

Cued Speech in Poland

Professor Robert Orin Cornett's idea of Cued Speech reached Poland at the beginning of the eighties, thanks to the participation of Professor Tadeusz Gałkowski in the works of BIAP and his contacts with the Belgian specialists, Professor Olivier Perier and Professor Jean-Marie Capouillez. The first attempts of adapting Cued Speech to Polish language were not used in practice, as they were too much dependent on the English version and did not take into account the specificity of the Polish phonological system (Wypych K. 1983; Kaczmarek B.L.J. 1986).

The Polish version of Cued Speech was worked out and scientifically described by the author of this paper in 1984. The author managed to elaborate a system of gestures that efficiently support the visual perception of the sound speech in Polish. It required using the same pattern of matching sounds with supporting gestures as in the English version, but creating a new system, more suitable for the Polish language. The author wanted the new method to be true to the original version as much as possible in order to preserve the international character of Cued Speech. Nowadays the method is known in Poland by the name "fonogesty".

In 1985 Polish Cued Speech was practically used in rehabilitation work with the first hearing-impaired child, Łukasz, the author's son. In the following years a pedagogical experiment was conducted and its effects were described in a detailed way in the monograph *Polish Cued Speech as a tool for forming the language of the hearing-impaired children* (Krakowiak K. 1995). On the basis of the knowledge gained during the years of conducting the experiment a handbook was published: *We speak with phonogestures (We cue). A guide for parents and friends of hearing impaired children and youngsters* (Krakowiak K., Sękowska J. 1996).

It was not an easy task to elaborate the Polish version of Cued Speech. Polish is a consonantal language. There are few vowels in its phonological system. When you speak quickly it is difficult to differentiate between the vowel pictures on the lips. On the other hand in the Polish language system there are many consonants. Majority of them differs from the others only slightly, and it is difficult to spot the differences visually. It applies especially to the dental consonants, spoken with jaws nearly closed. There are 12 such consonants. Their pictures are especially difficult to differentiate when they appear in groups of three or four called 'the

agglomeration'. The additional phonological processes appear there: the consonants become assimilated, some of them are reduced. Because of this fact the perception of the Polish sound language is difficult for people with serious hearing problems.

Writing makes the task of learning Polish easier for hearing impaired children, as the Polish spelling is more or less in accordance with the pronunciation. On the other hand as the accordance is only a partial one, it is tricky for children who are learning Polish, because they are trying to pronounce each letter as an individual sound, thus separating the consonants in agglomerations. They are pronouncing them with an unavoidable vocalic element, which disturbs the accent, the intonation, and the phrase timing. As a result the speech is hard to comprehend. This trouble in the realisation of the consonants and the prosody of the language is a result of using writing and dactylography in the early education of hearing impaired children. The finger alphabet is not a good support tool to lip-reading in the Polish language, where consonants are the majority of the language signs. You cannot speak and use finger alphabet synchronically.

The most difficult thing in learning Polish for hearing impaired students is the grammar, which is synthetic in its nature. The order of words in a sentence is free. The syntactic functions are created by the use of the inflexional suffixes. There are a lot of them and their meaning is equivocal. The use of nouns and adjectives is a major problem, as they have rich inflexion; a word can have as much as 14 different forms. 157 suffixes are used in the inflection of nouns! The additional trouble is the fact, that the suffixes appear in different paradigms and perform different functions. In order to create syntactically correct phrases and sentences you have to have the ability of correctly connecting inflectional forms, considering the singular or plural form of the noun, its gender and case. In addition to this you have to choose their proper forms in consideration with the verbs and prepositions, which 'govern' the noun forms. In order to create the correct form you have to choose a form of a word that is demanded by unpredictable, though strongly fixed convention.

The causes of the unsatisfactory effects of teaching Polish to hearing-impaired children stem both from the deafness itself and the properties of our language system. The fact that Polish is a synthetic language (an inflectional one) is an additional problem for hearing impaired students, who use Polish Sign Language. The grammatical structure of those two languages is not similar at all, so the translation from one language to another needs really well developed language skills. A verbatim translation from the Polish Sign Language into Polish seems for the

audience to be “primitive”, and is assessed as an incompetent one. The discrepancy between the structures of these two language systems is also the cause of inaptitude of these communication methods, which are based on using sign language gestures in teaching the national language. A direct matching of Polish Sign Language to Polish leads to the creation of an extremely complicated language. The sentences created in such a way are completely incomprehensible for the hearing Polish people.

It is worthy to underline that Polish people are really attached to their national language because of the historical reasons. Polish language was a refuge for culture and national identity in the days when Poland did not exist as an independent country. The language was preserved in rich, original and literary works that are still unknown to the world. That is why the correctness and purity of the language has a special value for us; it is considered a sign of the love of our country and a sign of somebody’s high culture and education. Thus hearing-impaired people who speak and write in Polish have some additional difficulties in communicating with others. Their “language experiments”, creating new sentences, which leads to the unavoidable conflicts with the language norm, are strictly judged by the audience who has in mind first of all the language purity and correctness. Because of that in order to educate deaf people properly we have to seek methods which would facilitate the process of acquiring the skills of correctly writing and speaking in Polish. It is also important to find methods which would help to separate the Polish Sign Language and Polish in the process of communication of the deaf people, so as to help them to acquire a good knowledge of these two languages and use them according to one’s will and needs.

Cued Speech appeared to be the method that successfully minimised the difficulties of the young deaf students in acquiring Polish language. The additional element for choosing Cued Speech was the fact that at the beginning of the 19th century a Polish doctor and surdopedagogue, Jan Siestrzyński created a conception of “manual-oral signs”, which was presented in the work *The theory and the mechanism of speech* (1820). Siestrzynski created a system of seven handshapes, which were used in order to support the pronunciation of the phonemes, thus helping to recognise and discriminate them. The Siestrzynski’s method differed from the Cornett’s one, as Siestrzyński did not acknowledge the difference between the vowels and the consonants in the phonic stream and treated them identically. The “manual-oral signs” did not spread widely.

The most difficult thing in the process of adaptation of Cued Speech to Polish language stemmed from the fact that there are more consonants in the Polish phonological system than in the English phonological system (in Polish there are ten consonants more). Despite, there is a greater number of the phonemic oppositions, different from these in English or in French.

The first task was to establish a list of basic phonemes, which are indispensable in order to differentiate the words properly. The second task was to classify the phonemes, to acknowledge their important phonological features and the features that can be differentiated visually. The third task was to divide the phonetic basis into groups of phonemes that are completely different from each other according to the visual picture of the articulatory movements.

In the Polish adaptation of Cued Speech, worked out by the author of this paper in 1984, there was used a list of phonemes elaborated on the basis of the south-Polish pronunciation (Wierzchowska 1980). In this conception the articulation of the palatalised consonants is synchronic, i.e. there appear the proper palatalised phonemes (*p'*, *b'*, *m'*, *f'*, *v'*, *k'*, *g'*), not the diphthongs combined of the consonant and the phoneme *j* (*pj*, *bj*, *mj*, *fj*, *vj*, *kj*, *gj*). The phoneme *y* was added to the list because of its particular features which distinguish it from the basic form of the same phoneme, the vowel *i* (the complete list of vowels is shown in the chart).

The using of palatalised consonants without isolating the *j* sound in the sound should be explained here. It is justified by the fact that the articulation of all consonants does not last long. The time of pronouncing palatalised consonants is also short, even in the asynchronous, north-Polish pronunciation (i.e. with the phoneme *j* after the basic consonant) that becomes more and more popular. Supporting one consonant with two gestures, that would be obligatory when isolating *j*, would disturb the tempo and the rhythm of speech. That is why another solution to this problem had to be found.

The solution was similar to the idea of the medieval creators of the Polish version of the Latin alphabet, who introduced diacritical marks in order to provide a greater number of letters. Special modification of the shape of the hand, i.e. a slight bending forward, to the inside part of the palm was used in order to differentiate the palatal and palatalised phonemes from their firm counterparts; the same figure was used for each pair of phonemes. As we learnt later from a private letter of Professor R.O. Cornett to K. Krakowiak and T. Galkowski, he independently used the same modification in creating the Spanish version of Cued Speech. Thanks to the modification there is no need to add any new handshape, or to increase the number of consonants

supported by the same figure, which would make the system less clear and more difficult to use in practice.

The way of cueing mentioned above is also useful from the point of view of the therapy of speech. It is possible to reach the correct pronunciation of palatal and palatalised sounds by changing phonetically the pronunciation of the proper basic phonemes. Children with a profound loss of hearing have immense difficulties with the discrimination of the articulation of basic, palatal and palatalised forms. Having this in mind it was thought to be important to underline both the common features of the sounds and the biggest difference between them. It is symbolised by the bending of the fingers, which is analogical to the touching of the tongue to the palate.

In the Polish adaptation of Cued Speech one rule different from the English version was applied: the handshapes of the consonants without any vowel after them (both in the consonant groups and in final sounds) are cued in one specific location, at the side of the face. No vowels are shown in this position. Thanks to that:

- a) One is able to reach a harmony of the gestures and the speech metrum and to underline the stressed syllables by a stronger gesture. It is connected with the fact that the number of the basic hand movements directed towards the face is equal with the number of vowels (and syllables) and the handshapes done in the location at the side of the face always accompany the perypheric syllables. As a result, each syllable is accompanied by one sequence of gestures with a structure clear and adequate to the phonemic structure of the given syllable.
- b) One can quickly and precisely complete the consonant groups (they are always at the same place).
- c) The adequacy is reached between the way of cueing and marking palatal and palatalised consonants in Polish orthography: a colon above a letter means the same as a hand movement towards the side of the face. The letter “i” after palatalised letters is cued with the hand movement towards the locations of the special points on the face.

As a consequence of the above rules we have to treat differently the consonants without vowels in front of them (so called ‘consonantal zero’ in the initial sounds of the Polish words beginning with a vowel and in the words of foreign origin with two adjacent vowels). In such a situation we use a handshape formed with all the fingers bent towards the palm, but not clenched

into a fist. As a result we gained the possibility to differentiate between the syllables beginning with a consonant and the syllables starting from the release of pharynx before the vowel. The support gestures not only help to differ between phonemes, but also help to spot their presence. It is important, as in Polish we rarely have vowel groups; they appear only in borrowings. It is the same with vowels in an initial position. These changes help to synchronise speaking with cueing, with a proper for Polish tempo, rhythm, stress and intonation.

The accuracy of matching the gestures with the Polish phonological system was assessed in several introductory experiments. The first experiment was reliable enough to continue the work. It was conducted with a group of hearing primary school pupils. 12 students at the age ranging from 14 years and 6 months to 15 years and 7 months learnt the Cued Speech system during four meetings, 45 minutes each. After that they were asked to lip-read the meaningless syllables in an equalised phonological test. The results were really satisfying. The students who were lip-reading with the support of Cued Speech read properly from 61,66% to 95,66% of the syllables; 82,78 on an average. A similar test was designated for the teachers preparing to use Cued Speech at school. Without Cued Speech they recognised 17,56% of the syllables properly. After learning to cue they recognised with the support of Cued Speech as much as 82,56%, so the difference was 65% on an average. The teachers were also given a test of lip-reading words and sentences. The effects were also encouraging. They recognised 81,05% of the words and as much as 97,33% of the sentences. All the effects were statistically relevant at the level of 0,001 (Krakowiak 1995, 97-104).

To check the usefulness of Cued Speech experimentally it was not an easy task. In those years it was difficult to get the permission of the school officials for the experimental use of Cued Speech in the special education system. We were not given any funds for conducting this scientific research. However, some courageous, eager and hard-working teachers agreed to take part in the experiment. It was conducted only thanks to the disinterested work of the teachers – volunteers and some helpful people from the Lublin Teachers Education Centre, who made it possible to prepare the handouts and record the work on video tapes. Only at the final stage of the experiment, in the nineties, we were given some funds from the Committee for Scientific Research and the Ministry of Education. Thanks to these funds we were able to make an instructional film and print the handbook *We cue*.

Polish Cued Speech (*fonogesty*) was first used in two centres for the deaf children education, in Lublin and in Radom. In the years 1987-1994 about 60 students took part in the experiment. They were using Cued Speech for at least 3 years. The results of the experiments and observations of the usefulness of using Cued Speech are published in a work *Fonogesty jako narzędzie formowania języka dzieci niesłyszących. (Polish Cued Speech as a tool for forming the language of the hearing impaired children)* (Krakowiak 1995). The latest results are inserted in a paper *Efekty wykorzystywania fonogestów w procesie formowania języka dzieci niesłyszących. (The effects of using Cued Speech in the process of forming the language of the hearing impaired children)* (Krakowiak K., Leszka J. 2000).

Choosing Cued Speech appears to have been an accurate decision and it is bringing the expected effects. Both the results of the experiment and the results of our sixteen-year experiences of using Cued Speech at schools and in families confirm that it is a method that really gives an access to the national language. When used consequently and properly, it enables to learn the spoken and written form of the language.

The results of using Cued Speech can be presented in these twelve statements, based on the scientific research results:

1. Cued Speech improves the visual contact with the interlocutor, concentration on the speaker's lips during the conversation and the ability to listen to the interlocutor's words.
2. It increases the effectiveness of the hearing aids and cochlear implants in the perception of the speech sounds – the ability of “visual hearing”
3. It promotes the communication activity, including the voice activity, and the language creativity of deaf children. They speak eagerly and eloquently and they ask a lot of questions.
4. Children using Cued Speech get full access to the phonological system of the language; they learn the inventory of Polish phonemes and the rules of connecting them into words.
5. The development of vocabulary skills follows the general rules of the child development. A typical for three-year-olds “explosion of vocabulary” appears after about three years of using Cued Speech.

6. The development of the abilities of creating sentences follows the general rules of the child development. First independently built sentences appear after two years of using Cued Speech.
7. The development of the word-formation ability and the morphological awareness develop according to the general rules of the child development. In the third year of using Cued Speech children begin to create neologisms; the practical morphological knowledge develops gradually and steadily.
8. After a preparatory period of using Cued Speech children are well prepared for learning reading and writing by the use of the analytic-synthetic methods. Students reach good reading and writing skills. They are able to write according to the morphological and phonetic rules and they know how to split words into syllables.
9. Students are very skilful in writing down the lip-read messages, so they are good at writing dictation exercises.
10. The pronunciation is in accordance with the phonological structure of the words. Substitutions, elisions, epentheses and metatheses disappear spontaneously, phonemes deformation have to be corrected by speech therapists.
11. There can be observed a great development in using equivocal words and phrases, synonyms, homonyms, phrases, idioms, language jokes, metaphors, similes and poetic symbols.
12. There can be observed the development of the perception of the word and sentence stress and some basic intonation patterns and recognition of metrum and rhymes in poems.

The quality and statistical analyses of the results can form a basis for a pedagogical reflection about the chances of good education for the hearing-impaired children. It will be worthy to provide the readers with two examples of many of our results. The first one is about a comparison of the ability to lip-read and write down Polish sentences. Three groups of pupils with severe hearing loss, 11 people each, took part in our research. All of them had been educated for three years with one of the three methods used in Polish schools for the deaf: auditive-oral method, Polish Cued Speech (fonogesty) or Polish Sign Language. A phonologically equalised test of single compound sentences was used. The results are shown on a diagram (fig.1).

The results do not need a long commentary. The Cued Speech method can support the educational chances of the Polish hearing-impaired pupils. It gives them an access to the oral language at a level similar to that of a hearing person.

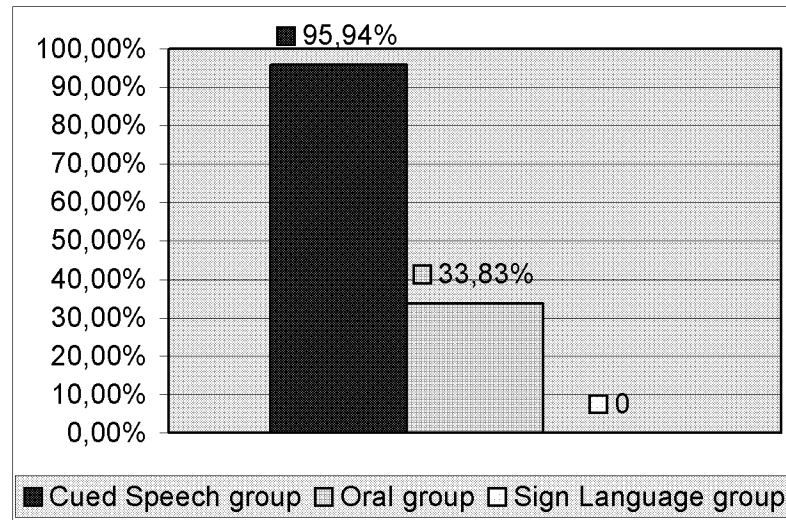


Figure 1.

A comparison of the ability to lip-read the sentences by three groups of children educated by the use of different teaching methods (during the tests the support means were used typical for each group). In: K.Krakowiak, J.Leszka (2000).

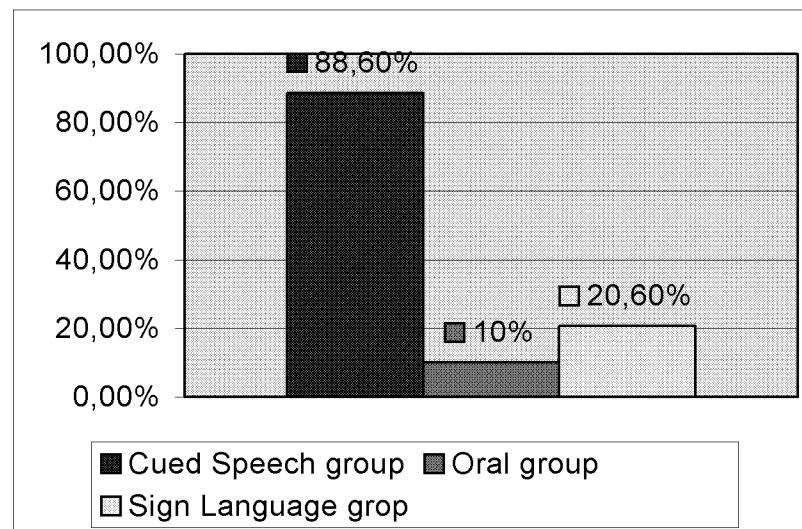


Figure 2.

A comparison of the ability to read the artificial words by three groups of children educated by the use of different teaching methods (during the tests the support means typical for the children were used). In: K.Krakowiak, J.Leszka (2000).

The same group of children took part in another experiment. They had to lip-read and write down artificial words from the phonologically equivalent group (Rules of phonemes

matching typical for Polish were maintained). The artificial words are an imitation of the unknown words. The aim of this experiment was to check the students' abilities of learning new words that had not been known to them previously. The access to new words gives the opportunity to learn the language. The pupils were divided according to the teaching method they had been exposed to during their school education..

The results show that new words are accessible in a satisfying way only for children using Cued Speech. Using fingerspelling alphabet helps to notice and memorise in order to write down only 20 % of the new language material; the oral method gives a chance to recognise and write down only 10% of the new words. These results do not need a long commentary. It is proper to add that the results cannot be treated as a proof for the thesis that Cued Speech is superior to the Sign Language. The worth of the Sign Language has its source in its other values, mainly in the fact that it is a result of the intellectual effort and creativity of many generations of the deaf people. In the education of the deaf people Sign Language is treated as a primary (national) language for children born in families using this language. Sign Language should be used as a second language in the education of children born to hearing parents who communicate with their children in their national language. However, it does not change the fact that it is not enough to use Sign Language to lip-read Polish properly.

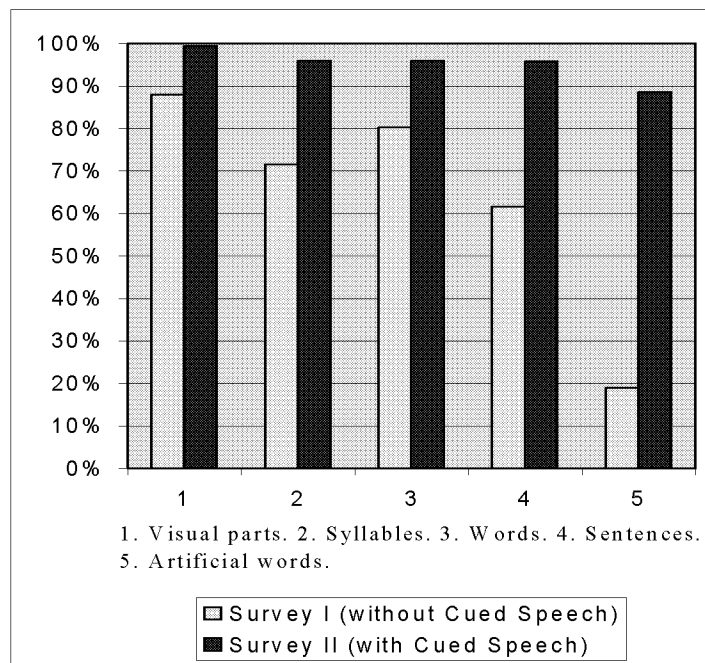


Figure 3. A comparison of the results of the test of visual perception of speech signals by children using Cued Speech.

Very important facts are shown on the next diagram. Children who have been using Cued Speech for at least three years are able to lip-read quite properly even without the support of Cued Speech. This ability is effective enough in every day situations and in fulfilling the basic psychological needs. If we want to provide the children with a full language development and the possibility of a further proper education, it is a must to use Cued Speech until the moment of achieving the full language competence, which enable the pupils to use the language skilfully and creatively.

The unique advantage of Cued Speech is the fact that its users do not become subordinated to it. The students, who have used Cued Speech for some time, especially after learning the basis of the language, can speak with people who do not use Cued Speech. Such conversations need more effort, but students have the opportunity to use practically the acquired skills. However, it is not good to give up Cued Speech completely, as it leads to a setback in the development of the language, as it restrains the learning of new words and notions.

The results of the research form the basis for a following thesis on the grounds of the linguistics and psycholinguistics: the effectiveness of using Cued Speech, which has been confirmed in pedagogical practice, verifies in a highly satisfying and clear way the theories concerning the ontology of the language sign and the basic theses of the developmental and general psycholinguistics. The results confirm the psychological reality of a phoneme and the importance of the procedures of the phonemic processing of the language information that are done by man (see also in: K.Krakowiak 1995).

The results of the research and the conclusion drawn from them should be taken into account in the processes of creating the education of the deaf in Poland. The results should be thought important by school officials, high schools preparing teachers for the work with the deaf, by the directors of the special education and mainstream schools, and also by audiologists, hearing aids suppliers, speech therapists, and most of all by the parents of the hearing impaired children. If Cued Speech became widespread it would create the possibility to break the language barrier and thus it would help to equalise the educational chances of the deaf.

Today in Poland 200 people with severe hearing loss is using Cued Speech. The method is being used in special education schools and special education classes in Kalisz, Radom, Lublin, Toruń, Długopole Zdrój, Wrocław, Łódź, Elbląg, Płock and Legnica. Each year there increases the number of teachers who are competently using Cued Speech. Since 1999 at the Catholic University in Lublin a Post-graduate Surdopedagogical Studies *The language communication with deaf and hard of hearing people* have been preparing specialists for work with the deaf. In its programme there is a course of practical cueing. In 1999 an association was founded “*The Polish Cued Speech Centre*”, which is placed in Kalisz, but operates all over Poland. The aim of the association is to organise practical courses of cueing for teachers and parents, and rehabilitation courses for parents with little children, children and teenagers.

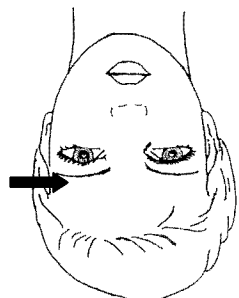
**THE CUED SPEECH SYSTEM
THE POSITION OF FINGERS FOR EACH VOWEL
WITHOUT A CONSONANT AFTER IT**



THE CUED SPEECH SYSTEM

THE HAND POSITION FOR VOWELS

1. The first location - cheek

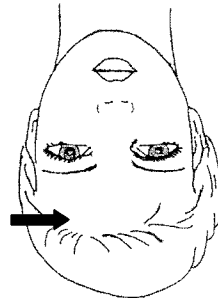


i u

i - igła, miś, pani

u - ulica, ósmy, bułka, góra, tu

2. The second location - mouth

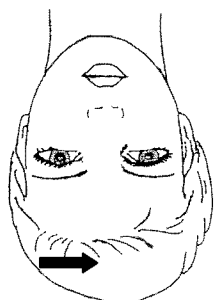


e o

e - Ewa, mleko, nie

o - Ola, kot, oko

3. The third location - chin

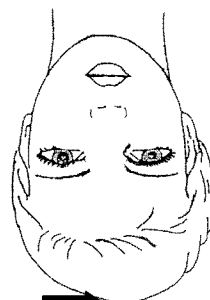


ę ą

ę - geś, idę, zęby, mięta, męka

ą - wąsy, idą, dąb, ką, łąka

4. The fourth location - neck

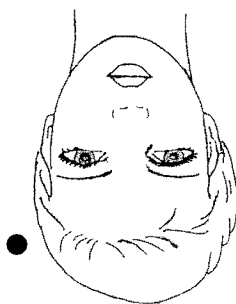


a y

a - Ala, mama,

y - mysz, dobry

5. The fifth location - next to the face



In this location we stop the hand while cueing each consonant without a vowel after it.

THE CUED SPEECH SYSTEM CONSONANT HANDSHAPES

Figure 1.

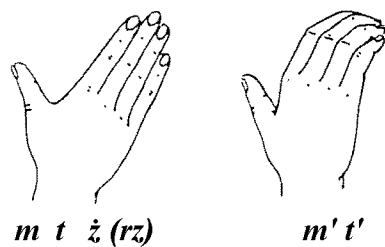


Figure 2.



Figure 3.

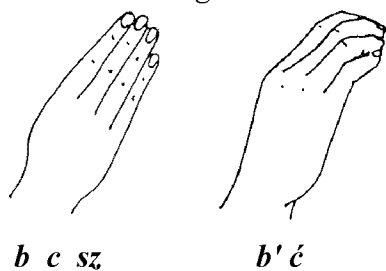


Figure 4.

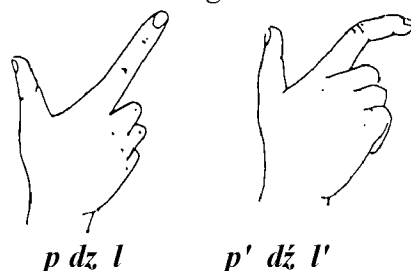


Figure 5.

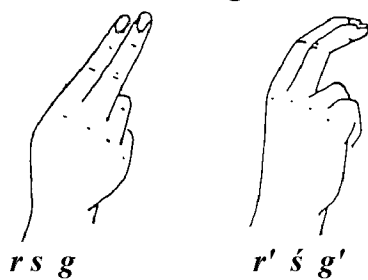


Figure 6.

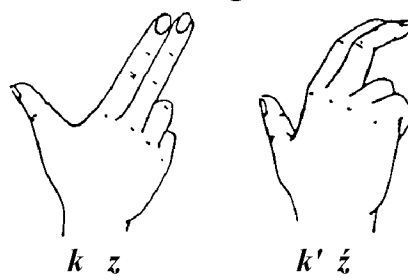


Figure 7.

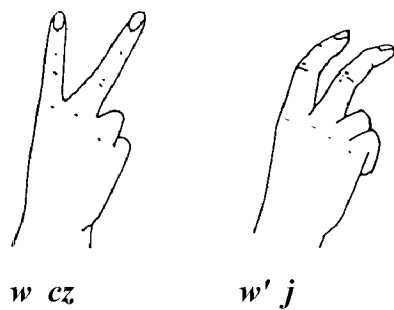
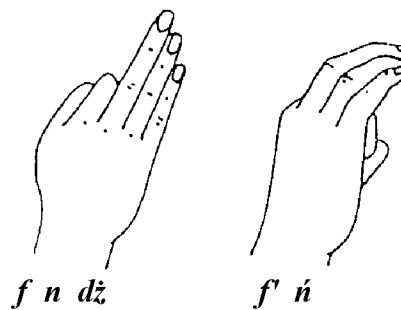


Figure 8.



The most important works about Cued Speech
published in Polish

1. Grabias S. (1996): Kazimiera Krakowiak: Fonogesty jako narzędzie formowania języka dzieci z uszkodzonym słuchem. (*Polish Cued Speech as a tool of forming the language of the hearing impaired children*). Lublin: Wydawnictwo Uniwersytetu Marii Curie-Skłodowskiej 1995 s 360. Komunikacja językowa i jej zaburzenia, 9. "Audiofonologia"IX,134-138 (Recenzje i sprawozdania z książek).
2. Kaczmarek B.L.J. (1986). Wzrokowa percepcja wypowiedzi słownych. (*The visual perception of speech*). Lublin, Uniwersytet Marii Curie-Skłodowskiej, Polskie Towarzystwo Logopedyczne.
3. Kita B. (1995). Uwagi na temat metody Cued Speech. (*Some notes about the Cued Speech method*). Audiofonologia VII, 69-92.
4. Krakowiak K. (1986). Fonogesty. Gesty pomagające odczytywać mowę z ust. Poradnik dla logopedów, nauczycieli i rodziców dzieci niesłyszących. (*Cued Speech. Gestures that help to lip-read. A guide for teachers, speech therapists and parents of hearing impaired children*). Lublin, IKN ODN.
5. Krakowiak K. (1987). Czy fonogesty umożliwią dzieciom niesłyszącym pełny rozwój językowy? (*Does Cued Speech enable a normal language development of hearing impaired children?*). Szkoła Specjalna 1 44-50.
6. Krakowiak K. (1989). Fonogesty – polska adaptacja Cued Speech. (*Phonogestures – Polish adaptation of Cued Speech*). "Biuletyn Audiofonologii" I, 1<27-35.
7. Krakowiak K. (1990). Mówimy z fonogestami. Ćwiczenia dla dorosłych i dzieci. (*We speak with phonogestures. [We cue]. Some exercises for adults and children*). "Biuletyn Audiofonologii" II,1-4,101-142.
8. Krakowiak K. (1992). Metoda fonogestów jako sposób wspomagania komunikacji werbalnej. (*Cued Speech as a supporting method for the verbal communication*). "Biuletyn Audiofonologii IV, 45-58.
9. Krakowiak K. (1993). Ręka matki pozwala dokładniej słyszeć, lepiej rozumieć i swobodniej mówić. (*The mother's hand helps to hear more clearly, comprehend better and speak more fluently*). Co słyszać? Poradnik dla rodziców dzieci z wadą słuchu. 1993, 1(4), 19-22.

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