Properties of Narrative Productivity, Syntactic Complexity and Lexical Diversity of Typical Bi-dialectal Cypriot-Greek-Speaking Children

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Article

Properties of Narrative Productivity, Syntactic Complexity and Lexical Diversity of Typical Bi-Dialectal Cypriot-Greek-Speaking Children

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Abstract: Background: Oral narratives are crucial for evaluating youngsters since they reveal a plethora of information about young children's language development. This study aimed to investigate the development of narrative productivity, lexical diversity, syntactic complexity and in Cypriot-Greek-speaking children during preschool and primary school years. An additional aim was to measure the effect of the children's gender in their performance on the measures of narratives. Methods: One hundred and twenty-nine typically developing Cypriot-Greek-speaking children were recruited for the study. Results: The results showed that the linguistic structure of narrations reflects a subtle developmental trend. As expected, older children tended to produce longer and syntactically more complex stories than the younger ones, which is in line with previous studies. There were significant differences in all productivity measures between the four-year-olds and those aged seven and ten years old. In addition, the results illustrated that there was not any significant effect of gender in the measures of narrative skills. Specifically, gender did not affect the children's performance in the sample. Boys and girls had similar narrative measurements in all the variables. Conclusions: This study aims to provide initial evidence in retelling narrative development patterns on typically developing Cypriot-Greek speaking children that could be used by speech and language to compare children's performance and detect language disorders.

Keywords: retelling; microstructure analysis; Cypriot-Greek bi-dialectal children; typical language development

1. Introduction

Narratives consist of accounts of experiences or events presented by a single speaker, and always follow a chronological order (Westerveld, 2011). Constructing a compelling narrative requires understanding the genre, utilizing effective language, and structuring the plot effectively (Hudson & Shapiro, 1991). In everyday communication, narrative abilities make it possible to explain things and events and tell other stories and personal experiences. The foundation of narration is learned early on in a child's development in play and conversation with parents, but narrative development continues into early adulthood. The development requires time because narration requires a wide range of linguistic and cognitive understanding of narrative genres, their structures, the demands of the audience, and language strategies.

The complex skill of narration has been thoroughly investigated from multiple perspectives. It has been linked, for instance, to social cognition, socio-emotional wellbeing, and literacy development. Additionally, narrative abilities are crucial for effective communication and social interaction since skilled storytellers are better at choosing the right words to use in a social situation than those who need help producing stories .

Up to now, a large body of literature has examined the oral narrative skills of young children with typically developing language and those with language disorders, including children referred to as having developmental language disorders. In contrast, there are sparse studies regarding narratives on typically developing children who are native speakers of Standard Modern Greek (SMG) (and Cypriot Greek, the variety of SMG spoken in the Republic of Cyprus . The present exploratory

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study aims to provide initial evidence on CG children's growth patterns in retelling narrative development. In addition, the present study aims to provide evidence of gender differences' effects on children's narrative performance.

Retelling

Narratives can be categorized into personal and fictional genres. In order to elicit narratives, two main conditions are story generation and retelling. Different methods, like visual aids, videos, or a series of pictures, are used to elicit narratives in these two broad categories (Westerveld, 2011).

For the purpose of this study retelling of a fictional story is employed. When asked to retell a story, a model is always provided. This can be done through either spontaneous or direct tasks. In spontaneous tasks, the participant is asked to retell a story they are familiar with, such as Cinderella, using a version they have previously been exposed to as a model. Direct tasks involve a structured model of an unknown story provided in either audio or audio-visual format. In the latter case, the participant has additional support through visual elicitation (Westervel, 2007).

Early retelling skills are essential for success in school and in society. Retelling stories, a genre of narrative created by kids, can also be used as an indicator of listening comprehension because it shows how well a story has been grasped by the listener.

Additionally, Merritt and Liles demonstrated that compared to story generation, the story-retelling samples were longer, featured more grammar elements, and had complete episode structures. Another benefit was that even though the story-retelling samples were longer, they could be rated more accurately if the examiner was familiar with the narrative's content and had a set scoring system.

Narrative performance has been used as an ecologically valid assessment measure and to diagnose and determine intervention goals and classroom recommendations . Difficulty with storytelling skills is frequently observed in various clinical conditions that are commonly associated with neurodevelopmental disorders. disorders (e.g. Botting, 2002; Dodwell & Bavin, 2008). Furthermore, although language learning contexts vary worldwide, narrative assessment is likely to be used by both monolingual and multilingual students . Research on how children develop their storytelling skills provides normative data, at least in English, that can be utilized as a basis for comparison in kids who struggle with language. In contrast to English (the most studied language) and other Germanic or Romance languages, for instance, there is a dearth of information about narrative development in CG-speaking children (CG). As Hickmann notes, due to various language typologies, cross-linguistic diversity is likely to happen, especially in the linguistic structure of narratives.

A broad-based narrative assessment analyses macrostructure (e.g., story grammar) and microstructure (e.g., syntactic complexity), as well as internal state language (e.g., how protagonists feel or think) . These criteria combined determine a narration's quality . Microstructure criteria include cohesion, speech length, grammatical accuracy and linguistic complexity .

Since narratives can be studied from a linguistic or more cognitive perspective (for example, the substance of the stories), their diversity provides a rich source of data for language sample analysis. The productivity and complexity of sentences form the linguistic structure of narratives. The typical productivity measurements depend on the number of T-units (minimum terminable unit), which are generally referred to as a major sentence and its subordinate clauses. The average length of C-units (MLCU) in words or morphemes or an analysis of the clausal structures employed in narration are common ways to measure syntactic complexity. The total number of words (TNW) is an additional often used productivity metric that provides data on the amount of linguistic output. Some academics interpret the number of different words (NDW) as a productivity measure. In the event that NDW is calculated from a predetermined number of words, it can also be viewed as a measure of lexical diversity.

Narrative Development

Only few studies have examined developmental variations in children's production of free (spontaneous) narratives (mostly) and story retellings . According to Muñoz et al , 3–4-year-old children's narratives are more of a temporal chain than they are thematically driven. Stadler and Ward proposed a continuum of storytelling development, which includes labeling, listing, connecting, sequencing, and narrating. As a child grows, they move from telling personal narratives to incorporating stories into play and finally to creating fictional narratives. A child can understand the motivations of the characters and utilize age to present the plot by the time they are five years old (Muñoz et al., 2003). A factor that seems to be understudied is gender differences in narrative development. Interestingly, parents tend to differentiate the emotions they emphasize when sharing everyday experiences, depending on the children's sex . There is evidence suggesting that girls perform better in microstructure in the ages 4-7 , while some other studies have demonstrated minor differences or no differences between boys' and girls' narrative development . In this study, we aim to fill this gap by measuring gender differences in narrative development among children.

The Cypriot Greek

The language situation in the island of Cyprus, located in the south-east Mediterranean Sea, has been characterised as "diglossia," in terms of Ferguson's (1959). Standard Modern Greek (SMG) is the codified and standardised language variety and the official language in Cyprus. The vernacular Cypriot Greek (CG) is the variety of Greek languages that Greek Cypriots acquired as their first language. A number of differences exist between the two varieties, which go beyond the obvious aspects of language, such as vocabulary, pronunciation, and prosody. There are distinct differences between CG and SMG in terms of their lexical, phonetic, and (morpho)phonological properties (a host of research since the seminal study of Newton, 1972). For example, SMG presents a two-way voicing contrast (voiced and voiceless unaspirated stops). In contrast, CG is a three-way contrast dialect containing voiceless unaspirated, voiceless aspirated, and pre-voiced stops (Okalidou et al., 2010). Another example is in SMG, personal pronominal clitics precede the finite verb. In contrast, CG uses enclisis in indicative declarative clauses where the clitic follows the finite verb (much work since Agouraki, 1997). In terms of inflection, the two varieties have different verbal suffixes (as in [exu-sin]: (they have) in CG and [exun] in SMG.'), as well as the use of a circumfix in CG for past tenses, namely [epira]: (I took) instead of [pira]: (I took). As for lexicon loanwords (related to the Cyprus historical events) have survived and are in everyday use, including [pathixa]:(watermelon' from Arabic pattikh) instead of [karpuzi] in SMG and [fundana/: ('tap', from Italian fontana), instead of [vrisi] in SMG (Terkourafi, 2007). According to Arvaniti (2006; 2010),Cypriots can easily understand people who speak the SMG, but reversibility is often difficult. Given the challenging linguistic environment in Cyprus, the term "bilectals," proposed by Rowe and Grohmann, is used in this study to describe the language status of Greek Cypriot children. In recent studies on language acquisition and subsequent development, many other researchers have used this term. In this context, "bilectalism" refers to the linguistic situation in Greek-speaking Cyprus, where children of Greek Cypriot parents grow up with CG from birth but are exposed to SMG from a young age. When it comes to formal language instruction and interaction in public schools at all levels in SMG, this typically happens through children's television programming (for example). However, this is only sometimes the case in practice, as demonstrated by researchers. In particular, Leivada et al. found that Greek Cypriot teachers' performance in SMG is significantly lower than that of their Greek colleagues, with semantics and lexicon being less accurate. Sophocleous and Wilks [38] pointed out that Greek Cypriot teachers 'correct' students who use 'improper' dialectal vocabulary but do not 'correct' the phonological features students express. Therefore, as Tsiplakou, Kambanaros and Grohmann highlighted, teachers and students switch between dialect and standard. They also noticed that this informal presentation of the dialect in the classroom—as opposed to the normal recognition of the dialect use—may promote linguistic inequalities and contribute against developing critical literacy skills, language equity, and metalinguistic awareness.

Present study

Studies have examined the development of narrative discourse in children across different languages and populations, such as those conducted by Hipfner et al. (2015), Fichman et al. (2017), and Sah & Torng (2019). Research has shown that while microstructure features may vary depending on the language, there are consistent developmental patterns in microstructural quality across different languages, as observed by Berman (2009) and Stein & Glenn (1979). The skill of storytelling begins to develop during childhood and continues to improve even after the age of 10, according to Blankenstijn & Scheper (2003). Lexical diversity and the use of complex propositions can be detected in children as young as 4 years old (Elbers & Van Loon-Vervoorn, 2000; Justice et al., 2006; Kaderavek & Sulzby, 2000; Reilly et al., 2004). However, as children grow older, they tend to develop longer narratives with more diverse content words (Justice et al., 2006) and increasingly complex syntactic structures (Berman & Nir-Sagiv, 2007). Microstructure serves as a useful tool to evaluate language development in children, encompassing various linguistic knowledge and skills that take time to develop. Studies have examined the development of narrative discourse in children across different languages and populations, such as those conducted by Hipfner et al. (2015), Fichman et al. (2017), and Sah & Torng (2019). Research has shown that while microstructure features may vary depending on the language, there are consistent developmental patterns in microstructural quality across different languages, as observed by Berman (2009) and Stein & Glenn (1979). The skill of storytelling begins to develop during childhood and continues to improve even after the age of 10, according to Blankenstijn & Scheper (2003). Lexical diversity and the use of complex propositions can be detected in children as young as 4 years old (Elbers & Van Loon-Vervoorn, 2000; Justice et al., 2006; Kaderavek & Sulzby, 2000; Reilly et al., 2004). However, as children grow older, they tend to develop longer narratives with more diverse content words (Justice et al., 2006) and increasingly complex syntactic structures (Berman & Nir-Sagiv, 2007). Microstructure serves as a useful tool to evaluate language development in children, encompassing various linguistic knowledge and skills that take time to develop.

Yet, few studies have focused on narrative skills in bilectal context of Cyprus (Theodorou, 2010; Theodorou et al., 2016). Previous research has focused on the comparison between children with developmental language disorder and typically developing children proving the value of retelling as a language-testing tool . Therefore, there is limited information documenting growth patterns in retelling narrative development of typically developing children growing up as bilectals at the microstructure level. The main aim of the present study is to provide evidence of the CG children's language skills development related microstructures of narratives. In addition, the present study aims to provide evidence of gender differences' effects on children's narrative performance.

Therefore, this study investigates how narrative abilities, generated by a story-retelling task, develop in typically developing CG children. Narrative abilities tend to undergo substantial growth, particularly in the pre-school and early school years, as earlier English-language studies (e.g. Justice et al., 2006; Schneider et al., 2006; Westerveld et al., 2004) have demonstrated. Therefore, we decided to narrow our focus on children between the ages of four and ten.

2. Materials and Methods

Methods

Participants

One hundred typically developing Cypriot-Greek-speaking children were recruited for the study. Children were divided into three age groups. The first age group consisted of 42 children between 4.9 and 6.5 years old (mean age: 5.8), the second one included 47 children from 6.6 to 8 years old (mean age: 7.3), and the third group included 40 children between 8 and 10 years old (mean age: 9.03). 67 children of the sample were boys (51.9%), and 62 were girls (48.1 %) (see Table 1). Subject selection criteria included: (i) CG-speaking background, (ii) no history of neurological, emotional, developmental, or behavioural problems, (iii) hearing and vision adequate for test purposes, (iv)

performance within a broad range of normal on a measure of non-verbal intelligence (Raven's Coloured Progressive Matrices), (v) no gross motor difficulties, and (vi) medium to high socioeconomic status. All information was obtained either from their teachers or from their parents.

Table 1. Descriptive statistics for children's age range and gender.

	Mean	SD	Female	Male	N
4.9 – 6.5	5.79	.44	18	33	42
6.6 - 8	7.29	.39	29	22	47
8 <	9.03	.84	21	22	40

Adopting the notion of 'bilectalism' from Rowe and Grohmann (2013), we consider 'monolingual' children in diglossic speaker communities to be (at least) bi-dilectal in the 'high' and 'low' varieties see Kambanaros et al for the first published study on child language implementing this term). Concerning the children participating in the present study, however, we can confidently state that they were all bilectal in CG (the native variety, spoken at home) and SMG (introduced formally in preschool; the language of media and communication) — as understood through the works just cited. In particular, none of them was simultaneous or sequential acquirers of an additional language and no child was a native speaker of SMG or received, to the best of our knowledge, any more input of strict SMG than any other.

All data were transcribed and scored by the first and re-scored by the second author. Reliability measures on classifying 25% of spoken utterances, collected across the tests, were conducted by an independent rater and resulted in 100% agreement.

Bus story

The Renfrew Bus Story was used to elicit a story retelling from each participant. In this test, the examiner told the child a predetermined story as they looked at 12 sequenced pictures depicting the story. The child was then asked to retell that story with support from the pictures. Specifically, the experimenter told each child a short story about a red bus while the child looked through a book of pictures illustrating the story. Then the children were requested to retell the story as close to the original as possible. The child then retold it, using the pictures as prompts. During the retellings, no reinforcement was provided besides encouragement with head nods and fillers. All children were tested in their schools, speech and language clinics, or in their houses in quiet rooms. Each child was tested individually.

The narrative samples were transcribed using IPA. Utterances were then divided into sentences and evaluated. In the first place, five measures, three measures that the Bus Story Test suggests and two more, were examined: the amount of original information included, the number of subordinate clauses, the mean sentence length of the five longest sentences, the mean length of utterances based on words, and the total amount of sentences used. All but the first of these are based on microstructural analysis, and all five measures were calculated for the participants. Results concerning this level of analysis can be found in Theodorou et al. (2016). Duinmeijer supports that children benefit from the input in story retelling by using retelling tasks. This happens because it includes as a model complex grammatical structure. Children who do not have to create their own stories are more productive. In this context, description strategies are avoided, and complex forms and structures are elicited.

Procedure

Children were tested either at schools or in a quiet room in their homes in three to five sessions of 45 min each to complete the whole set of tests. The setting was very familiar to each participant so it should not affect performance. At the start of the first assessment session, the examiner had a brief warmup conversation with the child to introduce the procedure and become more familiar with the child personally. At the end of each session, every child received a small token (such as a sticker or a pencil).

Scoring procedures for the narrative task

The scoring scheme used is the following:

1. Sentences: This measure forms the total number of used sentences (T-unit). When the narratives were transcribed, they were divided into sentences (T-units). Scott's criteria for the definition of a T-unit have adopted: "[A] main clause and all subordinate or non-clausal structures attached to or embedded within. All main clauses that begin with coordinating conjunction and, but or indicate a new T-unit unless there is a coreferential subject deletion in the second clause".
2. MLU-word: In the absence of normative data for the mean length of utterances in Cypriot, it was calculated based on words for each narrative (MLU-words). All words were added up and the sum was divided by produced sentences (T-units). The MLU-word was chosen since there is no study to support the use of a morpheme-based MLU in any varieties of Modern Greek.
3. A5LS: Then the MLU-word was calculated and the mean of the five longest sentences was computed.
4. Subordinates: After each narrative was divided into sentences following Scott's (1988) criteria, the produced subordinate clauses were counted.
5. Number of different words (NDW): it measures the number of different words.
6. Number of total words (NTW): it measures the total number of words produced.

Two scoring examples are presented here, intended to illustrate all the above:

(1) Το λεωφορείο έφυγε και βρήκε ένα τρένο.

To leoforio efije ce vrice ena treno.

GLOSSES

'The bus left and it found a train.'

This utterance is divided into two sentences, the first conjunct, [to leoforio efije] 'the bus left', and the second, [vrice ena treno] 'it found a train'. The first sentence gets scored 0 for Subordinates, 3 for MLU-word, and 1 for Sentences; the second sentence gets scored 0 for Subordinates, 3 for MLU-word, and 1 for Sentences.

(2) Παρατήρησε ότι είχε μια λίμνη πιο κάτω.

Paratirisen oti iʃe mɲa limni pco kato.

'It (the bus) noticed that a pond there was further down.'

Utterance (2) gets scored 1 for sentences, 7 for MLU-word, 7 for mean sentence length (A5SL), 2 for Subordinates.

Ethics Approval

Following the ethics guidelines, permission was obtained from the Cyprus National Bioethics Committee (ΕΕΒΚ/ΕΠ/2019/25). Approval date: 03/05/2019. All subjects gave their informed consent for inclusion before they participated in the study. The study was conducted in accordance with the Declaration of Helsinki.

3. Results

Descriptive Statistics

Table 2 reports the means and standard deviations by age group on the six measures of oral narrative ability: number of sentences (T-units), mean length of utterance in words (MLU-W), 5 longest sentences (A5LS), number of subordinate clauses, number of different words (NDW), and number of total words (NTW).

To determine if the oral narrative measures were sensitive to age and gender, we run six two-Way (3 x 2) ANOVAs measuring the effects of age and gender. The results showed that the effect of age was significant on T-units ($F(1,99) = 22.66$, $p < .001$, $\eta p2 = 328$), NDW ($F(1,99) = 14.16$, $p < .001$, $\eta p2 = 233$), and on NTW ($F(1,99) = 18.17$, $p < .001$, $\eta p2 = 281$). There was not statistically significant

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effect of age on MLU-W (F (1,99) = .739, p = .480), A5LS (F (1,99) = 1.18, p = .311) and the number of subordinate clauses (F (1,99) = 1.93, p = .150),

Table 2. Descriptive statistics (means and SD per age group) of the children's performance on the microstructure level tasks.

	4.9-6.5		6.5-8		>8	
	M	SD	M	SD	M	SD
T-units	12.47	4.37	16.55	3.61	20.07	5.00
MLU-W	6.82	2.03	6.69	1.15	6.41	0.96
A5ls	9.51	2.84	10.19	1.86	10.43	1.62
No of Subordinate Clauses	5.17	3.98	3.95	2.53	5.00	2.58
NDW	53.13	16.43	69.45	19.94	77.52	14.37
NTW	84.00	30.65	108.08	22.68	127.86	28.50

For the number of sentences, the post-hoc analysis revealed that children older than 8 years old (M = 20.07) performed better than their younger peers (M = 16.55 and M = 12.47) and children in group 6.5-8 years performed better than the group 4.9-6.5.

For the NDW, the post-hoc analysis revealed that children older than 8 years old (M = 77.52) performed better than their younger peers (M = 69.45 and M = 53.13) and children in group 6.5-8 years performed better than the group 4.9-6.

For the NTW, the post-hoc analysis revealed that children older than 8 years old (M = 127.86) performed better than their younger peers (M = 108.08 and M = 84) and children in group 6.5-8 years performed better than the group 4.9-6.5.

Regarding gender, the results showed that there was not any significant effect of gender in any measure of narrative ability. T-units (F (1,99) = .948, p = .333), MLU-W (F (1,99) = .061, p = .806), A5LS (F (1,99) = .055, p = .816) and the number of subordinate clauses (F (1,99) = 1.33, p = .252), NDW (F (1,99) = .690, p = .408), NTW (F (1,99) = .259, p = .612). Additionally, the interactions between gender and age were not statistically significant.

4. Discussion

This study aimed to investigate the development of narrative productivity, lexical diversity, syntactic complexity, and sentence length in CG children during preschool and primary school years. An additional aim was to measure the effect of the children's gender in their performance on the measures of narratives.

This study generally demonstrated that a slight developmental trend can be observed in the linguistic structure of narrations. According to previous studies (e.g. Justice et al., 2006; Westerveld et al., 2004), older children typically produced longer and syntactically more complicated stories than the younger ones. There were no discernible changes in syntactic difficulty between the age groups. Instead, the three age groups were distinguished by three measures of productivity (number of T-units, NDW, and NTW). All measures of productivity (number of T-units, NTW, and NDW) showed a substantial age-related variation. Our results differ from the studies by Westerveld et al. (2004) and Muñoz et al. (2003), who did not find differences in pre-school aged children in the productivity measures, even though there was a tendency for the older children to produce longer stories. In terms of syntactic complexity, our results are partly in line with Westerveld et al. (2004) but differ from Muñoz et al., who obtained significant differences in MLU(between four- and five-year-olds). It should be mentioned that the analytical methods used in narrative studies vary widely, which qualifies the direct comparisons between the studies.

Intriguingly, analysis of the descriptive data revealed that a tendency in productivity development was observed later, around the time of enrollment into primary school, which in Cyprus is at age six. In Cyprus, narrative language exposure continues to be a significant part of the first years of school. Narratives are a source of language learning during the preschool year. As a result,

this may encourage the use of increasingly complicated language as youngsters encounter different vocabulary and complex syntax in a variety of narrative contexts. Given that the research environment simulates school procedures, one factor that was not tested is the degree of use of dialect versus common Greek by the children. The production of the narrative may be affected as microstructure is known to be specific to languages. As this may affect their performance, future studies have to be focused on the dialectal elements used by children in formal and informal contexts.

According to the results, statistically significant developmental differences were found in children's performance across all oral language tasks except for MLU-word and subordinate clauses, with the older children performing better than the younger age groups (Hipfner-Boucher et al. 2014; Lepola et al. 2012; Westerveld & Gillon 2010). Older children also tended to have higher performance across the number of sentences, number of different words and the number of total words than the younger ones. The above pattern of narrative development is similar to the results of previous studies (Bohnacker 2016; Lepola et al. 2020; Makinen et. al. 2014; Roch et al. 2016; Wehmeier 2020). Nevertheless, the present study, adds new evidence for this developmental growth of typically developing CG children in relation to microstructure elements.

In addition, the results illustrated that there was not any significant effect of gender in the measures of narrative skills. Specifically, sex did not affect the children's performance in the sample. Boys and girls had similar narrative measurements in all the variables. This is in line with Hipfner-Boucheretal et al. (2014), Lepola et al. (2012), Fivush et al. (2012). Therefore, it is concluded that there are other variables that affect children's performance in the two narrative skills, such as language and cognitive skills (Allen et al., 2012; Bruner, 1986). Future studies have to measure gender differences as understanding oral language abilities between boys and girls could benefit clinicians and educators in identifying children with language impairment. Previous research data supports that gender differences in language skills are so small that they can be considered non-existent (Hipfner-Boucher et al., 2014; Hyde & Linn, 1988; Lepola et al., 2012). Specifically, Hyde and Linn (1988) analyzed 165 studies that evaluated the linguistic abilities of children and adults with various linguistic tasks. The results were mixed, as 42 studies showed female linguistic superiority, no gender differences were found in 109 studies, and male superiority was observed in 12 studies. Additionally, Lynch et al. (2008) found that girls recall more information than boys, regardless of age, although the effect size in their analyses was small. Furthermore, Ardila, Rosselli, Matute, and Inozemtseva (2011) evaluated the language abilities of 788 children between the ages of 5 and 16 and found minimal to non-existent differences in performance between genders., as in the present study.

This is the first exploratory study on narrative development in CG children who are typically developing that has been done. However, there are some restrictions on generalizing these findings, and it is important to take into account the relatively high within-group variability when analyzing the findings of this study. Other studies have found significant variance in narrative (Justice et al., 2006; Kit-Sum To et al., 2010; Muoz et al., 2003), and even in the narrations of adults (Berman & Slobin, 1994). Due to the significance of morphological inflections in Cypriot Greek, we used the word type when referring to our production measures. Since different word forms are often used, at least in English, this may validate comparisons to other studies.

In conclusion, the story-retelling task used in this study was able to identify a developing trend in the narrative abilities of CG children. Due to its potential to detect developmental disparities, this task seems especially appropriate for use with children. Regardless of MLU-W, the amount of subordinate clauses, or the A5LS, descriptive data revealed a developmental tendency in all measures. CG children appear to be developing in a manner similar to children speaking other languages. In other words, the length and complexity of stories for older children tend to be higher. While it would undoubtedly be beneficial to conduct cross-linguistic developmental studies using the same elicitation materials and measures with regard to Cypriot-Greek, we can concur with Berman and Slobin's assertion that "across languages, there is a common developmental pattern towards increasing cohesion and coherence" (Berman and Slobin 1994, p. 40). Narratives have multiple dimensions, thus its measures should be viewed in the context of the entire narrative task.

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From this perspective, the variety of word types that integrate lexical and inflectional knowledge appears to be a helpful indicator of the productivity of children's narrations.

Clinical implications

Narratives could provide a naturalistic format for language because of their role in everyday communication. It could also be a valuable tool for describing the language competence of children with language disorders. Therefore, narrative tasks may be an effective tool for assessing this population, with researchers emphasizing the importance of including narrative analysis as a routine part of language assessment for persons with suspected or identified language impairment (Muñoz et al. 2003).

In addition, narrative tasks are used frequently by speech and language therapists in clinical practice, since narratives can provide a naturalistic format for language intervention. In addition, this kind of task, such as the Bus Story Test (BST), can be given in less than 15 minutes and provides children with an enjoyable experience, while it provides clinicians with enough information about language development and communication skills. The reported findings cannot suggest that there are clear cues in terms of diagnosis, but it is argued that narrative analysis could assist the diagnostic procedure. There is evidence in the data reported above which suggests that the BST used here could be a reliable choice for speech and language therapists.

Moreover, given that we provide services in a country where an under-investigated language is spoken, it is imperative to provide them to other professionals, such as teachers and developmental psychologists. This tool could assist them in identifying 'at risk' children. In this way, they will ask for further assessment having on hand their first 'informal' evaluation. Therefore, teachers could also adopt a narrative task for informal classroom uses to support their claim that the particular children experience language difficulties.

This study highlighted the necessity of introducing language assessment narrative tasks that could benefit clinicians in detecting and documenting language disorder in early age stages. In addition, this study aimed to provide initial evidence concerning the developmental patterns of narratives on typically developing CG children that could be used by speech and language therapists. Cypriot speech and language therapists could use the results of the present study as a frame where they could compare children's performance and detect language disorders.

Limitations and future directions

Further research is needed to confirm the results of this study because of limitations. Note that this study is one of the few studies that aim to describe the narrative abilities of CG children. A clearer understanding of these findings is essential to provide data about the developmental patterns of narratives of CG children and so, to design appropriate evaluation and intervention programs.

Our findings regarding narrative development concern retelling, one dimension of narrative assessment. Future studies could use story generation and retelling without pictures to assess different narratives. The literature clarifies that the nature of the materials used to elicit narratives can influence the conclusions drawn from the results.

Moreover, it is essential to remember that data was not collected in one setting for the participants' group. This might influence results, which still need to be checked. However, and having these limitations in mind, these data highlight differences on the use of productivity and the length of utterances in children's narrative performance.

5. Conclusions

The results of the current study, taken on their own, provide preliminary evidence for the narrative skills of typically developing children whose native language is Cypriot Greek. This study confirms previous research findings regarding the narrative ability of children regarding the use of productivity and length of utterances and initial evidence of growth patterns that can be exploited by clinicians and other professionals. Although more research is needed, the findings indicate that

the Renfrew Bus Story Test and narrative assessment can provide clinicians with sufficient information regarding children's language skills. Findings of the current study support that narratives may be useful for assessing and monitoring language development within language intervention programs.

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