

A. Appendix

A.1. Comparison of data from the literature

A comparison of papers from Møller & Andresen [1984] and Watanabe & Møller [1990] is given in Table A.1:

Phon	Frequency	(1)	(2)	(3)
20	63	58.0	60.8	65.7
40	63	71.7	75.9	81.4
60	63	82.8	-	93.3

Table A.1.: *Comparison of data measured by: (1)= Møller & Andresen [1984] (adaptive procedure), (2)= Watanabe & Møller [1990](adaptive procedure), (3)= Watanabe & Møller [1990] method of limits.*

The main difference between the papers is that Møller & Andresen [1984] perform the experiments in an pressure chamber and signals have a duration of about 2 sec separated by a silent interval of around 1 s , whereas Watanabe & Møller [1990] use an unechoic chamber and signals have a duration of 1 s, separated by a 0.5 s silent intervall.

While it is unclear which is the reason for the large differences between data, for the model investigation in chapter 2 the newer data obtained with the adaptive procedure are used.

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A.2. Original instruction displayed on the computer screen

WELCHES DER BEIDEN SIGNALE WAR LAUTER ?

Drücken Sie Taste , wenn das erste Signal lauter war.

Drücken Sie Taste , wenn das zweite Signal lauter war.

A.3. Instructions for the measurement procedure

Instructions for the measurement procedure (same as used by Gabriel [1996]).

Instruktionen zum Versuchsablauf

Bei diesem Versuch werden Ihnen jeweils zwei aufeinanderfolgende Töne über den Kopfhörer vorgespielt. Die Töne unterscheiden sich in der Tonhöhe und in der Lautstärke. Bitte beurteilen Sie nur die Lautstärke der Töne und beantworten Sie nach der Darbietung der beiden Töne die folgende Frage:

Welcher der beiden Töne war lauter?

Drücken Sie Taste 1 auf der Tastatur, wenn der erste Ton lauter war.

Drücken Sie Taste 2 auf der Tastatur, wenn der zweite Ton lauter war.

Wenn Sie Ihre Antwort abgegeben haben, werden Ihnen zwei neue Töne vorgespielt.

Vielen Dank für Ihre Mitarbeit!

Instructions for the measurement procedure

In this experiment you will be presented with two successive tones via headphone. The tone will differ in pitch and in loudness. Please, base your judgement only on the loudness and answer after the presentation of two tone the following question:

Which of the two tone was louder?

Press key 1 on the keyboard, if the first tone was louder.

Press key 2 on the keyboard, if the second tone was louder.

When you have made your judgement, you will be presented with a new pair of tones.

Thank you very much for your co-operation!

A.4. Data from Chapter 4

f [Hz]	30 - 50 dB	50 - 70 dB
200	0.9	2.8
400	0.7	2.0
630	1.8	2.4
1000	0.5	-0.1

Table A.2.: Differences between PSE values using different starting levels, i.e. 30 vs. 50 dB and 50 vs. 70 dB for 4 test-tone frequencies. Initial step-size 8 dB.

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f [Hz]	30 - 50 dB	50 - 70 dB	70 - 90 dB
200	1.5	0.5	4.6
400	-0.1	0.5	-
630	-0.1	1.8	-
1000	0.3	-0.4	-

Table A.3.: Same as in Table A.2, but initial step-size is 16 dB. In addition a starting level of 90 dB is used for 200 Hz.

f [Hz]	30 - 50 dB	50 - 70 dB	70 - 90 dB
200	1.3	5.1	4.0
400	1.3	2.6	-
630	2.7	3.9	-
1000	0.5	0.1	-

Table A.4.: Same as in Table A.3, but initial step-size is 4 dB.