EDITORIAL

Hearing—the Gateway to Speech and Cognition

Hans Peter Zenner

Editorial to accompany the articles “Early Detection of Hearing Impairment in Newborns and Infants” by Martin Ptok and “The Differential Diagnosis of Hearing Loss” by Thomas Zahnert in this issue of *Deutsches Ärzteblatt International*

Hearing means sensation of an acoustic signal. Above all, however, hearing means active processing of that signal. After the sound has been received in the inner ear it is not simply transformed into a biochemical or electrical signal for transmission to the brain. No: hearing is already an active process in the inner ear. An incoming sound wave is the stimulus for a group of 20 000 sensory cells—the outer hair cells—to generate a wave of their own. In the healthy ear, this “traveling wave” is never identical to the original sound wave: It is amplified more than 1000-fold and intensified.

Significance of the hearing–speech cycle

When speech is heard, then it has a dialogical structure. The “hearing–speech cycle” permits the formation of interpersonal relationships. Words spoken and heard enable people to connect with each other. Listening is the communicative route to participation and thus to registering the individual reality of the interlocutor. Participation and communication are fundamental to human life.

Since listening is a form of communication and thus enables participation, hermeneutics is almost always involved. The inherent meaning is supposed to appear in the consciousness. Hearing is the dominant sense, at least in the first years of life. Hearing plays a crucial part in learning and education, in belief and emotion, and in speech and conscience (1).

But what is it like for a person who is barred from experiencing the miracle of hearing? Immanuel Kant is credited with being the first to express the thought that “not seeing separates us from things; not hearing, from our fellow man”.

Martin Ptok describes the importance of newborn hearing screening (2). Hearing screening is indispensable to uncover hearing impairment in early childhood. Only when hearing impairment and deafness are recognized in good time can modern otological interventions, e.g., hearing aids, surgery, or placement of a cochlear implant, put the affected child in a position to learn its native language while its brain is still highly plastic.

Thomas Zahnert depicts the severe social consequences for adults in whom hearing loss is unfortunately associated with the loss of ability to understand speech (3). Social withdrawal, whether private or occupational, is not infrequently the result.

Hearing impairment—a taboo subject

We who can hear take hearing for granted; we push the minority who cannot hear to the margins of our society. Experience shows that those who can hear are only occasionally prepared to grant individual deaf persons full access to spoken communication. However, as many as a fifth of all Germans are hard of hearing. Many of those of normal hearing never notice that the proportion is so high, because hearing impairment remains a taboo.

Hearing impairment is a silent disease in two senses. First, those who are afflicted hear silence; second, they remain silent, not owning up to their hearing disorder. They withdraw into communicative isolation and the hearing–speech cycle is broken.

Conflict of interest statement

Professor Zenner holds numerous patents connected with the treatment of hearing disorders. He has received funds for research or congress attendance from the companies Otologics, Cochlea, and Med-El.

Translated from the original German by David Roseveare.

REFERENCES

1. Zenner HP: Hören, Wahrnehmung, Kommunikation. *HNO* 1995; 2: 39–58.
2. Ptok M: Early detection of hearing impairment in newborns and infants. *Dtsch Arztebl Int* 2011; 108(25): 426–31.
3. Zahnert T: Differenzialdiagnose der Schwerhörigkeit. *Dtsch Arztebl Int* 2011; 108(25): 432–43.

Corresponding author

Prof. Dr. med. Dr. h. c. mult. Hans-Peter Zenner
Universitäts-Hals-Nasen-Ohren-Klinik
Elfriede-Aulhorn-Str. 5
72076 Tübingen, Germany
hans-peter.zenner@med.uni-tuebingen.de

Cite this as:

Zenner HP: Hearing—the gateway to speech and cognition. *Dtsch Arztebl Int* 2011; 108(25): 425. DOI: 10.3238/arztebl.2011.0425

Universitäts-
Hals-Nasen-Ohren-
Klinik Tübingen:
Prof. Dr. med.
Dr. h. c. mult. Zenner