation behaviors (see Table 2). The authors jointly selected the final excerpts that exemplified the most common patterns of interaction between the older sibling and the focal child identified across multiple visits to the families.

Results

In the following section, we describe the general patterns of intentional supports and vicarious modeling of cognitive self-regulation by the older sibling that occurred alongside different types of reading practice. Excerpts highlight how older siblings were modeling effective cognitive self-regulation in the context of shared book reading with their younger sibling. Table 2 also describes the patterns of interaction between older siblings and focal children that reflect the ways that older siblings provide intentional support and vicarious modeling, across texts and visits, to support younger siblings' autonomy and choice and metacognitive awareness, respectively.

Older Sibling Intentional Support: Scaffolding Autonomy & Choice

The preschool and kindergarten period is one in which children are making substantial gains in their cognitive self-regulation (Bronson, 2000; McClelland & Cameron, 2012), particularly as they are able to engage in increasingly complex tasks by identifying specific strategies, such as selecting goals and task that are appropriate to their age level (Bronson, 2000). In educational settings, adults—primarily teachers—help guide this process by providing choices and setting up the environment in ways that encourage persistence and self-evaluation. In the home context, older siblings appear to play this critical guiding role for their younger siblings, particularly in the context of shared book reading. We find evidence that older siblings are shaping the reading task by identifying appropriate materials and activities that sustain the younger sibling's attention with the reading task by using verbal and nonverbal cues to guide attention, using prosody to engage their sibling, and to initiate reading beyond resistance.

Table 2. Patterns of Interaction Between Older Siblings, Focal Children, and Parents That Reflect the Ways That Older Siblings Provide Intentional Support and Vicarious Modeling Across Texts and Visits.

Types of support by family		Cognitive processes	
Intentional Support: How are older siblings providing developmentally appropriate play materials and activities?			
	Scaffolding	Autonomy & Choice	
	Verbal & non-verbal, pointing & guiding attention	Prosody or adding to the text	Initiating reading beyond resistance / Choice
Flores	v.5 Gatita v.5 Oso v.6 Harold	v.1 Oso v.5 Gatita v.5 Gatita v.5 Gatita v.5 Oso	v.5 Gatita/Chica v.6 AtoZ v.6 Harold
Hernandez			v.2 Panda v.2 Harold v.4 Lion v.6 Lion
Lopez	v.2 Harold v.5 Lion v.5 Lion v.5 Lion		
Vicarious Modeling: How are older siblings modeling metacognitive awareness?			
	Reflection & Corrections	Positive affect	
	OS self-corrections & corrections of FC and parent		
Flores	v.2 Harold v.5 Gatita v.5 Gatita v.6 AtoZ;	v.2 Panda/Harold	
Hernandez	v.2 Panda v.2 Harold v.6 Panda	v.2 Panda/Harold v.4 Lion v.6 Lion	
Lopez		v.2 Harold v.5 Lion	

Note. v.#.ShortTitle = describes the visit number and book for each code; excerpts were coded for any occurrence of support and modeling, often yielding repeat codes when siblings engaged in the same support approach multiple times during the same visit and book reading. OS=older sibling; FC=focal child.

In Excerpt 1, the older sibling in the Flores Family, Fabiola, guides the reading interaction by helping their younger sibling, Vanesa, select the *Gatita* book during visit 5. Vanesa is having her hair brushed by her mother as she sucks her thumb. While her mom is stroking her hair, older sister Fabiola suggests the *Gatita* book. Once Vanesa has the book, the older siblings suggest that she sit next to her for the shared reading. Vanesa points to another seat and Fabiola accommodates by moving to sit side by side.

Excerpt 1. Flores siblings read *Gatita* in Spanish during visit 5

1. Fabiola: *¿si gatita?*
2. (‘yes kitty?’)
3. Vanesa: ((takes *Gatita* book and looks at the cover))
4. Fabiola: *lee lee aquí?*
5. (‘read read here?’)
6. ((FC points to where she wants to sit; FC sits and sibling sits next to her))
7. Fabiola: *“la primera luna llena de gatita.”*
8. (‘the first full moon of the kitty.’)
9. Vanesa: *“la primera luna llena de gatita.”*
10. (‘the first full moon of the kitty.’)
11. ((turns page))

Notice that the older sibling’s guidance allows for some autonomy on the part of the Vanesa, as the book is suggested in the form of a question (line 1). Once Vanesa has selected the text, Fabiola provides additional scaffolds by asking her sister to sit with her and is accommodating when her sister changes location. We are not able to infer whether the Fabiola recognizes that side-by-side sitting or allowing her younger sister to hold the book would facilitate the reading interaction; regardless of the intentionality, Fabiola rearranges the environment to maximize her younger sister’s attention toward the shared reading of *Gatita*.

This excerpt is illustrative of the activities that older siblings engaged to create a more supportive environment for their younger sibling. In this case, the older sibling guided the reading interaction by suggesting a specific text and flexibly adapted to her sibling’s desire to sit elsewhere. In essence, the older siblings met her younger siblings need for autonomy and choice during this interaction to maintain focus on the task.

Other older siblings engaged in different support strategies, including verbal and non-verbal pointing and using prosody to maintain their younger siblings’ engagement. For example, while reading *Harold and the Purple Crayon* during visit 2, Ofelia, the older sibling in the Lopez family said,

“*mira*” (look) and followed the text with her finger while stating, “*voy a empear aqui. . .*” (I’m going to start here). As the interaction continues, the younger sibling, Alma, also starts to point to the text. It is likely that Alma has encountered this support strategy with others in prior reading interactions. However, it is notable that Alma begins actively using this strategy when she sees her older sibling use it to guide her attention to the text. Similarly, the older Flores sibling, Fabiola, makes animal noises (e.g., “ribbit,” for frogs and “bahh” for sheep) to keep her younger sibling, Vanesa, engaged with the *Oso Pardo* Spanish language book during visit 1.

We have coded each of these interactions as part of intentional support for autonomy and choice, as they are proactive approaches that older sibling engaged to maintain their younger sibling’s interaction in reading without resorting to directives or commands that would force the younger child through the reading activity. Instead, the use of verbal and non-verbal strategies like finger pointing, use of prosody, and flexible adapting to children’s actions to initiate or maintain reading suggest that older siblings can engage in developmentally appropriate interaction that support their younger siblings’ learning and development.

Older Siblings Modeling Metacognitive Awareness: Reflections and Corrections

The previous excerpt emphasized the ways in which older siblings intentionally engaged their younger siblings to shape the way in which the younger sibling engaged with the text. The strategy that they employed was relatively straight forward—encouraging autonomy and book choice—even if it is not easy to use consistently over time. More complicated metacognitive strategies, such as encouraging reflection and self-corrections, may not yet be strategies that older sibling can employ directly in supporting their younger siblings reading attention. Nonetheless, we found evidence that older siblings are able to model these cognitive strategies for younger children when they demonstrate the skills while engaging in shared reading with their younger siblings. In particular, we documented older siblings’ expressions of preference for and joy associated with their own reading, as well as pauses for self-correction or sounding out words when they were approaching unfamiliar words or text.

We see evidence of vicarious modeling of text preference, joy, and self-corrections in the Hernández Family in the following excerpt. This is the second visit but the first time that the siblings engaged with the English language books. The researchers placed the books on the table and the older sister, Juliana, began to read the titles, articulating her recognition of, experience with, and pleasure in encountering *Harold*. The younger siblings,

Carolina, sat with her sister at the dining room table and flipped through the *Harold* book while eating an orange. Later in the interaction we see Juliana modeling self-correction and sounding out strategies when encountering new text in the *Panda Bear* book.

Excerpt 2. Hernández siblings read *Panda Bear, Panda Bear, What Do you See?* and *Harold and the Purple Crayon* during visit 2

1. Juliana: **oooh** ((reaches across table)) **“Panda Bear Panda Bear (2) What do you see?”**
2. ((move books around))
3. **Oh I really like this one.** ((tapping cover of Harold))
4. **“Harold and the Purple Crayon”**
5. Carolina: ((smiles and grabs Harold, flips through a few pages))
6. **WHAat?**
7. Juliana: **HAAROLDD!**
8. Carolina: ((wide smile, softly says)) **Harold. Ah?**
9. ((giggles))
10. Juliana: **and the purple crayon**
11. Carolina: **and the purple crayon**
11. ((mom sits at the table between the girls))
12. Mrs. H: **vas a leer S?**
13. ((are you going to read S?))
14. Juliana: **“by Crockett Johnson”**
15. ((mom reaches across table and slides Harold toward sibling))
16. Carolina: **no, primero este, primero este.**
17. ((first this one, first this one).))
18. ((moving Panda Bear back and forth on table in front of mother))
18. Juliana: **Harold and the. . .**
19. ((grabs Panda Bear))
20. Carolina: ((smiles)) **yaaay**
21. ((mom moves to kitchen to wash dishes))
22. Juliana: **“panda bear panda bear what do you see by Bill. (pause) By Bill Martin Jr. Eric Carle. panda bear panda bear what do you see?”**
23. **“panda bear panda bear what do you see? I see a bald eagle soaring at me. by me.”**
24. **bear what do you see?”**
25. ((turns page. FC is watching S read))
26. **“panda bear panda bear what do you see? I see a bald eagle soaring at me. by me.”**
27. **soaring at me. by me.”**
28. ((turns page)).

29. **“bald eagle bald eagle what do you see? I see a water buffalo**
 30. **sharing at me. flying by me.”**
 31. ((turns page)).
 32. **“water buffalo water buffalo what do you see?”**
 33. ((FC moves to get closer to book and S. FC shares a dinning chair with S.)).
 34. **“I see a spider monkey swinging by me.”**
 35. ((turns page)).
 36. **“spider monkey spider monkey what do you see? I see a green**
 37. **turtle swimming by me.”**
 38. ((turns page)).
 39. **“green turt-green sea turtle green sea turtle what do see? I see a**
 40. **moca-macaroni penguin struttering by me.”**
 41. ((turns page))
 42. **“macaroni penguin macaroni penguin what do you see? I see a sea**
 43. **lion splashing by me.”**

Beginning with line 1, older sister Juliana demonstrates positive affect with being provided books to engage with and in line 3, more specifically, her pleasure at re-encountering *Harold*. In the very next line (line 4), her younger sister Carolina picks up on this positive disposition by smiling and reach out for the book that has given her older sister pleasure. Although it may be that Juliana was not consciously demonstrating her pleasure with reading and books to influence her younger sister, by simple means of exposure, the younger sister is motivated to interact with the book, asking “What?” in line 6. Juliana demonstrates her excitement in new ways by answering with “HAAROLDD!” (line 7), extending the “a” sound and emphasizing the “d” at the end of the word. Carolina responds with further positive affect, this time with a smile, and repeats after her older sister with an upward intonation, perhaps demonstrating her own curiosity with an unfamiliar text. These positive affective interactions with books may be particularly important, given that Carolina, in an exchange that occurred later during visit 2, exclaimed that she cannot read when provided with an alphabet book by her older sister. Notably, these interactions among the sisters are occurring across two languages—English and Spanish (lines 10–20)—suggesting that modeling of cognitive self-regulation is supported by the process of translanguaging.

Unlike with the prior excerpts, where the goal was to draw and sustain the younger sibling’s attention, the goal of this older sibling does not appear to be to

maximize her younger sibling's focus and attention. Rather, by demonstrating her own joy and desire to read *Harold*, Juliana may be modeling the value of learning to read and may inadvertently motivate her younger sibling, Carolina, to persist with the development of her early literacy skills. In other words, Juliana's positive affect toward reading may help Carolina see herself as a joyful, motivated reader.

Once older sister Juliana begins to read *Panda Bear*, the younger sibling's book of choice, there is very little direct interaction between the siblings, although Carolina moves physically close to sit on the same chair as her sister and to have a better view of the book (line 33). Yet, even through this limited interaction, Juliana is modeling another key feature of cognitive self-regulation, self-monitoring and correction. Although it was evident that she was reading the text quickly, likely to be able to read *Harold* after finishing *Panda Bear*, Juliana was able to monitor her reading. For example, on line 27, she first states "soaring at me," pauses and follows with the self-correction "by me." Similarly, on line 39, Juliana quickly reads, "green turt," pauses when she recognizes that she has skipped a word and tries again with, "green sea turtle." On the next line (line 40), she has to slow down to sound out the word macaroni, with "moca" and quickly corrects to "macaroni." Although all three on their own are relatively minor self-corrections, each is an opportunity for Carolina to observe Juliana monitor her reading for accuracy and to engage in self-correction as necessary. Though not evident in the excerpt, we see Juliana continuing to model monitoring and correction, however, in this case it is of the mother who joins the siblings at the table and reads in English from the *Harold* book. With the mother reading an English-language text, which the older sibling supports through corrections while the younger sibling observes, we see the nexus between translanguaging and vicarious support for cognitive self-regulation. Although Carolina may be too young to perceive all of these as important strategies on her own, having access to a model in her older sister may serve to support the development of her cognitive self-regulation skills over time.

Discussion

The present study took a naturalistic and culturally situated approach to explore how older siblings in three families modeled and intentionally supported focal children's cognitive self-regulation in the context of shared reading. This study contributes to the research on shared reading by elaborating on the role of older siblings, particularly within Latinx families, and highlighting the interactional processes that emerge in this context to support younger siblings' early cognitive development. Consistent with previous literature on sibling interactions, the findings indicate that older siblings support younger children's regulation of behaviors and thoughts (Hill et al., 2020; Leach et al., 2015; Sang & Nelson, 2017; Taumoepeau & Reese, 2014), and they do so in

pursuit of successful shared reading interactions. Cognitive self-regulation appears to be significant for promoting attention in the context of shared reading. We found that as part of shared reading interactions, older siblings vicariously modeled reflections and self-corrections and intentionally supported focal children's cognitive self-regulation by fostering autonomy and choice.

Older Sibling Scaffolding Autonomy & Choice

During sibling shared book reading interactions, play materials and activities functioned as scaffolds and modifications to the task to support younger children's cognitive self-regulation. Though the texts were researcher provided, the older siblings allowed for and supported the reading interactions by allowing for younger sibling choice in text selection. Autonomy support is an important component of cognitive self-regulation, as it enables children to progress from having their thoughts and behavior regulated externally by caregiving figures to regulating themselves internally (Bernier et al., 2010). Choice also encourages attention and increases motivation, as children are increasingly drawn to participate in tasks promoting autonomy and control (Patall et al., 2008, 2010). Older siblings also engaged in verbal and non-verbal approaches to guiding attention and prosody to guide and promote their younger siblings sustained attention and active engagement on the reading task.

The finding that Latina older siblings fostered autonomy and choice in shared reading interactions is consistent with previous findings that older sisters also used warm and responsive interaction styles (Hill et al., 2020). Similar to the implications of autonomy and choice for supporting younger children's attention, older siblings' warm and responsive interaction styles coincided with practices that bolstered younger children's social emotional skills such as task engagement and social participation.

Metacognitive Awareness: Reflections and Self-Corrections

Older siblings also modeled reflections, including expressions of positive affect in reading, and self-corrections, which are more sophisticated forms of cognitive self-regulation due to their metacognitive nature (Bronson, 2000). Observing older siblings who had greater expertise in cognitive self-regulation provided the younger sibling with access and exposure to more advanced cognitive self-regulation skills. Although we did not observe younger siblings themselves engaging in approaches characteristic of greater metacognitive awareness, access to their older siblings use of these strategies are an early first step in their own development (Bandura, 1977; Whitebread & Neale, 2020). Exposure to models of reflection and self-correction may be especially important for children in linguistically minoritized

families, as these skills are necessary for children when switching between language systems. In multilingual contexts, children are required to self-monitor and identify places for correction in the production of both languages (Eksner & Orellana, 2012; Haukås, 2018). While noting the potential indirect benefits to children's cognitive self-regulation, it is important to acknowledge the caveat that older siblings were exclusively modeling metacognitive awareness as part of their naturalistic behavior rather than intentionally supporting the practice in the younger sibling.

Older Siblings Roles in Latinx Family Contexts

Older sibling practices in shared reading may be illustrative of roles of caretaking in the Latinx cultural frame that may be assumed by parents in other families (Calzada et al., 2013; Updegraff et al., 2005). Due to the proximal age range, knowledge, and experience of older siblings and younger siblings, younger siblings may have more opportunities to engage with their older siblings and be more attuned to practices of older siblings than that of parents.

Older siblings provide linkages between the language and cultural systems of home and school (Eksner & Orellana, 2012). Linguistic linkages are evidenced in the sibling practices, which occurred in English and Spanish, as they engaged with texts in both languages. Another feature of shared reading interactions was the gendered role of sibling interactions among Latinx families, in which modeling and intentional support for cognitive self-regulation occurred in interactions involving female siblings exclusively. We are not able to posit whether these patterns of nurturance are a result of family socialization of older female siblings (Maynard, 2019; Piña-Watson et al., 2014). However, the patterns evident in these three families suggest that older Latinx sisters—who may themselves be only 3 to 6 years older than their younger sisters—take on the role of teacher in ways that provide cognitively nurturing support during literacy interactions.

Limitations and Future Directions

The current study highlights the developmental significance of older sibling interactions in Latinx families. The present study included six visits within a period of 2 months and was not specifically designed to focus on sibling interactions. We suggest that future research on Latinx family should consider examine the ways in which older siblings can facilitate the long-term development of younger siblings cognitive and socioemotional development as younger siblings shift home and preschool to formal school environments. In the current study of reading interactions, books were purposefully selected to

exhibit a range of literacy skills. Nevertheless, the limited book options constrain the external validity of the present study. Future work should examine the ways in which older siblings support younger siblings' cognitive development when they have access to books of their own choosing. Moreover, future research must consider the cultural relevance of the text that siblings use during shared reading interactions.

Conclusions

The present study builds on prior work that documents the importance of sibling interaction for younger siblings' cognitive development in the context of play interactions. Our study extends our understanding of the sociocultural contexts that support the development of cognitive self-regulation among Latinx children in the U.S. by documenting the ways that older siblings support younger siblings' cognitive development in the context of shared reading. Analysis of themes revealed that older siblings intentionally support cognitive self-regulation by providing autonomy and choice and modeling metacognitive awareness during shared reading. These findings highlight the importance of older siblings, especially sisters, as key figures in the sociocultural context of development for Latinx children in the U.S. As we consider investing in supports for Latinx children's early development, it is necessary to reflect more broadly on the roles of key figures shaping children's development in ethnically and linguistically minoritized families.

Appendix A. Transcription conventions.

.	Stopping fall in tone
,	Continuing intonation
?	Rising intonation
CAPS	Emphatic stress
(.)	Brief pause
XXX	Unclear utterance for which a good guess can be made as to numbers of syllables uttered; each x equals one syllable
Bolded non-italic	Spoken in English
Bolded italics	Spoken in Spanish
('did')	English translation of Spanish
(())	Non-verbal phenomena, on the same line just prior to verbal message if it co-occurs, placed on its own line if not
“ ”	Reading from books

General notes:

1. These conventions were adapted from Palacios et al. (2016).
2. Transcriptions are written in standard orthography.

Author's Note

If interested in the data used in this project, please direct inquiries to the corresponding author.

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