The gestural communication of deaf children

Mª ÁNGELES ORTEGA
MERITXELL TORRES
CARMEN TRIADÓ

This study is based on the investigation of «The communication evolution within family and school contexts». This investigation, directed by Doctor Carmen Triadó Tur, has been sub-sidised by the DYGICIT. The authors of this study belong to the investigation group EIDA (E.I. of Hearing Deficiencies) integrated into the Evolutionary Psychology Department and in the Education Department of The University of Barcelona.

Studying the communication of deaf children has been approached by various researchers from different fields in the last decades. The definition of the communication necessities shown by deaf children has changed with the passing of time, creating guidelines and investigation interests to approach the subject and its educational necessities. The implantation in our Country of educational programs which would facilitate the integration of deaf children into ordinary schools, offering an oral alternative in their educational programs, has in the last years permitted the use of more varying methods in which, not only oral re-education is included, but also the use of sign language as an evident and clear alternative to the participation of the language of some deaf children, especially those whose audition is insufficient for using speech as a unique media of communication.

We have framed our studies in this context of investigation. We intend to go deeply into the gesture study as a natural form of deaf people's communication because this form of communica-tion doesn't necessarily mean that it is less linguistic than speech. Along this same line, although with different objects of study, other authors have worked (Boyes, 1990; Butcher, Mylander and Goldin Meadow, 1994; EIDA, 1992, 1993, 1994; Goldin-Meadow, 1982; Villier, 1993).

It is possible to distinguish different types of gestures in children's communication. Some of these gestures have been traditionally analysed as symbolic gestures, but have a crucial role for being used with communicative functions and with specific linguistic references. These com-municative functions are achieved in interactive situations with adults, which are also crucial for the learning of languages in normal conditions. In this field, Casselli (1990) studies the ges-tures produced by a hearing child of 10 to 20 months making a difference between what will be Deictic gestures (those conventional and referred to external objects and events that express communicative intention from the child but which can only be understood through an extra linguistic context other than the one the child makes reference to) and referential gestures (those which also express a communicative intention and that become conventional thanks to the child and his interlocutor), show a precise reference and have a semantic significance that will not change as per the function of the context).

Becoming more articulate in more specific gestures and in the population of deaf children, Triadó (1997) points out that the indication gesture at its origin presents a very similar evolution to those of hearing children, the difference is that while the hearing child slowly acquires the words of his surrounding language, gesture arrives accompanying the word, so that later the

word will assume all the importance within interactive situations. In deaf children brought up with oral gesture, the indication gesture persists in more advanced ages and they incorporate other gestures that the child acquires from its surroundings reinforcing the oral emission with an illustrative gesture or that the child creates to express himself.

Goldin-Meadow and others (1994) have studied in depth the characteristics of the language used by deaf children in their early stages. These studies have shown that deaf children not in contact with a formal sign language, develop a very complex communicative gestural system with their hearing mothers. These authors also realise the importance of the communicative system of the interlocutor (hearing father-mother) who use less communicative gestures than their son, lots of these gestures having been previously invented by the child.

Villier (1993) analyses the communication between deaf parents and their deaf children within an oral context and not using a sign language. The author considers of crucial importance the role that the sign plays in the input from the mother to the child in the communication between both. These parents are obliged to compensate for the deafness of their child by the use of: simultaneous gesturing with virtually all utterances, gestures with multiple rules, accompanying the speech with multiple symbolic gestures and grammatical rules through the shape of the gesture.

The characteristics of the gestural system are very similar to those of the spoken language in hearing children. In this study, similarities are found in the type of vocabulary used, the nature of the subject of conversation and the nature of the semantic communications that are expressed in reference to the communicative exchanges of the hearing children.

For his study, Villiers and others configured a system of categories that contemplates the following types of gestures: sign, idiosyncratic gesture, attention getting gesture, iconic gesture, deictic gestures and conventional gestures. The category of gestures used by the authors although adjusted, will be useful for our study. We believe that the population studied (although more similar to the way Goldin-Meadow studied it) will present similar gestures to those used by Villiers subjects. We equally intend to go deeper into the types of gestures used as well as analysing them.

METHOD

Objectives:

The main objective of our study is to analyse the communicative gestures of children with hearing parents who are brought up in an oral context.

Subjects:

In our study we have observed 2 children with prelocutive deafness between the ages of 20 and 36 months. These subjects receive logopedic re-education by the verb-tonal method within a environment of oral communication.

Procedure:

The observations have been done within a family context recording on video situations of

deaf children playing «free activities» with their parents. We have tried to unify the type of activity in which parents and child participate together. Although these observations have been sufficiently controlled, we have to point out the difficulties that arise when observing in a family context. These observations have been made every two months, recording films of about an hour each time. Of all the observation sessions, the 15 central minutes have been transcribed as per the category system drawn up by our team. Out of this category of general systems, we have focused our work on the gestural categories, which have had to be modified notably to give an answer to the objectives of our study. We have reorganised these categories as per the ones used by Villiers and others (1993). We have finally defined the G3 category, list of social gestures drawn up by Sainz and Cervenka (1972). Therefore, the studied categories are the following: G1(indication gestures with deictic function), G2 (indication gestures without deictic function), G3 (social gestures which naturally accompany the oral language), G4 (iconic gestures) and G5 (language gestures of LSE signs).

RESULTS AND CONCLUSIONS

The results of the present study have been analysed by means of a quantitative analysis of the appearing frequencies of the different categories studied.
Below are several considerations to take into account about the present results:

• Our subjects are son/daughter of hearing parents that go to nurseries using the system of integration from the age of 18 months in which they promote the oral language, using the verb-tonal method.

• None of our subjects have any contact with the LSC or LSE sign languages, in the case of one of these subjects the family will not use the gesture as a communicative support in the family. This explains that the G5 category of our study presents in both cases zero frequency.

• Despite these efforts, none of our subjects use a competent form of oral language, so their verbalisations are not understood by the interlocutors. Only sometimes certain verbalisations are understood thanks to the context in which they are uttered.

In Tables 1 and 2, we can see the total of the gestures made by our subjects in the total of observation sessions. It is important to point out that the G1 category (indication gestures with deictic function) presents a very high frequency in both subjects. It is confirmed then that the deaf child, brought up with oral language, keeps de indication gesture, which persists into advanced age if compared with a hearing child. In our observations we verify that our subjects incorporate other gestures in combination with the deictic gesture. That is why in the combination of 2 gestures presented by these subjects, 86% correspond to combinations of deictic gestures or others. The reason why this frequency of deictic gesture in our deaf subjects has been studied so deeply is in the communication of Dr. Carmen Triadó.
Coming back to Tables 1 and 2, G3 and G4 also present a high frequency in both subjects. The use of a high number of social gestures should not surprise us because they are the gestures that the speaker also uses in his normal way of communication. This would make us think that it is the result of natural learning to which every child in under from its birth. But the fact that the G4 is so frequent surely shows that the use of both types of gestures is the consequence of much more linguistic necessities. These deaf children have the necessity to create by them-

selves their own words, in this case gestural, their own standards and their own system to communicate with their parents which have very similar structures to the ones of hearing children. The analysis of those structures, probably linguistic, will be future studies in our team. The use of invented gestures by the deaf child, which maintain an important iconic representation, would probably incorporate with the passing of time, grammar and a conventional utility for only specific contexts, in our case family surroundings.

On top of what has already been commented, on a qualitative analysis of those gestures (G3 and G4) show certain peculiarities concerning its use by hearing children. The deaf child amplifies the expression of many of these social gestures in favour of his/her communication. In the activity shared with the hearer, the deaf child uses facial and corporal expressions as an indispensable way of completing his/her communicative productions so that he can, for example, specify the gender and the number of the announced.

In Graph 1, compared data of both subjects are shown, although the total number of gestures is very similar, in both subjects, G1 and G3 seem to invert their frequencies. We believe that this data, as well as probably due to the differences between both subjects, is very much related to the communicative styles of both the subjects parents. Andreu's parents do not use gestures other than the natural ones that accompany oral language, therefore this is the most frequent category in their child. It is in Andreu's case that the use of the category G4 gesture is surprising.

But going more deeply into why of these gestures are created by these subjects, we consider that the importance of this G4 category is the capacity that it offers for the expression of ideas or other concepts other that the daily events, therefore they facilitate the representation of new concepts, not necessarily related to their iconicity.

It is also important to point out that the frequency of use of all the gestures grows along the different sessions, as can be seen in graph 2 and 3.

What is important to stress in this study is the fact that the communication necessity makes the deaf child who is brought up in an oral context, build up individual gestures that Villiers calls idiosyncratic, when he/she could be using linguistic signs created by the deaf community for his/her communication, which would give the child a linguistic system with all the possibilities of expression, while in the other way, and as per what Goldin-Mayer has studied, the child builds up his/her own tools for immediate contexts, so that the majority of the gestures are created to solve specific communication problems with a specific interlocutor.

TABLES AND GRAPHICS

GRAPH 1. COMPARISON OF GESTURE TYPES
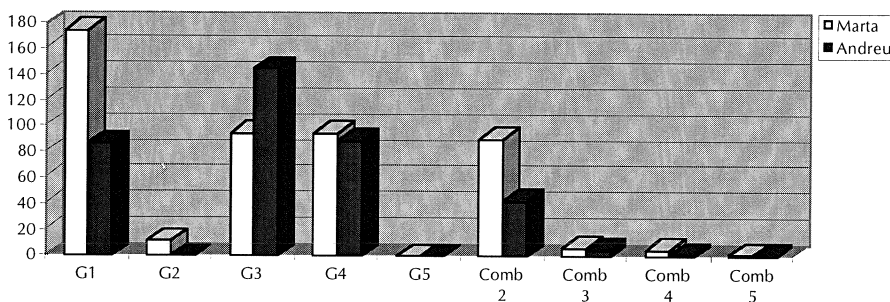
GRAPH 2. EVOLUTION OF MARTA'S GESTURE
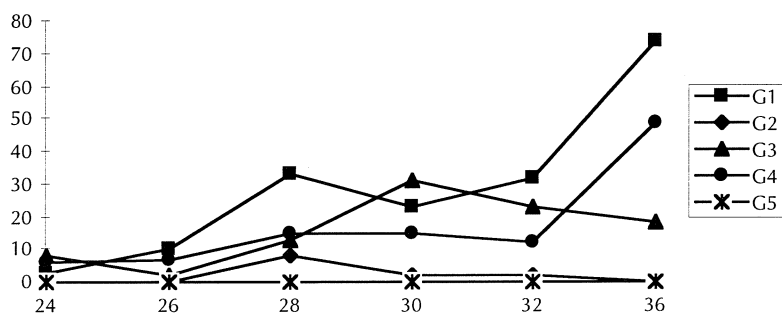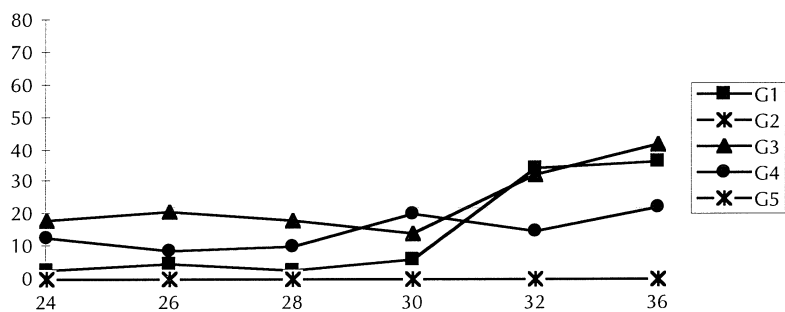

GRAPH 3. EVOLUTION OF ANDREU'S GESTURE

TABLE 1. MARTA'S FREQUENCIES

AGE	G1	G2	G3	G4	G5	COMBINATIONS			
						2	3	4	5
24	3	0	8	6	0	3	0	0	0
26	10	0	2	7	0	3	0	0	0
28	33	8	13	15	0	14	0	1	1
30	23	2	31	15	0	16	0	1	0
32	32	2	23	12	0	13	2	1	0
36	74	0	18	40	0	42	5	2	1
TOTAL	175	12	95	95	0	91	7	5	2

TABLE 2. ANDREU'S FREQUENCIES

AGE	G1	G2	G3	G4	G5	COMBINATIONS			
						2	3	4	5
24	3	0	18	13	0	2	0	0	0
26	5	0	21	9	0	4	1	0	0
28	3	0	18	10	0	4	0	0	0
30	6	0	14	20	0	2	0	0	0
32	34	0	32	15	0	11	2	0	0
36	36	0	42	22	0	20	2	2	1
TOTAL	87	0	145	89	0	43	5	2	1