This paper explores the problems of Arab children with hearing impairments living in Israel. It addresses the linguistic challenges involved such as the intrinsic problems of the Arabic language, the diglossia phenomenon expressed in colloquial dialects and literary registers, and the problems associated with a minority language in Israel. It describes the population of Arab children in Israel with hearing impairments, considers the identification problems associated with this population, and notes the lack of special schools or programs for Arab children with hearing impairments. The paper concludes with seven identified problems of the Arab population with hearing impairments: (1) intra-family marriages continue, preventing a decrease in the number of offspring with hearing impairments; (2) there are no Arabic-speaking parent support groups; (3) there are few educational institutes for Arabic-speaking children with hearing impairments; (4) there are no social groups for Arabs teenagers with hearing impairments; (5) there has been no survey of those with hearing impairments in the Arab population; (6) sign language is less preferred for the Arab population in their educational institutes; and (7) there is a problem determining which sign language system to use. (CR)
STUDENTS WITH SPECIAL NEEDS: ARABIC SPEAKING CHILDREN IN ISRAEL

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ABSTRACT

This paper is a first and preliminary description of the special case of Arabic speaking Hearing Impaired Children (HIC) in Israel. Their linguistic background is analyzed and the professional care is described. It is found that the linguistic factors involve intrinsic problems of the Arabic language, i.e., its basic structure as a Semitic language, the diglossia phenomenon expressed in colloquial dialects and literary (written) registers, as well as problems of being the language of a minority in Israel. The professional care for this population is very deficient compared to the care for native Hebrew-speaking HIC. Many problems were identified including locating the HIC and developing professional centers for their linguistic and cognitive development.

INTRODUCTION

In Israel there is a relatively large proportion of hearing-impaired/deaf children who belong to the group of native speakers of Arabic. The population of non-Jewish native-speakers of Arabic in Israel amounts to about 18% of the general population. It is believed that among the members of this language-community the rate of deaf children is larger than it is in the general population in the country. At least in part this fact is due to inter-family marriages, i.e., hereditary (genetical) cause of deafness (Sela and Weisel, 1992:18-9).

This paper focuses on hearing-impaired children (HIC) of this population who face in Israel specific difficulties beyond those of Hebrew-speaking HIC. We analyze the problems from the following linguistic aspects:
1. The state of diglossia in Arabic;
2. Dialect problems;
3. Arabic as a minority language in Israel (with Hebrew the dominant language);
4. Language-specific features of the structure of Arabic (different from Hebrew and English);

Finally, we review the situation of this population in Israel from the point of view of professional care and draw some conclusions.

**THE STATE OF DIGLOSSIA IN ARABIC**

Diglossia is the name given to a linguistic situation characterized by a deep dichotomy between a formal and an informal language variety used in one and the same language community. The differences that exist between the colloquial and literary Arabic registers have been taken as a model of diglossia in, e.g., the classical paper by Ferguson (1959). These differences encompass all the areas of the language system: phonology, morphology, syntax and lexicon. Every speaker of Arabic is basically a native-speaker of a colloquial dialect, informally acquired as the child's mother tongue at home. Literary Arabic, however, is learnt at school for literacy purposes (reading and writing) since it is used less than colloquial Arabic in particular in formal conversations and speeches.

Into this cleaved world are Arab children born. They exert a lot of effort in learning the two registers of their language while becoming literate. Their problems have been described in the literature (e.g., Frayha, 1959, Rosenhouse and Shehade, 1987), but even adults suffer from the same problem. Many writers of modern Arabic literature voice the difficulties of life with two language systems from the point of view of formalization of their inner thoughts as well as presenting these ideas to the readers (Diem, 1974).
Also Arab HIC face this problem. They have to learn first of all colloquial Arabic which is, as mentioned, the mother tongue spoken at home. Even for a hearing child this learning phase does not usually end before the beginning of school education. Omar (1973) found for hearing children in an Egyptian village that the acquisition of certain Arabic phonemes, such as glottals and pharyngeals, is achieved only as late as 7-9 years of age, due to their difficult articulation. Clearly, the Arabic phonological/phonetic system is more complicated than that of Hebrew or English, because of the number and kinds of its phonemes. The main difficulties are encountered in the pronunciation of guttural and emphatic consonants (see below, p. 7). The problem is of course greater for the HIC who do not learn the oral language spontaneously but have to learn it deliberately with the aid of teachers, by much motorical training, first as isolated segments and then in sequences.

Thus, problems of learning the colloquial phonology and phonetics, i.e. the mother tongue, are still very much there for HIC who reach the age that hearing children begin learning reading and writing at school. But as mentioned above, being literate in Arabic requires the acquisition of a relatively foreign, or at least new, language.

Of course, since the education system is aware of such diglossia problems, some help is offered to both hearing and HI students at the preliminary stages of school in the form of cognate words, i.e., common to both registers (cf. discussion in Rosenhouse and Shehade, 1987).

This device does not solve the HIC's problems, however. It is well known also in other language societies that HIC have difficulties in becoming literate and even more so in their progress to higher linguistic skills; this situation is even more pronounced in the Arabic speaking communities, due to the greater differences between the spoken and literary registers.


DIALECT PROBLEMS

Though Israel is a small country, many Arabic dialects exist in it, forming a very severe problem for the HIC. Arabic dialects are usually classified into urban and rural, sedentary and nomadic, and religion-dependent communal dialects. Thus, native speakers from Nazareth, Acre, Jerusalem or Jaffa use somewhat different Arabic dialects. The differences among them are, however, relatively smaller than the differences between these urban centers and various villages in the Galilee, Samaria or Judea Hills. Such differences exist also between various villages within the above mentioned areas. Much more prominent are differences between these dialects and those of bedouin tribes in Israel, either in the north or south of Israel (which are likewise distinct).

When speakers of different dialects come together, they usually use the more prestigious dialect which is often an urban dialect. Another phenomenon is that of leveling specific dialectal features in such meetings (koineization). Thus a native speaker of a bedouin dialect, for example, has to be in fact "multi-lingual" in his own "native colloquial", since he has to be able to communicate with non-bedouin rural or urban speakers. The situation could also be described at least as mastery of registers for daily communication in various social contexts. Moreover, it is basically valid for all encounters of speakers of different Arabic dialects (also outside Israel), including communal ones.

This linguistic situation is complex for hearing speakers since, as noted, it requires adaptation to many occurrences of dialect mixtures at different levels. It is certainly more complex for young Arab-HIC who struggle to acquire a certain basic language (= dialect) at home, and then at the kindergarten or school meet with teachers and friends who use different varieties of language. (This process is unlike the development of a HIC of the native Hebrew-speaking community in Israel.)
ARABIC AS A MINORITY LANGUAGE IN ISRAEL

Since native speakers of Arabic in Israel constitute a minority, their language is by definition a minority language, whereas Hebrew is the dominant language in the country. Legally Arabic is a second official language in the country; yet the sociolinguistic fact is that most of the population in Israel, including Arabs, use Hebrew for formal and many informal needs.

Hebrew is studied in the hearing Arab communities' schools starting in about the 3rd grade, but many of the older Arab adults (born before the establishment of the State in 1948) have learnt it spontaneously due to the necessities of life without formal schooling. Thus, the situation for most of the native-speakers of Arabic in Israel involves not only diglossia problems of their own language, but also bilingualism (at least - if English is left out of the considerations at this stage).

The situation of bilingualism of some part of the population in a country is not unique to Israel (see e.g., Quebec in Canada, Belgium or Switzerland). It does mean, however, a certain linguistic complexity in the life of individuals who have to resort to much adjusting and language switching in daily communication. This state of affairs is of course valid for the Arabic speaking population, including the children who almost as a rule learn also Hebrew at school.

This picture, however, is unlike what exists in many Arabic-speaking countries, such as Egypt, Syria, Jordan or Saudi Arabia, where Arabic is the dominant language. In some Arab countries, such as Morocco and Algeria, there is another kind of inter-language competition: French there stands for Western technology, progress and prosperity (Boualia, 1993), while Arabic is the national language (besides Berber, for a large part of the population). French there does not have the same status as Hebrew in Israel, however.

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Nor do the two separate communities of Jews and Arabs in Algeria, Morocco or Tunisia occupy the same sociolinguistic status as Jews and Arabs in Israel.

The difficulty in learning Hebrew at school as a 2nd language for the Arab-HIC may be compared with English in the Arabic-speaking community in Israel. The difficulty for them is apparently greater by scale of magnitude than it is for hearing children. It is doubtful, however, that the Arab HIC's linguistic competence allows them to start learning any of the above two foreign languages at an age parallel to that of the hearing children.

The literature indicates that 2nd/foreign language learning involves some different processes and methods than mother tongue acquisition (cf. Rosenhouse, 1994). The 2nd language learner has some initial notions and expectancies about (oral) linguistic communication and its components. For example, for hearing individuals not the basic fact of making articulation gestures has to be grasped, but the specific phonemes of the new language system. Furthermore, the fact that there are nouns, verbs etc. in a language and that they appear in certain forms and sequences in an utterance is taken for granted. What has to be learnt are the actual elements and the differences between those features in the mother tongue and the foreign one.

Second/foreign language learning has its difficulties, however, and particularly for HIC. These children may have grasped the notions related to language structure and function at the age they should start learning a new language in school; but their level of proficiency in the mother language is not the same as that of a hearing child. Moreover, when a speaker knows the mother tongue, and learns a second, third or a fourth language, s/he has problems caused either by mixtures and confusion between related linguistic elements (such as “faux amis”) or by unrelated elements which are therefore harder to memorize. Due to insufficient control of the structure of the mother tongue, HIC usually encounter in the process of learning a new language more difficulties than hearing children.
For those few Arab HIC who study Hebrew, this is another subject that they have to learn at school. Even if they are aware of its importance they usually do not enjoy learning it. For them Hebrew often remains a really foreign language, a topic learnt at school and hardly used in real life. In the long run a few may learn Hebrew to the end of secondary school education (although it is doubtful whether they finish it all), and can use it for basic daily needs. But the degree of proficiency they achieve is usually not very high and is much lower than that of hearing native speakers of Arabic, in any case. Perhaps, the right thing would be to compare their achievements in Hebrew to their proficiency in the mother tongue which is also not at the same level as that of Arab hearing students.

**THE STRUCTURE OF ARABIC**

Arabic is a Semitic language which is very different from English. It therefore poses for HIC who learn it as a mother tongue different problems from those posed by English. In this section we present a few examples of the phonological, morphological and syntactic structure of Arabic to demonstrate such difficulties.

The Arabic phonological system comprises some segments which are difficult to acquire even for hearing children. Among these, particularly difficult are the emphatics (/d, t, s, z/ and the somewhat related /q/) and laryngals (/&, h, h, ?/). In Arabic these consonants form part of sets of voiced and unvoiced homorganic phonemes (/d,t,t/,/z,s,s/) or voiced/unvoiced guttural phoneme groups (/&,.h/, /h,?/). These phonemes are hard to master since they cannot be externally seen and involve a manipulation (constriction) at the back of the vocal tract. Acoustically emphatics are involved mainly with a lowered F2 compared to the non-emphatic homorganic consonants.

Arabic morphology, like the morphology of other Semitic languages including Hebrew, is rich in verbal paradigms and nominal structures. The
basic morphological categories are relatively systematic. For example, verb morphology has a number of fixed patterns (forms) so that various consonantal roots (radicals) can be used in different patterns to yield more or less fixed and distinct meanings. There is no neuter gender in either Arabic or Hebrew and genders are only "natural" ones. But Arabic retains the counter-intuitive dual category (more in literary Arabic than in colloquial Arabic; Hebrew has hardly retained any traces of this category). For pluralization Arabic uses both suffixed endings (as do Hebrew and English) and also many "broken plural" patterns which have to be learnt by rote (unlike most Hebrew and English ones). These lexical elements require special learning effort. A hearing child learns these grammatical elements gradually by listening to the speech of the environment; a HIC is more limited in the input s/he perceives and absorbs from the environment and therefore needs a much longer learning period than the H child.

Also Arabic syntax has some counter-intuitive elements which make them difficult for beginners. A basic rule is that of concord (agreement) between an inanimate plural noun and its predicate and modifiers; for such nouns the concord rule governs singular feminine forms instead of the plural ones. This category exists both in colloquial and literary Arabic, so that the native speaker of a dialect has some basic preparation for it when beginning literary Arabic; however, the initial acquisition of this rule is probably more difficult for HIC children than to hearing ones.

Numbers serve as another example of a frequently-used difficult-to-acquire category. Their morphological forms vary according to syntactic functions and thus they have complex patterns and rules. Higher-level structures (such as modal or conditional clauses) are acquired relatively late by hearing children, too, and are expected to be learnt even later by HI ones.

These basic points vary, in various degrees and forms, between literary and colloquial Arabic, as well as between them and Hebrew and English. The
MC may be confused by the variety of these and many other elements, not mentioned here, leading to malfunctioning in the various language systems they use.

EDUCATIONAL INSTITUTIONS FOR ARAB HIC IN ISRAEL

In Israel the care for HIC is relatively well organized in the educational system and the national health services. Language teaching activities stress the development of the child's communicative competence from a very early age.

The first step of such care is identifying the HIC. The first problem with Arab HIC is often that they are not identified at all or early enough by the official medical or educational system. This fact leads to much frustration and many educational and communicative difficulties on the parts of both parents and children.

Special kindergarten frameworks (half-week or whole week activity for the youngest child, according to several criteria such as the child's age and level of hearing impairment) exist in 9 branches around the country, with some Arab-children’s kindergarten groups on certain days of the week. These are the semi-voluntary semi-national MICHA kindergartens which care for HIC from their infancy almost up to school. MICHA centers also care for some Arab HIC, but in Haifa, for example, there are only one or two kindergarten groups for them (3 days per week), which definitely do not cater for the real need of Arab HIC in the north of Israel. For the Arab population in this region of Israel (from about Haifa northward) there is now also a recently established "Center for the Deaf Child" in the French Hospital in Nazareth. These institutes provide oral and/or sign language training for both children and parents. They also deal with other educational topics as usually practised in kindergartens. In these institutes teaching methods include individual and group work, with frontal teachers and sometimes computer-aided teaching.
Special schools for the HI or deaf are few in the country, and even less function for Arab HIC.

For school-aged children there are Shema'& youth centers in the country which help the children by social, creative and educational activities in the afternoons, including help in preparing homeworks. These youth centers are found in the bigger towns in Israel, which means that HIC from remote villages or smaller towns, as often happens with the Arab community in Israel, are often deprived of their benefits.

In the educational system for Hebrew-speaking students there are special schools for the HI/deaf, classes for the HI/deaf within the framework of regular schools for hearing children, and individually integrated HI/deaf students in hearing classes. In the north of Israel, there is only one School for (Arab) Deaf and Blind, run by nuns in Nazareth. In the center of the country, e.g., in Jaffa, we hear that Arab HIC sometimes study in Hebrew-speaking schools for the HI, though hearing Arabic-speaking children normally learn in schools in which the language of teaching is Arabic. Learning in Hebrew, i.e., not in the mother tongue, involves additional difficulties of adaptation for the HI Arabic speaking children, although also some advantages.

Arab HIC are not usually integrated in the system operating for Hebrew-speaking children. There is, however, hardly any parallel educational system for this population in Israel: whole classes of HI children and individually integrated HI Arabic-speaking children in hearing children's classes are extremely rare, more so than similar Hebrew-speaking children.

Some details of the School for the Deaf and Blind in Nazareth are interesting to present in this context and compare with parallel institutes for Hebrew-speakers. Arab children learn there from age 5 to 14. Classes there are very small with 5 or 6 and up to 11 children per class. Basically the picture is so far very similar to Hebrew speaking schools or classes for the HI. Each class has a class-teacher and a helping teacher. Each class teacher
prepares the syllabus for the class before each term, according to the children's individual problems which include varying HI levels and other educational problems. Due to the scarcity of material in Arabic the teachers in the Nazareth School for the Blind and Deaf translate material from Hebrew and adapt for their students other educational material originally prepared for both hearing and HIC, such as brochures prepared for Shema'. This syllabus is then approved by the deputy-principal before implementation in the class.

The method of teaching at the school is mainly oralistic, though children and some of the teachers use spontaneous gestures, since formal teaching of sign language is not encouraged in this school. The achievements of the graduates of this school are not equal to those of hearing Arab schools' graduates, and rarely any have so far continued to learn in secondary schools.

We have discussed so far preliminary schools. Secondary schools for HIC are very rare. This fact creates a very serious problem for the Arab HIC teenagers who are left without adequate educational framework or support for varied vocational qualification.

Recently Arab families' awareness of the educational options has grown, and they increasingly turn to the relevant institutes for help in diagnosing and education of their HIC. As a result, the proportion of children who get some formal education before age 5 has started to grow, and some improvement can be noted in their communicative skills at the beginning of school compared to the past.

Arab sign language is not formally recognized in Israel, although it apparently exists "in the field". That is, gestures are used spontaneously by the HIC and their parents and educators. It is not certain how esoteric or uniform these signs are, among different families, schools, villages, regions etc. In the Haifa branch of MICHA, where total communication is applied, also the Arab HIC use sign language, but there it is based on the Hebrew sign
language. Due to the little information about this population in general, there is no real knowledge of the structure of this sign language or its users.

Sign language appears to be used in Judea, Samaria and the Gaza Strip, among other areas of the country. A study of this issue has not been undertaken so far and is badly needed. In the Gaza strip the Society for the Care of the Handicapped, established in 1975 with the aid of UN and other mostly American fundings sources (Abu Ghazaleh, 1995), also cares for Arab HIC by the Gaza "Atfaaluna (‘Our children’) Center for Deaf Children". It is unknown, however, how effective this establishment is beyond Gaza.

The situation in other Arab countries (Jordan, Egypt, Libya, Yemen) is probably similar. In Jordan for example, sign language is already taught at schools for the deaf (though it is unclear to us how formally recognized it is even there). According to members of the Jordanian delegation to the 18th International Congress on Education of the Deaf (1995, Tel-Aviv) there is an Arabic sign language there, as well as in some other countries, but each country and even town has its own sign language. This would be quite plausible in light of the above description of the nature of Arabic dialects and the fact that there is hardly any centralized care for the education of the deaf there. M. Hamza's Dictionary (1993) of Arabic sign language, also exhibited in this conference, reflects some official attention to the issue in Jordan. There is also an Institute for the Deaf in As-Salt, Jordan, directed by Brother A. L. de Carpentier. More knowledge of the situation there could contribute to developing a uniform Arabic sign language for teaching and use by Arab HI in Israel.

DISCUSSION AND CONCLUSIONS

We have reviewed here some linguistic problems of Arabic, which make its acquisition by HIC a very difficult task. From this preliminary investigation some major problems of the Arab HI population emerge:
1. Inter-family marriages still continue, preventing the chance to decrease the number of HI offsprings.

2. In Israel there are no Arabic-speaking parents' societies for guidance, support, and help of parents whose infants are found to be HI.

3. There are hardly any official educational institutes for Arabic-speaking HIC, either at kindergarten level or at the various levels of school. Particularly crucial is the need for vocational schools which will prepare the HI for constructive lives as adults in the community.

4. There are no social groups for Arab teenagers and adult HI, except for the few groups that exist in some towns (and run by ACHA, The Association of the Deaf in Israel), where HI population from all communities get together.

5. So far there has been no comprehensive survey of either HIC or adult HI in the Arab population in Israel. This does not allow us to know the real dimension of the problems and the difficulties and complications following from it.

6. Concerning teaching methods, it appears that sign language is less preferred at present for the Arab population in their educational institutes except for some branches of MICHA, though it has started to be applied also in the Nazareth Hospital Center for the Deaf. Sign language seems to exist "in the field", however, but questions about its structure or scope of use remain open for future investigation.

7. Another question rises about sign language: which sign system should be used? Should the HIC use an Arabic sign language based on another colloquial dialect (e.g., Jordanian, as shown at least partly in the above mentioned Hamza's Dictionary) or the Hebrew-based sign language used in MICHA? In Arab countries some activity is going on in this area, but only little is known about it in Israel.
The basic finding of this preliminary study is that the situation of Arab HIC in Israel is very poorly and much effort is required to improve it. Sela and Weisel (1992) criticize the fact that there has been no formal census of this population and its condition in Israel so far. We feel that additional information is badly needed in the following areas:

1. The proportion of HI Arab children vs. HI children in general in Israel.

2. A survey of the institutions for the Arab HIC in Israel (north/center/south).

3. Teaching methods of this population as currently practised in Israel: oral/finger spelling/sign language.

4. The structure of "Arabic" sign language(s) used in various locations in Israel.

5. Designing a uniform curriculum for the Arab HIC in the various ages and locations, a curriculum which will take into consideration the linguistic features of colloquial and literary Arabic as described above.

Each of these is a research topic in itself, and it is hoped that some activity to this end will begin soon.

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