

PHONOLOGICAL DEVELOPMENT IN ROMANIAN MONOLINGUAL CHILDREN

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Abstract: The paper aims at bringing to the fore the errors that occur in the production of children's early words in an attempt to see what phonological processes young learners of Romanian resort to in order to simplify adult targets. The data employed come from four longitudinal corpora and from diaries kept by colleagues of mine and they have been analysed in the framework of "developmental universals" and "particulars" (Slobin 1985). The findings reveal that, to a large extent, Romanian-speaking children adopt similar strategies in dealing with challenging targets as their English peers, but also strategies determined by language-specific features.

Keywords: acquisition of phonology, phonological processes, adult targets, developmental path

1. Introduction

An important aim of this paper is to contribute to the body of literature on cross-linguistic studies of language acquisition with a study on the phonological acquisition and development of monolingual Romanian-speaking children. The reason for this is that within the existing studies of Romanian language acquisition, the acquisition of phonology is the least explored. To my knowledge, the first researcher who slightly tackled the issue was Avram (1960). This is a little ironic, as, according to Ullmann (1957), the phonological system constitutes the first "building block" of any language (followed by lexicon and syntax).

Children seem to be able to identify the sound segments of the speech stream before they speak the first word. Still, their first words¹ require months of phonological development before production becomes adult-like. Several phonological processes affect/deform the child's early productions. These processes are defined as "a set of mental operations that change or delete phonological units as the result of natural limitations and capacities of human vocal production and perception" (Hua 2002: 28).

Foreign linguists involved in the study of the phonological acquisition have identified such processes both at segmental and suprasegmental levels. Ingram (1976) mentioned two basic types of processes that affect the segmental level, namely assimilation (reduplication) and substitution. At the suprasegmental level, the syllable structure may be affected by processes such as final consonant deletion, cluster reduction, and unstressed syllable deletion. For reasons of space, the present paper will focus only on those errors encountered at the segmental level.

The paper is structured as follows: the next section will review some cross-linguistic studies of phonological acquisition. Then, in section 3, I will describe the

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¹ There is consensus among linguists (O'Grady et al. 1997, Tomasello 2003, Lust 2006) that children start producing conventional linguistic symbols soon after their first birthday.

phonological structure of Romanian, focusing on those aspects that will be relevant to the subsequent discussion of the phonological acquisition and development. Section 4 reports on the phonological processes/error patterns affecting the sound segments, encountered in the speech of a number of Romanian-speaking children, aged 1; 0–3; 6. The developmental patterns will be discussed in the framework of “developmental universals” and “particulars” (Slobin 1985). According to Slobin (1985: 5), “by combining attention to universals and particulars, we are beginning to discern a more differentiated picture of child language – one in which we can see why patterns of acquisition of specific properties *vary* from language to language, while they are determined by common principles of higher order” (emphasis original). The source of data consists of diary records from 6 Romania-speaking children, whose utterances (mainly individual words) were shared with me by their parents (colleagues and friends of mine), as well as four longitudinal corpora.

The following section will review previous diary, cross-linguistic, and longitudinal studies on the acquisition of phonology of various languages, with the purpose of bringing to the fore comparable findings on developmental universals and particulars.

2. Cross-linguistic studies of phonological acquisition

The first important studies of the acquisition of phonology were targeted at the English language and were focused on individual children. From among such studies worth mentioning is Smith’s (1973) diary study of the phonological development of his son, Amahl, between 2; 2 and 4 years. Smith provided a generative, rule-based account of the child’s phonological development, suggesting that the child’s deformations were not the result of misperception, but rather of his rule-based system. In his study, the British linguist identified a number of phonological processes occurring at the level of segments, such as final stopping of fricatives (/si:/ → [di] *see*), fronting (/tɒp/ → [bɒp] *top*), consonant harmony (/jeləʊ/ → [lɛlɔ] *yellow*), final consonant devoicing (*big* → [bik] *big*), or weak syllable deletion (/əweɪ/ → [wei] *away*).

Other studies have examined the similarities and differences in the developmental patterns of children, focussing on the order and rate of acquisition of phonemes and on the developmental error patterns (Prather et al. 1975, Ingram 1976, Stoel-Gammon and Dunn 1985). These studies revealed that stops, nasals, and glides were among the first acquired consonants, while liquids, fricatives and affricates were acquired later by the English-speaking children.

In the late 70s and early 80s, we witness a movement away from segments to the word as an important unit in children’s early phonological organization. Thus, Waterson (1987) (quoted in Demuth 2011) was of the opinion that children’s early phonologies could be best described in terms of a holistic, non-segmental-prosodic approach. On the other hand, Allen and Hawkins (1980) (quoted in Demuth 2011), proposed that English-speaking children’s early words tended to take the form of disyllabic trochaic feet (i.e. feet made up of two syllables in which the first one is stronger than the second). They noticed that the early words produced by children were either shortened/truncated (e.g. /bə'nænə/ → ['nænə] *banana* CVCVCV → CVCV) or augmented (CVC → CVCV),

the outcome of both processes being a disyllabic trochaic foot. Allen and Hawkins were of the opinion that such word shapes might be universal, representing the default, or unmarked form of children's early words.

Starting with the 90s, linguists focused their attention on other languages with the aim of examining comparable data from children acquiring different languages in order to trace developmental universals. From among the cross-linguistic studies on phonological acquisition, only a few will be presented in this section, highlighting the similarities between the English-speaking children and children speaking other languages.

In 1998, Amayreh and Dyson, working on data from Arabic children aged 2:0 – 6;4, found that medial consonants were produced more accurately than initial and final consonants. The age of acquisition of most Arabic consonants was similar to that of English, the exceptions being /f, t, l/, which were acquired earlier in Arabic than in English, whereas /h, dʒ, ð, j/ became stabilised later in Arabic than in English. Fox and Dodd (1999) studied the phonological development of German children aged 1; 6-5; 11, showing that by the age of 4:0, most of the children acquiring this language were able to produce all the phonemes correctly, while the majority of English speaking children of the same age (i.e. 4;0) still had problems with the fricative and affricates sounds /v, z, θ, dʒ/. From among the language-specific errors observed by them was the lack of preference of the German-speaking children for either the first or the second consonant when reducing clusters such as /kv/ and /kn/.

As far as Spanish-speaking children are concerned, one important study on their acquisition of phonology was carried out by Mann and Hodson (1994) who found that by the age of 4, most of the Spanish phonemes were acquired, the ones that still posed problems to the children being /r, s, l, ʃ/. Very frequently, Spanish children substituted the liquids and the affricates, reduced word-initial clusters, deleted unstressed syllables, and turned fricatives into stops.

An important contribution to the acquisition of Chinese phonology was brought by Hua (2002) who investigated normally developing Putonghua-speaking children aged 1;6-4:0, children with atypical development, as well as a set of identical twins. Her findings indicated that Putonghua-speaking children first acquire tones, then syllable final consonants, i.e. /n, ŋ/, and vowels, the syllable-initial consonants being a later acquisition. In terms of error-patterns, the ones that were encountered in the cross-sectional study were diphthong and triphthong reduction, final consonant deletion, stopping (/ts/ → /t/), gliding (/ɹ/ → /j/), and affrication. The findings of her longitudinal study showed that the acquisition of vowels was relatively error-free, the central, open vowel /ʌ/ and the back, close vowel /u/ occurring earlier in the children's production of the first words. The consonants that seemed to be stabilized earlier were the unaspirated stops /p, t/ and three nasal sounds /m, n, ŋ/, the /n/ being acquired first in syllable-final position and later in onset position. With respect to the acquisition of tones, the longitudinal study revealed some errors produced by the Chinese children, the most frequent of them being the substitution of the high falling tone with the high level one. The patterns of tone substitution indicated inter-children variability, the explanation provided by Hua being "an incorrect association between a tone and a segment on a lexical basis" or such errors "were the result of children's simplification strategies" (Hua 2002: 98).

Let us now turn to the Romanian phonological inventory which will be presented in comparison with the English one, as the phonological development of the Romanian children will be compared, where possible, with that of the English-speaking children.

3. The English vs. the Romanian phonological inventory

The inventories of phonemes of English and Romanian vary to a certain extent. Thus, as far as the monophthongs are concerned, while English has 12 simple vowel sounds, Romanian has got only 7, i.e. /a/, /ə/, /î/, /e/, /i/, /o/, and /u/. From among these, the first three are always produced as full vowels (never as semivowels), the other four having a double status: they can function both as full vowels /e/, /i/, /o/, and /u/ (*bere* ‘beer’, *bine* ‘well’, *bol* ‘bowl’, or *bun* ‘good’) and as semivowels /ɛ/, /ɨ/, /ɔ/, and /ʊ/ (*bea* /bɛa/ ‘(she) drinks’, *bei* /beɨ/ ‘(you) drink’, *foame* /fɔame/ ‘hunger’, or *bou* /boʊ/ ‘ox’). Consequently, “the first three are always syllabic, whereas the other four are syllabic in certain contexts and non-syllabic in others (i.e. when they are semivowels, they cannot receive stress, nor can they form the syllable peak/nucleus)” (Ene 2010: 19). Another difference between the English and the Romanian simple vowels concerns their classification according to the degree of opening of the mouth cavity when producing them. While in English there are four levels/degrees of aperture, giving rise to four types of vowels (close, half-close, half-open, and open), in Romanian we have only three levels: open (/a/), half-open (/ə/, /e/, and /o/), and close (/i/, /î/, /u/). The length of vowels also differs: English has got both long and short vowels, length having a phonemic character, whereas in Romanian vowels are always short². Also worth mentioning in connection with the Romanian monophthongs is the devoicing of the final /i/, when this follows a consonant or a consonant cluster, as in *pești* /peʃtʰi/³ (the plural form of ‘fish’), *stupi* /stupʰi/ (‘beehives’), or *pomi* /pomʰi/ (‘trees’).

Unlike the English diphthongs, which are made up of two vowel sounds, the Romanian ones contain a vowel and a semivowel. Depending on the position/order of the constituents, Romanian diphthongs will be rising (semivowel + vowel) or falling (vowel + semivowel). The English diphthongs are rising if the stress falls on the second vowel, and falling if the stress falls on the first vowel. As a general rule, diphthongs in English are falling. Another difference between the diphthongs of the two languages relates to their number: while English has 8 diphthongs, in Romanian there are 22. The larger number of Romanian diphthongs is due to the combinatorial possibilities of vowels and semivowels.

As far as consonants are concerned, their number is different in the two languages: English has got 24, while Romanian only 22. Most of the consonantal sounds are the same, the exceptions being the interdental fricatives /θ, ð/ and the velar nasal /ŋ/ that occur only in English, and the palatal plosives /kʰ, gʰ/, as well as the affricate /tʃ/ that are typical of Romanian. Below are the consonantal inventories of both languages:

² In emphatic speech, vowels may be lengthened in Romanian, but this process does not have a phonemic value, i.e. the meaning of a word will not change.

³ This kind of /i/ is rendered by a superscript <i>, to indicate that it is not syllabic.

- (i) English
 - 5 sonorants – /l, m, n, ŋ, r/;
 - 19 obstruents – /p, b, t, d, k, g, f, v, s, z, ʃ, ʒ, θ, ð, h, tʃ, dʒ, w, j/.
- (ii) Romanian
 - 4 sonorants – /l, m, n, r/;
 - 18 obstruents – /p, b, t, d, k, g, k', g', f, v, s, z, ʃ, ʒ, h, tʃ, dʒ, ts/.

With these differences in mind, let us now have a look at the means by which young learners of Romanian try to cope with the difficult task of uttering the words of their mother tongue in an adult-like manner.

4. Methodology

In what follows, an attempt is made to see whether the phonological processes affecting sound segments are universal or language specific. To this aim, data coming from diary records⁴ and from the 4 longitudinal corpora will be subjected to analysis. My belief is that such errors provide a way of describing the relationship between the adult targets and the children's faulty realisations of them.

The analysis is based on the following research questions:

- (i) what phonological processes⁵ do young learners employ?
- (ii) which are the target phonetic classes and the phonological processes likely to affect them?
- (iii) are these processes universal or language specific?

4.1. Participants and data collection

As mentioned before, the data for the analysis of the phonological processes consists of two types of corpora. On the one hand, I have employed diary data from 6 Romania-speaking children, aged between 1; 7 and 2;10. Their utterances (mainly simple words) were gathered from language diaries kept by their parents (colleagues and friends of mine, and myself) as well as from recordings made sporadically. Diary records proved useful in detecting the differences between adult targets and children's erroneous realisations and in identifying whether the latter are universal or language specific. However, since the number of children was quite small and as the information was not

⁴ As the first studies of child language took the form of parental diaries and as they set the cornerstone in the study of language acquisition, I employed such diary data provided by my younger colleagues, whose contribution I would like to acknowledge: Laura T., Cristina V., Laura S., Adina C., and Răzvan S. The distinction between the children in the longitudinal study and those whose errors have been reported by their parents will be made by giving the full first names of the latter (as all my colleagues agreed on this issue), while the former will be referred to only by the initial of their first names.

⁵ Different other terms have been used for such processes. Hua (2002) calls them "error patterns" while Stampe (1969/1979) refers to them as "natural processes" due to the fact that they are so regular and encountered in a number of languages. Cruttenden (1979) considers them "phonemic substitutions", as the a "phoneme in the adult system not yet present in a child's system will be replaced by a phoneme which shares features with the adult phoneme and which is already present in the child's speech" (Cruttenden 1979: 22).

very rich, diary records were supplemented with four longitudinal corpora⁶ from four monolingual Romanian-acquiring children – Child S, Child M, Child L, and Child I.

One corpus was collected (audio-recorded) and transcribed by Stoicescu (2013) for her doctoral dissertation. It belongs to a boy (Child I) who was recorded once a month, from the age of 1;10 to 3;4, the time-span of the recording being somewhere around an hour, with the exception of some sessions that were a bit shorter (between 15-30 minutes), these being recorded by the child's parents "when the investigator could not be present and they tried to fit this around their busy schedules" (Stoicescu, 2013: 109). The boy interacted spontaneously with his mother and other adult persons who were present at the time of the recordings. The transcribed corpus of Child I extends over 18 recording sessions and all 18 files were used for the analysis.

Unlike the previous corpus, which was collected for linguistic research-related purposes⁷, the other three could be considered some kind of "family albums"; consequently, the duration of the recordings varies from a couple of seconds (Child M) to several minutes (the longest being 35 minutes in the case of Child S). The children were video-taped (Child M and Child L) or audio-recorded (Child S) by their parents in their homes while interacting with family members on various occasions (Christmas party, birthday party, bathing time, story-telling, etc.). Two of the children (Child S and Child M) were recorded at irregular time intervals. Thus, Child S was recorded in 10 sessions, the first taking place when he was 1;0 and the last at the age of 4;3, with a considerable time gap (5 months) between the first and the second recording, and 1 year and 2 months between the ninth and the last recordings. For Child M, on the other hand, there were 70 recording sessions within a period of approximately 8 months, the first dating from the time when the child was 1;2 and the last when the child was 1;10. For the present study only 58 recordings were employed, the others having been disregarded due to the fact that they did not contain any relevant material or because the child had not uttered any word.

Child L's corpus extends over a period of one year and two months (1;6–2;8), with video recordings performed monthly (except for the time span 1;10–2). The 32 sessions were transcribed and used for the analysis.

Despite the inconsistency in the data collection, the corpora have provided a large number of the error patterns. The table below contains information about the subjects in the study, both from the diary records and from the longitudinal corpora.

⁶ I am greatly indebted to all three persons who helped me with the longitudinal corpora: Ioana Stoicescu, who kindly agreed to share her laborious work on Child I; Ana Ene, my colleague from the Department of Theoretical and Applied Linguistics of "Transilvania" University of Braşov, who accidentally heard that I was interested in the phonological development of Romanian-speaking children and offered to make a selection of the recordings of her son (Child L), and my former student, Roxana Neagoe, the happy mother of Child M, who shared with me all the recordings of her daughter she had by the time I started the study. Child S is my own son who was audio-recorded at irregular time-intervals when he was very young, not necessarily to keep track of his linguistic development, but more for later delight (of the parents and his own) in listening to the recordings.

⁷ Stoicescu was interested in the acquisition of the verbal categories of tense and aspect, which accounts for the fact that her recordings of Child I started when the child was 1;10.

| No. | Name of the child | Age |
|-----|-------------------|-----------|
| 1 | Ștefan | 1;9 |
| 2 | Alex | 2;4 |
| 3 | Vlad | 1;7 |
| 4 | Maria | 2;10 |
| 5 | Paula | 2;1 |
| 6 | Ana Maria | 1;11 |
| 7 | Child I (boy) | 1;11–3;1 |
| 8 | Child M (girl) | 1;2–1;10 |
| 9 | Child S (boy) | 1;0;1–4;3 |
| 10 | Child L(boy) | 1;6–2;8 |

Table 1. Information on the children in the study

4.2 Transcription

The diary data have been sent to me in normal spelling, which I have transcribed for the examples employed in the analysis. Given the fact that Romanian has got a phonemic writing system, the examples of deformations encountered among the children were rendered quite accurately. When the parent was not exactly certain of how to render a certain error, she would provide additional information which I checked in face-to-face encounters with her/him.

The speech samples from each recording session in the longitudinal corpora were transcribed using CHAT by Stoicescu (2013) (for Child I) and in normal orthography by me (for the other three children). The children's unintelligible productions (i.e. the targets of these productions could not be guessed from the context) were marked with an asterisk. Due to time constraints, it was only the erroneous (deformed) productions in the corpora that have been transcribed phonetically.

In keeping with the conventions employed in child language research, child-produced forms will be given in square brackets, while the target/adult forms will be placed between slants; glosses will appear in single quotes, while the orthographically written target words will be spelled in italics. Children's ages are rendered e.g. 3;8 which reads 'three years and eight months'.

4.3 Data analysis

For reasons of simplification, the unit of analysis was the *word*. But since the subjects in the study were at the beginning of lexical use, I have employed two of the criteria for word identification suggested by Vihman and McCune (1994) (quoted in Hua 2002):

Criteria based on context: vocalisations will be identified as words when their meanings are easily identified in contexts or by the mother, or when they are used by the child more than once with similar phonological shapes across different uses.

Criteria based on vocalisation shape: vocalisations will be identified as words when they match more than two segments of the adult form, or when the prosody [...] of the vocalisations matches the adult target (Hua 2002: 83).

Let us now have a look at the Romanian-speaking children and see whether the error patterns reported in the acquisition of English also occur in Romanian.

5. The acquisition of Romanian phonology: phonological processes

5.1 Assimilation processes

Assimilation is the process that makes sounds become similar in pronunciation either completely or partially. Assimilation operates on adjacent sounds, causing them to share some or all features, e.g. manner and/or place features. An earlier sound in the word may be assimilated to the one that follows it (regressive assimilation) or a later sound may be assimilated to one which precedes it (progressive assimilation). Harmony could be viewed as a sub-type of assimilation, more specifically a long-distance assimilation (i.e. assimilation of non-adjacent sounds) that can target vowels (vowel harmony) or consonants (consonant harmony). Harmony is a wide-spread process among the world's languages and it is frequently encountered in child languages, too. In the small corpus under investigation the following types of harmony have been encountered:

5.1.1 Consonant harmony

As the examples in Table 2 show, harmony affects all consonant features and occurs in both directions. Manner of articulation is changed in /stafide/ → [statide] *stafide* 'raisins' and /pisika/ → [pikika] *pisica* 'cat' (the voiceless fricatives /f/ and /s/ turn into the voiceless plosive /t/ and /k/, respectively), as well as in /kolorəm/ → [kolobəm] *colorăm* '(we) are colouring' or /norok/ → [nonok] *noroc* 'cheers!', where the fricative /r/ is replaced by a plosive (/b/) or a nasal sound (/n/). More numerous are the examples of harmony that targets the place of articulation of consonants, as in /mənʊʃ/ → [məmʊʃ] *mănuși* 'gloves' where the alveolar /n/ changes into the bilabial /m/. Since both /m/ and /n/ are nasals and the voicing of both consonants remains unchanged, the conclusion is that the bilabial place of the initial sound of the word (i.e. /m/) is spreading to the coronal /n/ (progressive harmony). This is known as "labial harmony". Almost all examples of place of articulation harmony in the Romanian corpus involve labial harmony.

What is important to address in connection with this process is the direction of harmony and the nature of the trigger (i.e. the segment that causes harmony). As it can be seen in Table 2, harmony is bidirectional, in that in some cases the trigger of the process precedes the target (i.e. the segment that undergoes harmony), as in /bunika/ → [buma] *bunica* 'grandma' (Child M 1;4) or follows it, as in /guma/ → [buma] *guma* 'eraser' (Child S 1;8). In these two examples, a bilabial sound (/m/ or /b/) is the trigger of harmony, targeting either the coronal /n/ or the dorsal /k/ in the first word (as one syllable is deleted), and the dorsal /g/ in the second one.

| Child's form | Adult target | Child's name and age | Child's form | Adult target | Child's name and age |
|---------------|-----------------------------------------------------|----------------------|--------------|--------------------------------------------------|----------------------|
| Manner | | | Place | | |
| [dadu] | /radu/ <i>Radu</i> 'Radu' | Child S 1;8 | [anta] | /anka/ <i>Anca</i> 'Anca' | Child S 1;11 |
| [fofu] | /fokul/ <i>focul</i> 'the.fire' | Child S 1;8 | [bumi] | /buni/ <i>buni</i> 'granny' | Child S 1;11 |
| [g'ininit̩sə] | /grədinit̩sə/ <i>grădiniță</i> 'kindergarten' | Child I 2;1 | [buma] | /guma/ <i>guma</i> 'eraser' | Child S 1;8 |
| [galbel] | /galben/ <i>galben</i> 'yellow' | Child I 2;1 | [papaku] | /kapakul/ <i>capacul</i> 'the lid' | Child L 2;4 |
| [statide] | /stafide/ <i>stafide</i> 'raisins' | Alex 2;4 | [mobit] | /lovit/ <i>lovit</i> 'hurt' | Child I 2;1 |
| [pik'ika] | /pisika/ <i>pisica</i> 'the.cat' | Alex 2;4 | [məmoʃ̩] | /mənuʃ̩/ <i>mănuși</i> 'gloves' | Ștefan 1;9 |
| [dodaur] | /dinozaur/ <i>dinozaur</i> 'dinosaur' | Alex 2;4 | [mimelalə] | /mineralə/ <i>minerală</i> 'mineral water' | Child L 2;4 |
| [nonok] | /norok/ <i>noroc</i> 'cheers' | Ștefan 1; 9 | [buma] | /bunika/ <i>bunica</i> 'grandmother' | Child M 1;4 |
| [kolobəm] | /kolorəm/ <i>colorăm</i> '(we) colour' | Paula 2;1 | [pumpu] | /pentru/ <i>pentru</i> 'for' | Alex 2;4 |

Table 2. Consonant harmony in child Romanian

Two of the examples of place of articulation harmony are worth discussing. The first is Child I's attempt at producing the past participle of the verb *a se lovi* 'to get hurt', at the age of 2;1. The target form /lovit/ 'hurt' is pronounced by him as [mobit]. Until the age of 2;4 this subject replaced the labial fricatives with the labial plosives in all contexts. This accounts for the [b] sound in his form. Since the coronal liquid /l/ still posed problems for him at that age, we may assume that he replaced it with the labial sonorant [m], under the influence of the plosive [b].

The second example under scrutiny is Alex's attempt at the preposition *pentru* 'for', which he pronounced as [pumpu]. The processes that affected the adult target may be described as: (i) omission of the /r/ sound in the /tr/ cluster: /pen.tru/ → [pen.tu]⁸; (ii) consonant harmony: labiality of /p/ spreads progressively to the coronal /n/: [pen.tu] → [pem.tu]; (iii) progressive assimilation of place of articulation: the bilabial /m/ assimilates the adjacent coronal /t/, turning it into a [p]: [pem.tu] → [pem.pu]; (iv) vowel copying:

⁸ For an easy identification of the processes, some of the examples will be divided into syllables by means of a period (.)

the vowel of the second syllable (/u/) is copied in the first, showing the child's preference for identical vowel quality: [pɛm.pu] → [pumpu]⁹.

There is only one example of coronal harmony, more correctly of coronal assimilation, in the table: /anka/ → [anta] *Anca* 'Anca' (Child S 1;11). Here we have a case of progressive assimilation where the coronal /n/ targets the dorsal plosive /k/, which turns into the coronal [t]. As a result of this process, the nasal sound will share the place of articulation with the adjacent stop, which will lead to ease of articulation of the word (a girl's name) by the child.

Harmony targeting the place of articulation seems to be very common among children acquiring other languages. Cross-linguistically, it has been identified that out of the three major places of articulation (labial, dorsal, and coronal), coronal is targeted most often by both dorsal and labial consonants (Menn 1971, O'Neal 1998 for English, Macken and Ferguson 1983 for Spanish, Kappa 2001 for Greek). The Romanian data seems to bring further evidence with respect to the coronal target, the difference between the Romanian and the English children resting on the trigger of assimilation. Thus, in all the examples encountered in the two types of corpora it was a labial sound that affected the place of articulation of another consonant. The same appears to be true of German, Dutch¹⁰, and Jordanian Arabic (Johnson and Reimers 2010).

In the data I have come across two examples which may count as voicing harmony, namely Child I's attempts at the adult targets /bibliotekə/ *biblioteca* 'bookshelf' and /kobəarə/ *coboară* '(s/he) descends'. At the age of 2;7, the child pronounced the first word as [bipotekə]. Though he can pronounce the singleton /l/ in word-initial position, in clusters the sound still poses problems for the child; consequently, in the word under discussion he simply dropped it. The remaining /b/ from the initial /bl/ cluster is a voiced consonant which is followed by a vowel as a result of the cluster reduction, so it had the necessary environment for remaining voiced. But in the child's output it emerges as the devoiced [p]. The only explanation for this is that Child I anticipated the voicelessness of the initial consonant of the third syllable, i.e. /t/. So, in this example we have a clear case of regressive harmony of voicing. In his second example, the child produced the form [kopəarə]. The /b/ in the onset of the second syllable of the word undergoes devoicing to [p] triggered by the preceding voiceless /k/ sound, i.e. this is an instance of progressive harmony.

5.1.2 Vowel copying

It has already been shown that apart from consonant harmony, some of the Romanian subjects also resorted to a process that involves a similar vocalic sound content of syllables, i.e. vowel copy¹¹. This process affected polysyllabic words in which the

⁹ We may also assume that there is a kind of consonant-to-vowel harmony, in that the bilabial consonant /p/ preceding the front mid-open vowel /e/ will tend to change it into one that involves bilabiality, i.e. into [u].

¹⁰ Pater and Werle (2003), quoted in Johnson and Reimers (2010: 216), have identified a preference of Dutch children for labial harmony, which can be attributed to the prevalence of vowel-to-consonant assimilation in this language.

¹¹ I am indebted to Andrei A. Avram (University of Bucharest) who drew my attention to the fact that vowel harmony and vowel copying are distinct processes. The former "involves the spreading of vowel quality from

vowel sound of one syllable was copied in all or only some of the other syllables. Thus, in Vlad's (1;7) production of the word /te.le.vi.zor/ *televizor* 'TV set', which contains 3 different vocoid sounds, the vowel /o/ of the last syllable is copied all over his shortened production [to.zo.zo]. In Child I's attempt at the adult form /bukətəria/ → [bukutəria] *bucătăria* 'kitchen', the vowel of the first syllable is copied in the second one, the others remaining unchanged.

| Child's form | Adult target | Child's name and age | Child's form | Adult target | Child's name and age |
|--------------|---------------------------------------------------|----------------------|--------------|---------------------------------------------------|----------------------|
| [mototo] | /motoretə/ <i>motoretă</i> 'motorbike' | Vlad 1;7 | [goïo] | /gaura/ <i>gaura</i> 'the.hole' | Ştefan 1;9 |
| [pakalaka] | /portokala/ <i>portocala</i> 'orange' | Vlad 1;7 | [lopoto] | /lopətar/ <i>lopătar</i> 'antlered deer' | Ştefan 1;9 |
| [tozozo] | /televizor/ <i>televizor</i> 'TV-set' | Vlad 1;7 | [ghidi] | /gîdilə/ <i>gădilă</i> 'it tickles' | Ştefan 1;9 |
| [koloko] | /kəruʃorul/ <i>căruciorul</i> 'the pram' | Vlad 1;7 | [kakuku] | /kakaʊə/ <i>cacao</i> 'cocoa' | Ştefan 1;9 |
| [tonon] | /telefon/ <i>telefon</i> 'phone' | Vlad 1;7 | [mokuʃu] | /moriʃkə/ <i>morişcă</i> 'mill' | Ştefan 1;9 |
| [katoto] | /kalkulatorul/ <i>calculatorul</i> 'the PC' | Vlad 2;7 | [gataia] | /gələata/ <i>găleată</i> 'the.bucket' | Ştefan 1;9 |
| [ʒugui] | /ʒukəri/ <i>jucării</i> 'toys' | Child L 2;7 | [gənonitsə] | /grədinitə/ <i>grădiniţă</i> 'kindergarten' | Child I 2;7 |
| [g'ininitə] | /grədinitə/ <i>grădiniţă</i> 'kindergarten' | Child I 2;1 | [bukutəria] | /bukətəria/ <i>bucătăria</i> 'the.kitchen' | Child I 2;7 |

Table 3. Vowel copying in child Romanian

As Table 3 shows, vowel copy seems to be an individual preference: only 4 children out of 12 have made use of it to various extents. Thus, 6 out of the 25 words produced by Vlad at the age of 1;7 are characterised by vowel copy combined with consonant harmony, which in many cases resulted in reduplicated constructions (to be discussed in more details in the following section). Ştefan, another child in the "diary study" has employed this phonological process 7 times (from a total of 64 words), but his pattern is different from Vlad's in that vowel copy is frequently combined with metathesis, i.e. the process of changing the order of sound segments (consider his last two examples). Child I's attempts at the adult target /grədinitə/ *grădiniţă* 'kindergarten' show

one morpheme so as to replace the vowel quality of another" (Epps 2008: 102), consequently it applies across word boundaries; the latter consists in the literal copying of the whole vowel segment and may occur even within the same morpheme. The two processes have, nevertheless, much in common, both being motivated by the preference for identical melodic content of syllables.

preference for a certain vowel in two stages of his phonological development – [i] at the age of 2;1 and [ə] at the age of 2:7) – while the deformed output of Child L is caused by both vowel copy and pre-vocalic voicing: /ʒukəri/ → [ʒugui] *jucării* ‘toys’. All the examples in the table above show that, in many cases, children’s constructions are affected by a combination of phonological processes.

5.1.3 Reduplication

Reduplication, the process of repeating similar structures, is thought to be the first and most fundamental step in the linguistic development of children, since it occurs in all children in varying degrees” (Johnson and Reimers 2010: 2). In the earliest stage, it “coincides with the transition from playful babbling to first signs of communication and can persist well into the second year” (Johnson and Reimers 2010: 2). In my data, the child who seemed to have made extensive use of this process was Child S. At the age of 1;8, his vocabulary contained quite a number of reduplicated words, such as *'nena* ‘mister’, *'nani* ‘sleep’, *tu'tu* ‘the.car’, *'fofu* ‘the fire’, *ba'ba* ‘grandpa’ (which remained the same, even after 20 years, this form turning into a kind of proper noun), *'tita* ‘the clock’. Some of these reduplicated words are onomatopoeic in nature (*tu'tu* – the sound produced by the horn of a car, *'tita* – the ticking of the clock), some others being the result of a previously mentioned process, i.e. consonant harmony. Thus, the target word /fokul/ *focul* ‘fire’ underwent progressive consonant harmony that resulted in the substitution of the plosive /k/ with the fricative /f/. Simultaneously, the final consonant has been deleted. This deletion is a common practice even in adult speech, when the ‘l’ stands for the definite masculine article. Two of the words above, *tu'tu* and *ba'ba*, are examples of total reduplication (i.e. what is copied is the whole syllable), whereas the others show partial reduplication (based on vowel alternation, as in *'nani* ‘sleep’, *'tita* ‘the.clock’).

A totally reduplicated word was encountered in the speech of Child I, who at the age of 2;1 produced [kolka-kolka] when referring to *Coca Cola*. What is interesting is the way in which he combined the onset consonants of the second syllables in the brand name: [k]+[l]=[lk]. Other cases of reduplication in the corpus appeared as a result of adding an extra syllable to certain words, in order to obtain disyllabic trochaic feet. Only four such examples were encountered in the corpus (the additional reduplicated syllables are bolded): *Teododora*¹² (Maria, 2;11), *bunnicu* ‘grandpa’, *buninica*¹³ ‘grandma’ (Ana Maria, 2;6), and *să povestetesesc* ‘to narrate/tell the story’ (Child I: 2;3). All these examples are indicative of the fact that reduplication in child language, though it seems to complicate rather than simplify adult targets, is “merely a strategy used to alter the target word in accordance with the developing production capacity” (Johnson and Reimers 2010: 7) of the young learners.

¹² Though the name is pronounced with a hiatus between the first and the second syllables /te-o/, the child pronounces the two syllables as one, the two vowels being combined into a diphthong [t'ëo-do-'do-ra].

¹³ It is interesting to notice that Ana Maria reduplicates the middle (stressed) syllable of the words, while her sister, Paula, deletes it. This may be indicative of the two girls’ preferences for different strategies.

5.2 Substitution processes

The second major type of phonological processes that affect mainly consonantal segments is represented by what Ingram (1976) called “substitution processes”. These are: stopping, prevocalic voicing, final devoicing, fronting, and gliding. As shown below, they are all attested in the Romanian data.

5.2.1 Stopping

Stopping (deaffrication) consists in the replacement of fricatives or affricates with stops in the child output. Such a phonological process is reported to occur in the acquisition of other languages (for English, see Ingram 1976, Johnson and Reimers 2010, for Chinese, see Hua 2002). Stopping is not restricted to any specific word position: in English, for example, it may affect the final consonant, as in /haus/ → [haut], or “it can even occur at both ends of a monosyllabic word, for example *this* → [dit]” (Johnson and Reimers 2010: 14). Illustrated below are instances of stopping in the Romanian data:

| Stopping of affricates (deaffrication) | | | Stopping of fricatives | | |
|----------------------------------------|-----------------------------------------------|----------------------|------------------------|---------------------------------------------|----------------------|
| Child’s form | Adult target | Child’s name and age | Child’s form | Adult target | Child’s name and age |
| [gaditsi] | /gadʒiʃi/ <i>gagici</i> ‘chicks’ | Child L 1;8 | [podi] | /poze/ <i>poze</i> ‘photos’ | Child L 1;8 |
| [mede] | /merdʒe/ <i>merge</i> ‘(he) goes’ | Child L 2; 6 | [înkɪt] | /înkis/ <i>închis</i> ‘locked’ | Child L 2;5 |
| [tokolatə] | /ʃokolatə/ <i>ciocolată</i> ‘chocolate’ | Child L 2;5 | [pate] | /faʃe/ <i>face</i> ‘(it) makes’ | Child I 2;0 |
| [nide] | /nindʒe/ <i>ninge</i> ‘it is snowing’ | Ştefan 1;9 | [poku] | /foku/ <i>focu</i> ‘the fire’ | Child I 2;2 |
| [midėja] | /mindʒə/ <i>mingea</i> ‘the ball’ | Ştefan 1;9 | [dino] | /vino/ <i>vino!</i> ‘come’ | Alex 2;4 |
| [tai] | /ʃai/ <i>ceai</i> ‘tea’ | Ştefan 1;9 | [adutə-mə] | /aʒutə-mə/ <i>ajută-mă</i> ‘help me!’ | Alex 2;4 |
| [taʃ] | /ʃas/ <i>ceas</i> ‘watch/clock’ | Ştefan 1;9 | [buntu] | /vîntu/ <i>vîntu</i> ‘the wind’ | Ana Maria 1;11 |
| [bətu] | /bətsu/ <i>băţu</i> ‘the stick.’ | Child S 1;11 | [kate] | /kasə/ <i>casă</i> ‘house’ | Ştefan 1;9 |
| [aitėja] | /aiʃə/ <i>here</i> ‘here’ | Child S 1;11 | [mate] | /masə/ <i>masă</i> ‘table’ | Ştefan 1;9 |

Table 4: Stopping of affricates and fricatives in child Romanian

The most common type of stopping in the data was the substitution of fricatives with stops that have the same place or nearest place of articulation with that of the fricatives. Thus, /s/ is substituted with [t] and /z/ is replaced by [d], all being dental consonants; the labio-dental fricative /v/ turns either into the dental /d/ or into the labial /b/ in the children's output, while its voiceless counterpart /f/ becomes [p]. In the case of deaffrication, affricates turned into the dental plosives representing their first constituent element. Thus, /tʃ/ was pronounced as [t], and /dʒ/ as [d]. As one can notice, the sonority of the target and of the sounds produced by the children is the same. An interesting example of stopping is provided by Child I (aged 2;0), who in /fatʃe/ *face* '(it) makes' stops both the initial fricative to [p] and the affricate /tʃ/ to [t]: [pate].

Also worth mentioning are the cases of deaffrication which occurred without stopping. I came across a couple of such examples, produced by four subjects. In three situations, the affricate was replaced by its fricative constituent (/dʒ/ → [ʒ], /ts/ → [s]) (see the examples in the left-hand side of the table below), whereas in the other cases the outcome of the process was a totally different fricative, i.e. [f] and [s] (see the examples on the right-hand side of the table). As compared to stopping, this phenomenon is less frequent in Romanian.

| Childs' form | Adult Target | Child's name and age | Childs' form | Adult Target | Child's name and age |
|--------------|------------------------------------------------------|----------------------|--------------|-------------------------------------------|----------------------|
| | /dʒ/ → [ʒ]; /ts/ → [s] | | | /tʃ/ → [s]; /tʃ/ → [f] | |
| [melʒe] | /merdʒe/ <i>merge</i> 'he goes/it works' | Child I 2;1 | [foviapi] | /tʃorap/ <i>ciorapi</i> 'socks' | Child I 2;1 |
| [faʒ] | /fradʒ/ <i>fragi</i> 'wild strawberries' | Child S 2;4 | [duse] | /dulʃe/ <i>dulce</i> 'sweet' | Child M 1;4 |
| [koposelu] | /klopotselu/ <i>clopoțelu</i> 'the small bell' | Child L 2;5 | [duse] | /duʃe/ <i>duce</i> '(s/he) carries' | Child S 2;4 |
| | | | [teizesi] | /treizetʃ/ <i>treizeci</i> 'thirty' | Child S 2;4 |

Table 5. Deaffrication in child Romanian

If we consider the examples on the right-hand side of the table, we notice that the children articulate the affricate /tʃ/ more or less towards the front part of the oral cavity than the respective target. What they change is not only the manner of articulation (deaffrication) of the consonant, but also its place of articulation (depalatalization): /tʃ/ is replaced either by a labiodental /f/ or the alveolar /s/. Such errors are not typical of Romanian, but have been reported for English-speaking children, too (Bosma Smit 1993). This process may also be interpreted as fronting, which will be tackled more thoroughly further on in the analysis.

Another interesting phenomenon, that of affrication¹⁴ of fricatives was encountered in the speech production of one child, Maria, aged 2:11. Thus, the /v/ is turned into [dʒ] – a sound that does not exist in Standard Romanian¹⁵ – only when it occurs in word-final or mid position. In word-initial position it is pronounced like in the adult target, i.e. /v/. On the other hand, /f/ becomes [ts] in word-initial and word-mid position, as illustrated by the following examples:

| Child's form | Adult target | Child's form | Adult target |
|--------------|---------------------------------------|--------------|------------------------------------------|
| [modʒ] | /mov/ <i>mov</i> 'violet' | [tsorin] | /florin/ <i>Florin</i> 'Florin' |
| [morkodʒ] | /morkov/ <i>morcov</i> 'carrot' | [tsõare] | /flõare/ <i>floare</i> 'flower' |
| [rødʒan] | /rəzvan/ <i>Răzvan</i> 'Răzvan' | [tsarurie] | /farfurie/ <i>farfurie</i> 'plate' |

Table 6. Affrication of fricatives in child Romanian

Contrary to the general consensus that children's productions of the words in their mother tongues are "simplified" versions of the adult targets, the examples above seem to be more difficult to pronounce, as the affricates [dʒ] and [ts] are more complex segments than a fricative, as they are co-articulated consonants (i.e. consonants with double places of articulation, where the primary and secondary articulations are not of the same manner). So, in her attempt to produce words in an adult fashion, the girl adopted more complicated structures.

The third word in the set above is worth considering in more details. *Răzvan* (the name of the girl's father) contains the consonant cluster /zv/, which divides into /z/ and /v/ when the word is syllabified: /rəz.van/, /z/ being the final consonant of the first syllable, while /v/ the initial consonant of the second one, so the structure would not be very problematic. Actually, /zv/ is a licensed onset in Romanian, as in *zvîcnire* 'throb', *a se zvîrcoli* 'to writhe', *a se zvînta* 'to dry'. The child's structure could be explained if we assume that she has wrongly syllabified the word as /rə.zvan/, which gave rise to the /zv-/ onset of the second syllable, a structure that is quite difficult to pronounce even by adults, considering that both consonants are very close in their places of articulation (dental and labio-dental) and are both voiced. The child may have first simplified the cluster /zv/ to the singleton [v], and then affricated the [v] to [dʒ]. Evidence in support of this assumption is provided by her examples in which the fricative /f/, occurring in the /fl/ cluster, was affricated to [ts] only after the simplification of the cluster to [f]. As Maria was the only child in the study who resorted to this phonological process, the assumption is that this is an idiosyncratic phenomenon.

¹⁴ Affrication, the opposite of stopping, occurs when stops are replaced by affricates. This type of process occurs less frequently than stopping (Hua 2002).

¹⁵ One can come across pronunciations containing this affricate in the Moldavian variety of Romanian where a word like *ziuă* /ziüə/ 'day' is pronounced as [dʒiüə] (Ene 2010). We cannot assume that the child has been exposed to this variety as both her parents come from the southern part of the country.

5.2.2 Prevocalic voicing

A second substitution process encountered in the speech production of the young learners of Romanian, which is very common cross-linguistically, is prevocalic voicing. This is a kind of regressive vowel-to-consonant assimilation, where a voiceless consonant preceding a vowel sound receives voicing from it, turning into its voiced counterpart.

| Child's output | Adult target | Child's name and age |
|----------------|------------------------------------------------------|----------------------|
| [pizikə] | /pisikə/ <i>pisică</i> 'cat' | Child M 1;8 |
| [bunga] | /punga/ <i>punga</i> 'the bag' | Child M 1;9 |
| [buga] | /pu]ka/ <i>pușca</i> 'the gun' | Child I 2;0 |
| [gal] | /ka/ <i>cal</i> 'horse' | Child I 2;0 |
| [guze] | /skuze/ <i>scuze</i> 'apologies' | Child I 2;0 |
| [nazu'] | /nasu'/ <i>nasul</i> 'nose' | Child I 2;0 |
| [biratu'] | /piratul/ <i>piratul</i> 'the pirate' | Child I 2;0 |
| [dage] | /trage/ <i>trage</i> 'pull!' | Child I 2;0 |
| [gogodil] | /krokodil/ <i>crocodil</i> 'crocodile' | Child I 2;1 |
| (a) [guzut] | /kəzut/ (<i>a</i>) <i>căzut</i> 'it/he has fallen' | Child I 2;1 |
| [golega] | /kolega/ <i>colega</i> 'mate' | Child I 2;1 |

Table 7. Prevocalic voicing in child Romanian

As shown by the examples in the table above, only two children resorted to this process, Child I being the one who produced the largest number of prevocalic voiced consonants (8 such occurrences between 1;11 and 2;1). If we consider the first example produce by child M, we notice that she strengthened only the /s/ sound, though the word provided the conditions for voicing the other voiceless consonants (/p, k/). In her second production, the voiceless onset obstruent /p/ gained voice and surfaced as /b/. The same holds true for the other examples in the table, produced by Child I. Note should be made of the fact that the last two forms ([guze] *scuze* 'apologies', [gogodil] *crocodil* 'crocodile') are the result of combined phonological processes. First, the child reduces the onset clusters /sk/ and /kr/ to a singleton consonant, i.e. [k], which will next be strengthened into [g]. Also, if we compare the outputs of the two children in the study whose speech is characterised by this process (i.e. prevocalic voicing), we notice that Child I employed it for the voiceless consonant of each syllable in the word (see [gogodil] for /krokodil/ *crocodil* 'crocodile' and [buga] for /pu]ka/ *pușca* 'the gun'). This reflects inter-children variation. One other aspect that needs to be pointed out is that in all examples vowels are produced accurately.

Voicing of onset obstruents seems to be quite a common phenomenon in the child languages of the world. Johnson and Reimers (2010: 12) provide examples for English, such as /pig/ > [big] *pig pig*, /tu/ > [du] *two*, which may create homophone pairs in the children's speech. This was not the case in the Romanian samples, an explanation for this language-specific feature being the fact that Romanian words, unlike the English ones, are usually longer than one syllable (disyllabic or trisyllabic), which makes it more difficult to obtain homophonic pairs by strengthening one of their prevocalic consonants.

5.2.3 Devoicing of final consonants

This process affects the voiced coda obstruents of the adult target words which will lose their voice and appear as their voiceless counterparts in child production. Though it is a common phenomenon in both child and adult languages (e.g. English: /nob/ → [nop] *knob*, /dog/ → [dok] *dog*; German: /hab/¹⁶ → [hap] *hab* ‘I. have’), the Romanian data provided just two examples produced by the same child (Child I), who combined consonant cluster reduction with final consonant devoicing.

| Child's form | Adult target | Child's name and age |
|--------------|-----------------------------|----------------------|
| [gat] | /kald/ <i>cald</i> ‘warm’ | Child I 1;11 |
| [tëak] | /stëag/ <i>steag</i> ‘flag’ | Child I 1;11 |

Table 8. Devoicing of final consonants in child Romanian

The underlying representation of the first word underwent the following changes: (i) final consonant cluster reduction/dropping of the liquid (liquids are very seldom pronounced at this age in most of the languages, not only in Romanian): /ld/ → [d]; (ii) coda obstruent devoicing /d/ → [t] occurring simultaneously with prevocalic voicing /k/ → [g]. In the second example, the situation is slightly different: this time the consonant cluster that undergoes simplification is in the onset of the word: /st/ → [t]. One might expect the child to voice the [t] to [d] (the way he did in /skuze/ → [guze] *scuze* ‘apologies’), as the voiceless consonant is in prevocalic position, but this is not the case. This shows that in the case of Child I, initial cluster reduction combined with prevocalic voicing is an accident, rather than a pattern.

A possible reason for the lack of final devoicing in Romanian might be related to the fact that a lot of words end in a vowel sound, in a voiceless obstruent or in a sonorant. If the final consonant of the words/syllables is a liquid, then in most of the cases this is dropped by the children. The enclitic masculine definite article ‘-l’ is frequently dropped even in adult speech, so young learners have two reasons for omitting it.

5.2.4 Fronting

When we consider the place of articulation of consonants, we see that some of the Romanian subjects articulate certain consonants more towards the front than their respective targets. The table below contains the types of fronting processes encountered in the data available for Romanian, except for those discussed already under stopping.

In the data, I have come across examples that showed the replacement of the alveolar-palatal affricate /tʃ/ with the dental one, /ts/.

¹⁶ The correct first person singular form of the German verb *haben* ‘to have’ in the Present Tense is *habe* /habə/ but in rapid, casual speech, native speakers often drop the final /ə/ sound. Thus, /b/ becomes the final consonant of the word.

| Child's form | Adult target | Child's name and age | Child's form | Adult target | Child's name and age |
|----------------------------|-----------------------------------------------------------|----------------------|--------------|--------------------------------------|----------------------|
| (<i>Tu</i>) [tse fats']? | /tʃe fatʃ/ <i>Tu ce faci?</i> 'what are you doing?' | Child S 1;11 | [balol] | /salon/ <i>salon</i> 'hall' | Child I 2;0 |
| [aits ⁱ] | /aitʃ/ <i>aici</i> 'here' | Child M 1;4 | [moroi] | /noroi/ <i>noroi</i> 'mud' | Child I 2:1 |
| [tsints ⁱ] | /tʃintʃ/ <i>cinci</i> 'five' | Child M 1;4 | [kitiie] | /hirtie/ <i>hartie</i> 'paper' | Child I 2;1 |
| [tse] | /tʃe/ <i>ce</i> 'what' | Child M 1;11 | [zakər] | /zahər/ <i>zahăr</i> 'sugar' | Child I 2;3 |

Table 9. Fronting in child Romanian

The left-hand side of the table illustrates the replacement of the palato-alveolar affricate /tʃ/ with the dental one. As one can see, what the two children do is to preserve the manner of articulation and voicing features of the target consonant, changing only its place of articulation, i.e. pronouncing it more towards the front part of the oral cavity. Both children front the palato-alveolar in all three positions in the words. This kind of fronting may be a language-specific phenomenon, as Romanian has got both a palato-alveolar and a dental affricate.

All the examples on the right-hand side of the table come from the same child who, in some contexts, turned a coronal sound into a bilabial one (/n/ → [m] and /s/ → [b]), while in another situation he fronted the dorsal /g/ to a coronal [d]. Child I's last two deformed productions in the table are the outcome of the replacement of the glottal fricative /h/ with a velar /k/. But this process could also be interpreted in terms of stopping, as the child substitutes the stop for the fricative. A similar finding was reported by Meibauer et al (2007: 264) for the German-acquiring children, who replaced the voiceless velar fricative /X/ with the velar stop [k] in words like /dax/ → [dak] *Dach* 'roof' or /bux/ → [buk] *Buch* 'book'.

5.2.5 Gliding

In Romanian, like in most of the languages, the liquids are the last sounds to be acquired, the age of acquisition varying from child to child. While some children may start pronouncing the /r/ sound as early as the age of 1;6 (Child M), in the speech of others the same sound emerges much later, around the age of 2;6. Each child in the corpus has his/her own way of dealing with these two sounds. Very frequently the two sounds are dropped altogether, especially when they appear in consonant clusters: /hirtie/ → [itie] 'paper' (Stefan, 1;9), /fridʒe/ → [fidʒe] 'it's hot' (Child I, 1;11), /arde/ → [ade] 'it's hot/burning' (Child S, 1;0). Other times they are replaced by the semivowels /ĩ/ or /ũ/¹⁷:

¹⁷ These Romanian semivowels correspond to the English ones /j/ and /w/. For reasons of uniformity in rendering all the semivowels of Romanian, these symbols are preferred to the ones in the IPA.

/akolo/ → [acoŭə/] *acolo* ‘there’, /plek/ → [pĭek] *plec* ‘(I) am leaving’ (Child S, 2;4). There may also be situations in which an early acquired liquid will replace the other: /pork/ > /polk/ *porc* ‘pig’, /rotsⁱ/ → [lotsⁱ] *roți* ‘wheels’ (Child I, 1;11). Since liquids are among the last consonants to be acquired in most languages and as their acquisition is pretty problematic, this topic could be investigated more thoroughly in another study.

6. Conclusions

This paper was not aimed at testing a particular model or phonological theory, but rather at contributing to the knowledge of developmental universals by examining, specifically those of phonological acquisition, in monolingual Romanian-speaking children. The main objective of the analysis of the available data has been to consider in detail some of the prevalent phenomena encountered in children’s attempts to produce adult target forms and to consider the diverse strategies that children resort to in order to achieve the same ends.

As the analysis has revealed, many of the strategies discussed overlap in individual children. Thus, almost all phonological processes reported for the English-acquiring children have also been encountered in the speech production of my Romanian subjects, the difference consisting in the extent to which they made recourse to them. Nevertheless, some phonological processes, such as the devoicing of final consonants or final consonant elision (except for those cases in which the final consonant is the masculine definite article, which is omitted even by adults) seem to be language specific. The scarcity of final consonant devoicing in the Romanian data could be due to the fact that many of the words in this language end either in a vowel sound or in a voiceless obstruent. Moreover, many of the production patterns discussed are unique to specific children. Thus, affrication of fricatives and reduplication have been employed by one child each (Maria, 2;11 and Child S, 1;8). Individual preference was also shown for vowel copying: only four out of the ten subjects made use of it, with inter-child variation. While Ștefan (1;9) combined vowel copying with metathesis, Vlad (1;7) combined it with consonant harmony.

At the level of segments, the categories of sounds prone to deformations were the affricates, the fricatives, and the liquids. The affricates were frequently stopped or deaffricated, while fricatives were turned into stops: /f/ → [p], [b], /v/ → [b], [d], /s/ → [d], /ʒ/ and /z/ → [d]. Exceptionally, fricatives were affricated: /f/ → [ts], /v/ → /dz/. In terms of triggers of deformed productions, many were due to a labial sound in their neighbouring.

What needs to be emphasized is that by the age of 4, most of the patterns presented in this paper will have disappeared little by little in normally developing children. The deformations discussed could be considered a link between babbling and adult-like speech, reflecting the creative role of children as language learners.

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