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A Developmental Analysis of Parts of Speech Usage in Greek-speaking Children 3-6 Years Old

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Abstract: Language acquisition in all natural human languages is a process in which its foundations are laid during the formative years of early childhood when the brain undergoes developmental changes. Exploring specific linguistic components provides a detailed lens through which to understand the intricacies of language acquisition. This journal article investigates the developmental trajectory of parts of speech (POS) usage in Greek-speaking children aged 3-6 years. Leveraging a sample size of 300 participants, evenly distributed across three age groups (3-4, 4-5, and 5-6 years), the study employs a spontaneous speech sample to conduct a thorough statistical analysis. Findings reveal substantial differences in POS usage across distinct age categories and insignificant ones between boys and girls. Specifically, inflectional speech parts were more common than non-inflectional ones across all three age groups. Children used more often nouns (22.66%), verbs (22.25%), pronouns (12.63%), articles (11.98%), adverbs (10.36%), and conjunctions (10.82%). On the other hand, prepositions (4.69%), adjectives (3%), particles (1.17%), interjections (0.27%), and participles (0.16%) were used less frequently. This research provides valuable information regarding POS milestones, contributes to our understanding of language development in Greek-speaking children, and holds implications for tailored interventions and educational practices.

Keywords: Development**;** Parts of speech; Greek; Preschool; Children.

1.0 INTRODUCTION

Language acquisition in all natural human languages is a marvellously intricate process, and its foundations are laid during the formative years of early childhood (Bloom, 1993; Fletcher & Garman, 1986; Tomasello, 2005). Exploring specific linguistic components, such as parts of speech (POS), also known as word classes or syntactic categories, provides a detailed lens through which to understand the intricacies of language acquisition (Pinker, 1994). Investigating the frequency of POS usage by preschool children is essential for understanding, monitoring, and supporting language development (Ingram, 1989; Owens Jr, 2001). It has practical implications for educators, parents, and professionals involved in the well-being and education of young children. However, the frequencies of speech parts among languages vary drastically, and the reasons are largely unclear (Seifart, 2011).

With its rich historical tapestry and linguistic intricacies, the Greek language is a cornerstone of human communication and intellectual exploration. From the philosophical dialogues of Plato and the epic narratives of Homer, the Greek language has been an unparalleled source of inspiration and exploration. It is celebrated for its precision and elegance and provides a special perspective through which we can examine the building blocks of expression—the POS (Manolessou, 2007). One of the largest vocabularies in the world is found in Greek. There are ten distinct POS categories for all Greek words. These ten POS in the Greek languages are further separated into six inflected and four non-inflected types (Holton et al., 2012, 2015). Articles, nouns, adjectives, pronouns, verbs, and participles are the inflected types of speech. Adverbs, prepositions, conjunctions, and interjections are the non-inflected types of speech. Greek also has some small non-inflected words called "particles". Particles, in the context of linguistics, are often considered functional words or elements rather than traditional POS. They are words with a grammatical function but little meaning (Holton et al., 2012, 2015).

Previous research on the development of Greek speech parts in preschool children has been conducted in various domains. Studies have investigated Greek-speaking toddlers' typical language skills, including those with language delays (Kapsou, 2011). Additionally, the development of vocabulary in Greek children has been compared cross-linguistically, providing insight into the characteristics of Greek language acquisition (Papaeliou & Rescorla, 2011). Furthermore, investigations of colourful semantics techniques in Cypriot-Greek-speaking children with Autism Spectrum Disorder addressed language-related challenges in this group (Christopoulou et al., 2021). Moreover, research has delved into the linguistic interconnectedness and variability in typically developing Greek-speaking toddlers, providing insights into the dynamic nature of language development in this population (Petinou et al., 2021). Also, the morphosyntactic abilities of children with Down syndrome have been examined, highlighting difficulties in specific aspects of morphology and syntax inherent in the Greek language (Katsarou & Andreou, 2022). Lastly, research has focused on the psychometric properties of lexical lists for Greek infants and preschool children, demonstrating significant positive relationships among all language skills (Helidoni et al., 2022). Although all of these studies contribute to our understanding of the development of Greek POS in preschool children, covering various topics such as vocabulary, syntax, and language skills, none of these studies have investigated the frequency of POS use by preschool children in everyday life.

The measurement of POS usage by Greek-speaking children aged 3-6 has been investigated in limited studies. In 2021, Chadjipapa aimed to examine the frequency of occurrence of grammatical categories in the speech of preschool-aged children (Chadjipapa, 2021). The quantitative analysis of word categories in the Greek Speaking Children Corpus (GSCC) revealed that children in this age group use tokens of verbs, nouns, articles, and conjunctions more frequently than any other word class. They used more verb tokens than noun tokens, but concerning word classes (POS), nouns outnumbered verbs. They used more adverbs and pronouns than adjectives and prepositions (tokens). In addition, the study found an insignificant interaction between gender and word frequencies, indicating that gender does not seem to influence the use of all word classes. The GSCC includes interviews produced by sixty-one children aged three to six years (Gavriilidou & Kambaki-Vougioukli, 2011). Another study showed differences in the frequency of use of word classes (Papaeliou & Rescorla, 2011). Common nouns were the largest category among the fifty most frequent words.

Although the previous research has underscored the importance of investigating language development in Greek-speaking preschool children, there remains a gap in the specific frequency of traditional POS and particle usage within different age groups in this population. In this journal article, we embark on a journey investigating the developmental trajectory of Greek

POS (including particle) usage and gender interaction in preschool children. More specifically, we will systematically measure and categorise the individual word occurrences (tokens) by children aged 3-4, 4-5, and 5-6 years into grammatical categories and compare the performance of each category between genders. We aim to illuminate the evolving landscape of POS use in these crucial age groups. For the rest of this paper, the term POS will include particle as an extra category.

2.0 MATERIALS AND METHODS

2.1 Participants

The study involved 300 children aged between 3 and 6 years, with participants distributed across three distinct age groups: 3-4 years, 4-5 years, and 5-6 years. To reduce biases associated with a homogenous sample, the participants were recruited from different socio-economic backgrounds from kindergartens and nurseries in Athens and Patras. Parental consent was obtained before their inclusion in the study. Inclusion requirements included the following:

- Monolingual native speaker of Greek.
- Both parents are native speakers of Greek.
- No history of speech or language disorder.
- No other developmental disorder.
- Hearing within normal limits bilaterally.
- Alert and engaged child.

Each group consisted of 100 children, and gender was also considered. As a result, the 3 to 4-year group consisted of 50 boys and 50 girls, the 4 to 5-year group consisted of 49 boys and 51 girls, and the 5 to 6-year group comprised 45 boys and 55 girls.

The mean ages and standard deviations (SD) of the three age groups were as follows:

- 3-4 Years Group: Mean Age: 3.48, SD: 0.49
- 4-5 Years Group: Mean Age: 4,51, SD: 0.51
- 5-6 Years Group: Mean Age: 5,58, SD: 0.48

2.2 Voice recorder

A portable digital voice recorder (DVT 1120 by Philips) with a highly sensitive microphone was used to capture preschool children's speech samples. This model is capable of a PC connection, allowing share of voice files quickly for later analysis. The recorder was tested before each sample collection to ensure the recording of each child's speech.

2.3 Speech stimulus

The speech samples were elicited using a set of 11 carefully selected pictures designed to engage preschool children. These images were chosen from children's books in the intended age range and featured different categories. Selection criteria included the following:

- Developmentally appropriate for the target age group.
- Relevance to everyday objects and activities in the daily lives of preschoolers.
- Colourful and visually engaging pictures to capture the attention and interest of preschoolers.
- A variety of indoor and outdoor activities with a narrative potential to encourage language use.
- Non-threatening pictures that do not evoke fear in children.

Each picture aimed to prompt spontaneous and varied verbal responses from the participants, allowing for a diverse range of language samples.

2.4 Procedure

The data was collected in kindergartens and nurseries during school time after obtaining the necessary permissions from school authorities and administrators. Research assistants followed a standardised procedure to ensure consistency across sessions. The research sessions were conducted in a quiet, comfortable environment to minimise background noise and distractions and to encourage natural speech production. Each child was recorded individually. Participants were individually presented with 11 pictures, and the voice recorder was positioned at an optimal distance to capture clear audio recordings. Research assistants used child-friendly language to explain the recording process. They engaged children in open-ended conversations about the pictures, encouraging them to describe what they saw, express thoughts, and narrate stories to elicit natural speech, avoiding influencing the content of the children's responses.

Each speech sample session lasted approximately 10-20 minutes, providing a sufficient timeframe for spontaneous verbalisations. Children of the first and second groups had difficulty keeping up with the subject of discussion and required more time. A ten-minute break was allowed for 41 children to prevent fatigue and frustration, ensuring the child remained engaged and comfortable.

Ethical considerations were paramount throughout the study, and the research protocol received approval from the University of Patras. Specifically, the study was conducted in accordance with the Declaration of Helsinki and approved by the Departmental Committee of TEI Western Greece (currently University of Patras)

with protocol 1797/20-10-2019. Informed consent was obtained from parents or legal guardians before their child participated in the study. The purpose of the recording and how it will be used was explained. Participants' confidentiality and privacy were rigorously maintained during all data collection and analysis stages. To further ensure confidentiality, the data was protected with a password.

2.5 Contextual analysis

Spoken language can have context-dependent ambiguities. The same word may function as a different POS, depending on context. Greek has a lot of inflections. Put differently, Greek inflects—that is, modifies—its verbs, nouns, pronouns, and adjectives to accurately reflect each word's grammatical role inside a sentence (Holton et al., 2016). Therefore, several considerations were accounted for to determine the function of a word as a specific POS and, thus, to conduct a more accurate and nuanced analysis of the frequency of Greek POS in the text corpus of the children's speech samples:

- Morphological complexity, such as verb conjugations, noun declensions, and other inflectional morphemes.
- Variations that arise due to grammatical gender and number. Nouns and adjectives have gender (masculine, feminine, neuter) and number (singular, plural).
- Variations in verb forms. Greek verbs undergo extensive conjugation based on person, number, tense, mood, and voice.
- Contribution of word order patterns to the identification of different POS.
- Filler words (e.g., um, uh) were ignored.

The sample size (*N*) remained constant at 100 across all age groups to allow a more reliable comparison of linguistic features. Also, only 250-260 words from each speech sample were included in our analysis to reduce potential biases. Moreover, our study did not include the first ten words of each speech sample. In addition, two analysts are involved in categorising words at the appropriate POS to prevent biases related to individual characteristics and ensure that results are not heavily dependent on a single analyst's perspective. The two professionals were speech therapists with at least 3 years of experience working with preschool children. Before analysis, they participated in a training session with a professor in linguistics to familiarise them with the specific goals of the study, the criteria for analysis, and other potential sources of bias, such as imposing rigid expectations on speech patterns that may not align with the natural linguistic diversity among children.

2.6 Statistical analysis

Descriptive analysis was conducted for inflectional and non-inflectional POS (article, noun, adjective, adverb, verb, and participle) in 300 children aged 3-6 years. Moreover, a T-test was conducted regarding possible gender disparities and an ANOVA single-factor approach for the comparison of POS across the participants' three distinct age categories (3-4, 4-5, and 5-6 years) and for the investigation of which groups showed evidence of significant differencing from one another, a posthoc Tukey analysis was applied.

3.0 RESULTS

Utilising a comprehensive linguistic analysis, we examined the distribution of all POS in the spontaneous speech samples obtained from all 300 participants. The total sample consisted of 76508 words (word classes). **Figure 1** displays the POS proportion.

Table 1 and **Table 2** show the results from descriptive statistics for the inflectional and non-inflectional POS in all age categories.

Table 1. Descriptive statistics for inflectional POS (article, noun, adjective, adverb, verb, and participle) from 300 children 3-6 years.

Inflectional POS	*N*	Minimum	Maximum	Mean	Standard Deviation
Article	300	11	54	30.52	7.63
Noun	300	32	92	57.68	10.38
Adjective	300	0	24	7.64	4.31
Pronoun	300	15	55	32.20	7.52
Verb	300	28	79	56.67	8.01
Participle	300	0	5	0.40	0.85

Table 2. Descriptive statistics for non-inflectional POS (adverb, preposition, conjunction, interjection, and particle) from 300 children 3-6 years.

Non-inflectional POS	*N*	Minimum	Maximum	Mean	Standard Deviation
Adverb	300	11	55	26.34	8.00
Preposition	300	1	29	11.95	4.33
Conjunction	300	8	52	27.60	7.72
Interjection	300	0	9	0.70	1.07
Particle	300	0	12	2.99	2.38

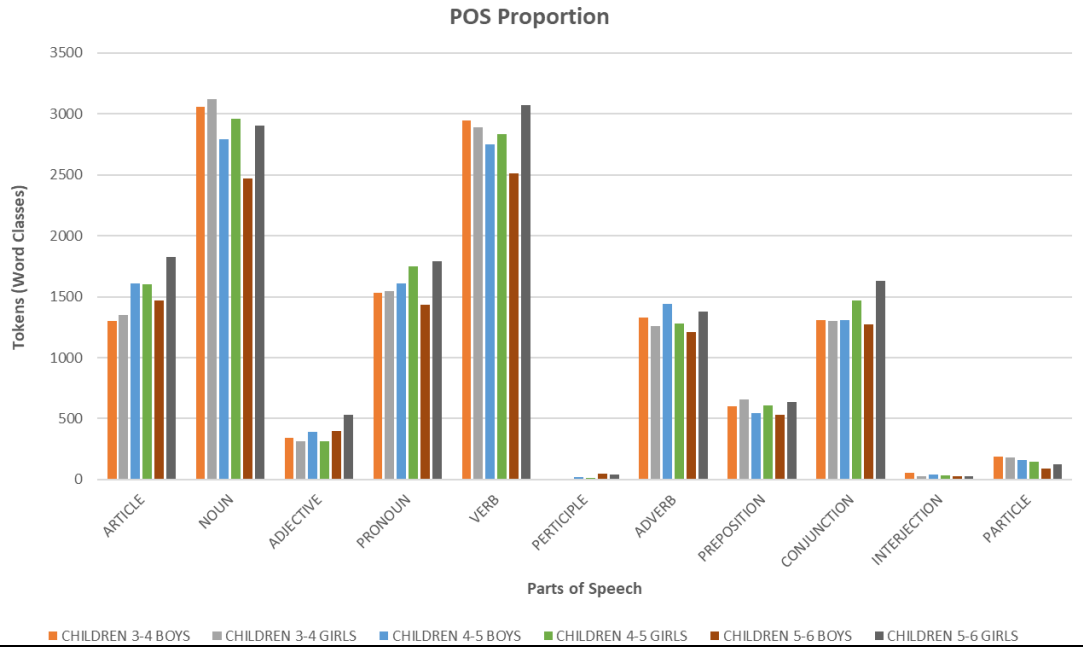

Figure 1. Proportion of POS from 300 children 3-6 years.

The above results reveal that children use the most inflectional POS more frequently than the non-inflectional parts. This is apparent from the mean occurrence of nouns (57.68), verbs (56.67), pronouns (32.20), and articles (30.52). The less frequently used inflectional POS are the adjective (7.64) and the participle (0.40). Regarding the non-inflectional POS, the adverbs (26.34) and the conjunctions (27.60) are the most frequently occurring.

A *t*-test was used to compare the means of the groups and the analysis of gender differences for the sample of 300 children revealed no significant differences for most POS besides adverbs $t(298)=2.82$, $p<0.05$ and interjections $t(298) = 2.36$, $p<0.05$ (**Table 3**).

Using an ANOVA single-factor approach, a comparison of POS across the participants' three distinct age categories (3-4, 4-5, and 5-6 years) revealed statistically significant differences ($p<0.05$) for most parts besides adverbs, prepositions, and interjections. Specifically, we notice that no statistically significant difference in the means emerges from terms of used adverbs ($F=0.901$, $df=2.297$, not significant; n.s.), prepositions ($F=1.831$, $df=2.297$, n.s.) and interjections ($F=2.085$, $df=2.297$, n.s.) for the three age groups (**Table 4**).

To investigate which groups showed evidence of significant differencing from one another, a posthoc Tukey analysis was applied. Results indicated that the mean article value of the 1st group (3-4 years) was significantly lower than that of the other two groups ($p<0.05$). Means of groups 2 (4-5 years) and 3 (5-6 years) did not differ significantly. The mean noun values from all three groups differed significantly from one another ($p<0.05$). Participants of the 1st group used more nouns than the second group, which used more than the third group. The mean adjective value of the 3rd group was significantly higher than that of the other two groups ($p<0.05$). The means of groups 1 and 2 did not differ significantly. The mean pronoun value of the 1st group was significantly lower than that of the other two groups ($p<0.05$). The means of groups 2 and 3 did not differ significantly. The mean verb value of the 1st group (3-4 years) was significantly higher than that of the other two groups ($p<0.05$). The means of groups 2 and 3 did not differ significantly. The mean participle values from all three groups differed significantly from one another ($p<0.05$). Participants of the 1st group used fewer participants than the second group, which used fewer than the third group. The mean conjunction value of the 1st group was significantly lower than that of the other two groups ($p<0.05$). The means of groups 2 and 3 did not differ significantly. The mean particle value of the 3rd group was significantly lower than that of the other two groups ($p<0.05$). The means of groups 1 and 2 did not differ significantly.

Table 3. Descriptive statistics and *t*-test results for POS usage in boys and girls from all age groups (3-6 years).

POS	Mean (boys)	Standard deviation (boys)	Mean (girls)	Standard deviation (girls)	*t*-value	*df*	*p*-value
Article	30.38	7.52	30.65	7.76	-0.30	298	0.381949
Noun	57.78	10.45	57.59	10.35	0.16	298	0.371004
Adjective	7.83	4.39	7.47	4.25	0.72	298	0.236547
Pronoun	31.77	7.26	32.60	7.75	-0.95	298	0.171481
Verb	56.99	8.10	56.38	7.95	0.66	298	0.256244
Participle	0.46	0.95	0.35	0.74	1.08	298	0.141257
Adverb	27.68	7.63	25.11	8.15	2.82	298	$p<0.05$
Preposition	11.69	4.24	12.19	4.41	-1.01	298	0.156762
Conjunction	26.99	7.52	28.16	7.87	-1.31	298	0.095524
Interjection	0.85	1.19	0.56	0.92	2.36	298	$p<0.05$
Particle	3.07	231	2.91	2.45	0.58	298	0.281935

Table 4. Relationship of the different parts of speech according to the age group of the participants.

Measure	3-4 years old		4-5 years old		5-6 years old		*df*	*F*	*p*-Value
	M	SD	M	SD	M	SD			
Article	26.46	6.28	32.13	7.60	32.97	7.31	2.297	24.996	$p<0.05$
Noun	61.77	10.68	57.53	9.59	53.75	9.31	2.297	16.496	$p<0.05$
Adjective	6.58	4.19	7.03	3.55	9.31	4.66	2.297	12.387	$p<0.05$
Pronoun	30.81	6.79	33.55	8.19	32.24	7.33	2.297	3.376	$p<0.05$
Verb	58.33	9.10	55.82	7.65	55.86	6.97	2.297	3.267	$p<0.05$
Participle	0.06	0.28	0.29	0.61	0.86	1.18	2.297	27.641	$p<0.05$
Adverb	25.91	7.44	27.22	8.21	25.9	8.31	2.297	0.901	0.407254
Preposition	12.62	4.57	11.55	4.81	11.68	3.44	2.297	1.831	0.162082
Conjunction	26.04	7.77	27.78	7.64	28.98	7.53	2.297	3.737	$p<0.05$
Interjection	0.77	1,25	0.8	0.89	0.52	1.02	2.297	2.085	0.12614
Particle	3.72	2.31	3.08	2.47	2.16	2.11	2.297	11.612	$p<0.05$

4.0 DISCUSSION

The present investigation aimed to count the POS usage between three different Greek-speaking age groups (3-4 years, 4-5 years, 5-6 years) and to examine any discrepancies in POS usage according to gender. For several reasons, measuring POS usage among Greek-speaking youngsters aged three to six is important. First, such a linguistic analysis can provide valuable information about language development during the preschool period. It helps professionals identify language developmental milestones, highlight individual differences, and detect children with language delays or disorders that need additional support. Second, it can guide the development of practical assessment tools and intervention programs for parents, educators, and professionals. Speech-language pathologists can use his information to create targeted material and activities for the individual needs of Greek-speaking preschool children. Third, the use and prevalence of specific POS at different developmental stages can offer valuable information for cognitive processes. Fourth, it will provide useful data for future cross-linguistic studies on the frequency of POS. Our findings revealed inflectional speech parts to be more common than non-inflectional ones across all three age groups (**Figure 1**). Children used more often nouns (22.66%), verbs (22.25%), pronouns (12.63%), articles (11.98%), adverbs (10.36%), and conjunctions (10.82%) (**Figure 2**).

Prepositions (4.69%), adjectives (3%), particles (1.17%), interjections (0.27%), and participles (0.16%) were used less frequently (Figure 2). These results are consistent with previous findings (Chadjipapa, 2021; Papaeliou & Rescorla, 2011). However, Chadjipapa (2021) reported lower frequencies for nouns (13.25%), verbs (15.29%), pronouns (5.81%), and adverbs (8.76%) when calculated in tokens. In contrast, Chadjipapa (2021) reported frequencies for nouns (42.48%), verbs (17.29%), pronouns (1.15%), and adverbs (4%) when calculated in word classes. This discrepancy may be due to sample size, linguistic analysis methodology, and/or differences in categories employed by the two studies.

The pronounced reliance on inflectional POS suggests a developmental trajectory marked by an expanding vocabulary and an increasing ability to convey more complex relationships and nuances in language (Bloom,

1993; Tomasello, 2005). The acquisition of inflectional elements indicates the children's growing awareness of grammatical rules and the application of these rules to enhance communicative competence (Pinker, 1994).

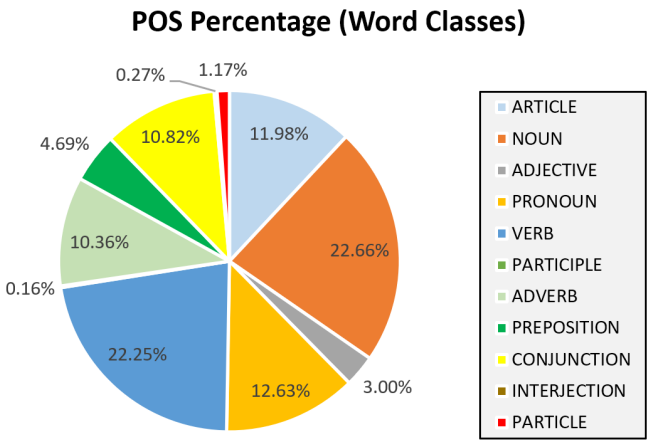

Figure 2. POS percentage (word classes).

4.1 Age-group variations

Significant differences were observed across most POS categories (Article, Noun, Adjective, Pronoun, Verb, Participle, Conjunction, Particle) at a significance level of $p<0.05$. The mean article value of the 1st group was significantly lower than that of the other two groups ($p<0.05$), indicating a markedly increase in article use between these age groups. The mean noun values from all three groups decreased over time and differed significantly from one another ($p<0.05$), suggesting that children rely less on nouns as their language skills evolve. An interesting observation is that although boys and girls used more nouns than verbs in the first two age categories, they used more verbs than nouns in the 5-6 years category (**Table 4**). This is in line with other studies that nouns are acquired earlier than verbs because nouns have more concrete referents than the concepts referred to by verbs and because children are exposed to more nouns than other POS (Bornstein et al., 2004; Gentner, 1982). Why children use more verbs than nouns in the 5-6 years category than in the previous two categories is open to various interpretations, with the simplest one being that as children progress in age, they move to more abstract domains, acquiring a broader range of action words with lower imageability (Gentner, 1982; McDonough et al., 2011; Rofes, 2018; Tomasello, 2005). The mean adjective value of the 3rd group was significantly higher than that of the other two groups ($p<0.05$). This shows that children of this age can communicate more precise details.

The mean pronoun value of the 1st group was significantly lower than that of the other two groups, implying that children at 4-5 years start using pronouns more frequently, which is critical for referring to persons and objects for communication purposes. The verb use decreases slightly over time, with the 1st group being significantly higher than the other two groups, suggesting changes in verb usage patterns. However, nouns and verbs occupy most of POS in all three age groups. Participles and conjunctions increase in all three groups. The mean participle values from all three groups differed significantly from one another. The mean conjunction value of the 1st group was significantly lower than that of the other two groups. Both participles and conjunctions are essential because they enable children to start forming more complex sentences. The mean particle value of the 3rd group was significantly lower than that of the other two groups, which might imply that children rely less on particles to construct efficient sentences. Another interesting result is that the mean count of adjectives and participles increases with age, indicating a potential expansion of descriptive and nuanced language skills as children progress from 3-4 to 5-6 years old. Another one is that the increase in conjunction usage may indicate a growing ability to form more complex sentences and express relationships between ideas, highlighting a developmental aspect in syntactical skills. These observations may correspond to cognitive and linguistic growth in children.

No significant differences were found in the usage of adverbs, prepositions, and interjections across the three age categories, as indicated by non-significant p-values. This finding suggests that the development of proficiency in these POS may not exhibit significant age-related changes during the specified age ranges. This lack of significant differences in adverb, preposition, and interjection usage suggests a degree of stability or consistency in developing these linguistic components across the specified age groups. Children in the studied age ranges may exhibit relatively similar proficiency in these aspects of language.

These findings suggest that as children progress through the different age groups (3-4, 4-5, and 5-6 years), there are notable variations in their usage of these linguistic elements. Certain linguistic elements may undergo substantial changes as children progress from one age group to another, reflecting the dynamic nature of language development in the early years. These results align with language development as a dynamic process,

with children progressing through successive stages of linguistic competence (Bloom, 1993).

4.2 Gender disparities in POS usage

The study revealed no significant gender-based differences in the usage of most POS (article, noun, adjective, pronoun, verb, participle, preposition, conjunction, particle). Both boys and girls demonstrated comparable proficiency in most fundamental language components, as indicated by the non-significant t-values (**Table 3**). Interestingly, a significant difference emerged in the usage of adverbs between boys and girls (p<0.05). Girls exhibited a lower mean score for adverbs compared to boys. This difference suggests potential variations in the linguistic preferences or styles of expression between the two genders in the adverbial category. Another notable finding was the significant difference in interjection usage (p<0.05). Girls demonstrated a lower mean score in this category compared to boys. This difference may reflect differences in communicative styles or emotional expression between the genders. The above adverb and interjection usage variations prompt further investigation into the sociolinguistic factors that may contribute to these differences. Further research into cultural, social, or contextual influences could assist in understanding how boys and girls employ language in these specific linguistic domains (Hoff, 2006). This demonstrated comparable overall language proficiency between the genders and is consistent with earlier studies suggesting insignificant gender-related variations in the use of speech parts for this age group (Chadjipapa, 2021).

Furthermore, a recent review study (Rinaldi et al., 2023) found statistically significant differences in several studies between girls and boys, but with a small advantage for girls and not for all ages. Moreover, the advantage in girls is more evident in the early stages (toddler). The statistical significance of the differences appears to depend on greater individual variability among boys than girls, which results in a higher number of boys among children with poor verbal abilities. Furthermore, as it was presented in the histogram, it was worth mentioning that in our study in the age of 5 to 6 years, the girls had higher scores than the boys in all the POS except from the participles and interjections. A study (Lange et al., 2016) with a sample of around 10.000 children 3-6 years found that although the girls performed better than boys, the effect sizes were small, and the differences decreased with age.

5.0 CONCLUSIONS

This study contributes to understanding the language acquisition process in Greek-speaking children aged 3-6. The differences observed in POS usage between the three age groups underscore the importance of considering developmental milestones in understanding language acquisition patterns. These findings are an important contribution to investigating cross-linguistic variation of POS usage. They may have practical implications for professionals, guiding the development of language intervention therapeutic programs to align with the evolving needs of children at different stages of development. A combination of biological, cognitive, and sociocultural factors may influence the frequency of POS usage-related differences. Further exploration into the underlying mechanisms driving these disparities could provide valuable insights into the striking differences in language development during the early years.

Future research could delve into a more fine-grained analysis within each age category to identify specific milestones or developmental patterns in the acquisition of individual POS. This could provide a more nuanced understanding of language development during the preschool years. Also, comparative studies across different languages and cultures can give a broader understanding of language development. Analysing how Greek-speaking children use POS compared to children in other language communities contributes to cross-linguistic research and informs best practices in language education. Additionally, linguistic analysis is crucial for researchers studying language disorders and pathologies (Leonard, 2017). Understanding how Greek POS deviates in children with language disorders can inform diagnostic criteria and therapeutic approaches.

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Author Contributions:

NT, MT and SMD conceptualized the study; MZ, SMD, and VCG devised the methodology; MZ, SMD and FF collected the data; NT, MZ, SMD, FF and AP prepared the original draft; MZ, SMD, FF and AP reviewed and edited manuscript; NT, VCG and PP supervised the project.

Conflicts of Interest: The authors declare no conflict of interest

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