

Appendix C

Details and Results of Blind Test Experiment

The 68 recordings used for the blind test experiment described in chapter 7.8, were produced by an independent person who logged original recording conditions, parameter settings and details of any applied copying processes. Recordings were identified to the analyst using only an abstract name. The analyst examined each recording and the result was correlated with the logs produced by the independent party.

Table C.1 provides a detailed description of the sample recordings produced and the results of the analysis. Column 1 shows recording/test number, column 2 gives original ‘O’ or copied ‘C’ status, column 3 gives details of how the recording had been produced, column 4 describes the acoustic signals recorded, column 5 gives the slope value as a standard deviation from the expected original slope value as plotted in fig 7.37, and column 6 gives the assessment result based on the estimated slope value. Also shown under ‘status’ for the copy recordings, is the ‘test’ number of the original recording that the copy has been produced from. Two recording machines were used to make the original recordings, designated R1 and R2.

Test	Status	Method of production	Acoustic data	Slope std	Result
1	O	Overt microphone, microphone input sensitivity set to low, manual record level, set for peak recording of -27 dB. (R1)	Room: speech, low ambient noise.	-2.245	Correct
2	O	Covert microphone, microphone input sensitivity set to low, manual record level, set for peak recording of -27 dB. (R2)	Room: speech, low ambient noise.	0	Correct
3	C (1)	1 Original copied to PC at 32 KHz (-27 dB peak level) 2 PC back to original recorder at 32 KHz (-27 dB peak level). Soundcard type: DigigramVX Pocket.	Room: speech, low ambient noise.	7.619	Correct
4	O	Overt microphone, microphone input sensitivity set to low, manual record level, set for peak recording of -27 dB. (R2)	Room: speech, low ambient noise.	-1.292	Correct
5	C (13)	1. Original copied to PC at 32 KHz (-3 dB peak level) 2. PC back to original recorder at 44.1 KHz (-3 to 0 dB peak level). Soundcard type: DigigramVX Pocket.	Room: speech, music	10.592	Correct

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6	O	Covert microphone, microphone input sensitivity set to low, manual record level, set for peak recording of -27 dB. (R1)	Room: low level speech, low ambient noise.	0.4081	Correct
7	C (2)	1. Original copied to PC at 32 kHz (-3 dB peak level) 2. PC back to original recorder at 44.1 kHz (-3 dB peak level). Soundcard type: DigigramVX Pocket.	Room: speech, low ambient noise.	4.489	Correct
8	C (9)	1. Original copied to PC at 32 kHz (-3 dB peak level) 2. PC back to original recorder at 44.1 kHz (-3 to 0 dB peak level). Soundcard type: DigigramVX Pocket.	Room: speech, high level music	3.946	Correct
9	O	Covert microphone, microphone input sensitivity set to low, manual record level, set for peak recording of 0 dB. (R1)	Room: speech, high level music	0	Correct
10	C (4)	1. Original copied to PC at 32 kHz (0 dB peak level) 2. PC back to original recorder at 32 kHz (-9 dB peak level). Soundcard type: DigigramVX Pocket.	Room: speech, low ambient noise.	10.204	Correct
11	C (2)	1. Original copied to PC at 44.1 kHz (-9 dB peak level) 2. PC back to original recorder at 32 kHz (-9 dB peak level). Soundcard type: DigigramVX Pocket.	Room: speech, low ambient noise.	7.619	Correct
12	C (6)	1. Original copied to PC at 32 kHz (-3 dB peak level) 2. PC back to original recorder at 44.1 kHz (-3 dB peak level). Soundcard type: DigigramVX Pocket.	Room: speech, low ambient noise.	15.238	Correct
13	O	Overt microphone, microphone input sensitivity set to low, manual record level, set for peak recording of 0 dB. (R1)	Room: speech, very high level music	3.673	Incorrect
14	C (9)	1. Original copied to PC at 32 kHz (0 dB peak level) 2. PC back to original recorder at 44.1 kHz (0 dB peak level). Soundcard type: DigigramVX Pocket.	Room: speech, high level music, left hand channel over-modulated	10	Correct
15	C (4)	1. Original copied to PC at 32 kHz (-6 dB peak level) 2. PC back to original recorder at 44.1 kHz (-6 dB peak level). Soundcard type: DigigramVX Pocket.	Room: speech, low ambient, recorder motor tones	8.503	Correct
16	O	Covert microphone, microphone input sensitivity set to high, automatic record level, set for peak recording of 0 dB. (R1).	Room: speech, high level music	-0.612	Correct
17	C (9)	1. Original copied to PC at 44.1 kHz (-6 dB peak level) 2. PC back to original recorder at 44.1 kHz (0 dB peak level). Soundcard type: DigigramVX Pocket.	Room: high level speech and music	6.598	Correct
18	C (45)	1. Original copied to PC at 44.1 kHz (0 dB peak level) 2. PC back to original recorder at 32 kHz (0 dB peak level). Soundcard type: DigigramVX Pocket.	Room: high level speech, low ambient, recorder motor tones	10.952	Correct
19	C (30)	1. Original copied to PC at 32 kHz (0 dB peak level) 2. PC back to original recorder at 44.1 kHz (0 dB peak level). Soundcard type: DigigramVX Pocket.	Room: high level speech, low ambient, recorder motor tones	4.830	Correct
20	C (33)	1. Original copied to PC at 32 kHz (0 dB peak level) 2. PC back to original recorder at 32 kHz (0 dB peak level). Soundcard type: DigigramVX Pocket.	Room: high level speech	11.7	Correct
21	C (13)	1. Original copied to PC at 44.1 kHz (-3 dB peak level) 2. PC back to original recorder at 44.1 kHz (0 dB peak level). Soundcard type: DigigramVX Pocket.	Room: speech, high level music	3.333	Correct
22	O	Covert microphone, microphone input sensitivity set to high, automatic record level, set for peak recording of 0 dB. (R2)	Room: high level speech, low ambient, recorder motor tones	-0.544	Correct
23	C (25)	1. Original copied to PC at 44.1 kHz (-3 dB peak level) 2. PC back to original recorder at 44.1 kHz (0 dB peak level). Soundcard type: DigigramVX Pocket.	Room: speech, high level music	11.292	Correct
24	C (35)	1. Original copied to PC at 44.1 kHz (-3 dB peak level) 2. PC back to original recorder at 44.1 kHz (0 dB peak level). Soundcard type: DigigramVX Pocket.	Room: speech, high level music	9.864	Correct
25	O	Overt microphone, microphone input sensitivity set to high, automatic record level, set for peak recording of 0 dB. (R2)	Room: speech, high level music	0.476	Correct
26	C (58)	1. Original copied to PC at 44.1 kHz (0 dB peak level) 2. PC back to original recorder at 32 kHz (0 dB peak level). Soundcard type: DigigramVX Pocket.	Street: cloths rustle against microphone, traffic.	16.19	Correct
27	O	Covert microphone, microphone input sensitivity set to high, automatic record level, set for peak recording of 0 dB. (R2)	Street: cloths rustle against microphone, traffic.	-0.476	Correct
28	C (16)	1. Original copied to PC at 32 kHz (0 dB peak level) 2. PC back to original recorder at 32 kHz (0 dB peak level). Soundcard type: Integral to Sony Vaio PCV RX407.	Room: speech, high level music	27.755	Correct

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29	C (33)	1. Original copied to PC at 32 kHz (0 dB peak level) 2. PC back to original recorder at 32 kHz (0 dB peak level). Soundcard type: Integral to Sony Vaio PCV RX407.	Room: high level speech, low ambient, recorder motor tones	31.156	Correct
30	O	Covert microphone, microphone input sensitivity set to high, automatic record level, set for peak recording of 0 dB. (R1)	Room: high level speech, low ambient, recorder motor tones	-1.564	Correct
31	C (16)	1. Original copied to PC at 32 kHz (0 dB peak level) 2. PC back to original recorder at 44.1 kHz (0 dB peak level). Soundcard type: DigigramVX Pocket.	Room: high level speech and music	9.523	Correct
32	C (22)	1. Original copied to PC at 32 kHz (0 dB peak level) 2. PC back to original recorder at 44.1 kHz (0 dB peak level). Soundcard type: DigigramVX Pocket.	Room: high level speech	12.177	Correct
33	O	Overt microphone, microphone input sensitivity set to high, automatic record level, set for peak recording of 0 dB. (R2)	Room: low level reverberant speech	-1.973	Correct
34	O	Covert microphone, microphone input sensitivity set to high, automatic record level, set for peak recording of 0 dB. (R2)	Room: high level speech and music	-1.837	Correct
35	O	Covert microphone, microphone input sensitivity set to high, automatic record level, set for peak recording of 0 dB. (R1)	Room: high level speech and music	0.476	Correct
36	C (57)	1. Original copied to PC at 32 kHz (0 dB peak level) 2. PC back to original recorder at 32 kHz (0 dB peak level). Soundcard type: DigigramVX Pocket.	Room: reverberant speech	11.83	Correct
37	C (42)	1. Original copied to PC at 44.1kHz (0 dB peak level) 2. PC back to original recorder at 32kHz (0 dB peak level). Soundcard type: Integral to Sony Vaio PCV RX407.	Room: reverberant speech	10	Correct
38	O	Overt microphone, microphone input sensitivity set to high, automatic record level, set for peak recording of 0dB. (R2)	Room: low level reverberant speech	-1.02	Correct
39	C (43)	1. Original copied to PC at 44.1kHz (0dB peak level) 2. PC back to original recorder at 44.1kHz (0dB peak level). Soundcard type: DigigramVX Pocket.	Room: reverberant speech	7.55	Correct
40	C (58)	1. Original copied to PC at 32 kHz (0dB peak level) 2. PC back to original recorder at 32 kHz (0dB peak level). Soundcard type: DigigramVX Pocket.	Street: cloths rustle against microphone, traffic.	14.29	Correct
41	C (38)	1. Original copied to PC at 32 kHz (0 dB peak level) 2. PC back to original recorder at 32 kHz (0 dB peak level). Soundcard type: DigigramVX Pocket.	Room: reverberant speech	14.286	Correct
42	O	Covert microphone, microphone input sensitivity set to high, automatic record level, set for peak recording of 0 dB. (R2)	Room: speech	0.136	Correct
43	O	Covert microphone, microphone input sensitivity set to high, automatic record level, set for peak recording of 0 dB. (R1)	Room: reverberant speech	0.612	Correct
44	C (57)	1. Original copied to PC at 32 kHz (0 dB peak level) 2. PC back to original recorder at 32 kHz (0 dB peak level). Soundcard type: Integral to Sony Vaio PCV RX407.	Room: reverberant speech	25.44	Correct
45	O	Overt microphone, microphone input sensitivity set to high, automatic record level, set for peak recording of 0 dB. (R1)	Room: speech	-0.408	Correct
46	C (58)	1. Original copied to PC at 44.1 kHz (0 dB peak level) 2. PC back to original recorder at 44.1 kHz (0 dB peak level). Soundcard type: DigigramVX Pocket.	Corridor: speech, cloths rustle against microphone	11.564	Correct
47	C (27)	1. Original copied to PC at 44.1 kHz (0 dB peak level) 2. PC back to original recorder at 44.1 kHz (0 dB peak level). Soundcard type: DigigramVX Pocket.	Street: speech, cloths rustle against microphone, traffic	7.006	Correct
48	C (4)	1. Original copied to PC at 44.1 kHz (-21 dB peak level) 2. PC back to original recorder at 32 kHz (-6 dB peak level). Soundcard type: DigigramVX Pocket.	Room: speech	10.476	Correct
49	C (1)	1. Original copied to PC at 44.1 kHz (0 dB peak level) 2. PC back to original recorder at 44.1 kHz (0 dB peak level)	Room: high level sibilant speech	9.048	Correct
50	C (6)	1. Original copied to PC at 32 kHz (0 dB peak level) 2. PC back to original recorder at 32 kHz (0 dB peak level). Soundcard type: DigigramVX Pocket.	Room: reverberant speech	11.361	Correct
51	O	Covert microphone, microphone input sensitivity set to high, automatic record level, set for peak recording of 0 dB. (R1).	Open air: speech, cloths rustle against microphone	0.884	Correct
52	C (59)	1. Original copied to PC at 4.1 kHz (0 dB peak level) 2. PC back to original recorder at 44.1 kHz (0 dB peak level). Soundcard type: DigigramVX Pocket.	Room: speech, cloths rustle against microphone	6.122	Correct

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53	C (42)	1. Original copied to PC at 32 kHz (0 dB peak level) 2. PC back to original recorder at 32 kHz (0 dB peak level). Soundcard type: DigigramVX Pocket.	Room: speech, cloths rustle against microphone	8.911	Correct
54	C (51)	1. Original copied to PC at 32 kHz (0 dB peak level) 2. PC back to original recorder at 32 kHz (0 dB peak level). Soundcard type: DigigramVX Pocket.	Open air: speech	9.659	Correct
55	C (6)	1. Original copied to PC at 44.1 kHz (0 dB peak level) 2. PC back to original recorder at 44.1 kHz (0 dB peak level) 3. Copy copied to PC 32 kHz (0 dB peak level) 4. PC back to original recorder at 44.1 kHz (0 dB peak level). Soundcard type: DigigramVX Pocket.	Room: speech	13.81	Correct
56	C (34)	1. Original copied to PC at 32 kHz (0 dB peak level) 2. PC back to original recorder at 44.1 kHz (0 dB peak level). Soundcard type: DigigramVX Pocket.	Room: speech, high level music	5.918	Correct
57	O	Overt microphone, microphone input sensitivity set to high, automatic record level, set for peak recording of 0 dB. (R1)	Room: speech	-1.497	Correct
58	O	Overt microphone, microphone input sensitivity set to high, automatic record level, set for peak recording of 0 dB. (R1)	Open air: speech, cloths rustle against microphone	1.76	Correct
59	O	Covert microphone, microphone input sensitivity set to low, automatic record level, set for peak recording of 0 dB. (R2)	Room: speech, recorder motor tones	-0.204	Correct
60	C (43)	1. Original copied to PC at 32 kHz (0 dB peak level) 2. PC back to original recorder at 32 kHz (0 dB peak level). Soundcard type: DigigramVX Pocket.	Room: reverberant speech	11.632	Correct
61	C (38)	1. Original copied to PC at 32 kHz (0 dB peak level) 2. PC back to original recorder at 44.1 kHz (0 dB peak level). Soundcard type: DigigramVX Pocket.	Room: reverberant sibilant speech	10.476	Correct
62	C (68)	1. Original copied to PC at 44.1 kHz (0 dB peak level) 2. PC back to original recorder at 44.1 kHz (0 dB peak level). Soundcard type: DigigramVX Pocket.	High level fan, wind noise	4.966	Correct
63	C (68)	1. Original copied to PC at 32 kHz (0 dB peak level) 2. PC back to original recorder at 32 kHz (0 dB peak level). Soundcard type: DigigramVX Pocket.	High level fan, wind noise	10.748	Correct
64	C (66)	1. Original copied to PC at 44.1 kHz (0 dB peak level) 2. PC back to original recorder at 44.1 kHz (0 dB peak level). Soundcard type: Integral to Sony Vaio PCV RX407.	High level fan, wind noise	0.748	Incorrect
65	C (66)	1. Original copied to PC at 32 kHz (0 dB peak level) 2. PC back to original recorder at 32 kHz (0 dB peak level). Soundcard type: DigigramVX Pocket.	Low level fan, wind noise	-2.312	Incorrect
66	O	Covert microphone, microphone input sensitivity set to low, automatic record level, set for peak recording of 0 dB. (R1)	High level fan, wind noise	-0.952	Correct
67	O	Overt microphone, microphone input sensitivity set to low, automatic record level, set for peak recording of 0 dB. (R2)	High level fan, wind noise	0.068	Correct
68	O	Overt microphone, microphone input sensitivity set to low, automatic record level, set for peak recording of -18 dB. (R2)	Low level fan, wind noise	-0.544	Correct

Table C.1: Summary of blind test experiment.