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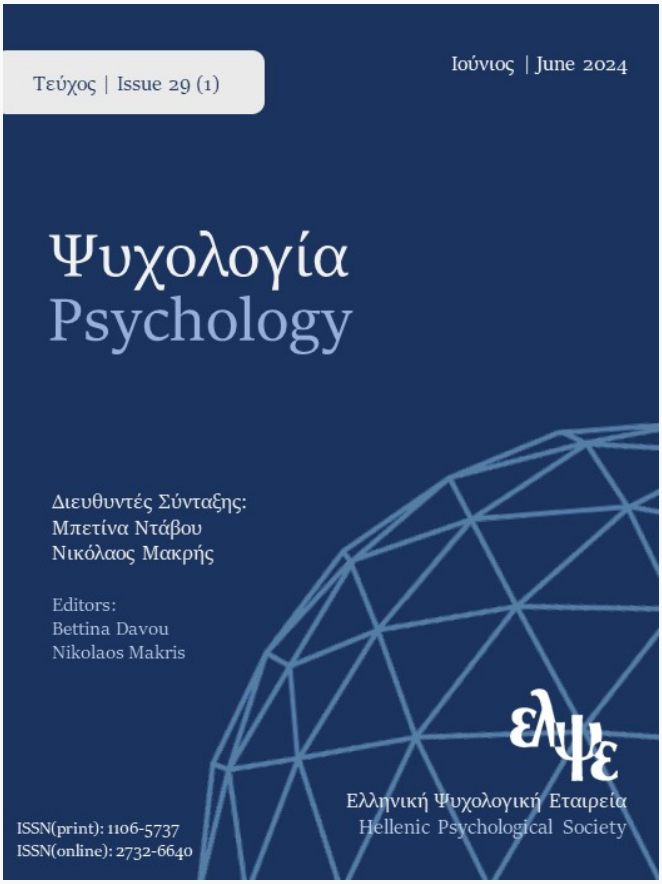

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Quantity and quality of book reading to infants and toddlers: their effect on early communication and language development

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KEYWORDS

Interactive shared book reading (ISBR)
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ABSTRACT

Among the various parent-child interactions taking place in a typical family context, interactive shared book reading (ISBR) has been shown to have a superior value in fostering language development. Although many studies have established the linguistic benefits of ISBR in preschoolers, results on children younger than 3 years are scarce. This cross-sectional parental report study explores the contribution of the quantity and quality of shared book reading to the communicative and language skills of a large sample of infants and toddlers growing up in Greek-speaking families. The parents of 740 children aged 6 to 36 months filled in the Interactive Shared Book Reading Strategies Questionnaire that assesses the number and frequency of interactive strategies adopted by caregivers during shared book reading. Parents were also administered the Communication Development Report, a standardized instrument for assessing Greek-speaking children's communication and language skills. Results are presented on (a) shared book reading quantity (frequency) and quality (interactive strategies), (b) the effect of these two factors on children's nonverbal communication (nonvocal and vocal), as well as their language development (comprehension, expressive vocabulary, morphology, and syntax), and (c) the effect of several contextual factors on this association. Results highlight the large effect of both the quantity and the quality of shared book reading in different dimensions of the children's communication and language. Birth order, siblings, and maternal education affected the quantity (but not the quality) of shared book reading. Overall, results confirm and extend previous findings regarding the benefits of shared book reading to children's vocabulary, morphology, and syntax, pointing to the significant contribution of its quality rather than its quantity. They also add interesting findings regarding the significant contribution of shared book reading to children's nonverbal communicative skills. Results are discussed based on previous relevant findings for their theoretical implications. Their applied interest in the early prevention of language difficulties is also discussed.

Introduction

Early parent-child interactions are critical in shaping children's communication and language development. The intersubjective sharing that takes place during these early interactions provides rich opportunities for children to develop, among others, important communicative skills (e.g., turn-taking or joint attention); at the same time, it gives meaning to the sounds, rhythms, and conventions of language, fostering, thus, their lexical and grammatical development (Bruner, 1975, 1983; Ford et al., 2020; Goldstein & Schwade, 2008; Hobson, 2002; Hoff, 2006; Kuhl, 2010; Snow, 1995; Terrace et al., 2022; Tomasello, 2003; Trevarthen & Delafield-Butt, 2013).

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Among the various parent-child interactions taking place in a typical family context, *shared book reading* or *book sharing* has been proposed to have a superior value in fostering language development (e.g., Weisberg et al., 2013). By constituting a source of more elaborated linguistic input than that produced during other parent-child daily interactions (e.g. playing, feeding), shared book reading is assumed to provide many opportunities for learning novel words as well as more elaborate grammatical constructions (e.g. Montag et al., 2015). Studies have revealed, however, that it is not merely the amount of exposure to reading materials or the frequency of shared book reading but also the quality of parent-child interactions during shared book reading that has a significant impact on lexical and grammatical development (Burgess et al., 2002; Mol et al., 2009; Whitehurst et al., 1988). Specifically, parents who engage actively in so-called interactive shared book reading (ISBR) use various strategies to foster the child's active engagement in the shared activity and enhance, thus, its linguistic benefits (Dowdall et al., 2020; Noble et al., 2019). To date, many studies –observational, parent report, and experimental (mainly, pre-post intervention measurements of parental training in ISBR strategies)- have established the linguistic benefits of ISBR.

However, the vast majority of studies have measured the effect of ISBR on language development in children older than 3 years -mainly preschoolers (for a recent review, see Lorio et al., 2022). Despite the importance of the first years of life for language development, few studies are available on the impact of parent-infant or parent-toddler book sharing. As a result, we know little about how the quantity and the quality of early book sharing may affect the development of children's emerging linguistic skills; we know even less about how book sharing interactions may affect young children's nonverbal communicative development (e.g., joint attention, gestures or early vocalizations).

The aim of the present study is to estimate the effect of the quantity (frequency) and the quality (ISBR strategies) of book sharing interactions on six factors of communication and language development, namely, nonverbal communication (vocal and nonvocal), early language comprehension, expressive vocabulary, morphology, and syntax. Adopting a parental report methodology, we aim to obtain data from a broad sample of infants and toddlers covering the extensive age range from 6 to 36 months.

Shared book reading and language development

Shared book reading has traditionally been advocated as an important activity for promoting preschoolers' language development and literacy skills (Bus et al., 1995; Mol et al., 2008; Wasik & Bond, 2016). The positive impact of shared book reading on language has been attributed to several characteristics of the language children are exposed to during these activities. These include the quantity (Logan et al., 2019) and the quality of the linguistic input, namely, the sophisticated nature of novel words found in children's books (Crain-Thoreson et al., 2001; Mol et al., 2008; Montag et al., 2015), the longer mean length of utterance (MLU) (Demir-Lira, et al., 2018), and the grammatically enriched information (Noble et al., 2018).

Linguistic benefits have also been associated with the quality of the shared book reading process per se. Particular strategies adopted by the parents during shared book reading (Marulis & Neuman, 2010, 2013; Mol et al., 2008, 2009; Towson et al., 2021) have been found to promote parent-child interaction (Gilkerson et al., 2017; Justice & Kadervak, 2002; Mol et al., 2008) and, hence, enhance its linguistic benefits: asking the children to make predictions about what the book might be about (Lorio & Woods, 2020), asking questions during shared book reading and linking concepts from the story to the child's life experiences (Rezzonico et al., 2015; Wasik & Bond, 2001), pointing to words or images (DeTemple, 2001; Haden et al., 1996; Vandermaas-Peller et al., 2003), repetitions (Horst et al., 2011), linking reading with a creative activity like drawing (Damber, 2015), and including the newly acquired words into comments or questions (Blewitt et al., 2009; Sénéchal,1997) are some of the interactive strategies highlighted by existing research. The adoption of similar interactive strategies by parents has been shown to foster the active participation of a child in the book reading activity (Duursma et al., 2008;

Huebner & Meltzoff, 2005; Trivette et al., 2010) and to enhance its linguistic benefits (Arnold et al., 1994; Crain-Thoreson & Dale, 1999; Lonigan et al., 1999; Whitehurst & Lonigan, 1998; Whitehurst, et al., 1994). Thus, ISBR has been related to preschoolers' (expressive and receptive) vocabulary enrichment (Crain-Thoreson et al., 2001; DeTemple, 2001; Malin et al., 2014; Marulis & Neuman, 2010; Mol et al., 2008; Mol & Neuman, 2014; Richman & Colombo, 2007; Sénéchal et al., 2008; Simsek & Erdogan, 2015; Whitehurst et al., 1988; Zevenbergen & Whitehurst, 2003), enhancement of children's phonological awareness (Elmonayer, 2013), and improved morphosyntactic skills (Crain-Thoreson & Dale, 1992; Sénéchal et al., 2008).

Several studies assessing the impact of shared book reading on language development have also examined factors of the family context that could potentially affect both the book reading practice and its linguistic benefits. Maternal educational level and the family's Socio-Economical Status (SES) have been found to significantly affect the quantity but also the quality (e.g., sentence complexity, variety of explanations, questions asked) of parent-child joint book reading interactions (e.g., DeBaryshe, 1995; Farrant & Zubrick, 2012; Hart & Risley, 1995; Hoff, 2003a; Niklas & Schneider, 2013; Lehrl et al., 2012). Given these results, but also taking into account the effect of these same factors on children's language outcomes, several intervention programs have been designed and implemented successfully targeting the quality of parent-child book reading interactions (e.g., Demir-Lira et al., 2018; Lorio et al., 2022; Mol et al., 2009).

Shared book reading and communication / language development prior to three years

The studies mentioned above have solidly established the benefits of both the quantity and the quality of shared book reading for children's language development. However, studies focusing on children younger than 3 years are very limited in the literature, despite shared book reading being developmentally appropriate for these young ages (Fletcher & Reese, 2005; Lorio et al., 2022).

Many of these studies focus on the interaction style and strategies parents use at these early ages, suggesting that these may vary based on children's developmental stage. Thus, several studies have pointed out that adult-child interaction during book reading changes as children develop better language skills (Bus & van Ijzendoorn, 1997; DeTemple, 2001; Dickinson et al., 1992; Ninio, 1983; Rowe, 2013; van Kleeck et al., 1996). In general, parents of both infants and toddlers tend to adopt a more active role during book sharing; they tend to talk more, ask more questions, respond more, provide more labels, and point to words or images in the book (Demir-Lira et al., 2018; Gros-Louis et al., 2016; Hindman et al., 2008; Hoff-Ginsberg, 1991; Montag et al., 2015; Snow et al., 1976; Soderstrom & Wittebolle, 2013; Sosa, 2016; Yont et al., 2003). Mothers of non-verbal infants seem to prefer either to label the story's objects or to reinforce children's pointing by posing "where" questions (Bus & van Ijzendoorn, 1997; Ninio, 1980, 1983), reinforcing that way a better understanding and learning of new words (Trivette et al., 2010). In contrast, when children are capable of communicating verbally, parents tend to request information by asking "why" and "what" questions (Ninio, 1980, 1983), setting, thus, the base for interactive dialogues. Moreover, as children grow older, simple descriptive talk seems to be replaced by inferential (Rowe, 2013; Snow et al., 2001).

Studies on the effect of shared book reading on young children's language development are very limited. Karrass and Braungart-Rieker (2005) found that book sharing at 8 months (but not earlier) can be associated with later expressive language skills at 12 and 16 months. Sinclair (2019) and Towell et al. (2021) found that shared book reading, even at 6 months, contributes positively to later language development and kindergarten readiness. Early shared book reading has been associated with different dimensions of language, such as expressive vocabulary (Farrant & Zubrick, 2012; Richman & Colombo, 2007), receptive vocabulary (Blake et al., 2006; Deckner et al., 2006; Hindman et al., 2008; Muhinyi & Rowe, 2019), as well as enhanced morphosyntactic development, e.g. longer MLU (National Early Literacy Panel, 2008; Whitehurst et al. 1988).

Another important aspect of shared book reading, which remains relatively uncharted in the early years, is the impact of its frequency on young children's language development. Although numerous studies have documented the relationship between the frequency of shared book reading during the preschool years (see, e.g., Payne et al., 1994), very few of them have examined its effect prior to 3 years of age (DeBaryshe, 1993; Demir-Lira et al., 2018; Muhinyi & Rowe, 2019). Even though most parents acknowledge the value of book reading (Bergin, 2001), there is still no agreement about the frequency needed for supporting language development (Adams, 1990). Existing studies show that including book reading in everyday activities, at least six times per week, can positively affect children's productive vocabulary (Westerlund & Lagerberg, 2008). The frequency variable has also been significantly linked with children's comprehension of syntactically complex sentences 6 months later (Crain-Thoreson & Dale, 1992) and with an increased MLU in their linguistic productions (Marjanovič-Umek et al., 2017). A moderate correlation between the frequency of book reading and young children's linguistic skills was also found in the meta-analytical work of Bus and colleagues (1995).

Finally, available studies are extremely limited regarding the contribution of shared book reading to the development of nonverbal communication skills. Indirect evidence of its potential benefits comes from studies pointing to the high levels of joint attention during shared book reading (Lingwood et al., 2022; Noble et al., 2020). Reaching similar conclusions with earlier studies on this topic (e.g., Bakeman & Adamson, 1984; Tomasello & Todd, 1983; Smith et al., 1988), recent findings also support the importance of joint attention during book reading for the enhancement of later language outcomes (Farrant & Zubrick, 2013; McGillion et al., 2017). Moreover, reports on children's pointing gestures (Murphy, 1978) and vocalizations (Murphy, 1978; Lamme & Packer, 1986; Sénéchal et al., 1995) during shared book reading have shown that their frequency tends to increase as children get older. However, to date, the effect of the quantity or the quality of shared book reading on the development of children's nonverbal communicative abilities has not received attention in the research literature (Muhinyi & Rowe, 2019).

Rationale and aim of the study

The first three years of life constitute a critical period for language development. During this time, typically developing children go through a rapid and remarkable progression of milestones in their communicative and language development, which result, by the end of this period, in the acquisition of the basic meanings and conventions of their mother language. These early developments constitute the foundations of subsequent language and literacy development but are also significantly associated with children's subsequent academic and socio-emotional development (e.g., Menting et al., 2011; Mokaiti & Karousou, 2021; Rescorla et al., 2007; Roben et al., 2013; Snowling et al., 2006).

Based on all previously presented evidence that posits the potential value of early shared book reading activities as a means for fostering the linguistic development of infants and toddlers, and given the limited number of studies focusing on this important developmental period, the aim of the present study is to report on the impact of early shared book reading on children's communication and early language development. More specifically, based on a wide sample of participants covering the age range from 6 to 36 months, we aim to explore the effect of both the quantity (frequency) and the quality (ISBR practices) of shared book reading on children's vocal and nonvocal communication, language comprehension, expressive vocabulary, morphology and syntax, while simultaneously exploring the effect of several contextual factors (children's gender, siblings and birth order, parental educational level, and economic status). Additionally, the study reports on the characteristics of early parent-child interactions in the context of book reading activities (their frequency and the interactive strategies used by parents).

Method

A cross-sectional design was adopted with two measures of shared book reading (frequency and interactive strategies), six contextual factors as predictor variables, and six measures of children's communication and language skills (nonvocal communication, vocal communication, comprehension, expressive vocabulary, morphology and syntax) as criterion variables.

Participants

The sample consisted of caregivers of 740 children (51.3% girls) ranging from 6 to 36 months of age (M_{age}=19.87, SD_{age}= 7.88, approx. 25 children/month). The distribution of children according to their age (in three-month intervals) can be found in Table 1.

Table 1 *Distribution of participants per age*

Age in months	N	%
6-8	72	9.73
9-11	69	9.32
12-14	73	9.86
15-17	71	9.59
18-20	77	10.41
21-23	76	10.27
24-26	74	10.00
27-29	75	10.14
30-32	73	9.86
33-36	80	10.81
Total	**740**	**100.00**

Greek was the only language spoken in the children's home. Moreover, children with a diagnosed sensory, physical, cognitive or language impairment and children at risk for language delay (i.e., children with prenatal or perinatal complications, premature with low birth weight < 2.100 kg, or repeated otitis) were excluded from the sample. Among the children in the sample, 58.1% were first born, 32.3% were born second, 6.7% third, and 2.9% fourth. Finally, 48.3% of the children were reported to have no brothers or sisters.

The majority of the questionnaires (87.3%) were filled in by the children's mothers, while the remaining were completed either by fathers (7.9%) or both parents (4.8%). *Table 2* presents parental educational level, and *Table 3* presents the family's economic status.

Table 2 *Distribution of the caregivers according to their educational level*

Educational level	Father	Mother
	%	%
University degree	53.2	57.3
Technical/professional school	18.4	17.0
Baccalaureate / secondary school	19.9	19.5
Compulsory education	8.5	6.2

Table 3 *Distribution of the families according to their economic status*

Economic status	**%**
Facing economic difficulties	2.8
Economic capacity just to meet essential needs	44.6
Economic capacity to meet essential needs and save some money for emergencies	43.0
High income, no worries about money	9.7

Instruments

(I) A question on the frequency of shared book reading was included in the protocol, which was extracted from the *Home Learning Environment* questionnaire (HLE; Melhuish et al., 2008): "*Does anyone at home ever read to the child?*" "*How often?*". Possible answers and their respective scoring followed the HLE questionnaire instructions: Never (0), Occasionally (less than once per week) (1), Once a week (2), Several times per week (4), Every day (6), More than once a day (7).
Furthermore, two psychometric instruments were used in data collection.

(II) ***The Interactive Shared Book Reading Strategies Questionnaire*** (ISBR_SQ; Karousou, 2023). It is a 10-item parental report questionnaire on different interactive shared book reading strategies that parents may adopt while reading a book with their infant or toddler. The ISBR_SQ was developed, piloted (N= 140), and validated for use in this study. The scale contains items on preparing the book reading session with a discussion on the book theme or its cover, commenting on the pictures of the book, asking the child to predict the evolution of the story, connecting the story with personal experiences, explaining new words, or asking the child to answer questions or narrate part of the story after finishing the reading session. Parents are asked to mark on a 5-point Likert scale (from 0 – *never* to 4 – *very often*) the frequency of using each of these strategies during shared book reading with their infants and toddlers. The concrete instructions and items of the ISBR_SQ are presented in Table 4.

Table 4 *The ISBR_SQ instructions and items (translated in English)*

Instructions	The following questions concern some practices you may use when reading books to your child. Which of the following do you do, and how often, when you read a book to your child? Please remember that it is normal not to use all the practices mentioned below. Also, note that here, we are interested in what **you** do during book reading and not how the child responds; depending on the child's age, he/she may participate in the interaction only with vocalizations or other non-verbal means.
Q1	You prepare the book reading session by discussing the book's topic or cover.
Q2	As you read, you pause at every word you think the child does not understand, and you explain it.
Q3	As you read, you discuss with the child the story you are reading (e.g., "Why do you think he did that?").
Q4	While narrating the story, you ask the child to predict how the story will develop (e.g. "so, what do you think (s)he did next?")
Q5	You pause reading for a moment to explain to the child something you think he/she may not have understood.
Q6	During the reading session, you link the experiences of the heroes to possible experiences of the child (e.g. ' Do you remember when you also...')
Q7	During the reading session, you point to pictures in the book and discuss them with the child.
Q8	After finishing the book, you ask the child questions about the story.
Q9	After finishing the book, you discuss with the child whether or not he/she liked the book
Q10	After finishing the book, you encourage the child to retell a part of or the entire story.

As for the development and the psychometric properties of the ISBR_SQ: the questionnaire initially consisted of 15 items, which covered relevant parental book reading practices and behaviors reported in the literature. A pre liminary study (N=33), based on video recordings of parents spontaneously reading to their children and comp aring the strategies observed with the answers the parents provided through the questionnaire a week later, le d to the elimination of 4 items in which parental responses were found to have low validity (actively keeping tu rns/waiting for the child's contribution, giving the lead to the child, establishing / re-establishing shared attenti on on the book, using gestures). Another item was eliminated, as it was practically never reported by parents (d rawing after book reading). The concurrent validity of the final 10-item form of the ISBR_SQ is r = .87, p<.001. Furthermore, based on the present study's data, its Cronbach's a is estimated to α = .91, the Gutman-Brown spl it-half reliability coefficient to .88 and a Confirmatory Factor Analysis gave very satisfactory results with a one-factor solution (Normed χ^2 = 4.19, p > .05; CFI =.958, TLI =.949; RMSEA = .046 / CI_{upper} = .062, SRMR =.054, AGFI= .988).

(III) The *Communication Development Report* *(*CDR; Karousou & Petrogiannis, 2024*)*: The CDR is a validated and standardized (N=2102) parental report questionnaire for the screening of communication and early language skills of Greek-speaking children aged 6-36 months. It includes a variety of developmental indexes, which are grouped into six subscales according to the dimension of communicative development they assess.

The CDR's first three subscales assess communicative behaviours that do not require the capacity for verbal communication (i.e., production of conventional language).

(a) *Nonvocal communication*: The 13 items of the scale include questions on nonvocal ways of communicating (e.g., establishing eye contact, gestures [proto-referential, proto-imperative, symbolic], communication through actions and rhythms, communication within interactive, pretend and symbolic play). Caregivers are asked whether they have noticed their child communicating in any of these ways, offering them a choice among the following answers: '*Not yet'* (0), '*Rarely*'(1), and '*Often*'(2).

(b) *Vocal communication*: The 12 items of the scale items include questions on vocal communicative behaviours (various types of vocalizations, communicative uses, vocal imitation, singing). Caregivers are asked whether they have noticed their child communicating in these ways by selecting one of the following options: '*Not yet*' (0), '*Rarely*'(1), and '*Often*'(2).

(c) *Language comprehension*: The 4 questions of this subscale present caregivers with everyday situations or communicative contexts in which their children respond behaviorally, indicating their understanding of words and linguistic expressions. Parents are asked under which of the four proposed circumstances their child responds, and they are offered a choice among the following answers: '*Not yet*' (0), '*Rarely*'(1), and '*Often*'(2).

The remaining scales of the CDR assess communicative behaviours, which assume children's ability for verbal communication / conventional word production.

(d) *Productive vocabulary*: This 23-item scale provides an index of children's productive vocabulary size, whereas it informs on the semantic categories of the words it contains. It includes word lists organized into 23 semantic categories (e.g., everyday expressions, food, clothes, furniture and objects, properties, questions, time, etc.). These categories cover many of the concepts that form part of the everyday experience of young children and, consequently, are very likely to be included in their vocabularies. For every category, caregivers are asked to estimate the number of words their children produce (None, 1-5, 5-10, >10).

(e) *Morphology*: This 6-item scale includes questions on the basic morphological variations that are likely to appear in the speech of Greek children of the age range covered by the CDR. More specifically, the items included concern the number, the gender, and the case of nouns and adjectives, as well as the verbal person and three basic simple tenses (present, past, and future). Caregivers are offered many examples for each item and are asked

whether their children use similar variations. The answers among which they have to choose are: '*Not yet*' (0), '*Rarely*'(1) and '*Often*'(2).

(f) *Syntax*: This 10-item scale constitutes an index of the morphosyntactic complexity of the sentences produced by the children. Each item consists of an imaginary dialogue with three (3) sentences of varying developmental complexity. Parents are asked to choose the sentence that sounds closer to what their child would say in a similar situation and that resembles the most in their child's 'way of speaking.'

The psychometric properties of the CDR were established through a series of studies, summarized in *Table 5*. Cronbach's α and Guttman split-half reliability indices were calculated based on the norming sample (N=2102, 6-36 months), and two additional studies were conducted to establish its test-retest reliability and concurrent validity. To assess test-retest reliability, the CDR was re-administered to part of the norming sample (N=317 children, 6-36 months) one month after the initial administration to determine the stability of the measurements. To assess the CDR's concurrent validity, 74 children were video-recorded while they were playing with their parents (10 minutes) and while interacting with a researcher following a semi-structured elicitation protocol (see, Karousou & Nikolaidou, 2015; Karousou & Petrogiannis, in press). Their parents filled in the CDR on the same day. Data were coded, and the scores were compared with the CDR scores. Spearman *rho* (ρ) correlations are presented in *Table 5*. All psychometric indices were found to be from very satisfactory to excellent.

Table 5 *Principal psychometric properties of the CDR*

Scale	**Cronbach's α**	**Guttman Split-half**	**Test-retest Spearman's ρ**	**Concurrent validity Spearman's ρ**
Nonvocal communication	.87	.85	.93**	.90**
Vocal communication	.90	.86	.91**	.89**
Comprehension of language	.80	.78	.89**	.86**
Productive vocabulary	.99	.97	.98**	.85**
Morphology	.97	.96	.96**	.91**
Syntax	.94	.92	.97**	.88**

Note. $p < .001$*

A Confirmatory Factor Analysis showed an excellent fit to a six correlated factors model (Normed $\chi^2 = 3.73$, $p > .05$; CFI=.997, TLI=.997; RMSEA= .037 / CI_{upper} = .038, SRMR=.046, AGFI = .996). More information on the structure, the psychometric properties and the standardization and validation of the CDR can be found in its Technical Manual (Karousou & Petrogiannis, 2024).

Finally, according to the literature, assuming that the socioeconomic status of the families could affect both shared book reading frequency and the ISBR strategies parents would use, two questions regarding the educational level of the mother and the father and a question on the economic status of the family were also included in the protocol (see descriptive results, *Tables 1 and 2*).

Procedure

After the caregivers were informed about the purpose and procedure of the study, the anonymity of the data to be collected and their legal rights, and given their consent for participation, they started to fill in the online questionnaires, which were provided with instructions regarding their completion. The questionnaires were implemented on a LimeSurvey installation, which guaranteed anonymity and confidential treatment of the data. The full research protocol was approved by the Research Ethics Committee of the Democritus University of Thrace (ΔΠΘ/ΕΗΔΕ/26310/155/21.12.2020). The collection of the data presented in this paper lasted from February to April 2022. The entire procedure (consent and completion of the questionnaires) lasted between 30 and 50 minutes. Parents reported no difficulty and commented positively on the procedure. Upon completing the

questionnaires, parents were given an online certificate of participation in the study, which they could download, fill in with their child's name, and print.

Results

Descriptive results: Shared book reading quantity and quality

In this first part, we present descriptive results and analyses of variance on (a) the frequency of book reading to children per age and (b) the ISBR strategies the parents reported using per age. All statistical analyses were performed with age in months as an independent variable. For practical/readability reasons, frequency results are presented in 3- or 6-month age groups.

(a)As for the *frequency* of shared book reading (see *Figure 1*), the mean score in book reading to 6-8-month-old infants is 2,33, indicating that, on average, parents read to their infants occasionally (less than once per week). However, the mean rises steadily to a score of 5.81 at 21-23 months, corresponding roughly to a mean reading frequency of once per day. This mean is maintained without significant changes until the end of the period studied. This rise in the frequency of shared book reading as children grow older is confirmed by additional analyses of variance showing the effect of age on the frequency of shared book reading (*Table 7*).

Figure 1. *Mean score (and standard error) per age group in book reading frequency*

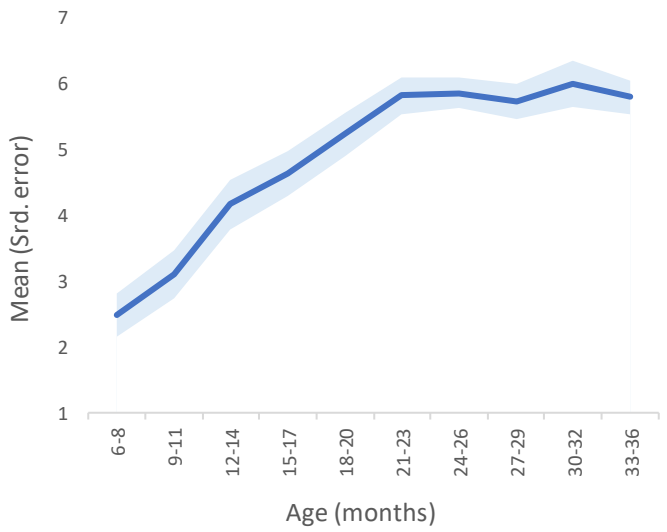
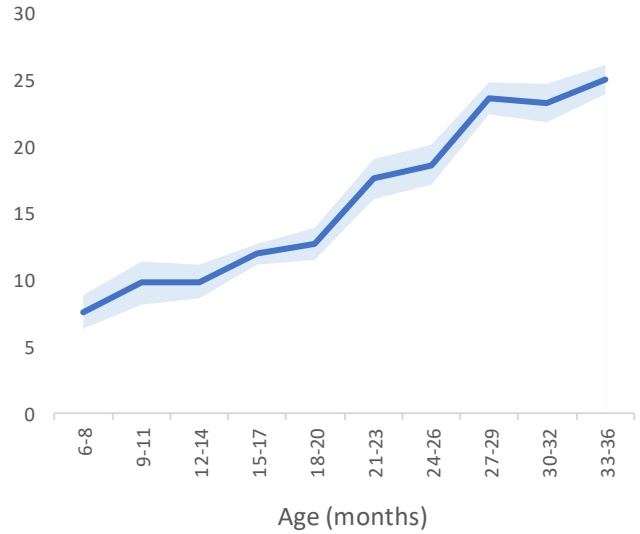


Figure 2. *Mean score (and standard error) per age group in the ISBR_SQ*



(b) Concerning the *interactive strategies* adopted by parents during shared book reading (*Figure 2*), the mean score in the ISBR_SQ at 6-8 months is 7.55 (maximum score: 40). This score rises to 12.63 at 18-20 months to reach 23.56 by 27-29 months and be maintained without significant changes until 36 months. This increase in the ISBR_SQ score with children's age is confirmed by additional analyses of variance (see, Table 7).

The correlation between the score of the ISBR_SQ and the frequency of shared book reading revealed a moderate association (r_s = .36, p < .001)

Examining more in detail the individual ISBR strategies across the age groups (*Figure 3*), one can see that the most frequent strategy used by the parents across the entire age range of the study is *'pointing to pictures in the book and discussing them with the child'* (Q7). This strategy already appears at 6-11 months with a mean score of 2,75 (max. 4) and rises slightly by 36 months. During the early 6-11 months period, the second most frequent

strategy is '*preparing the book reading session by discussing the book's topic or its cover*' (Q1), which also involves commenting on a picture. Overall, during the following months and by the end of the developmental period studied, all ISBR strategies present a significant rise in their use (see, *Table 6*) except from the very early Q7. By 36 months, the mean score for most ISBR strategies rounds 2 (max. 4), except for Q7 and Q9 ('*After finishing the book, you discuss with the child whether or not he/she liked the book*'), which score slightly higher, and Q4 ('*While narrating the story, you ask the child to predict how the story will develop (e.g. "so, what do you think he did next?*'), Q8 ('*After finishing the book, you ask the child questions about the story*') and Q10 ('*After finishing the book, you encourage the child to retell a part or the entire story*') which score slightly lower.

Figure 3 *ISBR_SQ strategies: Mean score (max. 4) per item per age group*

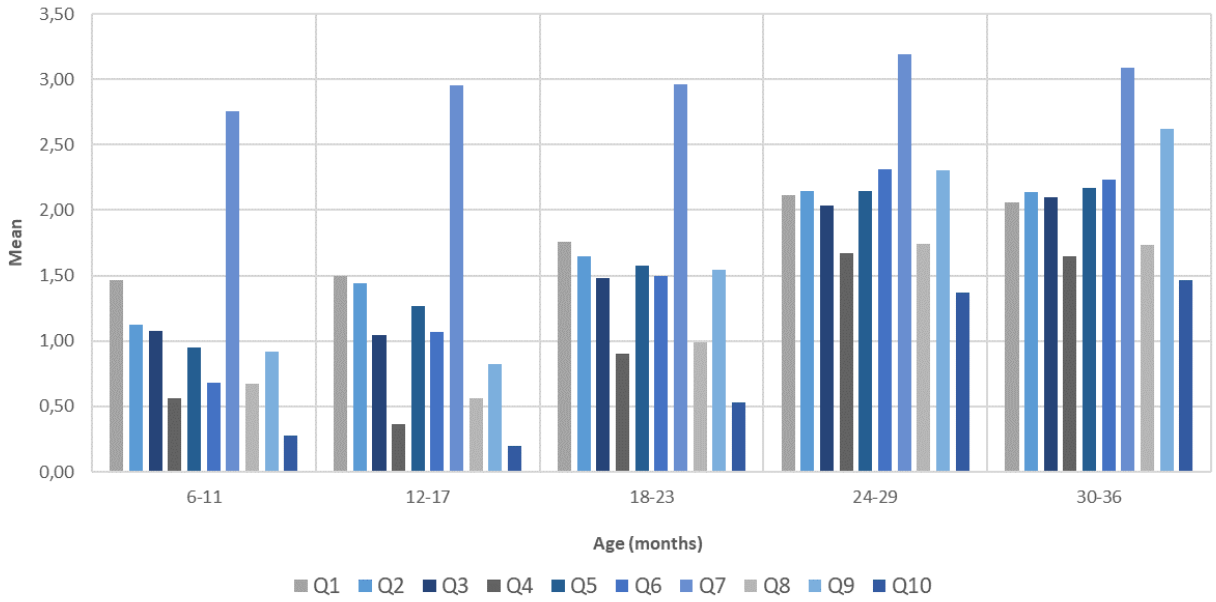


Table 6 *Analysis of variance on the effect of age on each ISBR strategy*

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
F	1.525	2.294	2.813	4.473	3.637	6.264	1.354	3.998	5.723	6.305
sig	.038	.000	.000	.000	.000	.000	**.102**	.000	.000	.000
η^2	.108	.154	.183	.262	.224	.332	.097	.241	.313	.334

The effect of children's age, gender, and contextual factors on the quantity and quality of shared book reading and on communication and language development

The effect of children's age, gender, and the contextual factors measured (siblings, birth order, maternal and paternal education level, family economic status) on the two factors of shared book reading and the six factors of communication and language development has been explored initially through Analyses of Variance. Results are shown in *Table 7*.

Age was found to significantly affect both the frequency of shared book reading, accounting for 18% of its variance, and the score of the ISBR_SQ, accounting for 34% of its variance. As expected, age also had a very large effect on children's communication and language skills, accounting for more than 60% of the variance in all cases. Children's gender was found to affect neither the shared book reading variables nor children's communication and language development, while whether the children had a sibling or not and their birth order were only found to affect the frequency of book reading with a small effect size. Finally, maternal education was found to significantly affect only the frequency of shared book reading with a small effect size, but not the ISBR

strategies used by the parents, or children's communication and language skills. The effect of paternal education and economic status were found to be non-significant.

Table 7 *Analyses of variance: the effect of children's age, gender and contextual factors on shared book reading and on communication and language development*[1]

		SHARED BOOK READING		COMMUNICATION/LANGUAGE DEVELOPMENT					
		FREQ	ISBR_SQ	NONVOCAL COM	VOCAL COM	COM-PREH.	VOCA-BULARY	MORPHO-LOGY	SYNTAX
AGE (months)	*F*	2.882	6.846	22.682	22.186	20.125	29.481	21.252	28.885
	p	**<.00**	**<.001**	**<.001**	**<.001**	**<.001**	**<.001**	**<.001**	**<.001**
	η^2	.180	.342	.633	.628	.605	.691	.618	.687
GENDER	*F*	2.585	.948	3.497	2.753	.981	1.407	1.122	.617
	p	.109	.331	.055	.098	.322	.236	.290	.432
	η^2	.006	.002	.008	.006	.002	.003	.003	.001
SIBLINGS (yes-no)	*F*	9.793	.008	.714	.002	.026	.231	.084	.451
	p	**.002**	.928	.399	.968	.871	.631	.772	.502
	η^2	.027	.000	.002	.000	.000	.001	.000	.001
BIRTH ORDER	*F*	3.059	.940	1.197	1.152	1.246	1.371	.683	.579
	p	**.017**	.440	.311	.332	.291	.243	.604	.678
	η^2	.025	.009	.011	.010	.011	.012	.006	.005
MOTHER EDU	*F*	5.031	.662	.568	.985	2.153	.437	.070	.347
	p	**<.00**	.618	.686	.415	.073	.782	.991	.846
	η^2	.045	.006	.005	.009	.020	.004	.001	.003
FATHER EDU	*F*	2.196	.677	1.926	1.777	.423	1.323	1.220	1.297
	p	.042	.668	.075	.102	.864	.246	.295	.257
	η^2	.031	.010	.027	.025	.006	.019	.017	.018
ECONOMIC STATUS	*F*	2.965	1.515	.912	1.959	.925	1.499	.559	1.472
	p	.032	.210	.435	.119	.429	.214	.642	.222
	η^2	.020	.010	.006	.013	.006	.010	.004	.010

Note.* Due to multiple comparisons, to control for familywise error rate, the significance level has been adapted through a Holm-Bonferroni correction procedure. Significant effects are typed in **bold.

The relationship between shared book reading and communication/language development

The following results examine the relationship between shared book reading quantity and quality and children's communication and language development. *Table 8* presents bivariate (Spearman's rho) and partial correlations controlling for children's age, a factor found to affect both children's language development as well as the parent's shared book reading quantity and quality. Both reading frequency and the ISBR strategies used by the parents, present low to moderate positive correlations to children's vocal and nonvocal communication, comprehension of language, expressive vocabulary, morphology and syntactic complexity of their sentences, even after partialling out the effect of age.

[1] All analyses were conducted using the normalized scores (z-scores) of the scales.

Table 8 *Spearman's rho and partial correlations between the two shared book reading factors (frequency and interactive strategies) and the six Communication and Language Development factors, controlling for children's age*

SHARED BOOK READING	COMMUNICATION/LANGUAGE DEVELOPMENT											
	NONVOCAL COM		VOCAL COM		COMPRE-HENSION		VOCABULARY		MORPHOLOGY		SYNTAX	
	bivariate	partial	bivariate	partial	bivariate	partial	bivariate	partial	bivariate	partial	bivariate	partial
Reading frequency	.287***	.189***	.308***	.225***	.303***	.215***	.291***	.212***	.230***	.137***	.262***	.184**
ISBR_SQ	.408***	.102*	.568***	.304***	.459***	.168***	.582***	.361***	.527***	.307***	.583***	.359***

**Note.* *** $p < .001$, ** $p < .01$, * $p < .05$

Next, hierarchical multiple regression analyses were conducted to examine the effect of the shared book reading factors (reading frequency, ISBR strategies) on each factor of communication/language development (nonvocal communication, vocal communication, comprehension, vocabulary, morphology and syntax), while examining the combined effect of children's age and gender, as well as the effect of the five contextual factors examined in this study, namely whether children had siblings or not, their birth order, maternal and paternal education level, and family economic status.

In the following analyses, children's age in months, a factor found to have a large effect on all outcome variables, was entered as the first block in the hierarchical regressions. Children's gender was also considered but not retained in the final models as it was not significantly associated with the outcomes. The two shared book reading predictors were entered as a second block, and the five contextual factors were entered as a third block. The factors that did not have a significant effect on the outcome variables were excluded from the models. All models were tested for multicollinearity. The Variance Inflation Factor (VIF) was between 1.0 and 1.43 in all cases, indicating low correlations between predictors. Further collinearity diagnostics (Condition Index and Variance Proportions) confirmed the lack of multicollinearity.

Table 9 summarizes the regression results. Each model's regression statistics for the six hierarchical regressions (one for each dimension of communication and language development) are presented separately, together with the change statistics after entering each group of predictors.

Nonvocal communication: Concerning the effect of the predictor factors on children's nonvocal communication (e.g. eye gaze, shared attention, deictic and symbolic gestures, interactive, symbolic, pretend play), all models were found to be significant. Age alone predicted 43.2% of the total variance of the nonvocal communication scale (Model 1). Entering the two shared book reading factors (Model 2) added a significant 3.2% to the model's predictive capacity. Among the two shared book reading factors, only the **frequency** of book reading seemed to explain significant changes in the nonvocal communication score of the children (β=.186[2]), while the effect of ISBR was non-significant. The five contextual factors (Model 3) contributed a non-significant 0,5% in the score but, in a second step, were excluded from the model since none of them had a significant effect on the outcome variable. Overall, age and the two book reading factors combined explained 46.4% of the variance in nonvocal communication.

[2] A standardized beta value of β indicates that, all other factors kept constant, one standard deviation increase in the independent variable results in a β standard deviations increase in the dependent variable.

Table 9. *Hierarchical multiple regressions (enter method): the effect of age, gender, quantity and quality of shared book reading and contextual factors on children's communication and language development*

						BLOCK 1 (standardized β)	BLOCK 2 (standardized β)		BLOCK 3 (standardized β)				
	Model	R^2	*F*	R^2 Change	*F* Change	Age (mos.)	Reading freq	ISBR_ SQ	Siblings	Birth order	Mother edu	Father edu	Economic status
Nonvocal com.	1	.432	261.70**	.432	261.70**	.657**							
	2	.464	98.78**	.032	10.26**	.622**	**.186****	.010					
	3	.464	98.78**	.032	10.26**	.622**	.186**	.010	x	x	x	x	x
Vocal Com.	1	.548	416.75**	.548	416.75**	.740**							
	2	.602	172.10**	.054	23.05**	.633**	**.139****	**.167****					
	3	.602	172.10**	.054	23.05**	.633**	.139**	.167**	x	x	x	x	x
Compre-hension	1	.407	236.18**	.407	236.18**	.638**							
	2	.463	98.384**	.056	17.89**	.561**	**.217****	.064					
	3	.474	76.891**	.011	7.13*	.547**	**.244****	.064	x	x	**.108***	x	x
Vocabulary	1	.631	589.23**	.631	589.23**	.795**							
	2	.678	240.25**	.047	24.87**	.683**	.063	**.212****					
	3	.678	240.25**	.047	24.87**	.683**	.063	.212**	x	x	x	x	x
Morphology	1	.529	386.12**	.529	386.12**	.727**							
	2	.573	152.94**	.044	17.65**	.618**	.041	**.218****					
	3	.573	152.94**	.044	17.65**	.618**	.041	.218**	x	x	x	x	x
Syntax	1	.604	523.86**	.604	523.86**	.777**							
	2	.657	218.66**	.054	26.79**	.656**	.040	**.243****					
	3	.657	218.66**	.054	26.79**	.656**	.040	.243**	x	x	x	x	x

**Note.* ** p < .001, * p < .01 x = n.s. factors excluded from analysis

Model 1 – Predictors entered: [Chidren's age (in months)]

Model 2 – Predictors entered: [Chidren's age (in months)], [Reading frequency, ISBR_SQ]

Model 3 – Predictors entered: [Chidren's age (in months)], [Reading frequency, ISBR_SQ], [Siblings, Birth Order, Mother's educational level, Father's educational level, family's economic status].

Vocal communication: As for the effect of the predictors on children's vocal communication (e.g. various preverbal vocalizations, such as babbling, communicative use of intonation, vocal imitation), again, all models were found to be significant. Age alone predicted 54.8% of the total variance of the vocal communication scale (Model 1). Entering the two shared book reading factors (Model 2) added a significant 5.4% to the model's predictive capacity. Among the two shared book reading factors, both the **frequency** of book reading and the **ISBR strategies** were found to explain, in nearly equal parts (β=.139 and .167, respectively), significant changes in the vocal communication score of the children. Again, the five contextual factors (Model 3) contributed a non-significant 0,4% in the score but, in a second step, were excluded from the model since none of them had a significant effect on vocal communication score. Overall, all predictors combined explained 60.2% of the variance in vocal communication.

Comprehension: As regards the effect of the predictor factors on children's comprehension, all three models were significant. Age alone, in this case, predicted 40.7% of the total variance of the comprehension scale (Model 1). The two shared book reading factors (Model 2) enhanced the predictive capacity by 5.6%. Among the two shared book reading factors, only the **frequency** of book reading appeared to explain significant changes in the comprehension score (β=.244). The contextual factors (Model 3) contributed a significant enhancement of 1.4%. Only maternal education was retained in the model since it was the only contextual factor found to significantly affect children's early comprehension. These predictors, taken together, accounted for 47.4% of the variance in comprehension.

Vocabulary: With respect to the effect of the predictor factors on children's expressive vocabulary, again, all models were significant. Age predicted 63.1% of the variance in the vocabulary scale (Model 1). When the two shared book reading factors were entered in the regression model (Model 2) they significantly enhanced its predictive capacity by 4.7%. Among the predictors, only the **ISBR strategies** were found to account for a significant amount of change in the vocabulary score (β=.212). The contextual factors (Model 3) contributed a non-significant enhancement of 0,8% but were excluded from the model since they were not found to affect significantly children's vocabulary. The combined effect of all predictors accounted for 67.8% of the variance in vocabulary.

Morphology: Concerning the effect of the predictor factors on children's use of morphological variations, age predicted 52.9% of the variance in the scale's score (Model 1). The two shared book reading factors (Model 2) significantly enhanced the model's predictive capacity by 4.4%. Among them, only the **ISBR strategies** accounted for a significant amount of variance in the morphology score (β=.218). Again, the five contextual factors (Model 3) contributed a non-significant 0.4% but, in a second step, were excluded from the model since none of them had a significant effect on the outcome variable. The combined effect of age and the two book reading factors accounted for 57.3% of the variance in morphology.

Syntax: Finally, regarding the effect of the predictor factors on the morphosyntactic complexity of children's sentences, age predicted 60.4% of the variance in Syntax (Model 1). The two shared book reading factors (Model 2) significantly enhanced the model's predictive capacity by 5.4%. Among the predictors, again, only the **ISBR strategies** accounted for a significant amount of variance in the syntax score (β=.243). The contextual factors (Model 3) added a non-significant 0.6% to the model's predictive capacity, and the factors were excluded from the model after resulting non-significant. The combined effect of age and the two book reading factors accounted for 65.7% of the variance in syntax.

Discussion

The aim of this study was to explore the effect of the quantity and quality of parental book reading to infants and toddlers aged 6 to 36 months on several dimensions of early communication and language development, also

considering several contextual factors. Apart from their effect on children's vocabulary size, morphology and syntax, we wanted to explore their scarcely-researched effect on early nonverbal communicative behaviors. The use of validated parental report instruments permitted data collection from a broad sample distributed across a wide age range.

The first part of the results focused on describing the shared book reading practices adopted by parents and their development across the age span of this study. Confirming previous results (e.g., Bus & van Ijzendoorn, 1997; De Temple, 2001), both the frequency of book reading and the interactive shared book reading (ISBR) strategies used by parents were found to be significantly affected by children's age. For instance, the parents of 6-8 month-old infants reported reading to their children on average only occasionally (less than once per week). This proportion rose steadily to reach a daily mean reading frequency by 24 months. The age-related development of the number and frequency of use of ISBR strategies reported by parents is very similar. Quite unsurprisingly, parents of preverbal children reported adopting, on average, fewer interactive strategies. Although all strategies are reported by some parents already since the 6-12 months group, their mean frequency is quite low. Several previous observational studies have also pointed out that adult-child interaction during book reading changes as children develop better language skills (Bus & van Ijzendoorn, 1997; DeTemple, 2001; Dickinson et al., 1992; Ninio, 1983; Rowe, 2013; van Kleeck et al., 1996).

The fact that not only the quality but also the quantity of shared book reading shows an age-related gradual increase and is associated with children's language development points to a possible parental conception of shared book reading as a linguistic activity apt for children who have already developed sufficient linguistic skills. We suspect that some parents, albeit not all, may believe that it is "too early" to engage in book reading with their infants; and perhaps when they do so, they adopt a more active and less interactive role in the book reading interaction. Future research could, perhaps, directly assess similar parental (mis)conceptions concerning the developmental appropriateness of early ISBR with infants so as to guide appropriate interventions in this respect.

Gradually, with older children, more "dialogic" strategies were reported to appear in the parents' book reading strategies repertoire. However, the mean score of the ISBR_SQ, even at 36 months, did not exceed 25 over a maximum of 40. Many parents still used only a few interactive strategies or used them not very often. Several observational studies have provided empirical evidence for generally low spontaneous use of ISBR strategies by (untrained) parents (e.g., Britto et al., 2006; Laakso et al., 1999; Silvén et al., 2003), based on which many parental interventions, aiming at 'teaching' parents how to employ interactive strategies during book sharing, have been developed and implemented successfully to foster children's development (e.g., Forssman et al., 2022; Mol et al., 2008).

In the second part of the results, the focus was put on the effect of the quantity and the quality of shared book reading on each of the six communication and language factors explored. Overall, results confirmed previous findings showing a significant contribution of the quality, i.e., the ISBR strategies parents use, on children's lexical, morphologic, and syntactic skills (Muhinyi & Rowe, 2019; Pillinger & Vardy, 2022). However, our data revealed that the mere quantity/frequency of shared book reading did not contribute significantly to children's productive language skills, confirming previous findings showing that it is not so much the quantity but mainly the quality of book sharing interactions that affect language development (e.g., Burgess et al., 2002; Mol et al., 2008; Whitehurst et al., 1988) by fostering the attention, engagement and active participation of the child in the book reading activity (Duursma et al., 2008; Huebner & Meltzoff, 2005; Trivette et al., 2010)

As for the results on the effect of shared book reading on children's nonverbal communicative skills, these showed that ISBR strategies, jointly with the frequency of book sharing, contributed only to children's vocal communication, but not their nonvocal communication or the early comprehension of words and expressions of their language. In these two cases, the frequency of shared book reading seemed to be the only factor with a significant effect. Thus, we can observe a differentiated pattern between the communication/language factors requiring the production of some vocal response by the child (either nonverbal -e.g., a vocalization- or

verbal/linguistic), which are mainly affected by the quality of shared book-reading, and factors that measure nonvocal behaviors, which appear to be influenced only by the frequency of shared book reading. One could assume that the interactions fostered by the adoption of the ISBN strategies, for some reason, promote mainly children's vocal communication skills. Alternatively, one could hypothesize that, if the ISBR_SQ could capture more nonverbal parental strategies reliably (strategies on eye gaze coordination, parental communication via gestures, techniques to maintain joint attention on the book, etc.), one could, perhaps, expect a stronger association between the ISBR_SQ and children's nonverbal behaviors. However, since parents' reliability in informing for similar strategies was found to be questionable, this hypothesis can only be tested through observational or parental training studies.

Finally, concerning the contextual factors, children's birth order, siblings, and maternal education appeared to have a significant -albeit low- effect on the quantity (frequency) but not the quality (ISBR strategies) of the shared book reading experiences of young children. The frequency of book reading was found to be affected by the order of birth of children and whether they had siblings or not, with parents reading more frequently to earlier-born children or children with no brothers and sisters. This finding can be interpreted by the time availability of parents, since parents of single/fewer children generally have more flexibility and time to integrate reading sessions into their daily routines. The fact that parents of higher educational levels tend to read more to their children has been a consistent finding in previous studies (e.g., Bus et al., 1995; Farrant & Zubrick, 2012; Fletcher & Reese, 2005; Lyytinen et al., 1998; Raikes et al., 2006). Some studies also found an effect of socioeconomic (SES) factors on the quality of shared book reading, although most of them refer to the quality and complexity of the language parents use during shared book reading (e.g., Hoff, 2003a, 2006; Weizman & Snow, 2001) and very few report data on the adoption of particular strategies during book reading (e.g., explicit labeling, Choi, 2000; Hoff, 2003b; asking more questions, Bus & van IJzendoorn, 1995; Mol et al., 2008). On the other hand, as the findings of Hoff (2003b; 2006; Hoff-Ginsberg, 1991) suggest, the effect of book reading on the nature of maternal speech attenuates the effect of SES on mothers' language complexity "*bringing the structural complexity and vocabulary use of lower SES mothers up to the level of higher SES mothers*" (Hoff, 2006, p. 70). This could, perhaps, explain why, in our results, contextual factors did not appear to account for a significant variance in children's communication and language scores. Other researchers studying the use of ISBR strategies in low SES families found intercultural differences between low SES parents from cultures prioritizing an educational function of shared book reading and those from cultures that mostly view it as a way to foster enjoyment of reading (e.g., Luo et al. 2012). Whether or not our results reflect a cultural influence of the Greek context will have to be addressed in future comparative studies.

The results we presented have two main limitations that should be taken into account. The first is related to the data collection method, namely the fact that data came from parental reports. Although both instruments used in the study present sound psychometric properties and have been tested for their concurrent validity, parental reports on shared book reading frequency, in particular, are bound to a desirability bias; parents that value book reading highly might tend to overestimate the time they spend reading to their young children (DeBaryshe, 1995). However, in their meta-analysis, Mol & Bus (2011) tested the impact of social desirability in parental responses on book reading frequency in young children and found no evidence of desirability bias. Another adverse consequence of the use of a parental report for data collection on ISBR strategies has to do with not being able to collect data tapping into more fine-grained parental behaviors (e.g. gaze coordination, parental communication via gestures or intonation) for which the parents could not report reliably, as mentioned earlier.

Another limitation is related to the economic status and educational level of the participating families. More than 50% of the parents of our sample had a University degree and reported not facing significant economic difficulties. The unequal representation of parents with very low educational levels and SES might have led to an

underestimation of the influence of these factors in the results. Future studies should aim at oversampling families of lower economic and educational strata to tackle this difficulty.

Finally, one should note that the results presented stem from a cross-sectional study. Follow-up measurements of the same participants would allow reporting on the longer-term effects of both the quantity and the quality of shared book reading and determining the minimal and optimal frequency and interactive strategies required to produce long-term gains in children's development.

Conclusions

The three first years of life are foundational for young children's communication and language development. During this period, typically developing children go through a remarkable progression of milestones, including the emergence and development of a wide range of nonverbal communicative behaviors (e.g., Colonnesi et al., 2010; Karousou & López Ornat, 2013; McCune, 2008; Morgan & Wren, 2018), the emergence of their earliest words (e.g., Karousou et al., 2008; Stoel-Gammon et al., 2011; Vihman & McCune, 1994), followed by a rapid lexical development, and eventually the production of multi-word sentences and the acquisition of the principal morphological and syntactic constructions of their language (e.g., Berko Gleason & Bernstein Ratner, 2023).

However, research has long reported significant individual differences in the course of early language development, even in typically developing children (Dale & Goodman, 2005; Fenson et al., 1994; Law et al., 2022). Motivated by recent findings that point to the effectiveness of systematic intervention programs, especially when these start very early (Law et al., 2017), efforts have been made to explain the causes of these individual differences and establish which factors affect language development at an early stage. Recently, particular emphasis has been placed on the study of some qualitative characteristics of the context in which the child develops, aiming to detect those that can act as protective factors. These are more 'malleable' factors (unlike, e.g. parental education, socioeconomic status, family structure), which leave quite some room for improvement, intervention, and preventive action.

Among the several qualitative factors of the early family context, joint parent-child reading has perhaps attracted the most attention, and relevant interventions yielded very encouraging results. However, despite the developmental appropriateness of shared book reading for children younger than three years, research on its contribution to the emergence and development of early communicative and language skills in infants and toddlers has been relatively neglected. The results we presented add to this inquiry data from a wide sample of typically developing infants and toddlers growing up in Greek-speaking families. The present study reported, as far as we know for the first time, data on the quantity and quality of shared book reading activities in the Greek context. It also reported for the first time interesting associations of shared book reading with the early development of the Greek language (a typologically and developmentally different language to English) as well as with the development of young children's nonverbal communicative skills. The fact that the quality of shared book reading has been found to explain a significant amount of Greek-speaking children's individual differences in language over and above the effect of age, combined with findings demonstrating the trainability of parents in the use of interactive book reading strategies and techniques (e.g., Lorio et al., 2022; Salley et al., 2022), make this field of work very promising for preventing language difficulties and supporting children from different sociocultural backgrounds. We believe that the results we presented constitute a solid empirical basis for further explorations and for formulating more specific theoretical hypotheses that could be investigated using more direct methodologies (e.g., observational or experimental). They could also empirically guide the development of targeted, research-informed interventions in the Greek context aimed at promoting optimal language development from a very young age.

Despite these encouraging findings, one has to bear in mind that many other qualitative factors of the context in which a child develops are expected to interact with the quantity/quality of shared book reading to significantly affect early language development. Factors such as the overall home learning environment, parent–child conversational style and use of explanatory talk, warm and responsive parenting, the dynamics of family interactions, routines and rituals, parents' beliefs on their role in enhancing language development, the quality of the early childhood education and care provision and language activities therein, educators' beliefs on their role in enhancing language development, parental involvement and parent-educator relationship (e.g., Burchinal et al., 2000; Hirsh-Pasek et al., 2015; Penderi & Papanastasatou, 2022; Weigel et al., 2007) are only some of these factors. While the analysis of these contextual characteristics was outside the scope of the current study, theoretical and empirical developments that account for ways in which qualitative or quantitative features interact to cause significant variance in language outcomes could provide a comprehensive explanation of individual differences in early language development and a deeper understanding of the dynamics of development (e.g., Ford et al., 2020).

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ΕΜΠΕΙΡΙΚΗ ΕΡΓΑΣΙΑ | RESEARCH PAPER

Ποσότητα και ποιότητα ανάγνωσης βιβλίων σε παιδιά βρεφικής και νηπιακής ηλικίας: η επίδρασή τους στην πρώιμη επικοινωνιακή και γλωσσική ανάπτυξη

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ΛΕΞΕΙΣ-ΚΛΕΙΔΙΑ

Διαδραστική ανάγνωση βιβλίων
Από κοινού ανάγνωση
Γλωσσική ανάπτυξη
Μη λεκτική επικοινωνία
Λεξιλόγιο
Μορφολογία
Σύνταξη
Βρέφική ηλικία
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ΠΕΡΙΛΗΨΗ

Μεταξύ των αλληλεπιδράσεων που λαμβάνουν χώρα σε ένα τυπικό οικογενειακό πλαίσιο, η διαδραστική από κοινού ανάγνωση βιβλίων (ΔΑΒ) έχει φανεί ότι επιδρά θετικά στη γλωσσική ανάπτυξη των παιδιών. Μολονότι πολλές έρευνες έχουν διαπιστώσει τα γλωσσικά οφέλη της ΔΑΒ σε παιδιά προσχολικής ηλικίας, τα αποτελέσματα για παιδιά μικρότερα των 3 ετών είναι περιορισμένα. Με την παρούσα συγχρονική μελέτη διερευνάται η συμβολή της ποσότητας και της ποιότητας της από κοινού ανάγνωσης βιβλίων στις επικοινωνιακές και γλωσσικές δεξιότητες βρεφών και νηπίων που μεγαλώνουν σε ελληνόφωνες οικογένειες. Οι γονείς 740 παιδιών ηλικίας 6 έως 36 μηνών συμπλήρωσαν το Interactive Shared Book Reading Strategies Questionnaire που εκτιμά τον αριθμό και τη συχνότητα των διαδραστικών στρατηγικών που υιοθετούν οι γονείς κατά την από κοινού ανάγνωση βιβλίων με τα παιδιά τους. Συμπλήρωσαν, επίσης, το Τεστ Επικοινωνιακής Ανάπτυξης, ένα σταθμισμένο εργαλείο για την αξιολόγηση των πρώιμων επικοινωνιακών και γλωσσικών ικανοτήτων. Παρουσιάζονται αποτελέσματα σχετικά με (α) την ποσότητα (συχνότητα) και την ποιότητα (διαδραστικές στρατηγικές) της από κοινού ανάγνωσης βιβλίων, (β) την επίδραση αυτών των δύο παραγόντων στη γλωσσική ανάπτυξη των παιδιών (κατανόηση, εκφραστικό λεξιλόγιο, μορφολογία και σύνταξη), καθώς και στη μη λεκτική τους επικοινωνία (φωνητική και μη φωνητική) και (γ) τον ρόλο παραγόντων του πλαισίου στη σχέση αυτή. Τα αποτελέσματα ανέδειξαν τη συμβολή τόσο της ποσότητας όσο και της ποιότητας της από κοινού ανάγνωσης βιβλίων σε διάφορες διαστάσεις της επικοινωνίας και της γλώσσας των παιδιών. Διαπιστώθηκε ότι η σειρά γέννησης, τα αδέλφια και η εκπαίδευση της μητέρας επηρεάζουν την ποσότητα (αλλά όχι την ποιότητα) της από κοινού ανάγνωσης βιβλίων. Συνολικά, τα αποτελέσματα επιβεβαιώνουν και επεκτείνουν προηγούμενα ευρήματα σχετικά με τα οφέλη της ανάγνωσης βιβλίων στο λεξιλόγιο, τη μορφολογία και το συντακτικό των παιδιών, αναδεικνύοντας ιδιαιτέρως τη σημαντική συμβολή της ποιότητας έναντι της ποσότητάς της. Προσθέτουν, επίσης, ενδιαφέροντα ευρήματα σχετικά με τη συμβολή της ανάγνωσης βιβλίων στη μη λεκτική επικοινωνία των παιδιών. Συζητούνται οι θεωρητικές και οι εφαρμοσμένες προεκτάσεις των ευρημάτων.

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