APPENDIX

CONNIE LOWE NIELSEN*, WENDY COHN*,
AND KIRSTEN BRØNDSTED**

A characteristic feature of cleft palate speech is the tenden-
cy to retract the articulation of obstruents normally produced
in front,of to a place below the velopharyngeal valve as a com-
pensatory obstruction of the airflow, resulting in glottal
stops and pharyngeal fricatives. This deviant pronunciation
is often very damaging to intelligibility - because each of
the compensatory sounds is often used as realization of several
phonemes, whereby the number of contrasting sounds is reduced.
Also, this type of deviant pronunciation has proved very dif-
ficult to correct, even after surgical normalization of the
velopharyngeal mechanism (see, e.g., Bzoch 1979). In the
status mentioned above of all individuals with cleft palate
from East Denmark, born during the period 1970-78 (N=293),
about 10% were found to use glottal stop articulation in their
speech at three years of age, and this was only reduced to 7%
at six years of age, in spite of logopedic intervention. It
would therefore be essential to be able to predict which in-
fants are likely to use compensatory sounds so that prophylac-
tic intervention could be initiated. And since glottal bab-
bling before surgical closure of the palate is sometimes ob-
served (Olson 1965, Henningsson 1981), this intervention could
be initiated very early.

From clinical experience we venture the hypothesis that these
children have certain features in common: extrovert personal-
ity, eagerness to communicate and to be noticed socially, and
earlier initiation of language than usual for most cleft
palate infants. It was therefore relevant to see if the
children in this study who are using glottal stops show fea-
tures in their communication behaviour which differ from the
children who use other "strategies".

From the video-recordings used in the phonetic analysis the
communicative interaction between parent and cleft palate
child was analyzed. It must be stressed, however, that be-
cause of the very limited number of children in the study
and also because of the limitations in which the experimental
setting was created (see p. 3), the results should only be
viewed as a guideline for more comprehensive studies.

The method used for this pilot study is descriptive and de-
rives from an etiological frame of reference (Blurton Jones
1979, Nielsen and Damholt 1982). The first phase consists
of describing interaction between the child and parent through
a rough analysis of the video recordings. Throughout this
phase we did not operate with any specific hypothesis. The

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*) Psychologist, M.A.
**) Institute for Speech Disorders, Hellerup.

second phase of the analysis required a detailed description
of specific elements in the parent-child interaction, and how
these elements interact and influence each other. This re-
quires a frame by frame analysis which could not be carried
out in this study.

It was not possible, from the rough analysis alone, to deter-
mine any definite impressions of the children's behaviour or
character, since the experimental setting limited free and
natural interaction between the parent and the child. How-
ever, it was observed that the children using glottal stops
seemed to use their voice more accompanied by gestures, when
they lacked words, and they also used more onomatopoeia than
the other children.

On the basis of the observations of parent-child interaction
a hypothesis could be formulated: The children with glottal
stops are exposed to greater expectation regarding their com-
municative competence than the children who do not use glottal
stops.

Communicative competence is defined as the child's knowledge
of and ability to use language (Hymes 1971). Thus, it can be
considered as a process involving interaction between impres-
sive and expressive language.

An attempt to verify the above hypothesis was made by examin-
ing the dialogue between parent and child. A categorization
similar to Newport et al.'s (1977) method of scoring Mother's
speech into sentence types was used. The sentence types are
the following:

<u>Sentence types</u>

Declarative	You can sing a song.
yes-no question	Can you sing a song?
Imperative	Sing a song.
Wh-question	What can you sing?
Deixis	That's a dog.

Thus, the first fifty utterances of each dialogue in the study
were categorized in order to study the differences in the ways
in which the parents communicated with their children. In
figure 6 is shown examples from the dialogues.

In example 1 the parent's sentence types are the following:
yes-no questions - declarative - deixis, in the parent's first
utterance. In example 2 the following combination is seen:
imperative - declarative - yes-no questions - imperative -
imperative, all in the parent's first utterance. In examples
3 and 4 the parents only use one sentence type for each utter-
ance.

The demand on the child to understand the message seems to be greater in ex. 1 and 2 than in 3 and 4. The frequency of the parent's use of successive sentences of different structure for the first 50 parent utterances in each recording was found to be: child I: 36%, II: 36%, III: 6%, IV: 2%, and V: 8%. These results show a significant difference in the ways in which parents communicate with their children. This shows that the parents of child I and child II seem to have greater expectations of their children's communicative competence than the other parents.

Child I and child II were the same children who showed predominant use of phonemic glottal stops in their speech. From clinical and parent information it appears that child I and child II used sentences several months earlier than the other children in the study, and that they used glottal babbling. According to the linguistic analysis child IV used glottal stops as well but in an atypical manner (see p.20).

The observations and the analysis carried out by the psychologists have led to many new questions concerning the communicative behaviour of children with glottal stops, as well as their parents' behaviour. Therefore, before any definite conclusions can be made concerning the findings in this study, further studies must be conducted.

It would be essential to study how parents of children with glottal stop communicate with their children during the years of language acquisition. The parents of children who use glottal stop may also have a significant role in their child's habit, since they may expect the child to understand their long and complicated sentences. They may also expect that their child has the ability to communicate with other, nonlinguistic forms of vocal utterance, such as onomatopoeia and sounds accompanying gestures.

Perhaps better insight into this process could show how a child's communicative competence can influence his/her parents' communicative behaviour. Such a study could also include a closer examination of whether a child's eagerness to speak is expressed when he/she first begins using words and sentences, and also whether the language acquisition occurs at a different rate than in other children with cleft palate. Finally, the parents' expectations of their child's communicative competence could be studied through interviews, observations, and analyses of their communication.

To be able to study these suggestions properly, the experimental conditions should be different from those of the present pilot study, which was primarily set up for the linguistic analysis. A study of this kind should include a detailed analysis of the children's spontaneous communication and behaviour in a more natural setting, with an emphasis placed on the behaviour occurring during the communicative dialogue. The number of children should be sufficient, including a control group of normal children and their parents.

The children should be as young as 1-2 years, which is the period in which glottal stops may change from a non-phonemic status in babbling into a phonematic function in emerging language. Also, the rate of language acquisition should be studied. A follow-up study some years later could perhaps be compared to the results of the present observations on 4-5 year old children.

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Ex. 1

P: Make flowers? - But it's not yellow all of it - they are green.

C: Where's green - oh yes, green

P: Yes, green to begin with - and then a red flower

C: Oh yes - green

P: hmm, a green one like that, and then a red flower - now you're making it wrong

Ex. 2

P: I think you ought to take your boots off - you're not sitting very comfortably, are you? - Yes, boots off - and put them next to you

C: Look, a little watermill

P: Oh yes, it's just like the one we just saw on TV about water - what can you use water for - can you remember?

Ex. 3

P: Look here

C: A hat

P: What's that?

C: Some clothes

P: What is it getting to drink?

C: milk

Ex. 4

P: What are you going to draw first?

C: I'm drawing a house

P: First a house, yes, and then you make the wall

C: This is inside, and that's outside

P: Hm-m

Figure 6

The figure shows examples from the child-parent dialogues (in translation). P = parent, C = child.