

Table 2. Recognition results of pitch and vowel quality tested for all sounds of a D-pattern with stepwise attenuation of H1 from 0 db to -100db (vowel recognition = 2 tests with 15 identifications, pitch recognition = 1 test with 10 identifications; double-vowel recognition = 1 test with 5 identifications; double-pitch recognition = 1 test with 5 identifications; values marked with "" are taken from Table 2; details see Method). Columns 1–3 = sound production (S=series number, fo=fundamental frequency in Hz, V=vowel quality intended). Columns 4–8 = harmonic configuration of synthesis (H1=fundamental, AH1=attenuation of H1, D(i)=dominant harmonics, approximate values in Hz). Columns 9–14 = recognised vowel qualities (total of both tests). Columns 15–16 = recognised pitch level for the comparison of sounds related to a D-pattern with and without full attenuation of H1. – Recognition rates ≥ 80% of mid-closed vowels and/or of low pitch is highlighted in blue, and recognition rates ≥ 80% of closed vowels and/or of high pitch is highlighted in red.

Natural sound			Harmonic synthesis					Vowel recognition						Pitch recognition	
S	f ₀	V	H1	AH1	D1	D2	D3	o	ø	e	u	y	i	low	high
1	220	e	220	0	440	2640	3080			13			2	10	
			(200)	-5						10			5	9	1
			(200)	-10						11			4	9	1
			(200)	-15						6			9	9	1
			(200)	-20						5			10	7	3
			(200)	-30									15		10
			(200)	-50									15		10
			–	-100									15		10
2	220	e	220	0	440	2640	3080		1	13			1	10	
			(200)	-5					2	13				10	
			(200)	-10					1	13			1	10	
			(200)	-15						13			2	7	3
			(200)	-20						9			6	6	4
			(200)	-30						9		2	4	6	4
			(200)	-50						3			12		10
			–	-100						3			12		10
3	220	ø	220	0	440	2640	3080		15					10	
			(200)	-5					15					10	
			(200)	-10					14			1		10	
			(200)	-15					13			2		10	
			(200)	-20					12			3		8	2
			(200)	-30					8			7		5	5
			(200)	-50								15			10
			–	-100								15			10
4	220	ø	220	0	440	2640	3080		15					10	
			(200)	-5					15					10	
			(200)	-10					14			1		10	
			(200)	-15					11			4		8	2
			(200)	-20					9			6		6	4
			(200)	-30					7			8		5	5
			(200)	-50					1			14			10
			–	-100					1			14			10
5	220	o	220	0	440	2640	3080	15						10	
			(200)	-5				14				1		10	
			(200)	-10				12				3		9	1
			(200)	-15				10				5		7	3
			(200)	-20				7				8		6	4
			(200)	-30				6				9		4	6
			(200)	-50								15			10
			–	-100								15			10
6	220	o	220	0	440	2640	3080	12				3		10	
			(200)	-5				12				3		10	
			(200)	-10				12				3		9	1
			(200)	-15				10				5		9	1
			(200)	-20				8				7		8	2
			(200)	-30				6				9		6	4
			(200)	-50								15			10
			–	-100								15			10