

In this listening test 10 cochlear implant listeners (Table 1) were asked to express their preference for original music pieces or specific processed versions in a paired-comparison test. For the test 16 music pieces were selected by a Plackett-Burman design (Table 2). The original music pieces are provided in the folder **Praeferenz_Hoerversuch_wav** including a description of the influential factors. The signals were simplified using three methods with two settings, respectively: PCA with 8 and 13 components, PLS with 8 and 13 components, and ASNA at 3 dB SIR and 5 dB SIR. The preference votes for the processed music pieces are shown in Tables 3 to 8. Votes in favor of a specific method and setting are denoted by 1. Votes for the unprocessed signal are denoted by 0.

Table 1: Information about CI listeners who participated in the listening test. All age-related details are counted in years.

	CI-01	CI-02	CI-03	CI-04	CI-05
Age	50	65	61	62	64
Age at HI diagnosis	5	3	36	0.5	n/a
Age at CI implantation	40/43	62/64	59	48/54	48/60
Hearing device (left)	CI	CI	CI	CI	CI
Hearing device (right)	CI	CI	HA	CI	CI
CI brand	Cochlear	MED-EL	MED-EL	Advanced Bionics	Cochlear
Speech processor (left)	CP910	Opus2	Opus2	Naída CI Q70	CP810
Speech processor (right)	CP910	Opus2	-	Naída CI Q70	Freedom
Coding strategy	ACE	FS4	FSP	HiRes Optima	ACE
Daily duration of music listening (before)	n/a	<30m	1h-2h	n/a	1h-2h
Daily duration of music listening (after)	1h-2h	30m - 1h	<30m	30m - 1h	<30m

	CI-06	CI-07	CI-08	CI-09	CI-10
Age	56	50	26	58	21
Age at HI diagnosis	12	17	1	13	0.5
Age at CI implantation	44/47	47/50	5/15	55/56	18
Hearing device (left)	CI	CI/HA	CI	CI	HA
Hearing device (right)	CI	CI	CI	CI/HA	CI
CI brand	Cochlear	Cochlear	Cochlear	Cochlear	MED-EL
Speech processor (left)	CP910	CP910	Freedom	CP910	-
Speech processor (right)	CP910	CP810	Freedom	Hybrid CP910	Opus2
Coding strategy	ACE	n/a	ACE	ACE	CIS
Daily duration of music listening (before)	n/a	2h-5h	n/a	1h-2h	<30m
Daily duration of music listening (after)	1h-2h	1h-2h	1h-2h	<30m	<30m

Table 2: List of music extracts providing name of composer, name of piece, and name/number of movement.

Index	Composer	Name of music piece
1	L. van Beethoven	String Quartet No.5 in A major, Op.18, No.5, III. Andante cantabile
2	A. Dvorak	String Quartet No.11 in C major, Op.61 (B.121), II. Poco adagio e molto cantabile
3	W.A. Mozart	Clarinet Quintet in A major, K.581, IV. Allegretto Con Variazioni
4	W.A. Mozart	Horn Quintet in E Flat, K.407, II. Andante
5	W.A. Mozart	String Quartet No.14 in G major, K.387, IV. Molto allegro
6	W.A. Mozart	Clarinet Quintet in A major, K.581, II. Larghetto
7	W.A. Mozart	12 Variations on 'La bergère Célimène', K.359/374a
8	F. Chopin	Variations for Flute and Piano in E major, B.9
9	C. Debussy	Première Rhapsodie for Clarinet and Piano or Orchestra, L. 116
10	G. Fauré	Fantasie for Flute and Piano, Op.79
11	J. Brahms	Clarinet Sonata No. 1 in F minor, Op.120, No.1, III. Allegretto grazioso
12	L. van Beethoven	String Quartet No.5 in A major, Op.18, No.5, I. Allegro
13	L. van Beethoven	Duo No. 2 in F major for Clarinet and Bassoon, WoO 27
14	W.A. Mozart	Clarinet Quintet in A major, K.581, I. Allegro
15	J. Brahms	Clarinet Sonata No. 1 in F minor, Op. 120 No. 1, IV. Vivace
16	W.A. Mozart	String Quartet No. 14 in G major, K.387 I. Allegro Vivace Assai

Table 3: Individual CI Preference ratings for PCA using 8 components.

Listener index	Signal index															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
CI-01	1	1	0	1	1	1	1	0	1	1	0	1	0	1	1	1
CI-02	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1
CI-03	0	0	1	1	1	1	1	0	0	0	1	0	0	1	1	1
CI-04	1	0	1	1	1	0	0	0	1	0	1	1	0	1	1	1
CI-05	0	1	0	1	1	1	1	0	1	1	1	0	1	1	1	0
CI-06	1	1	1	1	1	1	1	0	1	1	1	0	0	1	1	1
CI-07	1	1	1	1	1	1	1	0	1	1	1	1	0	1	1	1
CI-08	1	1	1	0	1	0	0	1	0	1	1	0	1	1	0	1
CI-09	0	0	0	1	0	1	1	1	1	1	0	1	1	0	1	0
CI-10	1	1	1	1	0	1	1	1	0	0	0	0	0	1	1	0
Total	7	7	7	9	8	8	8	3	7	7	7	5	4	9	9	7

Table 4: Individual CI Preference ratings for PCA using 13 components.

Listener index	Signal index															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
CI-01	0	0	0	1	0	0	0	0	1	0	0	1	0	1	1	1
CI-02	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1
CI-03	1	0	1	1	0	0	1	0	1	1	1	1	0	1	1	1
CI-04	0	1	1	0	1	0	0	1	0	1	1	0	1	1	1	0
CI-05	1	0	1	0	1	1	1	0	1	0	1	1	0	1	1	1
CI-06	1	0	1	1	0	1	1	0	1	0	0	1	0	1	1	0
CI-07	1	1	0	1	1	1	1	1	0	1	1	1	0	0	1	1
CI-08	1	1	1	0	1	1	0	0	1	0	0	0	1	1	0	1
CI-09	1	0	1	1	0	1	1	1	1	1	1	1	1	1	1	1
CI-10	1	0	0	0	1	1	0	1	0	1	1	0	1	1	1	1
Total	8	4	7	5	5	7	6	5	7	6	7	7	5	9	9	8

Table 5: Individual CI Preference ratings for PLS using 8 components.

Listener index	Signal index															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
CI-01	1	0	0	1	1	1	1	0	1	1	0	1	0	0	0	1
CI-02	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
CI-03	0	0	1	1	0	1	1	1	1	1	1	0	1	1	1	0
CI-04	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	1
CI-05	0	1	0	0	1	0	1	1	1	1	1	1	1	0	1	0
CI-06	0	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1
CI-07	0	1	1	0	0	1	0	1	1	0	1	1	1	1	1	1
CI-08	1	0	0	1	0	1	0	1	0	1	0	1	1	1	1	1
CI-09	0	1	1	0	1	1	1	1	1	0	0	0	0	1	1	0
CI-10	0	1	0	1	0	0	0	1	0	1	1	1	1	0	1	1
Total	3	6	6	7	5	7	6	7	7	7	6	8	7	6	8	7

Table 6: Individual CI Preference ratings for PLS using 13 components.

Listener index	Signal index															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
CI-01	0	1	0	1	1	0	0	0	1	0	0	1	1	1	1	0
CI-02	1	1	1	0	1	1	0	1	0	1	1	1	1	1	1	1
CI-03	1	0	1	0	1	1	1	0	1	1	1	1	1	1	0	0
CI-04	1	1	0	0	0	1	1	0	0	0	0	0	1	1	0	1
CI-05	0	1	1	0	0	0	1	0	0	1	1	0	0	1	0	0
CI-06	1	0	1	0	0	0	1	1	1	1	1	1	1	0	0	1
CI-07	0	1	1	1	0	1	0	1	1	1	1	0	0	1	1	1
CI-08	1	1	1	1	0	1	0	1	1	1	1	0	1	0	1	1
CI-09	0	0	1	0	1	0	1	1	0	1	0	1	0	1	1	1
CI-10	1	1	1	1	1	1	0	1	0	0	0	0	0	0	1	1
Total	6	7	8	4	5	6	5	6	5	7	6	5	6	7	6	7

Table 7: Individual CI Preference ratings for ASNA (remix at 3 dB SIR).

Listener index	Signal index															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
CI-01	1	0	0	0	0	1	1	0	0	1	1	0	0	0	0	1
CI-02	1	1	1	0	0	1	1	0	1	1	1	1	1	1	0	1
CI-03	0	1	1	1	0	0	1	0	0	0	0	0	0	1	1	0
CI-04	1	0	1	1	0	0	0	0	1	0	1	1	1	1	0	1
CI-05	0	0	1	1	1	1	1	1	0	0	0	1	0	0	1	0
CI-06	0	0	1	1	1	1	1	0	0	1	0	1	0	1	1	1
CI-07	0	0	1	0	1	0	0	1	0	1	1	1	0	1	0	0
CI-08	0	0	0	0	1	1	0	1	0	0	1	1	0	0	1	1
CI-09	1	0	1	1	0	1	1	0	1	0	0	0	0	0	0	0
CI-10	1	0	0	0	1	1	0	1	1	0	1	0	1	0	0	1
Total	5	2	7	5	5	7	6	4	4	4	6	6	3	5	4	6

Table 8: Individual CI Preference ratings for ASNA (remix at 5 dB SIR).

Listener index	Signal index															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
CI-01	1	1	0	0	0	1	1	1	1	0	0	0	0	0	0	0
CI-02	1	1	0	1	0	1	1	0	1	1	1	0	1	1	0	1
CI-03	0	0	1	0	0	1	1	0	0	0	0	0	0	1	0	1
CI-04	0	1	1	0	0	1	0	0	0	1	1	0	0	0	0	0
CI-05	1	0	0	1	0	0	0	1	0	0	0	1	1	1	1	1
CI-06	1	0	0	0	1	1	0	1	0	0	1	1	0	1	0	0
CI-07	0	0	1	0	0	1	0	0	0	1	1	0	0	0	0	0
CI-08	0	0	0	0	0	0	1	1	0	0	0	1	0	1	0	1
CI-09	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
CI-10	1	1	0	0	0	1	1	1	0	0	0	1	0	1	1	0
Total	6	4	3	3	2	7	5	5	2	3	4	4	2	6	2	4