

Sigmatismus Nasalis

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SIGMATISMUS NASALIS (nasal sigmatism) is an accepted term in speech pathology and is generally described as a nasalization of *s* or other sibilants (3, 63; 5, 212). Such a description seems wholly inadequate because no attempt is made to differentiate between *s* with a 'snoring' component and *s* given through the nose without a 'snoring' component.

The 'snoring' component has been thought by some writers to be related to organic abnormalities of the nose. For instance, H. Stern (4) was very much interested in the presence of adenoids, as shown in his monograph, *Der Sigmatismus Nasalis*. However, there was no evidence given for a close relationship between adenoids and the 'snoring' component of a sound. On the other hand, Froeschels (1, 167) suggests that the reason for the 'snoring' sound is entirely psychological. The patient, due to circumstances which are not apparent, tries to replace a mouth sound with a nose sound. He soon discovers he is forced to make it audible by 'snoring,' the only possible means of producing an audible noise in the nose, because in the nose and naso-pharynx no other audible noise can be produced without voice.¹ Al-

though, as mentioned above, the circumstances under which a 'snoring' sigmatism occurs are not definitely known, it seems worth mentioning that Froeschels (2, 327-328) described some cases which suddenly produced a sigmatismus stertens ('snoring') during the first attempt at treating some lateral and interdental sigmatisms with his plate method. These patients explained that they did not know how to bring the air through the mouth with the plate in it, so they 'instinctively' emitted the air through the nose.

Further basis for a psychological rather than an anatomical etiology for the sigmatism with a 'snoring' component was observed by the writer in several cases at the Speech Clinic at Mount Sinai Hospital, New York City. One of these was an 8-year-old girl treated for asocial dyslalia.² She had no anatomic abnormalities and presented many inconsistent sound substitutions and omissions. In repeating words after the clinician she used sometimes a 'snoring' *s* and at other times a correct *s*. Another was a 5-year-old girl, mongoloid type, but with surprising intelligence. Her articulation was faulty but improved with acoustic training. She nasalized the vowel sounds after certain consonants and she also gave *s* with a 'snoring' component but not consistently. In

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¹The normal nose sounds, *m*, *n* and *ng*, in which the air after having passed the oral pharynx enters the nose, are audible, because they contain voice delivered by the vibration of the vocal cords. In many books, e.g., Nemoy Davis, *Correction of Defective Consonant Sounds* (Expression Company, 1937) the diagrams of *m*, *n* and *ng* show the air going from the larynx directly into the nose (pp. 55, 99), which does not explain the audible difference between *m* and *n*.

²*Asocial dyslalia* is a term applied to defective articulation for which there is no, or not sufficient, anatomical basis and which is not confined to any consistent wrong use of the speech mechanism. Usually this consists of sound omissions and substitutions occurring in no particular pattern and more or less frequently, in many cases making speech unintelligible. This is caused by a maladjustment which may be understood as a subconscious tendency not to adapt oneself to some of the demands of society. (Other asocial traits are often quite marked in cases of this nature.)

both these cases it seems obvious that had there been any anatomical abnormality to produce the nasal component it would have worked consistently and would not have permitted the correct sound to be spoken at any time.

Linguistics teaches that a frequent cause for changing sounds in the process of development of language is the assimilation in a sound of some properties of the preceding or following sound in a word. There is a distinction between a progressive and a regressive form of assimilation. For example, in *observe* the *s* takes on the voiced aspect of *b* and becomes *z*. This is a progressive form. In *think* the *n*, in anticipation of the closing of the back of the tongue against the velum for *k*, becomes *ng*. This is a regressive form as is the *s* in *husband*, the *s* taking on the voiced quality of *b*.

A boy in the Speech Clinic at Easton Hospital, who speaks a correct *s* in all other combinations, suddenly spoke *s* in words like *small*, *snow* (initial *s* followed by *m* or *n*) with a 'snoring' component. This seemed to be a case of regressive assimilation with the addition of the 'snoring' component. In anticipation of the *m* or *n* sound the velum drops too soon, but as the air emitted through the nose produces no sound he resorts to the only possibility, namely the 'snoring' component.

This boy was referred to the clinic by the Children's Aid Society in whose charge he had been since he was two years old. Up to this time, when he was placed in a foster home, his history was anything but advantageous to normal physical and social adjustment. He was born in a County Home illegitimately to a mother suffering from parkinsonism and chorea. He had spent most of his time in bed and had had none of the attention and affection so important to a young child. Consequently, his physical and social adjustment was very much retarded. His muscular development was very immature and he was not toilet-

trained. He was underweight and sat a great deal with his mouth open and with a vacant stare. He jabbered a few sounds but mostly uttered *uh uh*. He had a great fear of people and the change to the foster home, where for the first time he had normal contacts with other children, meant a terrific adjustment to this child who had had nothing to make him feel secure. He made some progress in this home but it was after his placement in a second home six months later that he made great strides. At this time (2.5 yrs.) his I.Q. was rated as 80, with the comment that language retardation might be a factor accounting for the low score. When he was brought to the speech clinic at 3.5 years of age, his speech consisted of single words, none of which was articulated correctly, and any attempt to carry on a conversation was futile. His concentration and attention span were very low and in general his behavior was very immature. The speech mechanism showed no anomalies but general muscular skill was retarded.

The retarded speech development in this case could be explained as due to the delayed physical and psychological development. We used word-by-word repetition of well illustrated stories for acoustic stimulation and to increase his attention and concentration. The foster mother has been most cooperative with the agency and with the clinic, but uncontrollable circumstances prevented the child from attending the clinic regularly. However, now (15 months later) he shows a remarkable development socially and physically. He is a very attractive child, takes a great deal of interest in his environment and can carry on a conversation, although with immature vocabulary and grammatical skill. His speech contains all the sounds and in time, I am sure, will be perfectly normal.

To return to the *s* with the 'snoring' component which appeared only a month ago, why should he suddenly

produce this sound before *m* and *n* when he was using a correct *s* in all other positions in words? In spite of all the physical retardation evident in this case, the psychological factor described above seems to be the most logical explanation.

It is the hope of the writer that the references and cases cited in this article will serve as proof that there is a distinction between *s* given through the nose with a 'snoring' component and a so-called nasalized *s* which is hardly audible. It seems advisable that speech pathologists should adapt terms to designate appropriately this distinction.³

SUMMARY

1. The term *sigmatism nasalis* does not distinguish between the *s* given through the nose with a 'snoring' component and the *s* given through the nose without the 'snoring' component.

³Froeschels has already suggested *sigmatismus stertens* and *sigmatism nasalis*.

2. On the basis of the cases described, and other information, it is suggested that sigmatism with the 'snoring' component is due to a psychological factor introduced by the fact that *s* given through the nose is hardly audible. The 'snoring' component, being the only available means to make it audible, is therefore resorted to.

3. It is recommended that speech pathologists adopt appropriate terminology to note this distinction.

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