

Article

# Receptive Vocabulary and Listening Narrative Comprehension of Italian–English Bilingual Children between 5 to 7 Years

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**Abstract:** Vocabulary is the key component of listening narrative comprehension, but its contribution has been scarcely investigated in bilingual children. This study aimed to examine (a) listening narrative comprehension and receptive vocabulary in L1 (Italian) and L2 (English) in preschool and first grade children; (b) the specific contribution of receptive vocabulary to listening narrative comprehension in both languages. Participants were 30 preschoolers and 32 first graders, who are all Italian children attending an international school in English. In both languages, receptive vocabulary was assessed through PPVT-R and listening narrative comprehension through TOR 3-8. The results showed that listening narrative comprehension was age appropriate in both languages but higher in L1. Lower vocabulary in L1 than L2 was found, and this difference is higher for preschoolers than for first grades; finally, two regressions performed on listening narrative comprehension in each language showed that only vocabulary in the same language accounted for listening narrative comprehension. Children obtain higher performance in L1; however, after a few years of L2 exposure in the educational context, language skills fall within the normal range, with some weakness in vocabulary. Vocabulary contribution to listening narrative comprehension is similar in both languages and specific for each.

**Keywords:** receptive vocabulary; listening narrative comprehension; bilinguals; school readiness



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## 1. Introduction

Emergent literacy includes a set of interrelated linguistic skills, knowledge and attitudes identified as developmental precursors to conventional forms of reading and writing, pivotal for later school readiness and academic achievement [1]. Among these skills, listening comprehension—the ability to understand spoken language, crucial for successful communication—has a significant role in emergent literacy acquisition and later reading comprehension [2]. Listening narrative comprehension is a constructive and integrative process in which the interpretation of vocabulary, sentences and explicit and implicit information results in a coherent mental representation of the text [3]. In this study, we adopted the multicomponent model of text comprehension according to which narrative comprehension involves several languages and cognitive skills that interact dynamically and reciprocally allowing the obtainment of a coherent mental representation of the narrative meaning [4].

Although the importance of listening narrative comprehension from a preschool age has been recognized as the best predictor of subsequent reading comprehension [5], most studies adopting a multicomponent approach focus on reading comprehension in school-aged children [6,7]. However, recently this model has been partially tested for listening narrative comprehension in preschool children [8–13]. A growing body of research has investigated how monolingual children, from preschool to school age, use different language and cognitive skills in listening narrative comprehension [10–12,14–16]. However, research has not yet established how linguistic skills predict listening comprehension concurrently and longitudinally in children who speak more than one language [17]. Our study had three

distinct research questions. First, we explored performance in vocabulary and listening narrative comprehension in both languages of Italian preschool and school-aged children attending an international English school. Second, we wanted to investigate potential interrelations between L1 and L2 levels and the cross-linguistic transfer of linguistic skills. Third, we explored to what extent L1 and L2 vocabulary contribute to listening narrative comprehension in both languages in preschoolers and first graders speaking two languages.

Developmentally, the transition to primary school represents a particularly challenging period for the refinement of emergent literacy, as children enter a new environment where they must learn to understand oral and written texts, handle more cognitively complex tasks that require and build on good basic skills, both cognitive and linguistic. Preschoolers, through their daily experiences, encounter opportunities to develop oral language skills, gain knowledge about the forms and functions of written language and practice their emerging literacy skills. Once they move to school, children encounter opportunities to develop reading skills and practice; through specific exercises, their decoding skills have the potential to affect later reading comprehension [18]. Several components of listening narrative comprehension develop during preschool age and become more and more efficient once children enter primary school and advance through formal education [16]. Certainly, any weakness or developmental delay in core oral language skills may act as a bottleneck and constrain the ability to engage in higher-level comprehension processes [18]. Involvement in prereading activities may produce differences in the relation between comprehension and language skills, such as vocabulary, in the transition from preschool to school, particularly for children exposed to more than one language, who often lack the second language and preliteracy skills needed to best adapt to school demands.

### *1.1. The Role of Vocabulary in Listening Narrative Comprehension in Monolinguals and Bilinguals*

Understanding single words and their structural relationship within a sentence is the essential first step for understanding the meaning of a text. Vocabulary and morphosyntax have repeatedly been associated with language comprehension [8,12,14,17]. Recent research has highlighted the importance of vocabulary in text comprehension, showing that it represents the core ability and one of the best predictors for narrative comprehension from kindergarten to school in whatever modality a text is presented [8,9]. Previous studies, see ref. [19], showed that receptive word knowledge in preschoolers accounted for 4% of unique variance in reading comprehension when they were in third grade. Several longitudinal studies found that measures of receptive word knowledge directly predicted reading and listening comprehension, over and above the autoregressor and other components, in primary school children [20–24]. Thus, it may be argued that vocabulary appears as a core language ability for successful listening narrative comprehension in preschool and school-aged children [13]. Additionally, Meara argued that vocabulary size is the fundamental competence for acquiring lexical competence and emphasized that children with larger vocabularies are more proficient language users, understand more and produce more complex oral narratives than children with smaller vocabularies [25]. This evidence emphasizes the importance of vocabulary in listening narrative comprehension that may be limited in children who have a smaller vocabulary, as is often the case with children exposed to more than one language [26].

In the last few decades, society has become increasingly multilingual and worldwide the number of children developing in multilingual contexts has grown exponentially [27]. In parallel, there is growing research investigating how multilingualism shapes the linguistic developmental trajectory during preschool and how bilingual children face literacy and schooling [28]. The strongest effect of bilingual exposure on language development concerns vocabulary growth; thus, the investigation of vocabulary development in bilingual children received great attention in the previous literature. Bilingual children typically have lower scores than monolinguals on measures of both receptive [29–31] and expressive vocabulary [32–34] in at least one, but frequently in all, of the spoken languages. Additionally, they show a slower rate of vocabulary development in both languages compared to

monolingual peers [35]. The vocabulary of bilingual children is smaller compared to that of monolingual peers both in preschool [36,37] and school-aged children [29], even after three consecutive years of exposure [38]. This evidence causes concerns for the academic outcomes of bilingual children. In fact, poor vocabulary knowledge limits the ability to understand oral and written narratives, which is required to have full access to the curriculum, and consequently hinders the progress of spoken and written language [39]. On the one hand, the knowledge of words is crucial for understanding the meaning of the whole narrative. On the other hand, exposure to texts represents the main source for the acquisition of new words [40,41]. The relationship between these skills is reciprocal: the better children understand the narrative, the greater the opportunity to learn new vocabulary; on the other hand, increased vocabulary knowledge results in a greater chance that the narrative is understood [23]. However, research has not yet established how vocabulary predicts listening comprehension concurrently and longitudinally in children who speak more languages.

In recent years, narratives have been used for assessing bilingual language development during preschool and for establishing the relationship between bilingual exposure and language development [42–44]. Measures of narrative competence, which include both narrative production (storytelling and/or retelling) and comprehension assessment, allow the examination of a wide range of linguistic abilities as well as cognitive and pragmatic skills and provide rich data on children's multiple linguistic abilities, including story structure, structural complexity, internal state language, cohesion, morpho-syntax, lexical diversity and productivity [45]. For narrative production, a general result that emerges is that bilingual children in preschool years show similar narrative competence as far as macrostructure is concerned, whereas they tend to struggle with microstructure of narratives [46], attributable to lower exposure to each of their languages [47]. Numerous studies have investigated the narrative production of bilingual children showing that the ability to produce narratives in both L1 and L2 develops and improves from preschool to school age [48–50].

With regard to listening narrative comprehension, Rodina [51] found that bilinguals' ability to understand a story is equally developed in both languages. Bohnacker [45], investigating narrative comprehension in bilinguals aged 5–7, found that for the children's comprehension of macrostructural elements, the 5-year-olds scored lower but still relatively close to the 6- to 7-year-olds, with large variation within the group. For neither age group was there any difference between the two languages. The results show a large gap between story production and story comprehension for both age groups: comprehension was clearly ahead of production. In summary, the literature shows that even bilinguals with limited linguistic competence are able to comprehend narratives as far as macrostructure is concerned, albeit showing poor vocabulary and morphosyntactic comprehension [26,48,49,52]. Following on from these findings, it seems that the global structure of narratives develops as a function of age and not of language [53], while the ability to use adequate vocabulary for comprehending narratives develops as a function of increased exposure and linguistic input [26]. The question of how much vocabulary is necessary to adequately understand an oral narrative for bilingual preschool and school-aged children remains open.

To date, research with children speaking more than one language focusing on the contribution of vocabulary to listening narrative comprehension is scant and provides mixed results [17]. Stæhr found a strong relationship between vocabulary knowledge and listening narrative comprehension with advanced second language learners of English [54]. The results showed that vocabulary knowledge was highly correlated with listening comprehension and predicted half of the variance in the listening scores. Roch and Hrzica [31] investigated listening narrative comprehension in Croatian–Italian bilinguals aged 5–7, in both languages, aiming to find out to what extent receptive vocabulary and sentence comprehension predict narrative comprehension skills and possible interdependence between languages. The results show better performance in a narrative comprehension task in L1

than L2 including higher accuracy at answering questions about characters' goals than questions about mental states; they also found a similar contribution of vocabulary and sentence comprehension on narrative comprehension in L1; on the other hand, a smaller contribution of vocabulary and sentence comprehension on narrative comprehension in L2 emerged. These results have been confirmed by a recent study by Valentini and Seratrice [17] according to which vocabulary and morphological knowledge were the most significant predictors of English listening comprehension (L2) in bilingual children in the first two years of formal schooling. These skills specifically determined the children's listening comprehension but not their growth in listening narrative comprehension abilities over time, as is also the case for monolinguals [13].

### 1.2. Crosslinguistic Correlations

Another important issue that concerns linguistic development in children speaking more than one language pertains to the interrelations between L1 and L2 levels and crosslinguistic transfer. Crosslinguistic transfer has been observed in simultaneous bilingual children in phonology [55], vocabulary [32] and syntax [56,57]. A recent meta-analysis of crosslinguistic transfer of oral language shows a small meta-correlation between L1 and L2 oral language skills and a moderate to large correlation between L1 and L2 phonological awareness and decoding [58].

As for narrative competence, previous research has shown moderate crosslinguistic associations regarding macrostructure. Several studies found a relation between measures of macrostructure in L1 and L2 in the first grade but not in kindergarten [49,50,52]. Explanations for the results pointed out that there could be a shared conceptual knowledge of macrostructure of stories in L1 and L2, and this might facilitate crosslinguistic transfer while more experience (e.g., through schooling) is acquired in both languages [52]. The linguistic interdependence hypothesis [59], according to which every language presents its own superficial manifestations while underlying cognitive processes are common across languages, has been applied as a theoretical framework in studying narrative competence and in the analysis of the relationship between the macrostructure and the microstructure. For bilingual speakers, researchers hypothesize that the macrostructure is invariant across the two languages due to its dependency on cognitive skills. On the other hand, narrative microstructure, being more language specific, is less likely to transfer from one language to another and thus suffers from the effect of exposure to a specific language.

Crosslinguistic correlations of listening narrative comprehension in bilinguals need more attention since all the results of crosslinguistic transfer that have been reported in preschool children concern narrative production rather than comprehension [60] and in simultaneous rather than sequential bilingual preschoolers. Recently, Roch & Hrzica [31] analyzed the possible crosslinguistic transfer in narrative comprehension of sequential bilingual speakers of Croatian and Italian. The results suggest a degree of interdependence between L1 and L2: each language comprehension measure (vocabulary, sentence and narrative) in one language correlated with the same measure in the other language; each comprehension level in one language, however, correlated weakly with the other levels in the other language. These results, in line with previous works [50,61], highlight the complexity of the relations between L1 and L2 in bilinguals. Understanding crosslinguistic influence might help us both theoretically and practically, providing information on how the development of narrative comprehension in children learning two (or more) languages differs from that of children learning only one and then aiding the design of successful educational interventions that might help bilingual children, especially in preschool children, as a way to promote school readiness.

### 1.3. The Current Study

Findings reported above highlight the need for the further advancement of our understanding of the relationship between L1 and L2 vocabulary and listening narrative

comprehension of children speaking more than one language, particularly in the transition between preschool and primary school.

The main aim of the current work concerns whether the generally reported weak vocabulary of bilingual preschoolers and first graders may constrain broad, higher-level language processing, namely listening narrative comprehension. The rationale is that any weakness in core oral language skills (i.e., vocabulary) may act as a bottleneck and constrain the ability to engage in higher-level comprehension processes, impeding a successful listening narrative comprehension. The following research questions guided the current study and, although there is a lack of consensus about the relationship between receptive vocabulary and narrative comprehension in bilingual speakers, we advance some predictions:

- (1) To what extent do children show a different performance in L1 and L2 receptive vocabulary and listening narrative comprehension and to what extent does their performance change between 5 and 7 years? In line with the previous literature [38], although they were consistently exposed to L2 at school for at least three years, it is predicted that: (a) they will show some disadvantage of L2 over L1 in listening narrative comprehension; (b) there is a greater L2–L1 gap in receptive vocabulary between 5 and 7 years than in listening narrative comprehension.
- (2) To what extent are the two linguistic systems related? We expect to find high correlations between vocabulary and listening narrative comprehension in each of the two languages, as predicted from the previous literature [10] and weak correlations between the two languages, as shown in previous works using different tasks and involving different language combinations [31,61]. Based on previous studies [52], it is possible that the pattern of these relationships changes with age.
- (3) To what extent does L1 and L2 vocabulary contribute to listening narrative comprehension in both languages? Previous studies reported mixed results concerning this point and therefore we did not put forward specific predictions.

The findings of this study will provide evidence in both L1 and L2 listening narrative comprehension in relation to vocabulary comprehension in preschoolers and first graders and of the contribution of receptive vocabulary in their listening narrative comprehension. Because of the distributed nature of exposure to their languages, bilingual children also offer a unique opportunity for investigating the role of a relative amount of input in the process of listening narrative comprehension in the corresponding language [17]. Usually, the heterogeneity of this population, regarding the degree and quality of exposure to more languages in the home context, limits the generalizability of the findings [62]. In this study, we tried to control these variables (the amount and quality of linguistic input) by involving children born and raised in Italy, by Italian parents, but enrolled in an international school in English. In this way, the quantity of input and its quality are to be considered the same for all study participants, providing information that allows for the greater generalizability of the results. In addition, to analyze any variations between preschoolers and first graders, and the effect of the amount of language exposure, we involved two groups of different ages that are characterized by different amounts of language input in both languages and particularly in L2. Finally, the use of a standardized test to assess the comprehension of an oral narrative that does not involve expressive skills (described below) could provide insights into the contribution of receptive vocabulary to the listening narrative comprehension in both languages, Italian and English.

## 2. Materials and Methods

### 2.1. Participants

Study participants were 62 Italian children attending an English international school in northeastern Italy. Thirty children attended the last year of preschool and were thus not yet conventional readers (Mage 5;5, SD = 3 months, range 5–6 years) and 32 children attended the first year of primary school (Mage 6;6, SD = 4 months, range 6–7; 2 years) and were mostly exposed to prereading exercises. The children's mean age of first exposure to



English was 3 years, 3 months (SD = 1 month) for the younger group and 3 years, 6 months for the older group (SD = 2 months). The children's parents completed a short questionnaire investigating the amount of linguistic input in L1 and L2. In Supplementary Materials, we report the short questionnaire developed during the COST Action IS1804. To avoid confounding effects due to socioeconomic background, we only selected children from middle to high SES families. Additionally, to avoid confounding effects due to the quantity and quality of linguistic input in English, we selected only children enrolled full-time. Both groups, preschoolers and first graders, were exposed to English daily, in different activities appropriate for their age, for approximately 8 h every day. Moreover, unlike previous studies, all the children involved in this study had the same L1 (Italian) allowing us also to control for possible effects related to the language of origin. The study was approved by the ethics committee of the University of Padua (protocol n. 1521) and performed in accordance with the principles expressed in the Declaration of Helsinki. Only children with signed parental consent participated in the study.

## 2.2. Materials and Procedure

Two trained psychology graduate students tested each child individually in a quiet room during the school day with standardized tests (described below). Tasks were administered in a fixed order, preferable for investigating individual differences [63]. Each child was tested in two sessions lasting approximately 30 min each, on two different days (one for language), at the end of which the testers thanked the child for their participation and rewarded him/her with free playtime.

**Receptive vocabulary:** The children's English vocabulary was assessed through the Peabody Picture Vocabulary Test—PPVT-R [64], whereas the adapted and standardized version for Italian was used to assess their Italian vocabulary [65]. Adapted versions of PPVT keep the same procedure as the original version but introduce changes in the lexical material (order of words, exclusion/inclusion of words) to obtain a similar level of difficulty. It consists of a list of words presented to participants who are asked to point out which, out of four pictures, best represents the target word. The items are presented in order of increasing difficulty. Testing is then continued until the participant obtains six incorrect answers in eight consecutive items. Raw scores correspond to the number of correct answers (range 0–175); age-specific standard scores (with a mean of 100 and standard deviation of 15) are provided in the PPVT-R manual. The reliability for the PPVT-R, evaluated with split-half procedure, is 0.88.

**Narrative comprehension:** The test TOR 3-8 is a standardized test for Italian children aged between 3 and 8 years of age that measures listening narrative comprehension without involving expressive skills [66]. Assessing children's comprehension through listening narrative comprehension tasks such as these allows for the minimization of the constraints of oral language skills involved in narrative retelling tasks, as well as difficulties in answering verbal comprehension questions. To assess narrative comprehension in English, all the material of this standardized test was translated into English using the back translation method. The test consists of two short stories of equal difficulty and length. One story was presented in each of the two languages. The story is read to the child and his/her comprehension is evaluated by asking 10 questions, followed by a multiple-choice task with four possible answers, which were represented by pictures. The tester pauses the reading at two pre-established points and asks the questions in order to avoid overloading memory resources and to guarantee the child maintains attention. All the questions concerned information that is necessary for an adequate understanding of the story. Half of the questions are based on explicit information while the others concerned information that could be inferred from the text through the generation of text-based or knowledge-based inferences. The score consists of the sum of correct answers, 10 for each story, with a maximum score of 20. Raw scores can be converted into scaled scores ( $M = 10$ ,  $SD = 2$ ). Cronbach's alpha over items ranges from 0.52 to 0.72.

### 3. Results

In order to answer the first research question, the average performance of participants in the two tasks used in both languages was observed. Table 1 reports mean scores and standard deviations, in brackets, obtained in the two linguistic tasks, namely receptive vocabulary (PPVT) and listening narrative comprehension (TOR) for both L1 (Italian) and L2 (English) as a function of the age group (preschoolers and first graders). Both raw (first row) and standardized (second row) scores are reported in Table 1.

**Table 1.** Descriptive statistics.

		L1 (Italian)		L2 (English)	
		PPVT	TOR	PPVT	TOR
5 years ( $n = 30$ )	Raw score	79 (14)	6.5 (1.7)	56 (9)	5.2 (1.4)
	Standard score	91.4 (11.6)	10.5 (1.5)	83.1 (9.5)	9.6 (1.1)
6 years ( $n = 32$ )	Raw score	90 (20)	5.7 (2.3)	64 (9)	4.9 (1.7)
	Standard score	94.1 (14.9)	9.7 (2.1)	87.9 (11.3)	9.1 (1.7)

PPVT standard score: mean 100; SD 10; TOR standard score: mean 10; SD 2.

Descriptive statistics show that L2 constituted a weaker language. However, while for listening narrative comprehension children show age-appropriate performance in both languages, in receptive vocabulary, children show a delay in L2, with -1SD performance compared to monolingual scores in the normative sample.

#### 3.1. Levels of Narrative Comprehension and Receptive Vocabulary: The Role of Age and Language

To analyze whether the advantage of L1 over L2 decreases between 5 and 7 years, we performed a mixed ANOVA 2 Ages (preschoolers and first graders)  $\times$  2 Languages (L1 and L2) on each of the two dependent variables: Receptive Vocabulary and Listening Narrative Comprehension. Age was a between subjects' factor and Language was a within subjects' factor. The assumptions of normality and of homogeneity of variance were verified. According to the Shapiro–Wilk test, two of our observed variables, namely English vocabulary and Italian text comprehension are normally distributed (0.987 and 0.966, respectively), while the other two variables, namely Italian vocabulary and English text comprehension are not normally distributed ( $p < 0.05$ ). Additionally, we verified the homogeneity of the variance through the Levene's test and we found that only the Italian vocabulary reported a difference in the variances among the two groups ( $p < 0.05$ ); in fact, most of the children have low vocabulary.

In the case of the receptive vocabulary, both main factors yielded significance: the effect of Age was significant [ $F(1,60) = 11.40, p < 0.001, \eta^2 = 0.116$ ] indicating higher receptive vocabulary for older children; the effect of Language was significant [ $F(1,60) = 145.79, p < 0.001, \eta^2 = 0.708$ ] indicating a richer receptive vocabulary in L1 (Italian) than in L2 (English). The interaction Age  $\times$  Language was not significant. Different results emerged from the analysis with listening narrative comprehension as the dependent variable: only the Language factor yielded significance [ $F(1,60) = 11.61, p < 0.001, \eta^2 = 0.162$ ], while Age and the Interaction between the two factors, in both cases, were not significant.

#### 3.2. Relationship between Narrative Comprehension and Receptive Vocabulary

To investigate to what extent the two linguistic systems are related, we performed correlational analyses between the two measures within each language and across the two languages. Table 2 shows the results of preschoolers and of the first graders.

Correlation analyses suggest a different pattern of relations for preschoolers and first graders. Regarding preschoolers, the two language domains correlate only in the weaker language (L2), whereas for first graders, receptive vocabulary and listening narrative comprehension correlate in both languages. As far as the crosslinguistic relationships are concerned, it emerged that the preschoolers' receptive vocabulary correlated significantly

between the two languages whereas listening narrative comprehension in the two languages were not correlated. On the other hand, no significant crosslinguistic correlations emerged between the vocabulary in L1 and L2 for first graders, whereas a significant correlation emerged between the listening narrative comprehension in L1 and the receptive vocabulary in L2. To summarize, receptive vocabulary and listening narrative comprehension correlate in each of the two languages for first graders and only in L2 for preschoolers.

**Table 2.** Relationships between the two tasks and the two languages for preschoolers and first graders.

Preschoolers					
		L1 (Italian)		L2 (English)	
		PPVT-R	TOR 3-8	PPVT-R	TOR 3-8
L1 (Italian)	PPVT-R	-	0.142	0.624 **	0.278
	TOR 3-8		-	0.207	0.326
L2 (English)	PPVT-R			-	0.403 *
	TOR 3-8				-
First graders					
		L1 (Italian)		L2 (English)	
		PPVT-R	TOR 3-8	PPVT-R	TOR 3-8
L1 (Italian)	PPVT-R	-	0.534 **	0.273	0.042
	TOR 3-8		-	0.426 *	0.092
L2 (English)	PPVT-R			-	0.434 *
	TOR 3-8				-

\*  $p < 0.05$ ; \*\*  $p < 0.001$ .

### 3.3. The Contribution of Receptive Vocabulary to Listening Narrative Comprehension

Finally, to analyze the contribution of receptive vocabulary in accounting for individual differences in listening narrative comprehension, we performed two multivariate linear regressions, one on listening narrative comprehension in L1 and the other on narrative comprehension in L2. In both regressions, we used the same potential predictors: in the first step the score obtained in the listening narrative comprehension task in the other language was inserted; in the second step, we inserted age in months to control for developmental changes; and finally, in the third step, receptive vocabulary scores, in both languages, were included. Table 3 reports the results of the regression on the L1 listening narrative comprehension.

**Table 3.** Summary of multivariate linear regressions analysis for variables predicting listening narrative comprehension in L1 ( $n = 62$ ):  $R^2 = 0.283$  [ $F(4,61) = 5.6, p < 0.001$ ].

		R <sup>2</sup> Change		B	SE B	B
Step 1	Narrative comprehension L2	0.036 °				
Step 2	Age	0.059 °°	Narrative comprehension L2	0.251	0.178	0.189
			Narrative comprehension L2 Age	0.224 0.074	0.165 0.038	0.169 0.245
Step 3	Receptive vocabulary L1 Receptive vocabulary L2	0.188 °°°	Narrative comprehension L2	0.108	0.164	0.082
			Age	0.133	0.038	0.439 *
			Receptive vocabulary L1	0.045	0.015	0.387 **
			Receptive vocabulary L2	0.032	0.031	0.153

° F change (1, 60) = 2.21,  $p = 0.142$ ; °° F change (1, 59) = 3.89,  $p = 0.053$ ; °°° F change (2, 57) = 7.47,  $p < 0.01$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ .



The multivariate linear regression model predicting listening narrative comprehension in L1 (Italian) explained 28% of variance. Listening narrative comprehension in L2, inserted in the first step, explained around 4% of variance, which did not yield significance. Age added a small and marginally significant portion of variance, namely 6%. The third step accounted for 18.8% of unique variance in L1 listening narrative comprehension. A closer inspection of the results reveals that only receptive vocabulary in L1 was significantly related to listening narrative comprehension in the same language ( $\beta = 0.387, p < 0.01$ ) but not the receptive vocabulary in the other language ( $\beta = 0.153, p = 0.281$ ). Table 4 reports results of the regression performed on listening narrative comprehension in L2 (English).

**Table 4.** Summary of multivariate linear regressions analysis for variables predicting listening narrative comprehension in L2 ( $n = 62$ ):  $R^2 = 0.186$  [F (4,61) = 3.26,  $p < 0.01$ ].

		R <sup>2</sup> Change		B	SE B	B
Step 1	Narrative comprehension L1	0.036 <sup>°</sup>				
			Narrative comprehension L2	0.142	0.096	0.189
Step 2	Age	0.059 <sup>°°</sup>				
			Narrative comprehension L2	0.135	0.100	0.180
			Age	0.008	0.030	0.035
Step 3	Receptive vocabulary L1	0.188 <sup>°°°</sup>				
	Receptive vocabulary L2					
			Narrative comprehension L2	0.070	0.106	0.093
			Age	0.038	0.033	0.166
			Receptive vocabulary L1	−0.013	0.013	−0.151
			Receptive vocabulary L2	0.074	0.023	0.462*

<sup>°</sup> F change (1, 60) = 2.21,  $p = 0.142$ ; <sup>°°</sup> F change (1, 59) = 0.07,  $p = 0.794$ ; <sup>°°°</sup> F change (2, 57) = 5.22,  $p < 0.01$ ; \*  $p < 0.01$ .

The multivariate linear regression model predicting listening narrative comprehension in L2 (English) explained 18.6% of total variance. Listening narrative comprehension in L1, inserted in the first step, explained 3.6% of variance, which did not yield significance. Age inserted in the second step did not add further variance. The third step accounted for a 14.9% of significant unique variance in narrative comprehension. A closer inspection of the results reveals that only the receptive vocabulary in L2 was significantly related to listening narrative comprehension in the same language ( $\beta = 0.462, p < 0.01$ ).

#### 4. Discussion

The main aim of our study was to investigate the role and the contribution of receptive vocabulary in listening narrative comprehension of bilingual children aged between 5 to 7 years, during the transition from preschool to school. The findings extend previous research, which has scarcely investigated the effects of multilingual exposure listening narrative comprehension and vocabulary skills among preschool and school-aged children raised in Italian-speaking families in Italy. The investigation of these effects was enriched by considering age and controlling for SES and L1 differences. In contrast to many studies on bilingual migrants or heritage language speakers, the participants in our study are Italian children born and raised in Italian families but attending an English international school and thus exposed to English daily for approximately 8 h.

Three main issues were addressed, and the following results were obtained.

Regarding the first research question, we found that even after different years of continuative exposure to two languages, L2 remains a weaker language. Children performed better in L1 than in L2 both in vocabulary and in listening narrative comprehension. However, a comparison of the participants' performance to the monolingual norms revealed that listening narrative comprehension falls within the age-appropriate performance in both languages, whereas vocabulary lags behind the typical performance showing a 1 SD delay, again in both languages spoken. Vocabulary growth was evident within the age range considered whereas listening narrative comprehension performance remained stable.

We failed to find any interaction between the effect of language and age, indicating that the pattern of results is similar for both languages.

Regarding the second research question, we investigated the relationship between receptive vocabulary and listening narrative comprehension both within each language and across the two languages (Italian vs. English). For school-aged children, we found that the receptive vocabulary and listening narrative comprehension correlate within each language, whereas for preschoolers only in L2. Moreover, significant correlations emerged between the receptive vocabularies in both the languages in preschool children and between vocabulary in L1 and listening narrative comprehension in L2 in first graders.

Finally, concerning the role of receptive vocabulary in listening narrative comprehension (the third research question), the two regression analyses indicated that receptive vocabulary accounted for a relevant amount of the total variance in listening narrative comprehension, namely 18% in the native language (L1) and 14% in the second language (L2). Neither in L1 nor in L2 listening narrative comprehension did vocabulary in the other language (namely, L2 skills for L1 narrative comprehension and vice versa) provide a significant contribution to the model.

The results of the current study are discussed for their theoretical relevance as well as for the practical implications for education within two different sections: on the one hand, concerning the level of skills reached in each linguistic domain and, on the other hand, the role of vocabulary in listening narrative comprehension in each language and across the two languages.

#### *4.1. Receptive Vocabulary and Listening Narrative Comprehension in Bilingual Children*

The greatest advantage of measuring the language comprehension of bilinguals in both languages is that this allows for the comparison of the level attained in a native and second language. The current findings appear to be generally in line with what is reported in the literature on sequential bilinguals [31,47]: even after several years of exposure, vocabulary lags behind monolingual performance (i.e.,  $-1$  SD) in each language, and the vocabulary in L2 is significantly weaker than in L1. These results are in line with the results of Vettori and colleagues [67] who, working with bilingual language-minority children, found a statistically significant difference in lexical competence compared with monolingual children.

This result is not surprising for sequential bilinguals given that for the first years of life they were exposed only to one language, and from the introduction of the L2, they have been exposed less than monolinguals to both languages. In other words, the L1–L2 advantage in linguistic skills in our sample reflects their status as sequential bilinguals. In parallel, better outcomes for listening narrative comprehension for L1 than for L2 were also found, whereas we failed to find an age effect. The absence of an age effect for bilingual children could suggest that the amount of input, rather than age, is a better predictor in bilingual children because the amount of language experience is not just a function of age in this group [17]. Language input is one of the strongest predictors of the rate of language development in monolingual and bilingual children [68]. For our sample, although children belong to two different school grades (preschool vs. primary school), the amount of cumulative input in L2 is very similar (3.3 years vs. 3.6), while the daily amount of input in L2 is very similar (8 h). Additionally, qualitatively, no differences can be hypothesized among the children regarding input in L2 since they all attended the same school.

This result, although in line with the results of Roch and Hrzica [31], in part contradicts previous studies that analyzed narrative comprehension in bilingual speakers. Usually, no significant differences are found between children's L1 and L2 narrative comprehension [45,69]. However, concrete comparisons between these studies are difficult because the researchers used different methodologies, narrative comprehension measures and stimuli. For instance, narrative comprehension is usually measured through comprehension questions that are asked after a picture story has been told or retold. To the

best of our knowledge, this is the first study that examined narrative comprehension of a listened story (without pictorial stimuli) followed by comprehension questions among such young bilinguals in both languages. In addition, we used a standardized test (e.g., TOR 3-8), which allowed us to measure the extent to which listening narrative comprehension develops compared with monolinguals. This measure is very similar to that adopted for older children when measuring their reading comprehension, with the difference that in the current study we measured listening narrative comprehension. These preliminary data need to be further confirmed with future studies involving children of different age groups to understand developmental trajectories of listening narrative comprehension in both languages by bilingual speakers—simultaneous, sequential and second language learners—and how this ability can promote good outcomes in emergent literacy and transfer to reading comprehension.

#### *4.2. The Relationship between Vocabulary and Narrative Comprehension in Each Language and between the Two Languages*

Vocabulary represents a relevant predictor for listening narrative comprehension for bilinguals, which is similar for monolingual children [17]. More interestingly, the current findings suggest that low vocabulary scores obtained in both languages did not prevent children of our sample from comprehending adequately an oral narrative text in each language. Receptive vocabulary emerged as an equally important predictor of narrative comprehension in both L1 and L2 and explained the 18% and 14%, respectively, of significant variation in listening narrative comprehension after narrative comprehension and age have been controlled for. In both languages, a monolingual-like pattern of relations was found [9,67]. In line with Roch and Hrzica [31], we analyzed and quantified the contribution of vocabulary in listening narrative comprehension in children's narrative comprehension, and we argue that the contribution is relevantly high. Although the materials and stimuli are different in these two studies, we found similar results about the contribution of vocabulary in children's comprehension. At the same time, it is also evident that there is a conspicuous variation in narrative comprehension that cannot be attributed solely to vocabulary. This puts forward a hypothesis that other contributing factors may clarify how other skills, presumably cognitive in nature, may promote narrative comprehension processes in children acquiring more than one language [19]. Multicomponent approaches of text comprehension emphasize that the construction of a coherent mental representation of the narrative is based not only on linguistic components but also on higher-level integrative processes, such as inferential abilities, knowledge of story structure and comprehension monitoring [4]. These higher-level cognitive components might be even more important for narrative comprehension in bilingual speakers—who cannot rely completely on (poor) linguistic skills—and their role should be investigated in future studies.

This sheds light on the fact that there is a need for further studies that investigate broader linguistic comprehension in bilingual speakers in early stages of development and before they start formal education. This might facilitate the early identification of possible risk factors for reading comprehension failure and might prevent future learning difficulties.

#### **5. Limitations**

A limitation of our research is that, contrary to some models in previous research [16], we did not consider the contribution and the possible mediation effect of lower and higher cognitive abilities on the relationship between vocabulary skills and listening narrative comprehension. It is possible that lower-level cognitive skills, such as memory and attention, and higher-level cognitive skills, such as inferential ability and comprehension monitoring, might have a subtler relationship with listening comprehension, mediated via a relationship between these skills and vocabulary skills. It could be, for instance, that children with better working memory might be better word learners, with better vocabulary skills, and that better vocabulary skills will positively affect their listening

narrative comprehension [17]. We believe our model is of value in highlighting the specific importance of receptive vocabulary in both languages in predicting listening narrative comprehension in L1 and L2; however, we cannot rule out the possible (mediated) effects of other linguistic and cognitive skills involved in the comprehension process.

Another limitation of our research is the lack of longitudinal measurement of the predictors of listening narrative comprehension. We acknowledge that including longitudinal measures of the predictors might have accounted for more variability in listening narrative comprehension, especially in relation to longitudinal changes in English input and its growth over time. Another limitation is related to the sample size since our sample is too small and thus has low statistical power to detect the relationships among the variables in our study limiting the generalizability of our results. Finally, another limitation of our research is related to the use of Italian norms for the English translated version of TOR 3-8, the task used to assess children's listening narrative comprehension. The lack of normative data for English does not allow us to properly assess performance in the English-language task such that future studies should use standardized tests in both languages.

## 6. Conclusions and Implications for Education

The results of this study, albeit considering its many limitations, represent a novel contribution to a better understanding of the determinants of listening narrative comprehension in bilingual children and have relevant pedagogical implications. The results are relevant since worldwide the number of children exposed to more than one language is increasing exponentially. To the best of our knowledge, ours is one of the few studies that analyzes the contribution of vocabulary skills in listening narrative comprehension simultaneously in both languages. The majority of the studies focus on narrative production and analyze the contribution of vocabulary in the same language [67]. Additionally, in our study, we controlled for the amount and quality of linguistic input by involving Italian children enrolled in an international school in English. Since language input is one of the strongest predictors of the rate of language development in monolingual and bilingual children [68], controlling for this variable allows for greater generalizability of the results.

The specific focus on listening narrative and vocabulary skills was derived from a number of different studies that recognized the implications of these skills for emergent literacy skills development and later reading and writing skills. Narratives are a text type in which bilinguals may become competent and in which they are able to overcome their vocabulary limitations if they are given adequate qualitative and quantitative input in both languages. Bilingual children benefit from the fact that narratives are a universal text on which they have developed knowledge in L1 and that they transfer to L2. Understanding the specific contribution of vocabulary in listening narrative comprehension is crucial for educational settings and schools to design specific pedagogical actions and interventions to ensure high-quality teaching and strategies to foster children's language development.

For teachers and school practitioners, it is important to know that time and quality restrictions may negatively influence children's performances and that for bilinguals it seems more useful to learn vocabulary through activities and tasks in which they feel competent in order to support their motivation and enjoyment through learning. Increasing children's high-quality lexical representations, particularly by providing them with more information about the meaning and use of words, is likely to have a positive cascading effect on their understanding of spoken language. Interventions aimed at improving school learning skills with bilinguals through oral narratives could have the secondary benefit of also improving positive self-image, relationships and wellbeing [70].

**Supplementary Materials:** The following supporting information can be downloaded at: <https://www.mdpi.com/article/10.3390/educsci13080780/s1>. Background questions. This questionnaire was developed during the COST Action IS1804 Language Impairment in a Multilingual Society: Linguistic Patterns and the Road to Assessment.

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