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THE APPROACH TO PERSONS WITH HEARING PROBLEMS AND THE SPEECH REHABILITATION.
by Elena Amigoni

- *Nobody doubts that hearing is a miraculous sense in human life.*
- *The fact that many persons do not have this sense is a statistical data.*
- *It is also desirable and possible that this minority may be won with will, sensibility and application.*

CHAP. 1 THE APPROACH AT PERSONS WITH HEARING PROBLEMS.

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Hearing functions.

According to D.A Ramsdell, hearing has a triple function on three different levels, which are simultaneously, and differently interacting:

- Symbolic level. Sound is a word, the word is a symbol, and symbol shows a reality. Deafness started in a post verbal phase (i.e. after the complete acquisition of language) does not mean any alteration in this specific process, as the organization, the formulation and coordination of thought have been already acquired by the person.
- Warning level: it is important for the biological adaptation and survival; a hearing loss causes a disinformation on what happens outside the sight. This generates a vulnerability and insecurity sense more or less important due to the importance of the damage, the timing and the psychological equilibrium of the individual.
- Auditory background or primitive level. It is due to all the sound stimulations that organize the conscious and unconscious substrate of the individual surrounding. This third function makes a connection with the surroundings possible giving a comfortable sensation of being part of an active world, a world that belongs to us.

WORD PERCEPTION

The complicated process of word perception is organized by the capacity of the individual to differentiate.

- Sound from silence.
- Word from noise
- Word from other words.

This discriminating function is associated with the memory function, which allows the storage of sounds, which together with the cortical centers of the brain allow the comprehension of the sound message.

WHICH FACTORS ARE INFLUENCING THE UNDERSTANDING OF THE VERBAL MESSAGE.

These may be tied to four fundamental parameters.

- 1- the message with the variables of intensity, timing, redundancy and phonetic content etc.
- 2- the ambiance that leads the message with distortion, reflection and competitive noise phenomenon.

3- The person who sends the message together with the articulation of the word, the speed of the speech, the tonality of the voice, the rhythm of the voice etc.

4- the person who receives the message is strictly linked to his hearing level, the analysis, memorization and attention capacity together with other parameters such as language appraisal and interest in listening.

According to above, it is a logical result that due to a hearing loss, all the decodification process of the verbal stimulation is altered and therefore the communication capacity is compromised in a more or less relevant measure.

CHILD DEAFNESS

What does it mean being born or becoming deaf at an early age?

A harming event on the hearing apparatus, before during or immediately after birth inhibits the functional activity therefore creating damages due to hearing loss. These losses are primarily a loss of acquisition of speech. A baby born deaf cannot learn how to speak. This is one of the more handicapping pathologies for a human being because is only with the language we can communicate with other fellows.

On top of this primary aspect, more or less serious problems will arise on the global perspective development of the child; the attention and the concentration capacity are easily compromised as the comprehension and abstraction capacity meaning the idealization of a concept. The boy does not understand what he is being asked and cannot express himself so that he often appears diffident and shady, sometimes violent and litigious, tyrant with the parents. These problems may be increased, if necessary adjustments are not taken, by an intellectual pseudo deficit so that deafness may be understood as a mental deficit, particularly at school level.

This problem is slightly different from the previous one, but not less dangerous, is it is referred to childs who became deaf, even only partially, after having heard sounds. The fact of losing the hearing after having learned the language in its two main aspects: impressive (interior language) and expressive (spoken language), puts the handicapped subject in a slightly better position compared to the previous experience because what has been stored, remains in our memory.

Of course, the younger the child is the more important is to act tempestively with a prosthetic-riabilitative therapy (hearing aid or cochlear implantation in very serious cases) without losing valuable time, in order to avoid interruption in the language development process. On the contrary as time goes by the child would lose what he learned: a total regression of the wording will take place together with a complete alteration of the voice due to lack of audio phonetic control with more or less serious characterial and behavior problems which would change the personality of the child.

In both cases we categorically confirm that:

The unavoidable conditions for a good recover of the deaf child is the precocity of the diagnosis and the immediate application of the hearing aid together with a speech rehabilitation therapy, with the assistance of the family and the cooperation doctors and Therapists who will always have the task of informing, assuring and cooperating.

ACQUISITION OF SPEECH

Acquisition of speech is a fundamental imitative process which requires three fundamental factors:

- The anatomic and functional integrity of the listening and phonetic apparatus.
- Normal development of intellectual capacities.
- The ambience full of sound stimulations of any aspect mainly the affective one.

While examining the process with which the child learns to speak we always have to keep into account the temporal limitations, which are relative as they, change from child to child. The cry of a newborn child is an expression of life which certifies the normal of the breathing and laryngeal apparatus.

Next to the crying, shouting can be considered an initial rudimentary way of communication in the context of a vegetative life of the child to communicate his needs at an unconscious level. Passing the time, these first vocal emissions will change the modulations, expressing harm or joy. After the second month the vocalization starts and consists in the emission of guttural sounds and of different intensity where consonants and vocals can be distinguished.

Normally after 5-6 months the lallation takes place which is a vocalic game of the child who enjoys producing and listening the emitted sounds. These are syllabic type expressions in which consonants and vocals appear in an irregular way.

Only later, after 8-10 months, the locutory phase will start and the child with one only word (papa, mum etc) will show his thought: word-phrase. Increasing the number of words it will become normal for the child the junction of two words who reach after 24-30 months the use of more words connected together.

At the age of three years the vocabulary is of about 1000 words and the phrase is composed of subject, verb and complement.

Beyond three years the language enters in the phase of lexical enrichment and of syntactic perfection such as development of verbal abstractions.

SUMMARY.

- Hearing is the main condition to learn how to speak.
- First three years of life are essential to acquire the language.
- Spoken language is always following heard language.

HOW CAN WE UNDERSTAND IF THE CHILD HAS HEARING PROBLEMS?

By observing the reactions to sounds and the development of the language to the following table (merely indicative):

0 - 6 months of life:

Due to a strong noise the child cries, is frightened, awakes.

6 - 9 months

If the child hears a noise or if he is called he turns round. Repeats many times the same sounds (papapa, dadada) and some easy word (papa, mum)

10 - 18 months

Recognizes many noise and reacts to even low intensity sounds.

Understands the meaning of many words and starts to reproduce them.

With one word he expresses a phrase (pappa when he is hungry)

18 - 24 months

Hearing new noises he looks around and tries to find where they come from. He likes music,

Understands easy orders (send me the ball please)

Emits new words and joins two or more words to compose a phrase (no pappa)

2 - 3 years

He feels all noise and is attracted by particular sounds such as the bell and the telephone.

He answers to a call even if far away

He likes to listen to stories

Has a wide vocabulary (100-1000 words)

The phrase is more complete

Poses some questions

Executes some easy orders

After 3 years

The difficult or lack of answer to sound or a poor or absent development of the language may for sure indicate the possibility of a deafness.

ADULTS DEAFNESS

Among all sensorial handicaps, the reduction of auditive functionality is, even more than the sight, the more debilitating one as, hindering the verbal communication, gradually leads the affected person, mainly the old subject, to a lack of hearing which often leads to depression and isolation.

The past life of any single individual is determinant in the process for accepting deafness independently from the age or the degree of deafness.

Unfortunately in some not rare cases we face sudden deafness, which takes place in few days or even few hours. The anguish, which follows, is terrible and creates a very difficult to face and to win. Being the auditive handicap generally very important, in these cases the hearing aid has to be joined by teaching of the labial lecture to allow the subject to continue to communicate at least initially with the persons affected by the same drama. The results obtained are generally satisfactory; the patient succeeds with adequate motivation and application to utilize the hearing aid amplification, to read the words on the lips and therefore to continue the daily life with somehow modified autonomy. We have to underline once more that in front of reactions which appear in the subject, the doctor and technicians have to do their best to support the patient utilizing their experience, good sense and particularly to their sensibility operating with patience and conviction in order to lead the patient to the solution they believe the more appropriate.

THE OLD PEOPLE DEAFNESS

In the complex picture of the modifications which take place in the old person due to factors caused by the age, particular importance have the sensorial and motor activities. The most important sensorial activities are the reduced vision and audiological sharpness. For what concerns motricity, the reduced movement speed, together with reduced coordination, reflects seriously the global capacities of the person. As far as the intellectual capacities, the most affected process due to aging are the memorizing and learning capacities.

Concerning the old people deafness, the psychological consequences determined in the individual personality get across with the mentioned modifications which often lead to abandonment of hearing and consequent isolation and depression.

These subjects may automatically adopt defensive mechanisms such as:

- Ask to repeat what they did not understand
- Pretend having understood
- Accuse others not to clearly speak and in a low voice
- Renouncement to listen

In these ways the person flatters themselves, not uses the acoustic hearing aid, to dissimulate the deafness.

Increasing the handicap, the person finds himself to live difficult situations with consequent even serious repercussions on the psychological level.

THE SPEECH REHABILITATION APPROACH

To the baby

The development of a therapeutic work is always most important to obtain positive results, particularly when a child is involved.

Obtaining his confidence is the first important objective to reach.

But how? Showing sympathy, love, comprehension, being conscious of the difficulties to install a relation initially based on games and amusement. (this is even more true the younger is the baby).

The understanding of the targets reached, comprehension and self-consideration in a view, which never loses the reachment of the defined objective.

To the boy

The adolescence represents a very delicate and therefore very difficult aging time. Therefore the relation speech therapist/boy as to be completely different from the previous one using a series of specific strategies to make the boy responsible and understanding that the speech therapist is a person who leads and helps him to become an adult. The speech therapist has to demonstrate to trust him. The success of the work is also a relation based on loyalty and respect besides the friendship.

To the adult.

The relation of the speech therapist to the adult is very particular as he is a mature person, with his experience, culture, requirements, sensibility, personality and his problematic. The adult which has a hearing loss, often during his normal activity, is generally an intolerant person who believes being victim of injustice. The moment of the approach is always difficult as if it is not properly pursued may damage the starting of a dialogue and a therapeutic cooperation; the therapist should initially be able to listen, answer to his doubts and perplexities in a realistic way of leaving space to unrealistic expectations; determine a working scheme to follow together with determination and serenity.

To the senior.

The psychological consequences that deafness creates to the senior get across in various ways with the psychological, knowledge, emotional and social modifications arising with the increased age. All this leads the affected person to a frustration and depression status, which may lead to a refusal of the proposed remedy.

The procedure is quite different from the one adopted with younger guys, generally more motivated; all the activities which are normally decided for the adult are more emphasized by the senior. We don't have to forget that these persons with their specific and complex necessities may interfere with a trustful and loyal cooperation absolutely necessary for a good result of the therapy.

To the family

Deafness is a problem not only for the affected person but also for those persons living with him.

We have to say that the attention and help given by the family will be different if the affected person is an adult or a child.

CHAP 2. THE SPEECH REHABILITATION RIABILITATION OF LOW ACUSTIC LEVEL OF CHILD AND ADULT.

By Elena Amigoni

The role of the speech therapist.

To develop successfully the therapy the speech therapist has to:

- Have clear in mind all the necessary information on the correct enrollment of the patient assuming the responsibility of the treatment under all points of view: clinic, psychological, familiar and surrounds.
- Define a global profile of the patient when the therapy starts, quantifying if possible various levels of activity.
- Rigorously observe the fixed appointments taking actions if these are not followed and especially not justified.
- Have follow up at defined days to evaluate the reached improvements; report continuously to the specialist and other technicians who followed the patient and update them on the work done and the results obtained.
- Adjust an intervention method become accustomed for the patient and develop it according to the capacity and time of learning, but particularly to the personality of the patient.

THE SPEECH REHABILITATION THERAPY FOR THE BABY WITH HEARING PROBLEMS

Today the modern technology allows us to determine a hearing losses even during first days of life.

The early diagnosis has to be promptly joined by a hearing aid and speech rehabilitation therapy. It would be a dramatic error leaving the baby growing without sound stimulations; the very first years of life are extremely important for the development of the brain, of the activity, of the attention and of the intelligence.

The precocious diagnosis and hearing aid application for a baby (below 12 months and maximum 16-18 months) should not lead to a rehabilitation program but an educational one as, being a very young baby, the physiological steps of plurisensorial stimulation are indicated for the development of the language.

In case of late diagnosis, with clear language deficits often joined by characterial and behavior alterations, it is preferred adopting a rehabilitation as the therapeutic measures will need a specific methodology.

EDUCATION OF A CHILD CARRYING A HEARING AID

The education is based on the development of following points:

- Informative, psychological and educations support to parents and to all the family.
- Respect of the physiological phase of learning of the baby.
- Education to hearing- Comprehension development
- Improvement of the musicality of he vocal expression
- Starting the formulation of the vocal language compared to one mainly based on games.
- Informative, psychological and educational to parents.

At the beginning, the attention of the speech therapist will be addressed to the parents: they are living a very difficult period, if not dramatic, the are confused and disoriented and have to be assisted to face such a situation.

The speech therapist task at this stage and even after is not easy; he has to be present and answer to all their requests, programme a common work leading them to see and appreciate any small progress, explaining how the motive-perceptive-hearing associations which lead to the development of the language are starting.

- Respect of the physiological phase of learning of the baby.

The baby is only a few months old. The period of lack of sound is very short; the brain plasticity is fully developing. Why should we not follow the global physiological

development steps? It is obvious that we should find some expedients which will be explained in this presentation.

- Education to listening.

This is the first speech rehabilitation treatment after having installed the hearing aid. The answer to sound can take place at the same moment of the hearing aid installation or after some time; it depends from various factors such as deafness degree and the age of the baby. The sounds instruments have to be chosen accordingly to the baby interest in that particular moment (even a spoon hitting the plate may be good) and then substituted by more appropriate ones.

As the time goes by, at the arrival of sound, the baby may throw an object (a teddy bear for example) or put cubes in a box or set up a tower. At the same time we will have him listening some music and we will introduce him to reproduce the rhythm with the body. The speech rehabilitation educational moment in a small baby joins the psychomotive moment through a gradual acquisition of the body scheme in a time-space reality and a right psycho-physical equilibrium.

-Comprehension development

The acoustic stimulation gradually brings the baby to the comprehension development, indispensable support for the development of the verbal communication. If we compare with the normally hearing baby we realize that he understands more than when he can express, because the expression requires a moving activity strictly dependent with the neurological maturity.

- Improvement of the musicality in vocal expressions. With mimic, body movement, voice modulation, music.

- Starting of the oral speech compared to a prevailing ludic one potentiating the vocalic expressions of the baby in a natural way as every mother or father do with their baby. (for a better study see the book "learn by listening" by E. Amigoni.

When the baby gets older. (18months-3 years)

Acoustic stimulation has to become more specific; more complex sounds are introduced in the ambiance where the baby lives, in the external surroundings, of animals and everything which makes noise (onomatopoeic sounds) such as the cat's mao, the train's tu-tu etc. As the time goes by, without noticing, the verbal expression will follow the identification; the baby seeing the dog playing in the garden will say bu-bu. The language is evolving!

From onomatopoeic sounds action the easiest actions will follow; those which everyday the mother does with the baby: the doll will sleep (sssssssss, she sleeps) will eat (ahm how good it is) etc. The baby will look and will laugh and listen amusing himself, will repeat the same actions and will then verbalize.

After 3 years the baby with a precocious hearing aid, has acquired a speech which, although limited, is intentional and will be used during the day. Many items to continuously improve the comprehension and verbalization are available, any moment is indicated to verbalize what is of baby interest: he will easily learn to observe, listen and speak.

The therapy, if properly done with the cooperation of parents and school teachers, will allow the baby to properly join the normal school with the help, if necessary, of a supporting teacher.

RIEDUCATION of the child with a late hearing aid application.

Helping a baby deaf since the birth to whom the hearing aid has been lately applied presents some complex problems, mainly if the hearing deficit is serious or dramatic. In this case the intervention methodology presents some variables for execution of exercises and materials to be used.

The recover is generally difficult due the characterial diseases and the child behavior which are consequent to the sounds privation. The results obtained will therefore be less satisfactory,

The education, which will be very intensive, will need a long series of exercises which can be resumed as follows:

- Intensive acustic training to have the child to be used to listen surrounding rumors, instrumental sounds, words and his own voice.
-exercises for the set-up of various
- Identification and denomination of objects and figures chosen accordingly to what he will acquire.
- Association and classification exercises.
- Comprehension stimulation which may present difficulties as the child who lived in complete silence during the most important years for learning tends to answer mechanical to questions without getting the real meaning.
- Teaching of reading and development of graphic design.

THE SPEECH REHABILITATION THERAPY IN THE ADULT

The consequences of a neurosensorial hearing loss may more or less seriously reflect on two specific aspects:

- The hearing or communicational aspect with difficulties according to the hearing loss, configuration the audiometric curve and the timing of deafness.
- Psychological aspect as the hearing aid help before representing the compensation to the deficit, visualizes the deficit becoming synonymous of deficit.

The therapeutic process has three phases:

- The approach, which will be different from patient to patient.
- The set-up where all the communication necessities, the emotional, social consequences of the hearing loss and the level of labial lecture will be evaluated.
- The therapy which consists in an improvement of the listening attention through a listening training increased by the integration word lecture on the lips.

The rehabilitation steps synthesized according to the following points:

- Information on the problematic regarding deafness.
- Adaptment to amplification, gradually in time, to allow the habit to acoustic perception generally always different from the previous one (the patient should not immediately see the advantages of amplification in difficult listening situations, such as theatre, conferences etc and is not aware that in some cases the problem will not be completely solved).
- Hearing stimulation, without the help of the sight, based on exercises of different difficulties chosen in accordance to the hearing loss, the cultural and intelligence level of the patient and attention and mnemonic capacity.
- Labial lecture in case the hearing deficit is high and the acoustic hearing aidis not sufficient.
- Sensitization of persons related to the patient who on top of understanding the importance of the problem, have to know the best strategies to deal to whom carries an acoustic prosthesis.
- Psychological assistance: the linking strategy of the entire therapy.

THE SPEECH REHABILITATION THERAPY IN THE ADULT WITH HEARING AIDS.

The modern medical science allows the human being to live longer; this increase of lifetime leads to an unavoidable progressive deterioration of the body functions. Among sensorial functions, the reduction of hearing capacity, creating problems to the verbal

communication, can gradually lead the adult in an even severe social isolation. The psychological consequences of deafness and connected in various ways with psychophysiological, understanding and emotional modifications which the adult will suffer as time goes by. This will create a confliction situation which, if not faced in the right way, will lead to an even severe depression where all the methods that the speech therapist decides will find an higher emphasis.

The therapy steps are the following:

- Make sure that the adult understands his deficit, which has not to be lived as a dramatic or dishonorable situation.

- Make clear all the advantages of the hearing aid but also its limits.

- Find the way to convince the adult to be assisted to overpass the critical moment.

While dealing with the adult, the therapist has take into account:

- Need more time and patience.

- Give more advices.

- Stimulate the self-consideration and the reaction willingness.

- Present the problem in a not dramatic way.

- Give a psychological help, which includes, beyond any other aspect, the adaptment of the therapist to the character and behavior of the patient.

In general, from the practical point of view:

- Will sometimes support the task of the audiologist in the learning of the use of the hearing aid, generally difficult due to some deficit factors such as lack of memory, movement, tactical sensibility and visual sharpness.

- Obtain the adoptment of amplification in longer times due to the fact that when a person cannot hear, using the hearing aid after a long hearing privation time, is used to listen in an abnormal way.

- Increase the listening attention with a hearing training sometimes associated with the labial lecture.

- Utilize some psychological devices to overcome difficulties linked to the listening motivations (in some cases very poor), to the insufficient self-consideration, to the affective isolation.

THE SPEECH THERAPIST AND THE COCHLEAR IMPLANT

The speech therapist when he begins to assist a person with cochlear implant has to know that the evolution of the therapy and therefore the results may show a wide variation due to several factors which interact with the process of decodification of the electrical stimulations given by the implantation

In a child with a precocious implantation, the therapeutical assistance is the same of the one given to a child with acoustic prosthesis, with the difference that, being the child with implant is in better hearing conditions compared to a child with hearing aid, the results will be faster and equivalent to those reached in case of medium-severe deafness.

In a boy deaf from birth, with hearing aid and in a second time implanted, the rehabilitation program will initially difficult as the person hears the sounds in a totally different way and has to seriously applicate himself to start living in a sounding world unknown to him.

In an adult who became deaf as adult, the cochlear implantat usually allows an optimal re-establishment of the hearing functionality and therefore of the verbal communication. -