

CONCLUSIONS

Prosody

In regard to melody of speech, the rising, falling and expressive pitch levels are still observed in the child's idiolect; their distribution is, in distinction to both previous developmental stages, more evenly balanced now. No further progress, compared to the one-hundred-word period, is shown in the development of questions. Only those relating to identification and location are realized by the child, while those regarding time, manner and cause are still absent from his speech.

The correct usage of stress in expressively neutral utterances holds good in all the three developmental stages and so does its overuse under emphasis.

In distinction to both previous stages, the feature of length has been mastered in this third developmental stage, which shows both in the correct quantity and quality of the long vowels, as well as in their contrastive use.

Phonology

Vowels

All Czech vowels, short and long, which form the vocalic system in Standard Czech, are present in the child's phonemic repertory and all of them exhibit phonological characteristics of the child's pronunciation identical with those of Standard Czech.

In distinction to both previous stages, the phonetic realization of all vocalic phonemes is well established in this third developmental stage. The learning process has not, however, been accomplished as regards the realization of the sole Czech diphthong [ou].

In terms of phonemics, each of the vowels has the status of an autonomous phoneme, with one restriction: the long /o:/ is a phoneme in loan-words but an allophone in home-words. As the loan-words in the vocabulary of five hundred words have minimal occurrence, the allophonic status of [o:] prevails.

As for the distribution of the vowels, their order of frequency is as follows: /a/—/e/—/o/—/i/—/u/—/ɑ:/—/i:/—/u:/—/o:/—/e:/. Compared to both previous stages, the distribution is more evenly balanced and corresponds, with minor exceptions, to that in Standard Czech. The phoneme /a/, however, remains first in all three developmental stages, regardless of the fact that the long /ɑ:/ is charted separately in the last stage.

As for the positional occurrence, the vowels are—in accordance with both previous stages—most frequently distributed in the medial position. Their occurrence in the

final position, on the other hand, shows a decreasing tendency and so do the word-initial vowels.

In articulatory terms, the opposition of front *versus* back and high *versus* mid tongue position and the quantitative opposition of short *versus* long account for eight phonemes. Two central vowels, one short and one long, complete the vocalic inventory. All the distinctive and redundant features are well established in the child and no deviation from Standard usage has been recorded.

Consonants

Stops

All stop phonemes found in the Czech consonantal system appear and are well established in the child. No deviations in their phonetic realization has been noticed as compared with that of Standard Czech.

In terms of phonemics, each of the plosive consonants has the status of an autonomous phoneme. In contradistinction to the first-one-hundred-word period the voiced velar stop $[g]$ became phonologized, due to the existence of loan-words in the vocabulary of five hundred words. In non-loans, however, the velar stops $[k]$ and $[g]$ occur in complementary distribution in the position where the voiced *versus* voiceless feature is predictable, while in other positions $[g]$ does not appear. Thus the child has, in accordance with Standard Czech, two phonemic systems, in one of which $[g]$ is a separate phoneme and in the other (the indigenous system) $[g]$ is an allophone of $[k]$.

In spite of the differing analyses and special content of the child's vocabulary the frequency counts reveal a similar picture for Standard Czech and for the child's speech. A discrepancy is found only in the plosives $[p]$, $[t]$ and $[k]$. While $[p]$ is used more frequently, $[t]$ and $[k]$ are less frequent in the child compared to the Czech wordstock.

In articulatory terms, the stop articulation has been firmly established, and so have all the oppositions based on points of articulation, viz. labiality, alveolarity, palatality and velarity. The preponderance of the front consonants over the back ones, reported in both previous stages, shows now only in the stop phonemes, including the nasals, while the ratio between front and back oral stops is almost balanced, with slight predominance of the back ones.—Nasality is another well established feature. With regard to distribution, the oral plosives are more frequent as compared to the nasals. As with the other distinctions in stop phonemes, so too the feature of voicing is fairly stable and the contrast voiceless *versus* voiced is preserved in all instances. The voiceless members, however, are still more frequent compared to the voiced; the preponderance of the former group shows even when the voiced nasals are included in the latter.

Fricatives

Except for $[r]$ and $[ʃ]$ the child has all the fricative phonemes found in the Standard Czech system in his system too. Their phonetic realization might be considered as mastered though not to such an extent as with the stops. Fluctuation between voiced and voiceless fricatives and a few occurrences of palatalized allophones betray their lesser stability.

In terms of phonemics, each of the existing fricatives has the status of an autonomous phoneme. The phonemes $[l]$, $[j]$, $[š]$ and $[ž]$ apart from their own proper occurrences act as substitutes for $[r]$ and $[ʃ]$.

In distinction to stop phonemes, there are still considerable differences in regard to the frequency counts in our data as compared with those reported for Standard Czech. The discrepancy shows mostly in the voiced fricatives /v/, /z/ and /ʒ/, which are less frequent in the child. The phonemes /š/ and /ʃ/ are, on the other hand, more frequent in the child than in common Czech word-stock.

In articulatory terms, the fricative articulation has been established in both voiceless and voiced members. Laterality is another well-learned feature. Vibrativity, on the other hand, remains a non-mastered feature even in this third developmental stage. As for the distinctions based on points of articulation, the contrast front *versus* back is well established and so are, with minor exception, all the points of articulation which have their relevance in Czech, viz. the articulation in the labio-dental, prae- and post-alveolar, palatal, velar and laryngeal areas. In regard to frequency, the front fricatives are more frequent than are the back ones.

In distinction to the previous stage, the feature of voice might be considered as established in the fricatives of this developmental stage. The contrast voiceless *versus* voiced is preserved in most instances. In accordance with the findings in the previous stage, the total number of voiced fricatives (i.e. with the sonants) prevails over the number of the voiceless. Without the sonants, however, the voiceless members are preponderant.

Affricates

In agreement with Standard Czech, the child has two affricates in his system, viz. /c/ and /č/. Only the affricate /c/ has its voiced allophone in [ʒ], while the voiced allophone of /č/ is missing as yet. As regards the frequency counts, /č/ shows a wider distribution in the child, while the occurrence of /c/ is corresponding. The feature of semi-occlusivity is but imperfectly learned and instability shows also in the prae-alveolar point of articulation.

In summary then,

1. the stop and nasal phonemes represent a more mature stage as compared to fricatives and more so as compared to affricates.
2. The stop phonemes remain more frequent than the fricative and semi-occlusive phonemes.
3. The consonants produced in the front of the mouth prevail over those produced in the velo-glottal area both in stability and in distribution.
4. The voiceless consonants are more frequent as compared to their voiced counterparts.
5. The consonants are distributed word-medially, word-initially and word-finally, in this order of frequency.

The comparison of the features phonemically relevant in Standard Czech and their realization in the child follows:

From the six manners of articulation upon which the phonemically relevant distinctions of consonantal phonemes are based, the child has mastered well the following: occlusivity, nasality, fricativity and laterality. Semi-occlusivity, on the other hand, remains an imperfectly learned and vibrativity a non-mastered features.

As regards the distinctions based on points of articulation, the child has mastered all those which are phonemically relevant in Standard Czech, i.e. labiality, alveolarity, palatality and velo-glottality. The manner of articulation, then, accounts for a further breakdown into the spheres again identical in Standard Czech and in the child: bilabiality and labio-dentality, prae- and post-alveolarity, velarity and laryngeality.

The presence or absence of voice is the last distinction which has contrastive function in Czech and like most other distinctions might be considered a well-mastered feature in the child in the period of the first five hundred words.

Consonantal Clusters

In the realizations of the first five hundred words two linguistic strata are inter-related:

1. an older one, where the clusters are simplified,
- 2, a newer one, where the *two-*, *three-*, *four-* and *five-*consonant clusters occur in the initial, medial and final position.

In the initial position, *two-*, *three* and *four-*consonant clusters were recorded, the majority of them being compact. The *three-* and *four-*consonant clusters contain a syllabic variant [ʃ] in most cases.

With regard to distribution, the *two*-consonant clusters are by far the most frequent while the multi-member clusters have minimum occurrence. As concerns the various types of consonants which meet in combination word-initially, the fricatives are distributed most frequently. Next come the stops, while the affricates are least frequent. In the medial position, the *two-*, *three-*, *four-* and *five-*member clusters appear while most of them are divided with morphematic suture. As do the initial clusters, so, too, the medial contain a syllabic variant in *three-*, *four-* and *five-*member clusters. With regard to distribution, the *two-member* clusters show striking preponderance over the multi-member clusters. As concerns the various types of consonants which meet in combination word-medially, the stops have the widest distribution and are followed by fricatives. The affricates, as before, combine least frequently.

In the final position, only *two*-consonant clusters were recorded, all of them being compact except one. The multi-member clusters did not occur in this position. As concerns the various types of consonants, the stops are the most frequent here and are followed by fricatives. No affricate appears in combination word-finally.

To summarize the findings on consonant clusters these conclusions be may drawn: of the total of consonantal phonemes which appear in combination, the fricatives are the most frequent, being nevertheless closely followed by stops. The distribution of affricates in consonant clusters is minimal. The proportion is indicated in the following figures: 48.4 : 47.1 : 4.5.

The analysis of the first five hundred words shows the high preponderance of the clusters word-medially. The clusters in the word-initial position come as second while the word-final clusters are least frequent. As regards the question of which of the three positions the consonant clusters appear in and become stabilized in first, the medial is the earliest and most stable. The clusters in final position appear second, while the clusters in initial position appear and are stabilized last. As far as the number of occurrences of the various types of clusters is concerned, the *two-member* clusters strikingly predominate, while the multi-member clusters have minimum occurrence in the child's vocabulary. In simplifying the stop + fricative cluster, the stop is preserved as a rule, while the fricative is dropped. In simplifying the fricative + fricative cluster, the first of the two fricatives is preserved while the other is dropped.

Phonetic Changes

Assimilation is the most frequent phonetic change in the child's idiolect. Besides the sound assimilation which was typical of the two previous stages, data illustrating the assimilation of voice, place and manner of articulation were recorded in this third stage. As regards the proportion of the two types of assimilations, the regressive is far more frequent than the progressive is. As for timing, however, the progressive type is older. Alongside the common kinds of assimilation the operation of sandhi assimilation and haplology was observed in the child at this stage of speech development.

Of the *dissimilations*, distant dissimilation is the most frequent, but there are, however, even such data which illustrate the dissimilation of place and manner of articulation. Metathesis was recorded too, especially with regard to liquids.

Parallel to the phonetic changes where one of the existing consonants or vowels is dropped, there are such changes where an additional consonant or vowel is inserted. Difficult sound combination or analogy accounts for the origin of these svarabhakti consonants and vowels in the child's utterances.

As far as the combination of the two vowels is concerned, attention was devoted in the first place to the question of how the child deals with *hiatus*. As shown in many examples, he abolishes it—as an uncomfortable phenomenon—in most instances. The insertion of hiatic consonants is the most frequent way of abolishing hiatic combinations. Exceptionally, syneresis was employed for that purpose.

No phonetic changes take place where a consonant is followed or preceded by a vowel. Only in the first-fifty-word period, aspiration was recorded in the former case.

In abbreviating words, the child follows the same method as children generally do, namely, he preserves the end of the word while the initial syllables are dropped.

Phonemic Shapes of Words

In distinction to the first-fifty- and first-one-hundred-word periods, where the child's vocabulary consisted of *mono-*, *di-*, *tri-*, and *tetra-*syllables, the vocabulary of the first five hundred words has also *penta-* and *hexa-*syllables. Their order of frequency is as follows: disyllables—trisyllables—monosyllables—tetrasyllables—pentasyllables—hexasyllables.

As for their *shapes*, the following conclusions may be drawn: In monosyllables, there are 11 different shapes, the CV and CVC shapes being the most common. The shapes beginning with a vowel are exceptional. The ratio between open and closed syllables is almost balanced, with a slight predominance of open syllables.—In disyllables, 44 different shapes were recorded. Here are the first three in the scale of frequency: CVCV—CVCVC—CVCCV. As in monosyllables, so too in disyllables, the shapes beginning with a vowel are in a striking minority. The ratio between open and closed syllables is expressed in the following figures: 65.7 : 34.3, illustrating thus the preponderance of the open syllables.—In trisyllables 59 different shapes were realized. Among them the CVCVCCV shape is the most frequent and is followed by CVCVCV shape. The shape CVCVCVC comes third in order of frequency. As in mono- and disyllables, so too in trisyllables the shapes with a vowel in onset are exceptional. The ratio between open and closed syllables is expressed in the following figures: 69.7 : 30.3, in other words, the preponderance of the open syllables as compared to the closed is once again confirmed.—In tetrasyllables 42 different shapes were re-

corded. The three most frequently used follow: CVCVCVCV—CVCVCVCCV—CVCVCVCVC. Of the remainder, the shape VCVCVCV has fair distribution, thus violating the above-mentioned principle which indicates the exceptional character of the shapes beginning with a vowel. The frequent usage of verbs where the vowel *u*- appears in prefix accounts for the discrepancy. The ratio between open and closed syllables is shown in the figures 83.9 : 16.1. The preponderance of the open syllables has reached here the highest percentage.—In pentasyllables, there occurred 8 different shapes, all of them beginning with a consonant. The shapes CVCVCVCVCV, CVCVCVCVCCV and CVCVCVCVCCQV are the three most frequent. Also in pentasyllables the open syllables exhibit a striking preponderance over the closed. Their mutual ratio is expressed in the following figures: 80.0 : 20.0.—In hexasyllables only two shapes were realized, viz. CVCVCVCCVCVCV and CVCVCCVCVCVCV. Both of them represent the shape with a consonant in onset and indicate the conspicuous predominance of the open syllables. The ratio is as follows: 83.3 : 16.7.—Of the total of syllable occurrences, there is the proportion 69.5 : 30.5. The preponderance of the open syllables over the closed, noticed in all types of words, is confirmed in the total numbers too.

Parts of Speech

Of the word-categories, the *substantives* have the highest frequency in the vocabulary of the first five hundred words. *Verbs* come as the second frequent category, shifting thus the *interjections* to the third place in the scale of frequency. The remaining parts of speech have progressively lower frequencies: adjectives—pronouns—prepositions—adverbs—particles—numerals—conjunctions.—As for the forms of the words, the child uses mostly those which are highly productive in Standard language while those forms with slight productivity have either low occurrence or are absent in the child's vocabulary. Thus *nominative* singular and plural, is the most frequent case in Czech and so it is in the child's speech; it is followed by *genitive* and *accusative*. The dative and vocative, on the other hand, have minimum occurrence. *The singular* is more frequent than the plural, both in the speech of adults and in the speech of the child.—In verbs, the most frequently used tense is *the present* and *the preterite*. The same observation is shown in our corpus. *The imperative* is frequent in spoken language and so too in the speech of the child. *The infinitive* is another frequent form with regard to spoken language, as is *the first person* singular and plural. The high frequency of these forms in the child was exemplified elsewhere.—The passive voice, participles and conditionals have minimum occurrence in the speech of adults, and concomitantly they are absent from the child's speech.