

## รายการอ้างอิง



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ภาคผนวก

### ภาคผนวก ก.

ตารางในภาคผนวก ก. เป็นตารางแสดงค่าเชิงกลของเสียงแต่ละเสียงในแต่ละคู่คำทดสอบ (A และ B, P และ Q, และ X และ Y) รวมทั้งสิ้น 36 รายการคำทดสอบ ใช้ผู้บอกภาษาเพศหญิง 3 คน เพศชาย 3 คน จากจำนวนผู้บอกภาษาคุณจำนวนคำทดสอบ จึงได้คำทดสอบรวม 216 คำทดสอบ

		ကုမ္ပဏီ						ပုံကုမ္ပဏီ					
		b	α	p #	u	a	i	b	α	# p	u	a	i
Dur.		53	115	62	96	48	62	39	142	72	48	44	54
Hz.	begin	100	100.1	135.4	100	102.4	135.4	113.6	103.9	106.5	105.4	104.5	102
	end	100.1	135.4	100	102.4	135.4	115.3	103.9	106.5	105.4	104.5	102	101
	ave.	100.05	117.75	117.7	101.2	118.9	125.35	108.75	105.2	105.95	104.95	103.25	101.5
Intensity	begin	43.6	40.8	27	8.9	27.8	25.4	33.4	33	9.4	24	43.1	28.4
	end	40.8	27	8.9	27.8	25.4	7.4	33	9.4	24	43.1	28.4	10.1
	ave.	42.2	33.9	17.95	18.35	26.6	16.4	33.2	21.2	16.7	33.55	35.75	19.25

		b	α	p #	u	a	i	b	α	# p	u	a	i
Dur.		125	57	32	58	64	36	40	113	64	35	29	40
Hz.	begin	175	136.1	142.3	136	136.1	132.2	175.8	169.5	134.9	145.6	137.2	126.7
	end	136.1	142.3	136	136.1	132.2	128.6	169.5	134.9	145.6	137.2	126.7	147.4
	ave.	155.55	139.2	139.15	136.05	134.15	130.4	172.65	152.2	140.25	141.4	131.95	137.05
Intensity	begin	7.2	16	9.5	6.8	10.9	7.7	22.4	52.3	8	34.5	59.7	26
	end	16	9.5	6.8	10.9	7.7	5.3	52.3	22	34.5	59.7	26	7.3
	ave.	11.6	12.75	8.15	8.85	9.3	6.5	37.35	37.15	21.25	47.1	42.85	16.65

		b	α	p #	u	a	i	b	α	# p	u	a	i
Dur.		86	59	80	55	41	139	90	102	92	40	23	40
Hz.	begin	135.9	126.2	116.4	115	113.4	122.8	135.9	129.7	110.3	122.3	112.3	102.1
	end	126.2	116.4	115	113.4	122.8	121.8	129.7	110.3	122.3	112.3	102.1	131.4
	ave.	131.05	121.3	115.7	114.2	118.1	122.3	132.8	120	116.3	117.3	107.2	116.75
Intensity	begin	45.6	40.7	52	20.8	11.9	14.2	45.2	51.3	21.3	33.4	58.6	26.7
	end	40.7	52	20.8	11.9	14.2	8.2	51.3	51.3	33.4	58.6	26.7	7.3
	ave.	43.15	46.35	36.4	16.35	13.05	11.2	48.25	51.3	27.35	46	42.65	17

		b	α	p #	u	a	i	b	α	# p	u	a	i
Dur.		31	108	57	44	67	40	33	148	78	38	59	35
Hz.	begin	206	208.6	203.3	208.4	202.5	201	225.3	239	220	201	201	201.8
	end	208.6	203.3	208.4	202.5	201	201.6	239	220	201	201	201.8	214.7
	ave.	207.3	204.95	205.85	205.45	201.75	201.3	232.15	229.5	210.5	201	201.4	208.25
Intensity	begin	27.2	69.7	39.9	9.9	58.5	45.5	30	70.8	36.3	69.8	56	50.8
	end	69.7	39.9	9.9	58.5	45.5	5.5	70.8	36.3	69.8	56	50.8	18.3
	ave.	48.45	54.8	24.9	34.2	52	25.5	50.4	53.55	53.05	62.9	53.4	34.55

		b	α	p #	u	a	i	b	α	# p	u	a	i
Dur.		32	198	102	48	72	68	29	229	61	43	61	52
Hz.	begin	201.9	202.1	261.1	204	201	278.5	218.7	222.9	247.7	201	201	290
	end	202.1	261.1	204	201	278.5	303.4	222.9	247.7	201	201	290	203.1
	ave.	202	231.6	232.55	202.5	239.75	290.95	220.8	235.3	224.35	201	245.5	246.55
Intensity	begin	19.3	36.1	14.9	7.2	55.4	29.3	50.5	47.8	5.9	38	46.6	22.8
	end	36.1	14.9	7.2	55.4	29.3	7	47.8	5.9	38	46.6	22.8	16.2
	ave.	27.7	25.5	11.05	31.3	42.35	18.15	49.15	26.85	21.95	42.3	34.7	19.5

		b	α	p #	u	a	i	b	α	# p	u	a	i
Dur.		20	105	48	71	71	38	27	121	129	43	33	46
Hz.	begin	210.6	228	201	201	201	201	234.9	241.9	205.1	201	201	201
	end	228	201	201	201	201	201	241.9	205.1	201	201	201	219.1
	ave.	219.3	214.5	201	201	201	201	238.4	223.5	203.05	201	201	210.05
Intensity	begin	13.1	31	17	15	15.3	15.7	12.8	36.9	26.7	27.3	45.3	20.2
	end	31	17	15	15.3	15.7	5.4	36.9	26.7	27.3	45.3	20.2	6.1
	ave.	22.05	24	16	15.15	15.5	10.55	24.85	31.8	27	36.3	32.75	13.15

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		พยางค์ที่ 1					พยางค์ที่ 2				
		j	a:	t #	a	m	j	a:	# t	a	m
Dur.		55	106	48	69	80	97	127	108	105	93
Hz.	begin	131	123	100.5	109.4	100	133.5	106.2	103.9	114	143.7
	end	123.4	100.5	109.4	100	133.5	106.2	103.9	114	143.7	136.8
	ave.	127.2	111.75	104.95	104.7	116.75	119.85	105.05	108.95	128.85	140.25
Intensity	begin	7.8	40.3	17.7	19.1	22	9.2	35.7	18.8	25.8	20.6
	end	40.3	17.7	19.1	22	9.2	35.7	18.8	25.8	20.6	24.7
	ave.	24.05	29	18.4	20.55	15.6	22.45	27.25	22.3	23.2	22.65

		j	a:	t #	a	m	j	a:	# t	a	m
Dur.		74	88	23	85	75	66	108	93	73	68
Hz.	begin	185.4	200.1	204.1	184	165	151.3	185.2	166.6	167.7	158.2
	end	200.1	204.1	195.1	165	151.3	185.2	166.6	167.7	158.2	150
	ave.	192.75	202.1	199.6	174.5	158.15	168.25	175.9	167.15	162.95	154.1
Intensity	begin	46.9	63.1	46.6	43.1	20.1	6	51.1	13.1	34.5	18.2
	end	63.1	46.6	35.4	20.1	6	51.1	13.1	34.5	18.2	9

		j	a:	t #	a	m	j	a:	# t	a	m
Dur.		65	111	35	26	99	51	96	10	77	21
Hz.	begin	109.7	116.8	126.2	155.8	164.7	148.1	157.4	137.8	125	136.2
	end	116.2	175.9	116.3	164.7	144.1	157.4	111.2	126.8	136.2	137.1
	ave.	112.95	146.35	121.25	160.25	154.4	152.75	134.3	132.3	130.6	136.65
Intensity	begin	35.2	78.8	24.3	26.3	42	42.5	73.7	7.6	17.6	41.9
	end	77.7	46.9	15.6	42	13.1	73.7	9.4	17.6	41.9	42.5

		j	a:	t #	a	m	j	a:	# t	a	m
Dur.		54	100	61	61	100	62	140	89	93	80
Hz.	begin	240.3	253.3	267.7	314.5	212	211.1	231.8	203.1	231	208.5
	end	253.3	268.3	314.5	212	213.7	231.8	203.1	231	208.5	204.5
	ave.	246.8	260.8	291.1	263.25	212.85	221.45	217.45	217.05	219.75	206.5
Intensity	begin	8.6	79.6	48.1	17.9	43.7	26.6	59.6	8.5	58.4	34.3
	end	79.6	65.7	7.2	43.7	18.5	59.6	58.4	58.4	34.3	34

		j	a:	t #	a	m	j	a:	# t	a	m
Dur.		47	138	41	86	99	35	191	96	84	132
Hz.	begin	250.8	269.2	254.7	201	215.7	206.6	227.8	277.2	229.3	202.6
	end	269.2	254.7	201	215.7	211.4	227.8	277.2	229.3	202.6	201.1
	ave.	260	261.95	227.85	208.35	213.55	217.2	252.5	253.25	215.95	201.85
Intensity	begin	49.4	61.6	25.2	5.2	43.2	50.1	66.3	8	49.6	48.4
	end	61.1	25.2	5.2	43.2	15.5	66.3	8	49.6	48.4	20.1

		j	a:	t #	a	m	j	a:	# t	a	m
Dur.		71	113	15	44	92	81	141	114	94	27
Hz.	begin	263.3	268.1	248.4	253.2	241.4	228.4	254.4	258.5	232.3	211
	end	268.1	248.4	253.2	241.4	212.7	254.4	258.5	232.3	211	212.2
	ave.	265.7	258.25	250.8	247.3	227.05	241.4	256.45	245.4	221.65	211.6
Intensity	begin	26.6	40.1	26.5	26	34.7	19.4	44.1	18.4	30.4	18.8
	end	40.1	26.5	26	34.7	19.1	44.1	18.4	30.4	18.8	16.3

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		p	a:	k #	i	n	p	a:	# k	i	n
Dur.		110	85	62	87	22	84	125	85	113	59
Hz.	begin	132	101.6	111.4	136.9	100	100	103.6	103	117.2	134.6
	end	101.6	111.4	136.9	100	100	103.6	103	117.2	134.6	127.6
	ave.	116.8	106.5	124.15	118.45	100	101.8	569.5	110.1	125.9	131.1
Intensity	begin	6.7	22.7	13.6	23.1	27	25.7	22.1	11.3	7.4	30.4
	end	22.7	13.6	5.7	27	25.7	22.1	11.3	7.4	30.4	28.1
	ave.	14.7	18.15	9.65	25.05	26.35	23.9	16.7	9.35	18.9	29.25

		p	a:	k #	i	n	p	a:	# k	i	n
Dur.		105	55	28	102	92	108	104	79	104	34
Hz.	begin	224.1	150.8	150	150	150.1	150	243.7	167.7	150	150
	end	150.8	150	150	150.1	150	243.7	150.3	158.2	150	150
	ave.	187.45	150.4	150	150.05	150.05	196.85	197	162.95	150	150
Intensity	begin	7.9	42.7	17.2	9	9.5	6.7	32.8	34.5	11.4	10.7
	end	42.7	17.2	9	9.5	7	32.8	8.6	18.2	10.7	7.8
	ave.	25.3	29.95	13.1	9.25	8.25	19.75	19.75	20.7	26.35	9.25

		p	a:	k #	i	n	p	a:	# k	i	n
Dur.		50	43	17	51	25	82	117	63	59	45
Hz.	begin	120.3	130.5	118.8	119.7	132.9	119.3	128.5	107.5	117.3	129.9
	end	130.5	118.8	115.1	132.9	133	128.5	107.5	19.3	129.9	129.2
	ave.	125.4	124.65	116.95	126.3	132.95	123.9	118	63.4	123.6	129.55
Intensity	begin	10.8	26.4	50.6	32.9	64.8	33.3	22.9	27	53.1	46.9
	end	26.4	57	41.2	64.8	23.9	22.9	27	48.7	46.9	49.2
	ave.	18.6	41.7	45.9	48.85	44.35	28.1	24.95	37.85	50	48.05

		p	a:	k #	i	n	p	a:	# k	i	n
Dur.		41	108	34	66	58	76	124	79	86	58
Hz.	begin	203.1	267.1	203.8	204.3	201	203.1	201.3	201	202.2	201
	end	267.1	203.8	204.3	201	201.3	201.3	201	202.2	201	201
	ave.	235.1	235.45	204.05	202.65	201.15	202.2	201.15	201.6	201.6	201
Intensity	begin	7.9	65.6	34	19.1	57.6	4.8	42.6	9.1	31.1	28.1
	end	65.6	34	19.1	57.6	8.3	42.6	9.1	31	28.1	25.4
	ave.	36.75	49.8	26.55	38.35	32.95	23.7	25.85	20.05	29.6	26.75

		p	a:	k #	i	n	p	a:	# k	i	n
Dur.		28	119	34	100	85	80	217	64	87	69
Hz.	begin	243.3	210.6	226.5	287.5	202.2	228	216.6	201	220.6	206.1
	end	210.6	226.5	287.5	202.2	204.3	216.6	201	220.6	206.1	206
	ave.	226.95	218.55	257	244.85	203.25	222.3	208.8	210.8	213.35	206.05
Intensity	begin	7.4	45.8	25.4	7.6	53.8	10	42.5	8.8	45.7	83
	end	45.8	25.4	7.6	53.8	29.6	42.5	8.8	45.7	83	77.5
	ave.	26.6	35.6	16.5	30.7	41.7	26.25	25.65	27.25	64.35	80.25

		p	a:	k #	i	n	p	a:	# k	i	n
Dur.		48	125	23	92	88	48	150	90	55	49
Hz.	begin	206.8	212	201	201	201	208	210	202.3	205.3	208.2
	end	212	201	201	201	202.8	210	202.3	205.3	208.2	203.6
	ave.	209.4	206.5	201	201	201.9	209	206.15	203.8	206.75	205.9
Intensity	begin	5.9	23.3	28.1	8.2	63.9	7.9	24	6.8	48.1	36.1
	end	23.3	28.1	8.2	63.9	26.2	24	6.8	48.1	36.1	38.7
	ave.	14.6	25.7	18.15	36.05	45.05	15.95	15.4	27.45	42.1	37.4

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	t	a:	m #	a:	t	a:	# m	a:	
Dur.	41	118	70	190	40	60	78	98	
Hz.	begin	126.5	112.7	120.2	111.4	116	107.6	136.9	100.2
	end	112.7	120.2	111.4	100.3	107.6	139.2	100.1	33.2
	ave.	119.6	116.45	115.8	105.85	111.8	123.4	118.5	66.7
Intensity	begin	8	18.8	22.7	12.5	4.6	20.5	21.9	33.5
	end	18.8	22.7	12.5	13.8	20.5	22.3	33.3	24.3
	ave.	13.4	20.75	17.6	13.15	12.55	21.4	27.6	28.9

	t	a:	m #	a:	t	a:	# m	a:	
Dur.	81	74	64	161	45	48	70	89	
Hz.	begin	153.9	156.8	151.2	152.8	150.2	178.8	165.8	165
	end	156.8	151.2	189	152.3	178.8	165.8	165	157.8
	ave.	155.35	154	170.1	152.55	164.5	172.3	165.4	161.4
Intensity	begin	5.2	30.5	17.3	9.9	6	45.2	23.6	31.6
	end	30.5	17.3	9.9	8.4	45.2	23.6	31.6	27.4
	ave.	17.85	23.9	13.6	9.15	25.6	25.6	34.4	27.6

	t	a:	m #	a:	t	a:	# m	a:	
Dur.	85	97	39	97	35	108	56	58	
Hz.	begin	156.3	207.1	132	130.1	180.7	216.3	156.7	154.5
	end	207.1	132	130.1	139.1	216.3	156.7	154.5	151.2
	ave.	181.7	169.55	131.05	134.6	198.5	186.5	155.6	152.85
Intensity	begin	9.7	53.2	44.2	39.2	20.4	47.3	32.7	48.8
	end	53.2	43.9	39.2	35.2	47.3	32.7	48.8	52.2
	ave.	31.45	48.55	41.7	37.2	33.85	40	40.75	50.5

	t	a:	m #	a:	t	a:	# m	a:	
Dur.	71	117	71	99	60	113	61	73	
Hz.	begin	201.8	219.1	201.1	219.2	206.3	219	212.4	202.8
	end	219.1	301.1	219.2	201	219	212.4	202.8	201
	ave.	210.45	260.1	210.15	210.1	212.65	215.7	207.6	201.9
Intensity	begin	4.2	43.3	46.6	17.4	4.1	47.9	35.6	51.6
	end	43.3	46.6	17.4	9	47.9	35.6	51.6	48.3
	ave.	23.75	44.95	32	13.2	26	41.75	43.6	49.95

	t	a:	m #	a:	t	a:	# m	a:	
Dur.	64	141	49	189	48	77	81	74	
Hz.	begin	202.2	229.4	201	202.6	201	226.5	208.1	217.6
	end	229.4	201	202.6	212.7	226.5	208.1	217.6	202.1
	ave.	215.8	215.2	201.8	207.65	213.75	217.3	212.85	209.85
Intensity	begin	7	40.7	22.5	8	6.2	42	31.7	57.2
	end	40.7	22.5	8	6.9	42.2	31.7	57.2	30.9
	ave.	23.85	31.6	15.25	7.45	24.2	36.85	44.45	44.05

	t	a:	m #	a:	t	a:	# m	a:	
Dur.	84	106	45	167	53	205	87	124	
Hz.	begin	202.4	204.4	204.4	206.8	219.4	240.7	203.9	209.4
	end	204.4	204.4	206.8	201	240.7	203.9	209.4	203.3
	ave.	203.4	204.4	205.6	203.9	230.05	222.3	206.65	206.35
Intensity	begin	6.8	29.7	34.2	13.7	5.1	12.4	18.9	37.6
	end	29.7	34.2	13.7	8.9	12.4	18.9	37.6	27
	ave.	18.25	31.95	23.95	11.3	8.75	15.65	28.25	32.3

M A L E F E M A L E



		វ៉ាណត					វ៉ាអូត				
		w	a:	n #	o:	k	w	a:	# n	o:	k
Dur.		76	76	62	115	81	46	153	51	157	48
Hz.	begin	111	108.1	105.1	100.1	100.5	118.3	124.9	119	109.5	100.7
	end	108.1	105.1	100.1	100.5	100.8	124.9	119	109.5	100.7	136
	ave.	109.55	106.6	102.6	100.3	100.65	121.6	121.95	114.25	105.1	118.35
Intensity	begin	13.3	46.9	54.3	38.6	34.6	34.7	47	31	23.8	23.8
	end	46.9	54.3	38.6	34.6	7.9	47	31	20.9	21.1	21.1
	ave.	30.1	50.6	46.45	36.6	21.25	40.85	39	25.95	22.45	22.45

		w	a:	n #	o:	k	w	a:	# n	o:	k
Dur.		52	70	96	198	108	37	76	25	98	57
Hz.	begin	176	182	175.4	158.8	151.5	204.5	214	213.7	208	154.5
	end	182	175.4	158.8	151.5	152.1	214	213.7	208	154.4	211.9
	ave.	179	178.7	167.1	155.15	151.8	209.25	213.85	210.85	181.2	183.2
Intensity	begin	28	46.4	14.9	30.9	8.5	55.2	65.8	40.7	29.9	25.1
	end	46.4	14.9	30.9	8.5	5.1	65.8	40.7	29.9	25.1	8.7
	ave.	37.2	30.65	22.9	19.7	6.8	60.5	60.5	53.25	35.3	16.9

		w	a:	n #	o:	k	w	a:	# n	o:	k
Dur.		44	51	78	58	52	28	70	63	76	73
Hz.	begin	153.2	147.3	143.9	125.9	111.5	177.1	190.7	190.7	129.3	141.5
	end	147.3	143.9	125.9	111.5	107	190.7	190.7	169.3	141.5	131.1
	ave.	150.25	145.6	134.9	118.7	109.25	183.9	190.7	180	135.4	136.3
Intensity	begin	23.2	58.6	42	60.7	53.1	53	62.9	65.5	25.5	67.5
	end	58.6	42	60.7	53.1	37.7	62.9	65.5	25	67.5	43.5
	ave.	40.9	50.3	51.35	56.9	45.4	57.95	64.2	45.25	46.5	55.5

		w	a:	n #	o:	k	w	a:	# n	o:	k
Dur.		35	95	60	113	49	37	54	84	166	136
Hz.	begin	221	237.1	257.9	207.7	211.6	227.1	237.1	239.7	235.6	201
	end	237.2	257.9	207.7	211.6	201.1	237.1	239.7	235.6	201	201
	ave.	229.1	247.5	232.8	209.65	206.35	232.1	238.4	237.65	218.3	201
Intensity	begin	38.1	50.5	55.6	10.2	49.9	29.3	66.9	37.8	65	57.4
	end	50.5	55.6	10.2	49.9	13.1	66.9	37.8	65	57.4	9.2
	ave.	44.3	53.05	32.9	30.05	31.5	48.1	52.35	51.4	61.2	33.3

		w	a:	n #	o:	k	w	a:	# n	o:	k
Dur.		74	125	69	152	30	57	89	70	258	105
Hz.	begin	261.3	276.4	271.9	201	201	216.6	278.6	250.4	248.4	207.4
	end	276.4	271.9	201	201	201	278.6	250.4	248.4	207.4	203.1
	ave.	268.85	274.15	236.45	201	201	247.6	264.5	249.4	227.9	205.25
Intensity	begin	48	59.3	34.4	9.7	26.1	8.6	65.1	29.3	71.8	28.9
	end	59.3	34.4	9.7	26.1	8.9	65.1	29.3	71.8	28.9	6.2
	ave.	53.65	46.85	22.05	17.9	17.5	36.85	47.2	50.55	50.35	17.55

		w	a:	n #	o:	k	w	a:	# n	o:	k
Dur.		115	70	35	181	49	53	61	99	324	52
Hz.	begin	257	254	229.7	201	201	240.9	236.8	238.2	227.1	201
	end	254	229.7	201	201	201	236.8	238.2	227.1	201	201
	ave.	255.5	241.85	215.35	201	201	238.85	237.5	232.65	214.05	201
Intensity	begin	47.6	23.9	16.4	8.6	36	27	29.3	12.7	29.8	17.1
	end	23.9	16.4	8.6	36	12.3	29.3	12.7	29.8	17.1	4.5
	ave.	35.75	20.15	12.5	22.3	24.15	28.15	21	21.25	23.45	10.8

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		l	o : #	fj	#o	m	l	o : #	fj	#o	m
Dur.		80	81	72	91	100	50	171	55	94	66
Hz.	begin	102.4	103.6	100	117.7	100	108.7	105	100	100	131.3
	end	103.6	100	117.7	100	100	105	100	100	131.3	110.3
	ave.	103	101.8	108.85	108.85	100	106.85	102.5	100	115.65	120.8
Intensity	begin	36.7	45.9	43.1	12	29.3	33.3	30.8	16.3	16.3	15.7
	end	45.9	43.1	12	29.3	33.2	30.8	16.3	16.3	15.7	10.8
	ave.	41.3	44.5	27.55	20.65	31.25	32.05	23.55	16.3	16	13.25

		l	o : #	fj	#o	m	l	o : #	fj	#o	m
Dur.		37	52	22	104	22	53	115	71	40	15
Hz.	begin	189.8	193.8	187.6	151.9	178.8	185.2	189.4	162	153.4	150.9
	end	193.8	187.6	151.9	178.8	179.1	189.4	162.2	153.4	150.9	151.1
	ave.	191.8	190.7	169.75	165.35	178.95	187.3	175.8	157.7	152.15	151
Intensity	begin	24.1	49.3	25.5	19.5	22.6	16.3	41.9	14.9	21.8	16
	end	49.3	25.5	19.5	22.6	19.4	41.9	14.9	21.8	16	11
	ave.	36.7	37.4	22.5	21.05	21	29.1	29.1	28.4	18.35	13.5

		l	o : #	fj	#o	m	l	o : #	fj	#o	m
Dur.		34	90	65	97	42	50	112	70	41	13
Hz.	begin	176.3	181.2	179.3	147.3	162.5	179.3	182.5	165.3	156.1	150.2
	end	181.2	179.3	147.3	162.5	161	182.5	165.3	156.1	150.2	151.6
	ave.	178.75	180.25	163.3	154.9	161.75	180.9	173.9	160.7	153.15	150.9
Intensity	begin	26.7	56.2	27.5	19.2	24.6	16.2	43.7	16.5	23.6	18
	end	56.2	27.5	19.2	24.6	22.4	43.7	16.5	23.6	18	13.4
	ave.	41.45	41.85	23.35	21.9	23.5	29.95	30.1	20.05	20.8	15.7

		l	o : #	fj	#o	m	l	o : #	fj	#o	m
Dur.		57	74	32	63	42	45	135	53	38	35
Hz.	begin	202.1	206.9	202.4	332.4	211.1	249	254.9	220.9	221.5	212.3
	end	206.9	202.4	332.4	211.1	206.5	254.9	220.9	221.5	212.3	212.7
	ave.	204.5	204.65	267.4	271.75	208.8	251.95	237.9	221.2	216.9	212.5
Intensity	begin	28.7	61.6	30.4	10.8	56.5	56.5	70.3	31.9	47	46.6
	end	61.6	30.4	10.8	56.5	37.5	70.3	31.9	47	46.6	40
	ave.	45.15	46	20.6	33.65	47	63.4	51.1	39.45	46.8	43.3

		l	o : #	fj	#o	m	l	o : #	fj	#o	m
Dur.		16	99	30	97	22	56	162	76	56	94
Hz.	begin	204.7	206.5	278.5	201	203.1	250.9	251.7	201.6	203.7	201.3
	end	206.5	278.5	201	203.1	201	251.7	201.6	203.7	201.3	204.2
	ave.	205.6	242.5	239.75	202.05	202.05	251.3	226.65	202.65	202.5	202.75
Intensity	begin	36.1	52.5	30.3	7.1	50	25	58.4	29.4	44.2	33.8
	end	52.5	30.3	7.7	50	33.5	58.4	29.4	44.2	33.8	7.6
	ave.	44.3	41.4	19	28.55	41.75	41.7	43.9	36.8	39	20.7

		l	o : #	fj	#o	m	l	o : #	fj	#o	m
Dur.		28	72	49	142	106	81	149	93	58	109
Hz.	begin	206.7	211	212.5	205.1	223.4	265.4	253.6	232.1	225.3	222.5
	end	211	212.5	205.1	223.4	214.9	253.6	232.1	225.3	222.5	232.1
	ave.	208.85	211.75	208.8	214.25	219.15	259.5	242.85	228.7	223.9	227.3
Intensity	begin	3.5	8.3	8.4	3.3	7.1	9.1	14	4.3	9.3	5
	end	8.3	8.4	3.3	7.1	4.1	14	4.3	9.3	5	4.3
	ave.	5.9	8.35	5.85	5.2	5.6	11.55	9.15	6.8	7.15	4.65

		ตัวอื่น					ตัวอื่น				
		w	a:	w #	a	n	w	a:	# w	a	n
Dur.		59	143	57	72	53	53	134	48	63	33
Hz.	begin	113.8	107.1	115.3	110.5	141.3	130.8	123.3	122.1	116.1	107.2
	end	201.1	115.3	110.5	141.3	142	133.3	122.1	116.1	107.2	100.5
	ave.	157.45	111.2	112.9	125.9	141.65	132.05	122.7	119.1	111.65	103.85
Intensity	begin	43.2	44.8	25.7	16.8	19.6	6	38.4	23	21	22.7
	end	44.8	25.7	16.8	19.6	23.2	38.4	23	21	22.7	21.1
	ave.	44	35.25	21.25	18.2	21.4	22.2	30.7	22	21.85	21.9

		w	a:	w #	a	n	w	a:	# w	a	n
Dur.		24	71	34	72	34	76	67	41	45	14
Hz.	begin	188.8	194.2	200.9	195	177.5	150.7	193.2	199	197.2	176
	end	194.2	200.9	195	177.5	172.5	193.2	199	197.2	176	172.4
	ave.	191.5	197.55	197.95	186.25	175	171.95	196.1	198.1	186.6	174.2
Intensity	begin	44.1	51.2	30.5	22.9	15.7	25.9	56.4	14.9	26.5	13
	end	51.2	30.5	22.9	15.7	13.4	56.4	14.9	26.5	13	12.7
	ave.	47.65	40.85	26.7	19.3	14.55	41.15	41.15	35.65	20.7	12.85

		w	a:	w #	a	n	w	a:	# w	a	n
Dur.		29	63	37	70	32	76	75	42	39	11
Hz.	begin	190.3	201.1	223.1	200.9	187.6	161.3	190.6	197.2	192.1	180
	end	201.1	223.1	200.9	187.6	185.2	190.6	197.3	192.1	180	177.5
	ave.	195.7	212.1	212	194.25	186.4	175.95	193.95	194.65	186.05	178.75
Intensity	begin	43.2	49.8	30.1	23.1	16.3	23.2	51.6	11.2	24.6	11.7
	end	49.8	30.1	23.1	16.3	11.7	51.6	11.3	24.6	11.7	11.2
	ave.	46.5	39.95	26.6	19.7	14	37.4	31.45	17.9	18.15	11.45

		w	a:	w #	a	n	w	a:	# w	a	n
Dur.		61	83	61	70	35	84	96	61	30	20
Hz.	begin	201.1	215.4	229.2	229.5	212.2	209.6	205.8	247.6	251	240.9
	end	215.4	229.2	229.5	212.2	203.8	205.8	247.6	251	240.9	233
	ave.	208.25	222.3	229.35	220.85	208	207.7	226.7	249.3	245.95	236.95
Intensity	begin	46.3	60.3	54.5	46.8	38.3	19.6	48.5	44.2	55	47
	end	60.3	54.5	46.8	38.3	35.9	48.5	44.2	55	47	43.6
	ave.	53.3	57.4	50.65	42.55	37.1	34.05	46.35	49.6	51	45.3

		w	a:	w #	a	n	w	a:	# w	a	n
Dur.		29	172	70	38	29	76	182	25	34	33
Hz.	begin	202.2	216.3	246.7	246.2	212.2	288.5	235.6	253.8	252.7	240.3
	end	216.3	246.7	246.2	212.3	203	235.6	253.8	252.7	240.3	227.3
	ave.	209.25	231.5	246.45	229.25	207.6	262.05	244.7	253.25	246.5	233.8
Intensity	begin	43.6	65.8	45.8	34.9	50.8	5.7	61.1	50.6	57	46.6
	end	65.8	45.8	34.9	50.8	30	61.1	50.6	57	46.6	28.1
	ave.	54.7	55.8	40.35	42.85	40.4	33.4	55.85	53.8	51.8	37.35

		w	a:	w #	a	n	w	a:	# w	a	n
Dur.		23	127	42	113	28	99	187	28	57	25
Hz.	begin	245.6	250	255.8	247.4	223.8	201	229.2	250.4	239.2	221.6
	end	250	255.8	247.4	223.8	220.8	229.2	250.4	239.2	221.6	223.1
	ave.	247.8	252.9	251.6	235.6	222.3	215.1	239.8	244.8	230.4	222.35
Intensity	begin	11.7	13.4	10.6	8.8	5.2	2.2	13.8	6.8	7.9	6.8
	end	13.4	10.6	8.7	5.2	4	13.8	6.8	7.9	6.8	4.4
	ave.	12.55	12	9.65	7	4.6	8	10.3	7.35	7.35	5.6

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		h	a:	j #	e:	n	h	a:	# j	e:	n
Dur.		60	162	62	91	81	54	91	76	100	48
Hz.	begin	120.8	131.7	108.5	100.5	100	122.1	116.7	109.1	104.6	136.3
	end	131.7	108.5	100.5	100	146.1	116.7	118.2	104.6	136.5	142.1
	ave.	126.25	120.1	104.5	100.25	123.05	119.4	117.45	106.85	120.55	139.2
Intensity	begin	10.3	23.6	26.3	14.9	28.4	19	27.8	33.9	39.2	20.8
	end	23.6	26.7	14.9	28.4	6.5	27.8	28.9	39.2	20.8	25.5
	ave.	16.95	25.15	20.6	21.65	17.45	23.4	28.35	36.55	30	23.15

		h	a:	j #	e:	n	h	a:	# j	e:	n
Dur.		89	86	25	106	78	96	81	54	48	32
Hz.	begin	202.4	215	206.4	200.2	172.3	180.1	201	190.2	183.5	169.9
	end	215	206.4	200.2	172.3	150.7	201	190.2	183.5	169.9	169.9
	ave.	208.7	210.7	203.3	186.25	161.5	190.55	195.6	186.85	176.7	169.9
Intensity	begin	14.3	54.8	39.6	28.1	15.5	8.1	20.4	11	28.3	18
	end	54.8	39.6	28.1	15.5	6.2	20.4	110	28.3	18	10.8
	ave.	34.55	47.2	33.85	21.8	10.85	14.25	14.25	65.2	19.65	14.4

		h	a:	j #	e:	n	h	a:	# j	e:	n
Dur.		76	82	32	112	71	89	86	53	48	36
Hz.	begin	189.3	212.5	208.6	201.3	169.8	179.2	196.7	189.2	181.3	165.2
	end	212.5	208.6	201.3	169.8	156.2	196.7	189.2	181.3	165.2	164.7
	ave.	200.9	210.55	204.95	185.55	163	187.95	192.95	185.25	173.25	164.95
Intensity	begin	15.4	62.3	40.1	31.2	19.5	8.3	25.4	12.3	33.4	21.6
	end	62.3	40.1	31.2	19.5	8.7	25.4	12.3	33.4	21.6	11.7
	ave.	38.85	51.2	35.65	25.35	14.1	16.85	18.85	22.85	27.5	16.65

		h	a:	j #	e:	n	h	a:	# j	e:	n
Dur.		81	80	70	57	38	78	123	54	66	47
Hz.	begin	201	256.2	204.1	223.4	208.6	234.2	254.5	234.4	224.8	212.6
	end	256.2	244.1	223.4	208.6	216.6	254.5	234.4	224.8	212.6	205.6
	ave.	228.6	250.15	213.75	216	212.6	244.35	244.45	229.6	218.7	209.1
Intensity	begin	9.2	78.5	49.4	43.6	27.6	27	73.2	44.4	53.9	57.7
	end	78.5	44.5	43.6	27.6	11.7	73.2	44.4	53.9	57.7	39.8
	ave.	43.85	61.5	46.5	35.6	19.65	50.1	58.8	49.15	55.8	48.75

		h	a:	j #	e:	n	h	a:	# j	e:	n
Dur.		34	171	42	110	93	74	155	89	106	55
Hz.	begin	221.7	248.6	259.4	251.6	220.4	240	260	245.1	240.7	202.6
	end	248.6	259.4	251.6	220.4	210.4	260	245.1	240.7	202.6	201
	ave.	235.15	254	255.5	236	215.4	250	252.55	242.9	221.65	201.8
Intensity	begin	23.1	47	47.7	13.6	40.3	29.9	65.6	40.1	60.3	35.1
	end	47	47.7	13.6	40.3	9.2	65.6	40.1	60.3	35.1	8.1
	ave.	35.05	47.35	30.65	26.95	24.75	47.75	52.85	50.2	47.7	21.6

		h	a:	j #	e:	n	h	a:	# j	e:	n
Dur.		81	110	86	139	81	41	211	58	79	66
Hz.	begin	229.4	231.2	263.4	241.8	223.8	236.6	251.8	236.5	233.8	206.3
	end	231.2	263.4	241.8	223.8	204.9	251.8	236.6	233.8	206.3	204.5
	ave.	230.3	247.3	252.6	232.8	214.35	244.2	244.2	235.15	220.05	205.4
Intensity	begin	17.6	42	29.1	17.3	18	35.5	30.2	16	34.6	18.3
	end	42	29.1	17.3	18	3.9	30.2	16	34.6	18.3	8.5
	ave.	29.8	35.55	23.2	17.65	10.95	32.85	23.1	25.3	26.45	13.4

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		thiunao							thiuhao						
		p	r	a	p #	r	κ	j	p	r	a	# p	r	κ	j
Dur.		57	48	57	58	93	138	48	66	31	109	84	31	140	45
Hz.	begin	101.9	101.4	100.4	101.4	104.7	100.2	113.9	100.5	119	145.1	121.3	111.4	135.4	157.4
	end	101.4	100.4	101.4	104.7	100.2	113.9	133.4	119	145.1	121.3	111.4	135.4	157.4	118.7
	ave.	101.65	100.9	100.9	103.05	102.45	107.05	123.65	109.75	132.05	133.2	116.35	123.4	146.4	138.05
Intensity	begin	7.9	4.1	30	20	6.7	28.7	21.7	5.1	8.4	32.1	7.7	7.4	34.1	20.5
	end	4.1	30	20	6.7	28.7	21.7	6.2	8.4	32.1	7.7	7.4	34.1	20.5	7.1
	ave.	6	17.05	25	13.35	17.7	25.2	13.95	6.75	20.25	19.9	7.55	20.75	27.3	13.8

		p	r	a	p #	r	κ	j	p	r	a	# p	r	κ	j
Dur.		91	38	46	51	70	82	63	53	33	68	88	39	117	47
Hz.	begin	186.2	177.3	170.3	151.2	151.1	158.5	158.2	154	171.7	153.5	150.7	209.6	158.2	156.3
	end	177.3	170.3	151.2	151.1	158.5	158.2	154	171.7	153.5	150.7	209.6	158.2	156.3	151.8
	ave.	181.75	173.8	160.75	151.15	158.8	158.35	21.7	162.85	162.6	152.1	180.15	183.9	157.25	154.05
Intensity	begin	10.2	10.7	41.4	27.7	6.8	33.5	28.2	5.1	18.6	43	10.6	11.6	41.8	29.7
	end	10.7	41.4	27.7	6.8	33.5	28.2	5.1	18.6	43	10.6	11.6	41.8	29.7	13.8
	ave.	10.45	26.05	34.55	17.25	20.15	30.85	16.65	11.85	30.8	26.8	11.1	26.7	35.75	21.75

		p	r	a	p #	r	κ	j	p	r	a	# p	r	κ	j
Dur.		18	29	53	50	43	52	46	32	31	63	82	37	131	50
Hz.	begin	134.3	131.2	135.8	131.2	128.2	135.1	131	136.7	142.3	152.1	147.9	139.8	142.3	151.3
	end	131.2	135.8	131.2	128.2	135.1	131	136.2	142.3	152.1	147.9	139.8	142.3	151.3	130.2
	ave.	132.75	133.5	133.5	129.7	131.65	133.05	21.7	139.5	147.2	150	143.85	141.05	146.8	140.75
Intensity	begin	7.6	18.6	78	23.8	7.3	72.8	56.3	6.2	26.3	61.2	31.1	30.6	61.2	49.2
	end	18.6	78	23.8	7.3	72.8	56.3	10.5	26.3	61.2	31.1	30.6	61.2	49.2	11.7
	ave.	13.1	48.3	50.9	15.55	40.05	64.55	33.4	16.25	43.75	46.15	30.85	45.9	55.2	30.45

		p	r	a	p #	r	κ	j	p	r	a	# p	r	κ	j
Dur.		43	22	45	28	104	96	31	77	21	93	102	22	205	31
Hz.	begin	336.2	201	203.4	201.7	201	206.6	201	203.1	209.1	207.6	201.7	201	215.8	201
	end	201	203.4	201.7	201	206.6	201	202.7	209.1	207.6	201.7	201	215.8	201	201.3
	ave.	268.6	202.2	202.55	201.35	203.8	203.8	21.7	206.1	208.35	204.65	201.35	208.4	208.4	201.15
Intensity	begin	5.6	54.8	44.8	32.2	18.3	49.2	50.2	5.4	55.7	35.3	14.6	33.6	49.8	51.3
	end	54.8	44.8	32.2	18.3	49.2	50.2	22	55.7	35.3	14.6	33.6	49.8	51.3	12
	ave.	30.2	49.8	38.5	25.25	33.75	49.7	36.1	30.55	45.5	24.95	24.1	41.7	50.55	31.65

		p	r	a	p #	r	κ	j	p	r	a	# p	r	κ	j
Dur.		38	32	92	67	92	132	43	62	29	105	74	96	175	58
Hz.	begin	207.4	270.8	214	201.3	211.9	206.5	201	201.8	243.7	201.7	225.9	203.9	204.6	201
	end	270.8	214	201.3	211.9	206.5	201	283.5	243.7	201.7	225.9	203.4	204.6	201	202.1
	ave.	239.1	242.4	207.65	209.6	209.2	203.75	21.7	222.75	222.7	213.8	214.65	204.25	202.8	201.55
Intensity	begin	6.3	10.7	45.6	25	5.3	36.2	43.7	5.1	31.2	41.5	16.7	33.9	34	35.9
	end	10.7	45.6	25	5.3	36.2	43.7	12.1	31.2	41.5	16.7	33.9	34	35.9	9.5
	ave.	8.5	28.15	35.3	15.15	20.75	39.95	27.9	18.15	36.35	29.1	25.3	33.95	34.95	22.7

		p	r	a	p #	r	κ	j	p	r	a	# p	r	κ	j
Dur.		54	48	84	46	119	151	53	68	59	175	54	16	141	77
Hz.	begin	217.9	299.1	215.6	201.3	203.9	201	201.2	304.4	246.8	201.4	208.8	246.8	205.2	201
	end	299.1	215.6	201.3	203.9	201	201.2	201.7	246.8	201.4	208.8	246.8	205.2	201	201.9
	ave.	243.9	242.35	208.45	202.6	202.45	201.1	21.7	275.6	224.1	205.1	227.8	226	203.1	201.45
Intensity	begin	3.8	2.9	20.9	10.7	3.1	22	14.9	3	3.5	17.3	2.3	6.8	17.1	16.9
	end	2.9	20.9	10.7	3.1	22	14.9	3	3.5	17.3	2.3	6.8	17.1	16.9	4.9
	ave.	3.35	11.9	15.8	6.9	12.55	18.45	8.95	3.25	10.4	9.8	4.55	11.95	17	10.9

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		c	a	p #	l	i:	k	c	a	# p	l	i:	k
Dur.		61	54	35	85	91	53	51	76	45	38	108	51
Hz.	begin	124.2	102.2	132.6	130.6	100	121.1	115.6	124.2	140.2	100.3	109.5	119
	end	102.2	132.6	130.6	100	121.1	133.8	124.2	140.2	100.3	109.5	119	136
	ave.	113.2	117.4	131.6	115.3	110.55	127.45	119.9	132.2	120.25	104.9	114.25	127.5
Intensity	begin	5.2	24.5	19.7	6	19.2	16.9	6.1	13.7	5.1	5.2	22.2	21.4
	end	24.5	19.7	6	19.2	16.9	5.4	13.7	5.1	5.2	22.2	21.4	5.5
	ave.	14.85	22.1	12.85	12.6	18.05	11.15	9.9	9.4	5.15	13.7	21.8	13.45

		c	a	p #	l	i:	k	c	a	# p	l	i:	k
Dur.		39	67	50	82	67	36	38	73	51	48	124	24
Hz.	begin	151.5	215.2	162.2	157.8	165.5	151.2	153.6	246.8	151.5	150.3	227.8	153.7
	end	215.2	162.2	157.8	165.5	151.2	158.5	246.8	151.5	150.3	227.8	153.7	158.2
	ave.	183.35	188.7	160	161.65	158.35	154.85	200.2	199.15	150.9	189.05	190.75	155.95
Intensity	begin	8.5	63.2	27.9	10	35.3	22.1	10.7	41.8	7.7	8.6	54.8	17.1
	end	63.2	27.9	10	35.3	22.1	9.1	41.8	7.7	8.6	54.8	17.1	12.8
	ave.	35.85	45.55	18.95	22.65	28.7	15.6	26.25	24.75	8.15	31.7	35.95	14.95

		c	a	p #	l	i:	k	c	a	# p	l	i:	k
Dur.		60	75	61	85	65	40	40	78	61	58	135	36
Hz.	begin	150.3	210.7	260.2	154.1	162.7	158.2	151.6	244.2	149.2	167.7	174.3	101.2
	end	210.7	160.2	154.1	162.7	158.2	164.1	244.2	149.2	167.7	174.3	101.2	110.3
	ave.	180.5	185.45	207.15	158.4	160.45	161.15	197.9	196.7	158.45	171	137.75	105.75
Intensity	begin	8.2	64.1	30.1	13.6	38.2	25.4	11.2	42.5	10.5	9.2	55.7	18.2
	end	64.1	30.1	13.6	38.2	25.4	13.5	42.5	10.5	9.2	55.7	18.2	12.9
	ave.	36.15	47.1	21.85	25.9	31.8	19.45	26.85	26.5	9.85	32.45	36.95	15.55

		c	a	p #	l	i:	k	c	a	# p	l	i:	k
Dur.		86	38	21	69	82	51	72	64	96	40	45	36
Hz.	begin	201.2	258	219.2	206.3	203.7	201	209.5	245.6	202.3	201	216.5	201.2
	end	258	219.2	206.3	203.7	201	201.7	245.6	202.3	201	216.5	201.2	201
	ave.	229.6	238.6	212.75	205	202.35	201.35	227.55	223.95	201.65	208.75	208.85	201.1
Intensity	begin	5.8	53.4	44.3	17.4	41	55.6	6.6	54.9	4.3	50.4	65.4	50.5
	end	53.4	44.3	17.4	41	55.6	22	54.9	4.3	50.4	65.4	50.5	28.6
	ave.	29.6	48.85	30.85	29.2	48.3	38.8	30.75	29.6	27.35	57.9	57.95	39.55

		c	a	p #	l	i:	k	c	a	# p	l	i:	k
Dur.		59	76	61	111	115	94	49	66	96	32	121	43
Hz.	begin	205.1	243.7	274.6	219.1	203	253.2	237.8	243.7	217.7	202.8	206.8	295.4
	end	243.7	274.6	219.1	203	253.2	202	243.7	217.7	202.8	206.8	295.4	274.6
	ave.	224.4	259.15	246.85	211.05	228.1	227.6	240.75	230.7	210.25	204.8	251.1	285
Intensity	begin	5.6	50.9	20.3	5.7	49.8	17.7	5.6	49	49.3	19.6	41.1	23.2
	end	50.9	20.3	5.7	49.8	17.7	5.3	49	49.3	19.6	41.1	23.2	5
	ave.	28.25	35.6	13	27.75	33.75	11.5	27.3	49.15	34.45	30.35	32.15	14.1

		c	a	p #	l	i:	k	c	a	# p	l	i:	k
Dur.		35	61	35	97	93	30	72	62	114	33	166	39
Hz.	begin	201	259	215	216.6	205	201.6	228	255.5	260	303.6	233.9	201
	end	259.4	215	216.6	205	201.6	201	255.5	260	303.6	233.9	201	201
	ave.	230.2	237	215.8	210.8	203.3	201.3	241.75	257.75	281.8	268.75	217.45	201
Intensity	begin	2	14.2	9.7	4.2	4.5	6	1.8	10.2	1.8	2.9	14.5	8.2
	end	14.2	9.7	4.2	4.5	6	8.8	10.2	1.8	2.9	14.5	8.2	2
	ave.	8.1	11.95	6.95	4.35	5.25	7.4	6	6	2.35	8.7	11.35	5.1

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		p	a:	t #	r	a:	p	a:	# t	r	a:
Dur.		97	70	64	124	200	62	118	89	64	182
Hz.	begin	117.4	112.7	105	139.7	121.8	128.9	134.4	100.5	142.2	103.3
	end	112.7	105	139.7	121.8	144.2	134.4	100.5	142.2	103.3	114.1
	ave.	115.05	108.85	122.35	130.75	133	131.65	117.45	121.35	122.75	108.7
Intensity	begin	7.2	23	11.7	7.4	35.7	5.6	22.7	7.5	9.6	29.9
	end	23	11.7	7.4	16.5	6.7	22.7	7.5	9.6	29.9	14.7
	ave.	15.1	17.35	9.55	11.95	21.2	14.15	15.1	8.55	19.75	22.3

		p	a:	t #	r	a:	p	a:	# t	r	a:
Dur.		45	57	20	147	152	42	110	57	38	51
Hz.	begin	156.4	216.3	173.4	155.8	181.3	185.7	189	155.5	166.5	174.5
	end	216.3	173.4	155.8	181.3	155.3	189	155.5	166.5	174.5	157.2
	ave.	186.35	194.85	164.6	168.55	168.3	187.35	172.25	161	170.5	165.85
Intensity	begin	7.9	75.6	26.9	10.5	67.5	7.4	70	7.3	9.4	61.3
	end	75.6	26.9	10.5	67.5	7.1	70	7.3	9.4	61.3	33.4
	ave.	41.75	51.25	18.7	39	37.3	38.7	38.7	38.65	8.35	47.35

		p	a:	t #	r	a:	p	a:	# t	r	a:
Dur.		56	60	32	152	161	40	112	76	54	74
Hz.	begin	160.3	233.4	189.3	162.7	192.3	175.3	172.1	143.7	172.1	179.7
	end	233.4	189.3	162.7	192.3	187.6	172.1	143.7	172.1	179.7	159.2
	ave.	196.85	211.35	176	177.5	189.95	173.7	157.9	157.9	175.9	169.45
Intensity	begin	8.2	69.7	37.8	26.5	54.3	6.7	59.3	8.9	9.7	54.3
	end	69.7	37.8	26.5	54.3	9.7	59.3	8.9	9.7	54.3	30.6
	ave.	38.95	53.75	32.15	40.4	32	33	74.15	9.3	32	42.45

		p	a:	t #	r	a:	p	a:	# t	r	a:
Dur.		48	88	40	88	132	63	114	63	63	72
Hz.	begin	204.1	267.1	203.1	240.2	218.7	203.2	228.4	203.9	201	212.2
	end	267.1	203.1	240.2	218.7	202.7	228.4	203.9	201	212.2	201.1
	ave.	235.6	235.1	221.65	229.45	210.7	215.8	216.15	202.45	206.6	206.65
Intensity	begin	6.7	64.7	16.6	23.9	49.4	7.2	61.5	5.2	34.9	61.5
	end	64.7	16.6	23.9	49.4	32.3	61.5	5.2	34.9	61.5	76.7
	ave.	35.7	40.65	20.25	36.65	40.85	34.35	33.35	20.05	48.2	69.1

		p	a:	t #	r	a:	p	a:	# t	r	a:
Dur.		44	79	52	121	262	62	9.6	140	68	162
Hz.	begin	205.6	248	207.5	201	205.2	212.5	228.9	283.8	221.5	217.1
	end	248	207.5	201	205.2	208.8	228.9	283.8	221.5	217.1	251.9
	ave.	226.8	227.75	204.25	203.1	207	220.7	256.35	252.65	219.3	234.5
Intensity	begin	5.6	42.4	34.7	5.6	39.4	5.9	45.9	14.2	11.6	44.3
	end	42.4	34.7	5.6	39.4	6.6	45.9	14.2	11.6	44.3	7.4
	ave.	24	38.55	20.15	22.5	23	25.9	30.05	12.9	27.95	25.85

		p	a:	t #	r	a:	p	a:	# t	r	a:
Dur.		33	70	48	172	208	67	177	72	37	172
Hz.	begin	276.4	249.3	213.4	203.1	218.6	209.6	222.8	209.5	229.4	213.3
	end	249.3	213.4	203.1	218.6	213.4	222.8	209.5	229.4	213.3	211.8
	ave.	262.85	231.35	208.25	210.85	216	216.2	216.15	219.45	221.35	212.55
Intensity	begin	2.9	24.4	11.5	4	20.4	3.2	20.8	2.4	2.6	25.5
	end	24.4	11.5	4	20.4	8.6	20.8	2.4	2.6	25.5	17.3
	ave.	13.65	17.95	7.75	12.2	14.5	12	11.6	2.5	14.05	21.4

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Dur.		105	115	53	86	134	67	48	127	76	45	83	41
Hz.	begin	126.3	144.4	124.2	118.2	103.3	130.9	126.6	118.9	104.8	103.6	102.7	102.1
	end	144.4	124.2	118.2	103.3	130.9	114.4	118.9	104.8	103.6	102.7	102.1	126
	ave.	135.35	134.3	121.2	110.75	117.1	122.65	122.75	111.85	104.2	103.15	102.4	114.05
Intensity	begin	5.3	15	11.5	5.1	31.8	14.2	4.9	37.4	5.7	7.8	29.6	19.2
	end	15	11.5	5.1	31.8	14.2	8.2	37.4	5.7	7.8	29.6	19.2	6.3
	ave.	10.15	13.25	8.3	18.45	23	11.2	21.15	21.55	6.75	18.7	24.4	12.75

		ph	ac	k #	r	၁ :	၇	ph	ac	# k	r	၁ :	၇
Dur.		82	57	28	79	73	26	81	104	51	56	66	70
Hz.	begin	183.2	196.7	205.1	208.6	199.9	180.5	183	208.6	151	188.4	178.4	164.2
	end	196.7	205.1	200.6	199.9	180.5	178.1	208.6	151	188.4	178.4	164.3	142.1
	ave.	189.95	200.9	202.85	200.25	190.2	179.3	195.8	179.8	169.7	183.4	171.35	153.15
Intensity	begin	18.7	25.7	29.4	10	47.8	30.3	10.9	47.2	7.7	22.1	65.9	31.2
	end	25.7	29.4	10	47.8	30.3	22.1	47.2	7.7	22.1	65.9	31.2	27.2
	ave.	22.2	27.55	19.7	28.9	39.05	26.2	29.05	27.45	14.9	44	48.55	29.2

		ph	ac	k #	r	၁ :	၇	ph	ac	# k	r	၁ :	၇
Dur.		79	48	19	67	71	30	79	97	53	57	73	32
Hz.	begin	180.1	193.7	207.3	198.2	197.6	188.2	183.1	202.6	157.1	194.2	184.1	170.6
	end	193.7	207.3	198.2	197.6	188.2	186.4	202.6	157.1	194.2	184.1	170.6	145.1
	ave.	186.9	200.5	202.75	197.9	192.9	187.3	192.85	179.85	175.65	189.15	177.35	157.85
Intensity	begin	37.1	30.1	34.1	15.7	42.1	25.6	8.7	45.6	8.7	23.6	67.1	32.3
	end	30.1	34.1	15.7	42.1	25.6	18.2	45.6	8.7	23.6	67.1	32.3	26.3
	ave.	33.6	32.1	24.9	28.9	33.85	21.9	27.15	27.15	16.15	45.35	49.7	29.3

		ph	ac	k #	r	၁ :	၇	ph	ac	# k	r	၁ :	၇
Dur.		47	105	42	56	134	38	76	104	47	57	70	25
Hz.	begin	201.1	201	236.6	234.2	228.8	202.4	250.6	245.1	201	235.3	220	206.3
	end	201	236.6	234.2	228.8	202.4	201	245.1	201	235.3	220	206.3	206.8
	ave.	201.05	218.8	235.4	231.5	215.6	201.7	247.85	223.05	218.15	227.65	213.15	206.55
Intensity	begin	46.7	86.4	78.6	88.4	88	72.7	68.6	83.9	12.7	69.6	76.3	39.5
	end	86.4	78.6	88.4	88	72.7	60.9	83.9	12.7	69.6	76.3	39.5	28.7
	ave.	66.55	82.5	84.5	89.2	80.35	66.8	76.25	48.3	41.15	72.95	57.9	34.1

		ph	ac	k #	r	၁ :	၇	ph	ac	# k	r	၁ :	၇
Dur.		153	119	54	76	179	33	68	189	45	70	119	69
Hz.	begin	202	253.2	254.5	211.9	242.6	202.9	203.4	245.3	205.5	270.8	255	209.6
	end	253.2	254.5	211.9	242.6	202.9	201.3	245.3	205.5	270.8	255	209.6	234.7
	ave.	227.6	253.85	233.2	227.25	222.75	202.1	224.35	225.4	238.15	262.9	232.3	222.15
Intensity	begin	7.7	24.1	33.4	4.3	51.2	26.7	10.5	17.2	4.6	11.6	54.8	26.2
	end	24.1	33.4	4.3	51.2	26.7	13.1	17.2	4.6	11.6	54.8	26.2	10.6
	ave.	15.9	28.75	18.85	27.75	38.95	19.9	13.85	10.9	8.1	33.2	40.5	18.4

		ph	ac	k #	r	၁ :	၇	ph	ac	# k	r	၁ :	၇
Dur.		71	152	80	79	130	70	57	147	70	38	153	38
Hz.	begin	203.1	249.2	263.8	252	239.1	218.9	208.1	238.5	201.6	201	237.6	212.5
	end	249.2	263.8	263.8	239.1	218.9	217.7	238.5	201.6	201	237.6	212.5	213.6
	ave.	226.15	256.5	255.3	245.55	229	218.3	223.3	220.05	201.3	219.3	225.05	213.05
Intensity	begin	3.7	15.1	12.6	4	26.7	22.3	59.3	48	10.4	12.5	59.5	18.7
	end	15.1	12.6	4	26.7	22.3	10.9	48	10.4	12.5	59.5	18.7	14
	ave.	9.4	13.85	8.3	15.35	24.5	16.6	53.65	29.2	11.45	36	39.1	16.35

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		s	a	k #	l	က	j	s	a	# k	l	က	j
Dur.		81	62	14	111	151	83	122	160	163	43	121	60
Hz.	begin	101.6	113.9	130.2	109.8	100.4	125.1	125.6	128.2	130.2	108.3	100.7	124.2
	end	113.9	130.2	10	100.4	125.1	109.2	128.2	130.2	108.3	100.7	124.2	120.9
	ave.	107.75	122.05	70.1	105.1	112.75	117.15	126.9	129.2	119.25	104.5	112.45	122.55
Intensity	begin	9.8	19.2	6.5	6.5	17.1	18.4	6.1	21.3	4.9	6.3	29.8	23.1
	end	19.2	10	4.2	17.1	18.4	15.7	21.3	4.9	6.3	29.8	23.1	5
	ave.	14.5	14.6	5.35	11.8	17.75	17.05	13.7	13.1	5.6	18.05	26.45	14.05

		s	a	k #	l	က	j	s	a	# k	l	က	j
Dur.		54	54	30	99	92	76	72	62	114	33	166	39
Hz.	begin	152	200.1	162	175.6	160.7	160.5	228	255.5	260	303.6	233.9	201
	end	200.1	162	175.6	160.7	160.5	150.7	255.5	260	303.6	233.9	201	201
	ave.	176.05	181.05	168.8	168.15	160.6	155.6	241.75	257.75	281.8	268.75	217.45	201
Intensity	begin	7	58.6	17.5	6	43.1	34	1.8	10.2	1.8	2.9	14.5	8.2
	end	58.6	17.5	6	43.1	34	4.2	10.2	1.8	2.9	14.5	8.2	2
	ave.	32.8	38.05	11.75	24.55	38.55	19.1	6	6	2.35	8.7	11.35	5.1

		s	a	k #	l	က	j	s	a	# k	l	က	j
Dur.		57	67	31	101	112	92	80	132	34	31	91	30
Hz.	begin	141.7	192.3	157.1	170.1	162.3	161.2	148.7	178.6	142.7	143.1	164.6	161.7
	end	192.3	157.1	170.1	162.3	161.2	151.7	178.6	142.7	143.1	164.6	161.7	159.4
	ave.	167	174.7	163.6	166.2	161.75	156.45	163.65	160.65	142.9	153.85	163.15	160.55
Intensity	begin	8.2	61.5	21.7	10.7	50.2	39.7	5.4	61.1	9.7	12.4	42.5	43.2
	end	61.5	21.7	10.2	50.2	39.7	8.6	61.1	9.7	12.4	42.5	43.2	13.1
	ave.	34.85	41.6	15.95	30.45	44.95	24.15	33.25	35.4	11.05	27.45	42.85	28.15

		s	a	k #	l	က	j	s	a	# k	l	က	j
Dur.		61	51	38	83	100	34	67	91	74	32	87	34
Hz.	begin	299.1	295.4	210.3	201.5	211.5	206.1	202.5	226.4	211.3	327.5	223.9	201.8
	end	295.4	210.3	201	211.5	206.1	203.1	226.4	211.3	327.5	223.9	201.8	201
	ave.	297.25	252.85	205.65	206.5	208.8	204.6	214.45	218.85	269.4	275.7	212.85	201.4
Intensity	begin	24.7	61.5	50	10.9	78.2	90	15.8	50.8	13.2	17.7	59.8	44.5
	end	61.5	50	10.8	78.2	90	36.4	50.8	13.2	17.7	59.8	44.5	21.4
	ave.	43.1	55.75	30.4	44.55	84.1	63.2	33.3	32	15.45	38.75	52.15	32.95

		s	a	k #	l	က	j	s	a	# k	l	က	j
Dur.		76	69	28	93	208	42	72	124	81	53	169	40
Hz.	begin	221.5	255.7	201	293.7	201.7	201.1	221.8	210	204.8	257.6	267.1	201
	end	255.7	201	293.7	201.7	201.1	295.5	210	204	257.6	267.1	201	201.4
	ave.	238.6	228.35	247.35	247.7	201.4	248.3	215.9	207	231.2	262.35	234.05	201.2
Intensity	begin	15.7	49.7	24.5	6.5	24.2	48.1	9.1	51.5	5.9	11.9	23.9	46.6
	end	49.7	24.5	6.5	24.2	48.1	14.7	51.5	5.9	11.9	23.9	46.6	11.9
	ave.	32.7	37.1	15.5	15.35	36.15	31.4	30.3	28.7	8.9	17.9	35.25	29.25

		s	a	k #	l	က	j	s	a	# k	l	က	j
Dur.		96	80	54	57	134	51	97	186	57	72	141	53
Hz.	begin	223	231.6	211.8	203.1	207.3	216.9	266	246.8	201	315.3	203.4	207.5
	end	231.6	211.8	203.1	207.3	216.9	201	246.8	201	315.3	203.4	207.5	203.3
	ave.	227.3	221.7	207.45	205.2	212.1	208.95	256.4	223.9	258.15	259.35	205.45	205.4
Intensity	begin	2.4	10.6	3.4	2	10.9	15.1	9.2	45	8.4	8.9	55.5	56
	end	10.6	3.4	2	10.9	15.1	3.1	45	8.4	8.9	55.5	56	9.1
	ave.	6.5	7	2.7	6.45	13	9.1	27.1	26.7	8.65	32.2	55.75	32.55

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		n	ac	k #	w	c	a	n	n	ac	# k	w	c	a	n
Dur.		57	132	57	97	75	86	49	83	188	63	49	30	28	34
Hz.	begin	140	103.3	110.8	102.5	100	100	100	137.5	100.9	100.6	146.6	124.8	117.5	128.2
	end	103.3	110.8	102.5	100	100	100	136.3	100.9	100.6	146.6	124.8	117.5	128.2	129.2
	ave.	121.65	107.05	102.5	101.25	100	100	118.15	119.2	100.75	123.6	135.7	121.15	122.85	128.7
Intensity	begin	25.8	39	27.2	7.4	42.5	31.3	31	29.1	40.3	7.4	5.9	42.6	34.1	26.6
	end	39	27.2	7.4	42.5	31.3	31	12.4	40.3	7.4	5.9	42.6	34.1	26.6	23.6
	ave.	32.4	33.1	17.3	24.95	36.9	31.15	21.7	34.7	23.85	6.65	24.25	38.35	30.35	25.1

		n	ac	k #	w	c	a	n	n	ac	# k	w	c	a	n
Dur.		40	117	38	55	42	34	31	44	109	43	17	30	31	33
Hz.	begin	171.9	192.4	208	196.1	186.1	181.5	175	171.3	189.8	180.5	175.8	171.9	166.6	153.5
	end	192.4	208	196.1	186.1	181.5	175	178.1	189.8	180.5	175.8	171.9	166.6	153.5	157.6
	ave.	182.15	200.2	202.05	191.1	183.8	178.25	21.7	180.55	185.15	178.15	173.85	169.25	160.05	155.55
Intensity	begin	16.9	30.3	30.9	26.5	49	65.8	38.5	16.5	29.2	8.3	32.8	45.8	50.6	20.9
	end	30.3	30.9	26.5	49	65.8	38.5	34.1	29.2	8.3	32.8	45.8	50.6	20.9	17.4
	ave.	23.6	30.6	28.7	37.75	57.4	52.15	36.3	22.85	18.75	20.55	39.3	48.2	35.75	19.15

		n	ac	k #	w	c	a	n	n	ac	# k	w	c	a	n
Dur.		42	120	39	60	52	44	41	46	112	47	20	32	34	37
Hz.	begin	169.2	187.6	212.5	204.5	194.5	189.2	183.1	172.1	190.1	179.2	170.4	166.3	161.7	148.6
	end	187.6	212.5	204.5	194.5	189.2	183.1	184.5	190.1	179.2	170.4	166.3	161.7	148.6	152.3
	ave.	178.4	200.05	208.5	199.5	191.85	186.15	21.7	181.1	184.65	174.8	168.35	164	155.15	150.45
Intensity	begin	17.2	32.1	22.6	24.3	47.9	53.4	20.4	17.2	29.3	9.2	33.2	46.5	51.8	21.4
	end	32.1	32.6	24.3	47.9	53.4	20.4	22.6	29.3	9.2	33.2	46.5	51.8	21.4	18.2
	ave.	24.65	32.35	23.45	36.1	50.65	36.9	21.5	23.25	19.25	21.2	39.85	49.15	36.6	19.8

		n	ac	k #	w	c	a	n	n	ac	# k	w	c	a	n
Dur.		54	132	36	59	52	86	77	69	175	73	25	26	25	47
Hz.	begin	201	203.2	243.2	221.3	219.7	221.8	201.1	201	217.7	220.2	336.2	237.8	229.1	219.5
	end	203.2	243.2	221.3	219.7	221.8	201.1	201	217.7	220.2	336.2	237.8	229.1	219.5	205
	ave.	202.1	223.2	232.25	220.5	220.75	211.45	21.7	209.35	218.95	278.2	287	238.45	224.3	212.25
Intensity	begin	30.7	33.8	62	43	40.5	67.4	37.4	48.7	65.3	7	37.9	72	67.1	59.7
	end	33.8	62	43	40.5	67.4	37.4	16.4	65.3	7	37.9	72	67.1	59.7	39.3
	ave.	32.25	47.9	52.5	41.75	53.95	52.4	26.9	57	36.15	22.45	54.95	69.55	63.4	49.5

		n	ac	k #	w	c	a	n	n	ac	# k	w	c	a	n
Dur.		65	178	34	83	74	57	106	89	196	84	41	48	65	49
Hz.	begin	201	209.4	250	240.6	210.8	215.9	234.3	201	212.8	302.6	201.6	211.5	205.9	201
	end	209.4	250	240.6	210.8	215.9	204.3	202.8	212.8	302.6	201.6	211.5	205.9	201	201
	ave.	205.2	229.7	245.3	225.7	213.35	210.1	21.7	206.9	257.7	252.1	206.55	208.7	203.45	201
Intensity	begin	19.8	55.1	49.7	24.3	70.3	41.1	30.2	27.1	50.4	50.8	18.6	66.9	63.5	30.1
	end	55.1	49.7	24.3	70.3	41.1	30.2	30.2	50.4	5.8	18.6	66.9	63.5	30.1	37.1
	ave.	37.45	52.4	37	47.3	55.7	35.65	30.2	38.75	28.1	34.7	42.75	65.2	46.8	33.6

		n	ac	k #	w	c	a	n	n	ac	# k	w	c	a	n
Dur.		85	161	47	69	99	65	28	73	123	108	57	80	64	73
Hz.	begin	201	222.8	251.2	230.9	231.6	227.9	204.8	211.6	233.2	237.4	256.9	237.5	218.3	205.4
	end	222.8	251.2	230.9	231.6	227.9	204.8	205.7	233.2	237.4	256.9	237.5	218.3	205.4	216.3
	ave.	211.9	237	241.05	231.25	229.75	216.35	21.7	222.4	235.3	247.15	247.2	227.9	211.85	210.85
Intensity	begin	36.5	48.2	53.5	31.3	77.6	62.6	56.9	11.7	15.6	3.2	14.5	16.1	10.5	6.9
	end	48.2	53.5	41.3	77.6	62.6	56.9	43.7	15.6	3.2	14.5	16.1	10.5	6.9	5.9
	ave.	42.35	50.85	42.4	54.45	70.1	59.75	50.3	13.65	9.4	8.85	15.3	13.3	8.7	6.4

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		t	i	a	p	t	i #	a	p
Dur.		86	47	45	66	72	100	119	59
Hz.	begin	138.4	126.8	121.1	134	100.9	100.8	138.5	110.4
	end	126.8	121.1	134	119.6	100.8	137.6	110.4	125.6
	ave.	132.6	123.95	127.55	126.8	100.85	119.2	124.45	118
Intensity	begin	5.6	34.1	35.9	19.7	5.5	29.5	12.6	28.4
	end	34.1	35.9	19.7	6.1	29.5	12.3	28.4	6.9
	ave.	19.85	35	27.8	12.9	17.5	20.9	20.5	17.65

		t	i	a	p	t	i #	a	p
Dur.		67	40	37	40	73	76	53	72
Hz.	begin	184.7	152.6	177.6	205.5	150.7	157.9	150	214.2
	end	152.6	177.6	205.5	159.7	157.9	150	214.2	154.8
	ave.	168.65	165.1	191.55	182.6	154.3	153.95	182.1	184.5
Intensity	begin	14.9	33.8	62	44.7	7.4	53.8	25.2	65.9
	end	33.8	62	44.7	8.9	53.8	25.2	25.9	6.2
	ave.	24.35	47.9	53.35	26.8	30.6	39.5	25.55	36.05

		t	i	a	p	t	i #	a	p
Dur.		70	45	40	40	80	87	60	78
Hz.	begin	187.6	155.5	180.2	155.3	147.6	154.9	147.9	211.9
	end	155.5	180.2	155.3	152.5	154.9	147.9	211.9	152.8
	ave.	171.55	167.85	167.75	153.9	151.25	151.4	179.9	182.35
Intensity	begin	15.2	34.8	65.3	52.3	8.6	55.3	26.6	26.4
	end	34.8	65.3	52.3	16.5	55.3	26.2	26.4	6.7
	ave.	25	50.05	58.8	34.4	31.95	40.75	26.5	16.55

		t	i	a	p	t	i #	a	p
Dur.		62	34	53	20	70	45	65	50
Hz.	begin	201.1	256.5	230.8	201.5	234.9	221.6	229.4	203.1
	end	256.5	230.8	201.8	226.2	221.6	229.4	203.1	201
	ave.	228.8	243.65	216.3	213.85	228.25	225.5	216.25	202.05
Intensity	begin	6.7	55	56.5	48.6	6	54.3	30.4	36.1
	end	55	56.5	48.6	25.3	54.3	30.4	36.6	11.6
	ave.	30.85	55.75	52.55	36.95	30.15	42.35	33.5	23.85

		t	i	a	p	t	i #	a	p
Dur.		60	84	66	55	53	170	119	83
Hz.	begin	205.2	240.7	201.1	201	221.5	201	203.5	205.6
	end	240.7	201.1	201	203	201	203.5	205.6	201.9
	ave.	222.95	220.9	201.05	202	211.25	202.25	204.55	203.75
Intensity	begin	6.6	50.1	51.8	36.2	6.7	47.6	8	47.7
	end	50.1	51.8	36.2	7.3	47.6	8	47.7	8.9
	ave.	28.35	50.95	44	21.75	27.15	27.8	27.85	28.3

		t	i	a	p	t	i #	a	p
Dur.		86	71	33	77	43	138	77	69
Hz.	begin	215.9	224.1	201.7	201	205.9	205.9	202.4	201
	end	224.1	201.7	201	211.9	205.9	202.4	201	201
	ave.	220	212.9	201.35	206.45	205.9	204.15	201.7	201
Intensity	begin	8.7	11.9	13	8.2	2.3	12.9	4.2	10.7
	end	11.9	13	18.2	1.6	12.9	4.2	10.7	1.5
	ave.	10.3	12.45	15.6	4.9	7.6	8.55	7.45	6.1

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		t	r	i:	a	m	t	r	i: #	a	m
Dur.		61	41	48	47	85	76	57	234	62	50
Hz.	begin	145.1	100	102	100	100	138.4	101.6	107.4	115.2	132.6
	end	100	102	100	100	148.8	101.6	107.4	115.2	132.6	122.6
	ave.	122.55	101	101	100	124.4	120	104.5	111.3	123.9	127.6
Intensity	begin	5.1	10.8	43.4	38.9	24	4.8	8.4	31.5	14.7	26.3
	end	10.8	43.4	38.9	24	8.6	8.4	31.5	14.7	26.3	7.8
	ave.	7.95	27.1	41.15	31.45	16.3	6.6	19.95	23.1	20.5	17.05

		t	r	i:	a	m	t	r	i: #	a	m
Dur.		59	37	33	45	39	27	23	63	109	60
Hz.	begin	151.9	171.5	172.3	172.1	158.9	154.8	152.6	177.4	175.2	159.6
	end	171.5	172.3	172.1	158.9	158.2	152.6	177.4	175.2	159.6	154.4
	ave.	161.7	171.9	172.2	165.5	158.55	153.7	165	176.3	167.4	157
Intensity	begin	5.4	16.9	37.9	57.5	13.2	4.9	9	43.1	45.5	13.6
	end	16.9	37.9	57.5	13.2	95	9	43.1	45.5	13.6	7
	ave.	11.15	27.4	47.7	35.35	54.1	6.95	6.95	26.05	44.3	10.3

		t	r	i:	a	m	t	r	i: #	a	m
Dur.		61	40	35	47	41	30	27	65	110	62
Hz.	begin	152.3	162.7	163.5	163.1	149.9	153.1	151.7	175.8	171.3	155.7
	end	162.7	163.5	163.1	149.9	149.7	151.7	175.8	171.3	155.7	150.2
	ave.	157.5	163.1	163.3	156.5	149.8	152.4	163.75	173.55	163.5	152.95
Intensity	begin	6.2	17.8	38.2	58.6	14.3	5.3	10.1	44.3	46.7	14.8
	end	17.8	38.2	58.6	14.3	18.7	10.1	44.3	46.7	14.8	8.2
	ave.	12	28	48.4	36.45	16.5	7.7	27.2	45.5	30.75	11.5

		t	r	i:	a	m	t	r	i: #	a	m
Dur.		80	50	150	84	84	73	17	44	41	34
Hz.	begin	208.5	278.7	223.4	202.4	201.7	202	218.2	216.7	217.8	208.6
	end	278.7	223.4	202.2	201.7	212.3	218.2	216.7	217.8	208.6	210.2
	ave.	243.6	251.05	212.8	202.05	207	210.1	217.45	217.25	213.2	209.4
Intensity	begin	6.1	20.3	45.3	23.4	47.5	5.1	42.8	50.1	60.4	44.7
	end	20.3	45.3	23.4	47.5	25.3	42.8	50.1	10.4	44.7	38.7
	ave.	13.2	32.8	34.35	35.45	36.4	23.95	46.45	30.25	52.55	41.7

		t	r	i:	a	m	t	r	i: #	a	m
Dur.		17	47	89	76	62	81	49	176	85	81
Hz.	begin	206.2	291	214.2	212.2	201.8	210.5	289.8	220.4	202.2	201.7
	end	291	214.2	212.2	201.8	204.2	289.8	220.4	202.2	201.7	210.1
	ave.	248.6	252.6	213.2	207	203	250.15	255.1	211.3	201.95	205.9
Intensity	begin	6.6	6.6	59.1	46.2	31.3	6.1	20.6	46.3	20	42.4
	end	6.6	59.1	46.2	31.3	5	20.6	46.3	20	42.4	23.7
	ave.	6.6	32.85	52.65	38.75	18.15	13.35	33.45	33.15	31.2	33.05

		t	r	i:	a	m	t	r	i: #	a	m
Dur.		42	18	89	21	35	67	27	251	111	74
Hz.	begin	270.8	211.9	219.1	223.9	220.5	210.8	214.2	230.2	201	219.8
	end	211.9	219.1	223.8	220.5	220.9	214.2	230.2	201	219.8	205.6
	ave.	241.35	215.5	221.45	222.2	220.7	212.5	222.2	215.6	210.4	212.7
Intensity	begin	1.9	4.4	15.3	11.2	8.8	2.1	2.8	15.9	3.4	4.7
	end	4.4	15.3	11.2	8.8	34	2.8	15.9	3.4	4.7	4.5
	ave.	3.15	9.85	13.25	10	21.4	2.45	9.35	9.65	4.05	4.6

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Dur.		84	57	60	23	69	103	214	37
Hz.	begin	123.6	105.9	100	100.1	141.8	103.7	109.8	100
	end	105.9	100	100.1	100.7	103.7	109.8	100	100
	ave.	114.75	102.95	100.05	100.4	122.75	106.75	104.9	100
Intensity	begin	6	31.7	33.5	32.3	8.7	30.1	21.5	27.5
	end	31.7	33.5	32.3	22.8	30.1	21.5	27.5	25.7
	ave.	18.85	32.6	32.9	27.55	19.4	25.8	24.5	26.6

		kh	ว :	a	ng	kh	ว :	#a	ງ
Dur.		61	37	48	28	61	33	58	67
Hz.	begin	150.9	218.4	199.7	190.9	192	233	218.6	187.5
	end	218.4	199.7	190.9	192.5	233	218.6	187.5	175
	ave.	184.65	209.05	195.3	191.7	212.5	225.8	203.05	181.25
Intensity	begin	7.4	59.1	46	19.4	11.7	57.8	41	16.5
	end	59.1	46	19.4	15.9	57.8	41	16.5	19.4
	ave.	33.25	52.55	32.7	17.65	34.75	49.4	28.75	17.95

		kh	ว :	a	ng	kh	ว :	#a	ງ
Dur.		65	40	52	32	65	37	60	71
Hz.	begin	152	219.5	200.8	191.7	187.6	226.6	212.2	194.7
	end	219.5	200.8	191.7	193.5	226.6	212.2	194.7	182.3
	ave.	185.75	210.15	196.25	192.6	207.1	219.4	203.45	188.5
Intensity	begin	7.9	59.8	46.8	22	12.3	61.4	45.4	20.9
	end	59.8	46.8	20.2	16.5	61.4	45.4	20.9	13.8
	ave.	33.85	53.3	33.5	19.25	36.85	53.4	33.15	17.35

		kh	ว :	a	ng	kh	ว :	#a	ງ
Dur.		71	85	73	75	48	38	93	34
Hz.	begin	201.5	252.6	216.6	230.3	206.8	248.9	248.3	215.6
	end	252.6	216.6	230.3	215.2	248.9	248.3	215.6	213.7
	ave.	227.05	234.6	223.45	222.75	227.85	248.6	231.95	214.65
Intensity	begin	5.4	73.4	46.4	37.3	7.5	49.2	48.5	36.3
	end	73.4	46.4	37.3	32.6	49.2	48.5	36.3	20.3
	ave.	39.4	59.9	41.85	34.95	28.35	48.85	42.4	28.3

		kh	ว :	a	ng	kh	ว :	#a	ງ
Dur.		83	22	49	68	89	114	112	81
Hz.	begin	260.5	260	251.6	226.7	229.4	232.4	201	201
	end	260	251.6	226.7	206	232.4	201	201	274.6
	ave.	260.25	255.8	239.15	216.35	230.9	216.7	201	237.8
Intensity	begin	6.5	64.3	67.1	50.9	5.8	63.7	7.3	41.7
	end	64.3	67.1	50.9	37.1	63.7	7.3	41.7	14
	ave.	35.4	65.7	59	44	34.75	35.5	24.5	27.85

		kh	ว :	a	ng	kh	ว :	#a	ງ
Dur.		71	83	42	52	35	41	122	30
Hz.	begin	209.6	276	239.9	240.6	221.5	253.4	236.9	237.7
	end	276	239.9	240.6	243.3	253.4	236.9	227.7	226.3
	ave.	242.8	257.95	240.25	241.95	237.45	245.15	232.3	232
Intensity	begin	2.2	16.9	10.9	9.6	1.9	10.3	9	8.8
	end	16.9	10.9	9.6	5.5	10.3	9	8.8	8.5
	ave.	9.55	13.9	10.25	7.55	6.1	9.65	8.9	8.65

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Dur.		57	55	64	39	62	158	77	34
Hz.	begin	129.7	100.5	100	100	103.8	101.7	118.7	100.1
	end	100.5	100	100	124.2	101.7	118.7	100.1	100
	ave.	115.1	100.25	100	112.1	102.75	110.2	109.4	100.05
Intensity	begin	11.7	32.1	25.4	28.1	12	33.8	19.4	25.6
	end	32.1	25.4	28.1	12.2	33.8	19.4	25.6	15.9
	ave.	21.9	28.75	26.75	20.15	22.9	26.6	22.5	20.75

		r	u:	a	n	r	u: #	a	n
Dur.		35	96	76	56	33	50	76	68
Hz.	begin	186.6	178.8	184.9	174.8	184.9	182.5	184.6	173.9
	end	178.7	184.9	174.8	161.2	182.5	184.6	173.9	171.1
	ave.	182.65	181.85	179.85	168	183.7	183.55	179.25	172.5
Intensity	begin	17.7	16.1	53.5	18.2	27.5	44.9	49.5	27.8
	end	16.1	53.5	18.2	10.3	44.9	49.5	27.8	13.9
	ave.	16.9	34.8	35.85	14.25	36.2	47.2	38.65	20.85

		r	u:	a	n	r	u: #	a	n
Dur.		77	56	41	84	68	187	57	48
Hz.	begin	165.6	168	165.9	161.3	122.6	147.9	146	148.4
	end	168	165.9	161.3	156	147.9	146	148.4	144.2
	ave.	166.8	166.95	163.6	158.65	135.25	146.95	147.2	146.3
Intensity	begin	46	58	57.1	46.6	8.4	65	58.2	42.4
	end	58	57.1	46.6	31.5	65	58.2	42.4	17.8
	ave.	52	57.55	51.85	39.05	36.7	61.6	50.3	30.1

		r	u:	a	n	r	u: #	a	n
Dur.		72	59	43	41	76	41	46	18
Hz.	begin	210.4	216.6	211.1	209.1	231.4	257.2	247.9	230.2
	end	216.6	211.1	209.1	209.3	257.2	247.9	230.2	224.1
	ave.	213.5	213.85	210.1	209.2	244.3	252.55	239.05	227.15
Intensity	begin	71.2	63.2	59.3	37.8	56.6	72.8	68.6	48.2
	end	63.2	59.3	37.8	17.4	72.8	68.6	48.2	38.6
	ave.	67.2	61.25	48.55	27.6	64.7	70.7	58.4	43.4

		r	u:	a	n	r	u: #	a	n
Dur.		47	57	43	81	37	122	109	90
Hz.	begin	215.7	236	229.6	215.7	221.5	259	269.5	214.2
	end	236	229.6	315.7	212.1	259	269.5	214.2	208.2
	ave.	225.85	232.8	272.65	213.9	240.25	264.25	241.85	211.2
Intensity	begin	15.6	59.9	47.4	37.6	15	42.8	17	25.6
	end	59.9	47.4	37.6	25.2	42.8	17	25.6	15.1
	ave.	37.75	53.65	42.5	31.4	28.9	29.9	21.3	20.35

		r	u:	a	n	r	u: #	a	n
Dur.		62	79	60	80	21	123	100	79
Hz.	begin	224.5	227	225.7	220	234.1	12.2	226.6	216.2
	end	227	225.7	220	213	12.2	226.6	216.2	207.2
	ave.	226.25	226.35	222.85	216.5	123.15	119.4	221.4	211.7
Intensity	begin	56.7	63.3	65.9	42.3	4.3	235.5	11.2	8.1
	end	63.3	65.9	42.3	30.1	235.5	11.2	8.1	2.4
	ave.	60	64.6	54.1	36.2	119.9	123.35	9.65	5.25

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### ประวัติผู้เขียน

นางสาว อุมพร ศรีรักษา เกิดวันที่ 7 กันยายน พ.ศ. 2512 ที่จังหวัด ชลบุรี สำเร็จการศึกษาปริญญาตรีศิลปศาสตรบัณฑิต สาขาวิชาภาษาอังกฤษ คณะมนุษยศาสตร์และสังคมศาสตร์ มหาวิทยาลัยสงขลานครินทร์ ในปีการศึกษา 2534 และในปีเดียวกันได้เข้าศึกษาต่อในหลักสูตรอักษรศาสตรมหาบัณฑิต สาขาวิชาภาษาศาสตร์ ที่จุฬาลงกรณ์มหาวิทยาลัย และใน พ.ศ. 2538 ได้สมัครเข้าศึกษาต่อที่ New York Institute of Technology ประเทศสหรัฐอเมริกา.