

The Lisp of Children, its Cause, its Reason, its Meaning

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When a child has his stock of speech sounds nearly completed, there often remain – for quite a long time – defects in the production of the s-sound. Mindful of the auditory control on the articulation, we may think a missing link in the afferent branch of the feed-back circuit to be the cause. A high tone-deafness would be a sufficient explanation of sigmatism, but it is very seldom found. In Dutch there is no phonemic opposition between one s and another; but in other languages the confusion belonging to an early phase of language development may well be at the root of sigmatism⁷. A further theoretical possibility is abnormality of the perceptive area: a weak representation of the s-norm or insufficiency of discriminative power; they are difficult to prove. One thing is certain, that a constant difference between the s perceived from others and from oneself tends to get so familiar, that the difference no longer has any corrective effect, even tends to remain unnoticed by the speaker. This accounts for the fact that a peculiar way to produce an s may persist long after the factor which started this articulation habit has ceased to operate*.

We shall have to explain how the abnormal s-sound came into existence before it has become a persistent habit. We will confine ourselves to the interdental lisp that is by far the most frequent. We do not find hearing losses in these infants, but we do find that many of them have an anterior open bite (a gap between the front incisors).

* I remember a 12 year-old boy with a most remarkable velar s-sound. He had acquired this during a temporary velar insufficiency after adenoidectomy, and nobody (including the patient) had made an attempt to correct it after that. It was cured in three weeks exercising.

To take this for the cause of interdental articulation habits would be a too hasty conclusion. Granted that gross irregularities of the dental arches may predispose for speech defects⁸, it is surprising how important abnormalities in the mouth after a while can be met with a little change in the action of the tongue⁴. The adaptation to a dental plate may serve as an example. If this holds true for an aged subject, how much easier is it for a child.

In many cases of open bite we observe a reversed chain of cause and effect. The dental irregularity is not the cause for the tongue to leave its normal point of articulation. On the contrary, it is the forward thrust of the tongue between the teeth during swallowing that checks the vertical outgrowth of the alveolar processes, resulting in an open bite. I do not pretend to bring something new: in recent years there have appeared a great many articles about this subject in the orthodontic and speech pathology literature^{1, 2, 3, 5}. The reliability of this view has been proved by the experience that many cases of open bite have been cured with only tongue- and swallowing exercises, without the use of orthodontic appliances (see Fig. 1).

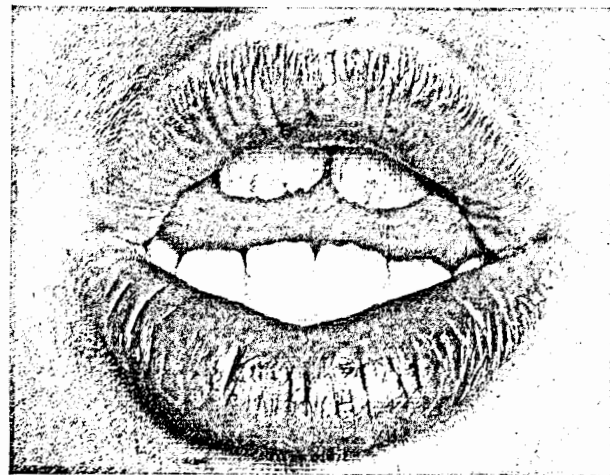


Fig. 1. Open bite associated with tongue thrust in swallowing and interdental sigmatism.

Changing the tongue position in swallowing sufficed to restore the normal outgrowth of the alveolar processes, and close the bite; moreover the lispng disappeared. It should be noted however, that also in the presence of a vertical open bite the possibility to produce a normal s-sound is already there, but is not used. Inter-

dentalism and open bite are both caused by an abnormal motor behaviour of the tongue. So there is a brother and sister relation between the two:

COMMON CAUSE
(infantile motor
pattern of the tongue)

TONGUE THRUST IN
SWALLOWING
(anterior open bite)

LOW TONGUE POSITION
IN ARTICULATION
(multiple interdentalism)

Implications for Phonetics

The structures for articulation do only part-time work for speech. The rest of the time they have to eat, chew, drink and swallow.

In an investigation of speech-characteristics it is sensible to take into consideration these elementary ("animal") functions of the organs for speech. They are phylogenetically much older, and of vital importance for the organism. A person with a paralysis of the palate is clearly not able to realize his speech-intentions. With our lispng children, however, matters are different. They have a primarily functional defect. The normal auditory controlling mechanism for articulation is being overruled by a deviated "animal" function of the organs for articulation. From a close analysis of the "deviation" we learn the following.

The movements of the tongue in these children, when they speak, drink or swallow, bear a reminiscence of sucking. They are a remains of the motor behaviour of the suckling, persisting long after this phase is over. The motor pattern of the tongue is still controlled by the tactile sensations of the tongue and the mucosal lining of the mouth. The desired release of pleasure cannot disengage itself from the infantile pattern. (If nursing habits are to be blamed for this does not matter here.)

For the phonetician the question is relevant if such a tongue habit (like thumb sucking it is an atavism from the nursery) has no meaning at all in connection with speech or if it has significance as subconscious but intentional expressive behaviour⁹. Lispng is well known as something belonging to the small child. It is conceivable that a child when growing up would take advantage of this and

stick to its old pattern to deceive his surroundings about his age, dodge the responsibilities of growing up and invite pampering. The psychology of animals and children shows examples of a similar conduct.

However we are not inclined to accept this as the main aspect of lispings for the simple reason that the infantile swallow (with tongue-thrust) does not fit into the picture of expressive behaviour. We feel that the syndrome of infantile swallowing and interdental sigmatism should be labeled a pleasure-determined physiologic act with some sign-value for other people. It may be compared to our gait or handwriting that are equally difficult to change voluntarily.

If we may trust a popular saying: "girl that lisps, good to kiss" we find there to our surprise a confirmation of the reversed hypothesis that oral-tactile pleasure sensation goes together with the childish s-sound.

In the end when all these different aspects of an apparently simple phenomenon fall into their place, they lose their complexity. We will see them once more apart, and then realise how they fit together.

1. Sigmatism cannot be explained from its acoustical or audiological aspect only.

2. The phonetical explanation of this phenomenon has to reckon with the functioning of the tongue in swallowing; the habit of suck-swallowing may prevent a normal dental development.

3. It appears that interdental sigmatism is a mode of expression suiting an organism whose tongue-motoricity functions on an infantile level.

4. The failure to conform to the s-norm that has been discussed, is the result of contamination of the articulation pattern with an archaic tongue-function. The latter has no communicative purpose, but by influencing the articulation it has an unintended expressive value.

It is not possible to draw an exact line between the two: any motor body function may be seen from a communicative aspect.

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