

## **Abstract EFAS/DGA 2007**

### **Questionnaires For Hearing Aid Evaluation – Useful tools or Wasting Time?**

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#### **Motivation:**

Hearing aids are evaluated using different objective and subjective procedures. The advantage of using objective procedures is that they provide reliable and valid results, but the extrapolation from these results to the benefit in real life can be difficult. On the other hand, the results of subjective procedures are often uncertain, but data gained in this way are more readily transferable to the benefit of the hearing aid user in real life.

To improve the reliability of data collected with a questionnaire as a typical example of a subjective test, several studies comparing a set of questionnaires in terms of reproducibility and dependence on experience with listening tests were conducted.

#### **Research Questions:**

The following issues are important for estimating the variance of different questionnaires:

- Open vers. closed questions
- Bipolar vers. unipolar scales
- Continuous vers. discrete scale
- Experience vers. inexperienced test person

#### **Subjects and Methods:**

We conducted three studies with 30 hearing impaired and 47 normal hearing subjects fitted binaurally with hearing instruments. The devices had 3 pre-adjusted programs. Different sound examples were presented and the subject's task was to fill in the questionnaires for all programs and sound examples. To check the test-retest reliability, this procedure was repeated several times in consecutive sessions.

#### **Results and Conclusions:**

In all studies, the variance of the judgments depended on the experience with listening tests and the complexity of the scanned dimensions. We also found that in order to simplify and advance the task, the most meaningful scale to use is the discrete scale since the increased variance of the continuous scale counteracts its higher resolution. The results show that questionnaires can be a useful tool for hearing aid evaluation if they are designed carefully with respect to the research questions.

