

WESTERN EXTENDED TECHNIQUES IN TRADITIONAL JAPANESE WIND  
PERFORMANCE:  
*GAGAKU KANGEN AND SHAKUHACHI HONKYOKU*

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## Abstract

The term “extended techniques” in the context of Western art music refers to performance techniques that fall outside the normal course of study for an instrument. The purpose of this study is, 1) to show that woodwind techniques considered “extended” and relatively “new” in Western classical music appear in traditional repertoires in Japan, and 2) to show that these techniques do not function as merely ornamental or virtuosic devices, but are instead structurally significant. I approach these two objectives through case studies of the instrumental *kangen* repertoire of the *gagaku* court ensemble (with a focus on the *hichiriki* and *ryūteki* wind parts) and the classical Zen Buddhist *honkyoku* repertoire of the *shakuhachi* flute.

Whereas previous studies have disregarded the role of performance techniques in their analyses of form and mode, I have investigated how performance techniques confirm, emphasize, and even outline the formal and modal structure of the case-study pieces: *Etenraku* (*gagaku*) and *Sokaku Reibo* (*shakuhachi*). In this study, I analyze two recordings of the virtuosic *shakuhachi* piece *Sokaku Reibo* by recognized masters: Aoki Reibo II and Yamaguchi Gorō, and three recordings of the well-known *gagaku* piece *Etenraku* by Japanese court ensembles, in addition to recordings of the individual wind parts and sung mnemonics. In order to create a comprehensive picture of the role of the relevant performance techniques, I combine the methods of transnotation of tablature scores and mnemonics into staff notation (and lists of pitch cells in the case of *Sokaku Reibo*), transcription of recordings, and spectral analysis of recorded excerpts.

This study demonstrates that all elements of a performance should be considered in analysis. An analysis that considers only the basic melodic line of a piece risks discarding elements that could inform and confirm the results. In the case of *Etenraku* and *Sokaku Reibo*, my investigation of performance techniques has led to a discovery of their structural significance.

To  
Matthew

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## Table of Contents

Abstract	ii
Dedication	iv
Acknowledgements	v
List of figures	xi
List of examples	xiv
Notes on language and names	xxii
Labeling of notes	xxii
Notes on the pdf version	xxii

### Section I – Introduction

<b>1. Introduction</b>	<b>1</b>
1.1 Introduction and purpose of study	1
1.2 Literature review	4
1.3 Methodology and questions of tradition	7
1.4 Chapter summary	11
<b>2. What are extended techniques?</b>	<b>13</b>
2.1 Definition	13
2.2 Classification	14
2.2.1 Pitch	14
2.2.1.1 Pitch bends	14
2.2.1.2 Pitch slides	15
2.2.1.3 Microtones	15
2.2.1.4 Beating or roughness (spectral dissonance)	16
2.2.1.5 Vibrato (through head position)	16
2.2.1.6 Extended range	17
2.2.2 Timbre	17
2.2.2.1 Embouchure and air pressure changes	18
2.2.2.2 Timbral breath sounds	18
2.2.2.3 Multiphonic timbral effects	19
2.2.3 Articulation	20
2.2.3.1 Flutter tonguing (also a timbral effect)	20
2.2.3.2 Finger percussion	20
2.2.3.3 Finger articulation	21
2.2.4 Breathing	21
2.2.4.1 Pulsating breath	21
2.2.4.2 Circular breathing	22
2.3 Comments on aesthetic factors	22

### Section II – The *Gagaku* winds: *Hichiriki* and *ryūteki*, Japanese large double reed and transverse flute

<b>3. The <i>Gagaku</i> ensemble</b>	<b>24</b>
3.1 Brief history of <i>gagaku</i>	24
3.2 Preservation	29
3.3 <i>Gagaku</i> today	33
3.4 The <i>Gagaku</i> winds	35

3.4.1 <i>Hichiriki</i>	36
3.4.2 <i>Ryūteki</i>	36
3.4.3 The Wind section	37
<b>4. <i>Etenraku</i></b>	<b>39</b>
4.1 <i>Shōga</i> mnemonics and tablature notation	40
4.2 Mode	45
4.3 Form and metre: Quadratic structure	53
4.4 Tempo	55
4.4.1 Free-rhythm opening	58
4.4.2 Deceleration in closing	58
4.4.3 Acceleration between <i>fue-ondo</i> and <i>tomede</i>	59
4.4.4 “Breath rhythm”	60
4.5 Transcribing <i>Etenraku</i>	61
<b>5. Wind techniques in <i>Etenraku</i>—Sung <i>shōga</i></b>	<b>68</b>
5.1 Extended techniques and <i>shōga</i>	68
5.1.1 Metric accentuation	73
5.1.2 Pitch bends and slides	74
5.1.3 Microtonal inflection and dissonance	77
5.1.4 Preliminary conclusions based on <i>shōga</i> recordings	79
<b>6. Wind techniques in <i>Etenraku</i>—Pitch bends and slides in ensemble recordings</b>	<b>80</b>
6.1 Initial pitch bends at beginning of four-measure phrases	80
6.2 Initial bends on reiterated tones within four-measure phrases	87
6.3 Pitch bends between tones	90
6.4 Downward pitch slides between tones	93
6.5 Upward pitch slides between tones	96
6.6 Pitch bends at the end of measures and at the <i>tsuke-dokoro</i>	100
<b>7. Wind techniques in <i>Etenraku</i>— Further techniques in ensemble recordings and conclusion</b>	<b>102</b>
7.1 Microtonal pitch alteration	102
7.1.1 <i>Embai</i> : Microtonal inflection to prepare upward leaps	102
7.1.2 The F/F# pitch area	105
7.1.3 Spectral dissonance: Roughness	108
7.1.4 Intonation	112
7.2 Breath pulse ( <i>osu</i> )	112
7.3 Pitched finger percussion ( <i>tataku</i> )	116
7.4 Conclusions	118
7.4.1 Metric accentuation	119
7.4.2 Modal implications	121
7.4.3 Metre and mode in the <i>tsuke-dokoro</i>	123

### Section III – The *Shakuhachi* flute

<b>8. The <i>Shakuhachi</i> and its <i>honkyoku</i> repertoire</b>	<b>125</b>
8.1 Brief history of the <i>shakuhachi</i>	125
8.2 Temples, schools, and styles	134
8.2.1 Kinko-ryū	134

8.2.2 Tozan-ryū	138
8.2.3 Myōan/Meian style	139
8.2.4 Other schools	140
8.3 <i>Shakuhachi</i> outside Japan	141
8.4 Modern <i>shakuhachi</i>	143
<b>9. Transmission and notation of <i>honkyoku</i></b>	<b>147</b>
9.1 Transmission	147
9.2 <i>Honkyoku</i> notation	151
9.2.1 Early <i>shakuhachi</i> notation	152
9.2.2 Kinko-ryū notation	152
9.3 <i>Sokaku Reibo</i> in transcription	158
<b>10. <i>Sokaku Reibo</i>, part 1</b>	<b>162</b>
10.1 <i>Sokaku Reibo</i> : Genealogy and programme	162
10.2 <i>Sokaku Reibo</i> tablature	164
10.3 Twelve-dan form	172
10.4 Mode	175
<b>11. <i>Sokaku Reibo</i>, part 2</b>	<b>178</b>
11.1 Pitch and rhythm cells	178
11.2 Pitch cells and principal intervals in <i>Sokaku Reibo</i>	179
11.2.1 <i>Dan</i> 1 and 2: Expansion and contraction of pitch cells	180
11.2.2 <i>Dan</i> 1 and 2: Principal intervals and trichords	182
11.2.3 Exceptional tones: D $\flat$ and G $+$	186
11.2.4 <i>Dan</i> 3 to 11: Recurring pitch cells and trichords	188
11.2.5 <i>Dan</i> 12: Return of <i>dan</i> 1 cells	198
11.3 Rhythm and metre	200
11.3.1 Terminal three-note rhythm cell	201
11.3.2 Two-note rhythm cell	204
11.3.3 Breath rhythm	205
11.4 Summary	207
<b>12. Wind techniques in <i>Sokaku Reibo</i>—Timbral techniques, part 1</b>	<b>210</b>
12.1 Timbral alteration via breath angle and fingering	210
12.1.1 Closed and open fingerings for D2	211
12.1.2 <i>Meri</i> and non- <i>meri</i> fingerings for D3	216
12.1.3 B $\flat$ 2 fingerings for <i>tamane</i> and M3 intervals	219
12.1.4 Basic and non-basic fingerings for G and A $\flat$	225
12.1.5 Timbral fingerings in <i>Sokaku Reibo</i>	229
<b>13. Wind techniques in <i>Sokaku Reibo</i>—Timbral techniques, part 2</b>	<b>230</b>
13.1 <i>Tamane</i> flutter tonguing	230
13.1.1 <i>Tamane</i> on D (M3) at the beginning of a cell	231
13.1.2 <i>Tamane</i> on B $\flat$ (m2) at the beginning of a cell	233
13.1.3 <i>Tamane</i> on E $\flat$ 3 (m2) near the beginning of a cell	236
13.1.4 <i>Tamane</i> in <i>Sokaku Reibo</i>	237
13.2 <i>Koro-koro</i> multiphonic tremolo	237
13.2.1 Full <i>koro-koro</i> on D $\flat$	239
13.2.2 Partial <i>koro-koro</i> on D and B $\flat$	241
13.2.3 <i>Koro-koro</i> in <i>Sokaku Reibo</i>	243
13.3 Timbral alteration through “breathiness”	243



13.3.1	Change of timbre mid-tone on D2	244
13.3.2	Added breathiness to introduce a cell or change of note	248
13.3.3	Breathiness alongside other techniques	249
13.4	Summary of timbral techniques in <i>Sokaku Reibo</i>	254
<b>14.</b>	<b>Wind techniques in <i>Sokaku Reibo</i>—Pitch bends and slides, part 1</b>	<b>256</b>
14.1	Pitch slides and bends on reiterated tones	259
14.1.1	<i>Nayashi</i> rising pitch slides on reiterated tones	259
14.1.2	Downward pitch bends on reiterated tones	265
14.2	Initial upward pitch bends and slides	267
14.3	Pitch bends at ends of breath phrases	269
14.3.1	Downward bends at ends of breath phrases	269
14.3.1.1	Downward bends on phrase-ending D2	272
14.3.1.2	Downward bends on phrase-ending M3 and m2	273
14.3.1.3	Downward bends after <i>nayashi</i> on G2 and A2	279
14.3.1.4	Downward bends after 3RC and 2RC	280
14.3.1.5	<i>Tome</i> downward bend	283
14.3.2	Upward bends at ends of breath phrases	284
14.3.3	Phrase-ending bends in <i>Sokaku Reibo</i>	286
<b>15.</b>	<b>Wind techniques in <i>Sokaku Reibo</i>—Pitch bends and slides, part 2</b>	<b>288</b>
15.1	Pitch bends and slides within cells	288
15.1.1	Rising pitch bends followed by a downward step or leap	291
15.1.2	Falling-then-rising bends within ascending melodic motion	299
15.1.3	Slides and melodic movement in like motion	303
15.1.4	Bends and slides as connectors	305
15.2	Two summary examples of pitch bends and slides in <i>Sokaku Reibo</i>	306
<b>16.</b>	<b>Wind techniques in <i>Sokaku Reibo</i>—Further techniques and conclusion</b>	<b>310</b>
16.1	Structural microtonality in <i>Sokaku Reibo</i>	310
16.2	<i>Yuri</i> vibrato in <i>Sokaku Reibo</i>	315
16.3	Finger articulation in <i>Sokaku Reibo</i>	322
16.4	Performance techniques in <i>Sokaku Reibo</i> : Conclusion	328
<b>Section IV – Conclusions</b>		
<b>17.</b>	<b>Conclusion</b>	<b>336</b>
17.1	Introduction	336
17.2	Findings: Structural significance of performance techniques	338
17.3	Implications of the present study	341
17.4	Future research	342
17.5	Limitations of the present study	343
17.6	Conclusion	344
<b>Section V – Appendices</b>		
A	<i>Etenraku</i> recordings	346
B	Transcriptions of <i>Etenraku</i> recordings	348
C	<i>Sokaku Reibo</i> recordings	361

D	<i>Sokaku Reibo</i> : Transnotation of scores by Kurahashi Yodo I and Aoki Reibo II	362
E	Transcriptions of <i>Sokaku Reibo</i> recordings by Aoki Reibo II and Yamaguchi Gorō	374
F	<i>Sokaku Reibo</i> : Identification of cells and their variants	389
G	<i>Sokaku Reibo</i> : Summary of cells by <i>dan</i>	406
H	<i>Sokaku Reibo</i> : Pitch cell analysis	408
I	<i>Sokaku Reibo</i> : Prevalent pitch cell variants and rhythm cells	416

## **Section VI - Bibliography**

<b>Bibliography</b>	<b>418</b>
<b>Discography and Filmography</b>	<b>435</b>

## List of Figures


3.1	Meiji-style <i>ryūteki</i> score of tablature and mnemonics for <i>Etenraku</i> in <i>Hyō-jō</i> mode	31
4.1a.	<i>Etenraku</i> in <i>hyō-jō</i> from the <i>Meiji Sentei-fu</i> (Meiji 21, 1888), <i>ryūteki</i> part (Courtesy of Steven Nelson and Allan Marett)	40
4.1b.	<i>Etenraku</i> in <i>hyō-jō</i> from the <i>Meiji Sentei-fu</i> (Meiji 21, 1888), <i>hichiriki</i> part (Courtesy of Steven Nelson and Allan Marett)	41
4.2	<i>Shōga</i> syllables used in <i>Etenraku hichiriki</i> and <i>ryūteki</i> parts	42
4.3a.	Tablature for <i>ryūteki</i>	43
4.3b.	Tablature for <i>hichiriki</i>	43
4.4	Transnotation of <i>Etenraku</i> in <i>hyō-jō</i> based on <i>ryūteki</i> and <i>hichiriki</i> parts in <i>Meiji Sentei-fu</i> (Meiji 21, 1888)	44
4.5	Scale of the <i>hyō-jō</i> mode	46
4.6a.	The Japanese <i>in</i> scale	48
4.6b.	The <i>miyakobushi</i> scale	48
4.7a.	Annotated engraving of <i>ryūteki</i> part, <i>Etenraku</i> in <i>hyō-jō</i>	51
4.7b.	Annotated engraving of <i>hichiriki</i> part, <i>Etenraku</i> in <i>hyō-jō</i>	52
4.8a.	Scale of the <i>ōshiki-chō</i> mode	53
4.8b.	Scale of the <i>sui-chō</i> mode	53
4.9	<i>Etenraku</i> in <i>Hyō-jō</i> mode: Section lengths (in seconds) in three recordings	56
4.10	<i>Etenraku</i> in <i>Hyō-jō</i> mode: Measure lengths in three recordings	57
4.11	Measure lengths	60
4.12	Symbols used in transcription of <i>Etenraku</i> recordings	64
5.1	Transnotation of <i>ryūteki</i> and <i>hichiriki</i> parts in the <i>Meiji Sentei-fu</i> (Meiji 21, 1888); transcription of <i>ryūteki</i> and <i>hichiriki shōga</i> as sung on Sasamoto, <i>Hajimete no Gagaku</i> CD (2003)	70
5.2	Symbols used in transnotation of <i>Etenraku</i> parts and transcription of <i>shōga</i> recordings	72
8.1	Lineage of the <i>Kinko-ryū</i>	137
8.2a.	Modern 1.8 <i>shakuhachi</i> with Tozan-style inlay in <i>utaguchi</i> mouthpiece	144
8.2b.	Detail of 1.8 <i>shakuhachi</i> , Kinko-style <i>utaguchi</i> mouthpiece and inlay	144
8.2c.	Detail of 1.8 <i>shakuhachi</i> , showing 4 of 7 nodes at root end and lowest 2 holes	144
9.1	Excerpt from the last <i>dan</i> of Kawase's notation of <i>Tsuru no Sugomori</i>	154
9.2a.	<i>Sokaku Reibo</i> , opening. Notation by Aoki Reibo II, Reibo-kai guild of <i>Kinko-ryū</i>	156
9.2b.	<i>Sokaku Reibo</i> , opening. From <i>Jin Nyodō Honkyoku: Notation by Kurahashi Yodo</i>	156
9.2c.	<i>Sokaku Reibo</i> , opening. Notation by Sato Seibi, student of Miura Kindo. From <i>Honkyoku Zenshu Book 6</i>	156
9.2d.	<i>Koden Sugomori</i> , opening. Notation by Taniguchi Yoshinobu. From <i>Koden &amp; Koten Honkyoku: Chikuzen Shakuhachi Series Sheet Music</i>	156
9.2e.	<i>Tsuru no Sugomori</i> , opening. Notation by Yokoyama Katsuya, student of <i>Kinko-ryū</i> and Watazumi's <i>dokyoku</i> . From <i>Shakuhachi Koten Honkyoku, No. 16: Tsuru no Sugomori</i>	156
9.3	Symbols used in transcription of <i>Sokaku Reibo</i> recordings	160
10.1	<i>Katakana</i> syllables used in <i>shakuhachi</i> tablature and <i>gagaku shōga</i> mnemonics	164

10.2	First <i>dan</i> of <i>Sokaku Reibo</i> , notation by Aoki Reibo II, Reibo-kai guild of Kinko-ryū, and Kurahashi Yodo I, from <i>Jin Nyodō Honkyoku: Notation by Kurahashi Yodo</i>	167
10.3	Approximate tones in tablature used for <i>Sokaku Reibo</i> , played on 1.8-foot <i>shakuhachi</i>	168
10.4	Transnotation of <i>dan 1</i> of <i>Sokaku Reibo</i> scores by Kurahashi Yodo I and Aoki Reibo II	170
10.5	Symbols used in transnotation of <i>Sokaku Reibo</i>	171
10.6	<i>Dan</i> included in selected scores and recordings	174
10.7	First and last tones of each <i>dan</i>	174
10.8a.	<i>In</i> scale on D	175
10.8b.	<i>Miyakobushi</i> scale on D, disjunct and conjunct forms	175
10.9	Four trichords identified by Koizumi Fumio	176
10.10	<i>Miyakobushi</i> trichord on D, G, and A	177
10.11	Frequent M3 and m2 transpositions found in <i>Sokaku Reibo</i>	177
11.1	Contraction and expansion of <i>dan 1</i> pitch cells in <i>Sokaku Reibo</i>	181
11.2	Contraction of <i>dan 2</i> pitch cells, <i>Sokaku Reibo</i>	181
11.3	Pitch cells in first <i>dan</i>	182
11.4	Pitch cell analysis, <i>dan 2</i>	184
11.5	<i>Miyakobushi</i> scale on D, disjunct and conjunct forms	186
11.6	Pitch cell analysis, <i>dan 3</i>	189
11.7	Pitch cell analysis, <i>dan 4</i>	190
11.8	Pitch cell analysis, <i>dan 5</i>	191
11.9	Pitch cell analysis, <i>dan 6</i>	192
11.10	Pitch cell analysis, <i>dan 7</i>	192
11.11	Pitch cell analysis, <i>dan 8</i>	193
11.12	Pitch cell analysis, <i>dan 9</i>	195
11.13a.	<i>Koro-koro</i> technique, followed by <i>ro</i> in tablature (Kurahashi score)	196
11.13b.	<i>Koro-koro</i> trill fingering indication to the right of tablature (Kurahashi score)	196
11.13c.	<i>Koro-koro</i> technique, followed by <i>tsu-meri, re, ro</i> in tablature (Sato score)	196
11.13d.	<i>Koro-koro</i> trill fingering indication to the right of tablature (Sato score)	196
11.13e.	<i>Koro-koro</i> technique, followed by <i>ro</i> in tablature (Aoki score)	196
11.13f.	<i>Koro-koro</i> trill fingering indication to the right of tablature (Aoki score)	196
11.14	Pitch cell analysis, <i>dan 10</i>	197
11.15	Pitch cell analysis, <i>dan 11</i>	198
11.16	Pitch cell analysis, <i>dan 12</i>	199
11.17	Pitch cell analysis, <i>dan 2</i> and <i>3</i>	203
11.18	Main pitch cells in <i>Sokaku Reibo</i>	207
11.19	Pitch cells or their variants found in each of the five <i>dan</i> common to all consulted sources	208
12.1	Closed and partially-open fingerings for D2 used in Aoki and Kurahashi <i>Sokaku Reibo</i> scores	212
12.2	D3 fingerings used in Aoki and Kurahashi scores	217
12.3	B♭2 fingerings used in Aoki and Kurahashi scores	220
12.4	A♭2 and G2 fingerings used in Aoki and Kurahashi scores	226
13.1	Occurrences of <i>tamane</i> in <i>Sokaku Reibo</i> in versions by Aoki, Yamaguchi, and Kurahashi	230
13.2	Occurrences of full and partial <i>koro-koro</i> in <i>Sokaku Reibo</i> in versions by Aoki, Yamaguchi, and Kurahashi	238

14.1	Types of pitch bends and slides notated in <i>Sokaku Reibo</i> scores by Aoki and Kurahashi	257
14.2	All occurrences of <i>nayashi</i> pitch slides in <i>Sokaku Reibo</i> sources by Kurahashi, Aoki, and Yamaguchi	260
14.3	A <i>nayashi</i> slide on G in the middle of <i>dan 2</i> closes one sub-section and introduces the trichord of the next	263
14.4	Direction of phrase-ending bends at end of <i>dan</i> in each source	287
15.1	Rising pitch bends followed by a descending step or leap, arranged by interval	292
15.2	Descending intervals embellished with rising bends after the first note, listed by cell	294
16.1	<i>Yuri</i> types	316
16.2	Basic <i>atari</i> types	323
16.3	Summary of performance techniques in <i>Sokaku Reibo</i>	329
16.4	Summary of performance techniques that embellish principal intervals	333

## List of Examples

4.1	<i>Keitoku</i> in <i>hyō-jō</i> , mm.9-12, <i>hichiriki</i> part (Garfias 213)	66
5.1	Bend to F, C section, m.3, sung <i>hichiriki shōga</i>	75
5.2	<i>Embai</i> at end of F, B section, m.5, sung <i>hichiriki shōga</i>	76
5.3	Raised B and A, B section, m.6, sung <i>ryūteki shōga</i>	78
6.1	<i>Etenraku</i> , mm.1-4, as transcribed by Sukehiro Shiba in <i>Score of Gagaku: Japanese Classical Court Music</i> , 9	81
6.2a.	Approach to first tone, D (A=440Hz, ICE recording), Melodyne analysis	81
6.2b.	Approach to first tone, D (A=440Hz, IHA recording)	81
6.2c.	Approach to first tone, D (A=430Hz, Sasamoto CD, track 5)	82
6.3	Bend to first tone does not reach D (A=430Hz, Kyoto recording)	82
6.4	Kyoto transcription, m.1, <i>ryūteki</i>	83
6.5	ICE and IHA transcriptions, m.1, <i>ryūteki</i>	83
6.6	Approach to D in m.9, <i>hichiriki</i> (Kyoto recording)	84
6.7	<i>Ryūteki</i> , m.1, first tone (Garfias recording), SPEAR analysis	85
6.8a.	<i>Hichiriki</i> bend to B, m.17, 1 <sup>st</sup> beat of B1 (Kyoto recording)	86
6.8b.	<i>Hichiriki</i> bend to a low B, m.17, 1 <sup>st</sup> beat of B1 (IHA recording)	86
6.8c.	<i>Hichiriki</i> bend to B, m.85, C3 m.5 (ICE recording)	86
6.9a.	<i>Hichiriki</i> , m.63 beat 3 through m.64 (A4), bend to reiteration of E after rest (ICE recording)	88
6.9b.	<i>Hichiriki</i> , m.8 (A1), bend to reiteration of E on beat 2 after rest (IHA recording)	89
6.9c.	<i>Hichiriki</i> , m.12 (A2), bend to reiteration of E on beat 2 after rest (IHA recording)	89
6.9d.	<i>Hichiriki</i> , m.74 (B4), bend to reiteration of B on beat 2 after rest, followed by A-F# (Kyoto recording)	89
6.9e.	<i>Hichiriki</i> , m.36 (C1), bend to reiteration of A on beat 2 after rest (Kyoto recording)	89
6.9f.	<i>Hichiriki</i> , m.2 (A section, da capo), bend to reiteration of B on beat 2 after rest (Sasamoto CD, track 5)	90
6.10a.	<i>Ryūteki</i> , m.38, beat 2 (Kyoto recording)	91
6.10b.	<i>Ryūteki</i> , m.46, beat 2 (Kyoto recording)	91
6.10c.	Transcription of bend	91
6.11a.	<i>Ryūteki</i> , m.38, beat 2 (ICE recording)	92
6.11b.	<i>Ryūteki</i> , m.46, beat 2 (ICE recording)	92
6.12	Terauchi transcription, mm.1-2, <i>ryūteki</i> (32)	93
6.13	Shiba transcription, mm.1-2, <i>ryūteki</i> (9)	93
6.14a.	Kapuściński and Rose, general <i>orute</i> example	93
6.14b.	Kapuściński and Rose transcription, <i>Etenraku</i> , m.18	93
6.15a.	<i>Ryūteki</i> , m.2, beats 2-4 (B-A-B) (Kyoto recording)	94
6.15b.	<i>Ryūteki</i> , m.2, beats 2-4 (B-A-B) (ICE recording)	95
6.15c.	<i>Ryūteki</i> , m.2, beats 2-4 (B-A-B) (IHA Recording)	95
6.16a.	Kyoto transcription, m.2, <i>ryūteki</i>	95
6.16b.	ICE transcription, m.2, <i>ryūteki</i>	95
6.16c.	IHA transcription, m.2, <i>ryūteki</i>	95
6.17	<i>Ryūteki</i> and <i>hichiriki</i> m.10, beats 2-4 (B-A-B) (Garfias recording)	96
6.18	<i>Ryūteki</i> , m. 6 (Shiba 9)	97
6.19	<i>Ryūteki</i> , m. 6 (Kyoto recording)	97
6.20a.	<i>Ryūteki</i> , m. 6 (IHA recording)	98

6.20b.	<i>Ryūteki</i> , m. 6 (Sasamoto CD, track 5)	98
6.21a.	Kyoto transcription, m.6, <i>ryūteki</i>	99
6.21b.	ICE transcription, m.6, <i>ryūteki</i>	99
6.21c.	IHA transcription, m.6, <i>ryūteki</i>	99
6.21d.	Sasamoto CD, track 5 transcription, m.6, <i>ryūteki</i>	99
6.22a.	Terauchi transcription, m.6, <i>ryūteki</i> (32)	99
6.22b.	Transcription of Sasamoto sung <i>shōga</i> , m.6, <i>ryūteki</i>	99
6.23	<i>Hichiriki</i> entrance on bend to a low E, m.7, (Kyoto recording)	100
6.24	<i>Hichiriki</i> bend at end of m.6 of A section, da capo, before E on downbeat (Sasamoto CD, track 5)	101
7.1	<i>Hichiriki</i> , m.14, F-F#- <i>embai</i> -A (Kyoto recording), Praat analysis	103
7.2a.	<i>Hichiriki</i> , m.21, F-F#- <i>embai</i> -A (Kyoto recording)	104
7.2b.	<i>Hichiriki</i> , m.35, F-F#- <i>embai</i> -A (Kyoto recording)	104
7.3	<i>Hichiriki</i> , m.94, A1- <i>embai</i> -A2 (ICE recording)	105
7.4	<i>Hichiriki</i> , m.14, F-F# pitch area (Kyoto recording)	106
7.5	Shiba transcription, mm.14-15, <i>hichiriki</i> (9)	106
7.6	Kyoto transcription, mm.14-15, <i>hichiriki</i>	106
7.7a.	<i>Hichiriki</i> , m.35, F-F# pitch area, followed by <i>embai</i> to E (Kyoto recording)	107
7.7b.	Kyoto transcription, m.35-36, <i>hichiriki</i>	107
7.7c.	<i>Hichiriki</i> , m.35, F-F# pitch area (ICE recording)	107
7.7d.	<i>Hichiriki</i> , m.91, F-F# pitch area (ICE recording)	107
7.8a.	Kyoto transcription, m.30	109
7.8b.	Frequency analysis, m.30, beat 2 (Kyoto recording), Transcribe! software	109
7.9a.	Kyoto transcription, mm.35-36	110
7.9b.	Spectral analysis, m.35 (Kyoto recording), SPEAR software	111
7.9c.	Spectral analysis, m.35, first note (Kyoto recording), Transcribe! software	112
7.10a.	<i>Ryūteki</i> , m.3 beat 3 (Kyoto recording), Praat analysis	114
7.10b.	<i>Hichiriki</i> , m.3 beat 3 (ICE recording)	114
7.11a.	Shiba transcription, mm.3-4, <i>tenuto</i> marking for <i>osu</i> breath pulse (9)	115
7.11b.	Kyoto transcription, mm.3-4,  for <i>osu</i> breath pulse	115
7.12	<i>Ryūteki</i> , m.5 beat 4 (Kyoto recording)	117
7.13	Notation for <i>ryūteki</i> finger tap (Miki, <i>Composing</i> , 20)	117
7.14	Finger articulation transcription example for <i>ryūteki</i> (Kapuściński and Rose)	118
11.1a.	Example of octave interval in <i>dan 7</i> , transnotation of Aoki score	183
11.1b.	Transnotation of cell #4 containing A4 (A-E <sup>b</sup> ) and M2 (G-A) intervals in <i>dan 2</i> , found in both Aoki and Kurahashi scores	184
11.2	Cell #7, beginning of <i>dan 3</i> , Aoki score transnotation	188
11.3a.	C-A <sup>b</sup> -G descending trichord in <i>dan 4</i> , followed by emphasis on G-E <sup>b</sup> interval, then G alone, transnotation of Aoki score	189
11.3b.	Cell #8.1, second breath phrase of <i>dan 5</i> , transnotation of Kurahashi score	190
11.4a.	Beginning of <i>dan 9</i> , transnotation of Aoki score	194
11.4b.	First cell of <i>dan 9</i> , played three times, Aoki recording	194
11.5	First and last breath phrases of <i>Sokaku Reibo</i> , transcription of Yamaguchi recording	199
11.6	3RC example from <i>dan 5</i> , transnotation of Aoki score	201
11.7a.	3RC on G2 as notated in Aoki score, <i>dan 2</i>	201
11.7b.	3RC on G2 as notated in Kurahashi score, <i>dan 2</i>	201
11.8a.	3RC rhythm cell in <i>dan 1</i> , Kurahashi transnotation; first appearance in piece	202
11.8b.	3RC rhythm cell in <i>dan 2</i> , Kurahashi & Aoki transnotations	202
11.8c.	Repetition of 3RC rhythm cell in <i>dan 2</i> , Kurahashi & Aoki transnotations	202

11.8d.	Repetition of 3RC rhythm cell in <i>dan 2</i> , Aoki transnotation	202
11.8e.	3RC rhythm cell at end of pitch cell #8.1 in <i>dan 10</i> , Kurahashi transnotation	202
11.8f.	Repetition of 3RC rhythm cell on G2 in <i>dan 2</i> ; transnotation of Kurahashi and Aoki scores	202
11.9	3RC cell preceding and following <i>nayashi</i> slide	204
11.10	2RC rhythm cell in <i>dan 6</i>	205
11.11	Rest between 1 <sup>st</sup> and 2 <sup>nd</sup> breath phrases of <i>Sokaku Reibo</i> , Yamaguchi recording	207
12.1a.	<i>Dan 1</i> , first breath phrase, cell #1, Aoki score ( <i>tsu meri-re-ro</i> )	213
12.1b.	<i>Dan 1</i> , first notation for <i>ha</i> following <i>koro-koro</i> , cell #2, Aoki score	213
12.1c.	<i>Dan 1</i> , D2 played as <i>ro</i> in cell #2am', Aoki score	213
12.1d.	<i>Dan 1</i> , second breath phrase, cell #1, Kurahashi score ( <i>tsu meri-re-ro</i> )	214
12.1e.	<i>Dan 1</i> , first notated <i>a</i> following <i>koro-koro</i> , cell #2, Kurahashi score	214
12.1f.	<i>Dan 1</i> , D2 played as <i>ro</i> in cell #2am', Kurahashi score	214
12.2a.	Cell #2, <i>dan 1</i> , last breath of 3 <sup>rd</sup> system, Aoki transnotation (D2= <i>ro</i> )	215
12.2b.	Cell #2, <i>dan 1</i> , last breath of 4 <sup>th</sup> system, Aoki transnotation (D2= <i>ha</i> )	215
12.2c.	Cell #2, <i>dan 1</i> , Aoki recording, corresponding to Example 12.2a	215
12.2d.	Cell #2, <i>dan 1</i> , Aoki recording, corresponding to Example 12.2b	216
12.3	First breath of <i>dan 6</i> , cell #11	216
12.4a.	First breath of <i>dan 6</i> , cell #11, transcription of Aoki score	218
12.4b.	First breath of <i>dan 6</i> , cell #11, spectral analysis of Aoki recording corresponding to Example 12.4a	218
12.5a.	Non-basic $\mathcal{A}$ <i>a</i> fingering for D3, directly preceded by E $\flat$ , <i>dan 5</i> , Kurahashi transnotation	219
12.5b.	Non-basic <i>ha/go no ha (meri)</i> fingering for D3, cell #11.1db (D-E $\flat$ beginning deleted), <i>dan 12</i> , Aoki transnotation	219
12.6a.	Cell #7, first breath phrase of <i>dan 3</i> , Aoki transnotation	221
12.6b.	<i>Tamane</i> in variant of cell #7 (7de), <i>dan 10</i> , Kurahashi transnotation	221
12.7a.	Cell #11, <i>dan 6</i> , Kurahashi (upper) and Aoki (lower) transnotation. <i>Hi meri</i> follows <i>a</i> (KY) and <i>go no ha</i> (AR)	222
12.7b.	Cell #15de, <i>dan 12</i> , Aoki transnotation. <i>Hi meri</i> follows <i>go no hi</i>	222
12.7c.	<i>Dan 6</i> , cell #3.2, Kurahashi transnotation. <i>Hi meri</i> follows <i>i</i>	222
12.7d.	<i>Dan 7</i> , cell #3.2, Aoki transnotation. <i>Hi meri</i> follows <i>go no hi</i>	222
12.8a.	2RC on <i>hi meri</i> , <i>dan 6</i> , Kurahashi and Aoki transnotation	222
12.8b.	2RC on <i>san no u</i> , <i>dan 6</i> , Kurahashi transnotation	222
12.9a.	First breath phrase of <i>dan 3</i> , Aoki transcription	223
12.9b.	Emergence of B $\flat$ ( <i>san no u</i> ) after first <i>tamane</i> of above transcription, Aoki recording	224
12.9c.	Emergence of B $\flat$ ( <i>san no u</i> ) after second <i>tamane</i> of above transcription, Aoki recording	224
12.9d.	Third breath phrase of <i>dan 6</i> , Aoki transcription	225
12.9e.	B $\flat$ 2 ( <i>hi meri</i> ) following D3 of above transcription, Aoki recording	225
12.10a.	<i>Chi meri</i> (A $\flat$ ) in eighth breath phrase of <i>dan 2</i> , Aoki transcription	227
12.10b.	<i>Ichi san no u</i> (A $\flat$ -/G+) follows <i>chi</i> (A) in tenth breath phrase of <i>dan 2</i> , Aoki transcription	227
12.10c.	<i>Re</i> (G) in fifth breath phrase of <i>dan 2</i> , Aoki transcription	227
12.10d.	<i>Chi meri</i> , Aoki recording, corresponding to Example 12.10a	228
12.10e.	<i>Chi-ichi san no u</i> , Aoki recording, corresponding to Example 12.10b	228
12.10f.	<i>Re</i> , Aoki recording, corresponding to Example 12.10c	229
13.1a.	Cell #3, <i>dan 1</i> , transcription of Aoki recording	231



13.1b. Cell #3, <i>dan</i> 1, Aoki recording, Melodyne analysis corresponding to Example 13.1a	232
13.2a. Cell #3, <i>dan</i> 1, Aoki recording, SPEAR analysis corresponding to Example 13.1a	233
13.2b. Close-up of Example 13.2a: Beginning of cell #3, <i>dan</i> 1, Aoki recording, SPEAR analysis	233
13.3a. Cell #7, <i>dan</i> 3, transcription of Aoki recording	234
13.3b. Cell #7.1, <i>dan</i> 3, transcription of Yamaguchi recording	234
13.4a. Cell #7, <i>dan</i> 3, Aoki recording, SPEAR analysis corresponding to Example 13.3a	235
13.4b. Cell #7.1, <i>dan</i> 3, Yamaguchi recording, SPEAR analysis corresponding to Example 13.3b	236
13.5a. Cell #11, <i>dan</i> 6, transcription of Aoki recording	237
13.5b. Cell #9ae, <i>dan</i> 12, transcription of Aoki recording	237
13.5c. Cell #9ae, <i>dan</i> 3, Aoki recording, SPEAR analysis corresponding to Example 13.5b	237
13.6a. Cell #2, <i>dan</i> 1, Aoki recording, SPEAR analysis	240
13.6b. Close-up of Example 13.6a: <i>Koro-koro</i> at beginning of cell #2, <i>dan</i> 1, Aoki recording, SPEAR analysis	241
13.6c. <i>Koro-koro</i> at beginning of cell #2am, <i>dan</i> 1, Yamaguchi recording, SPEAR analysis	241
13.7a. Trill on D3 with undertone, cell #9db, Aoki recording, SPEAR analysis	242
13.7b. Close-up of Example 13.7a: Trill on D3 with undertone, Aoki recording, SPEAR analysis	243
13.8a. D2 of cell #2am, <i>dan</i> 1, Aoki recording, SPEAR analysis	245
13.8b. D2 of cell #2am, <i>dan</i> 1, Yamaguchi recording, SPEAR analysis	246
13.8c. D2 of cell #2am, <i>dan</i> 1, Aoki recording, Praat analysis corresponding to Example 13.8a	246
13.8d. D2 of cell #2am, <i>dan</i> 1, Yamaguchi recording, Praat analysis corresponding to Example 13.8b	246
13.9a. First D2 of cell #9ae", <i>dan</i> 12, Yamaguchi recording, SPEAR analysis (m.80 in transcription)	247
13.9b. First D2 of cell #9ae", <i>dan</i> 12, Yamaguchi recording, Praat analysis corresponding to Example 13.9a	247
13.9c. D2 of cell #9, <i>dan</i> 5, Aoki recording, SPEAR analysis (m.46 in transcription)	248
13.9d. D2 of cell #9, <i>dan</i> 5, Aoki recording, Praat analysis corresponding to Example 13.9c	248
13.10a. Cell #10 (F-G), <i>dan</i> 5, transcription of Aoki recording (m.47)	249
13.10b. Cell #10, <i>dan</i> 5, Aoki recording, SPEAR analysis corresponding to Example 13.10a	249
13.11 Cell #2am, <i>dan</i> 12, Aoki recording, SPEAR analysis	250
13.12 <i>Koro-koro</i> trill on D3 with undertone resulting from added breathiness, cell #9db, Aoki recording, SPEAR analysis	251
13.13 <i>Ha</i> fingering for D2 following <i>koro-koro</i> , cell #2db, <i>dan</i> 12, Aoki recording, SPEAR analysis	252
13.14 <i>Nayashi</i> pitch slide to A2, 3RC cell, <i>dan</i> 7, Aoki recording, SPEAR analysis corresponding to m.76 in transcription	253
13.15a. Cell #2am", <i>dan</i> 12, transcription of Aoki recording (m.102)	253
13.15b. Cell #2am", <i>dan</i> 12, Aoki recording, SPEAR analysis corresponding to Example 13.15a	254

14.1a.	<i>Nayashi</i> pitch slide on G2, <i>dan 2</i> , Yamaguchi recording, Melodyne analysis	261
14.1b.	<i>Nayashi</i> pitch slide on G2, <i>dan 2</i> , Aoki recording, Melodyne analysis	261
14.2	<i>Nayashi</i> pitch slide on G from <i>dan 2</i> , transnotation of Kurahashi (top) and Aoki (bottom) scores	262
14.3	Closing phrases of <i>dan 4</i> : <i>Nayashi</i> on G2, followed by 3RC, Aoki transnotation	262
14.4a.	<i>Nayashi</i> slides in <i>dan 12</i> , Kurahashi (top) and Aoki (bottom) transnotation	263
14.4b.	Transcription of <i>nayashi</i> slide in Yamaguchi recording, corresponding to Kurahashi transnotation above, first phrase	264
14.4c.	Transcription of <i>nayashi</i> slide in Yamaguchi recording, corresponding to Kurahashi transnotation above, second phrase	264
14.5a.	<i>Nayashi</i> slide on A2, <i>dan 3</i> , Yamaguchi recording, Melodyne analysis	265
14.5b.	<i>Nayashi</i> slide on A2, <i>dan 3</i> , Aoki recording, Melodyne analysis	265
14.6a.	Downward bend on reiteration of A $\flat$ 2, Melodyne analysis of Aoki recording, corresponding to m.28 of <i>dan 2</i> in transcription	266
14.6b.	Downward bend on reiteration of D3, Melodyne analysis of Aoki recording, corresponding to m.56 of <i>dan 6</i> in transcription	266
14.6c.	Downward bend on reiteration of E $\flat$ 2, Melodyne analysis of Yamaguchi recording, corresponding to m.11 of <i>dan 1</i> in transcription	267
14.7	Upward slide from C3 to D3, followed by trill figure, Melodyne analysis of Yamaguchi recording, corresponding to m.67 of <i>dan 11</i> in transcription	268
14.8	Upward slides on first note of cell #3 (D2), played three times, Melodyne analysis of Aoki recording, corresponding to mm.18-20 of <i>dan 1</i> in transcription	268
14.9a.	<i>Ori-keshi</i> at end of first phrase, Aoki score	270
14.9b.	<i>Meri-komi</i> at end of first phrase, Kurahashi score	270
14.9c.	<i>Hiku</i> at phrase end in <i>dan 5</i> , Kurahashi score	270
14.9d.	<i>Meri-komi suri-age</i> at phrase end in <i>dan 9</i> , Aoki score	270
14.9e.	<i>Tome</i> at end of final phrase, Aoki score	270
14.10a.	Pitch bend at end of first phrase, on D2, Melodyne analysis of Aoki recording	272
14.10b.	Pitch bend at end of first phrase, on D2, Melodyne analysis of Yamaguchi recording	272
14.11a.	Pitch bend on D2 after space at end of first breath phrase of <i>dan 5</i> , cell #9, Melodyne analysis of Aoki recording, corresponding to m.46 of transcription	273
14.11b.	Pitch bend on D2 after space at end of breath phrase in <i>dan 12</i> , cell #9ae'', Melodyne analysis of Aoki recording, corresponding to m.97 of transcription	273
14.12a.	Pitch bend at the end of C-A $\flat$ interval, <i>dan 2</i> , cell #5, Melodyne analysis of Yamaguchi recording, corresponding to mm.17-18	274
14.12b.	Pitch bend at the end of C-A $\flat$ interval, <i>dan 2</i> , cell #5, Melodyne analysis of Aoki recording, corresponding to mm.27-28	275
14.12c.	Pitch bend at the end of C-A $\flat$ interval, <i>dan 9</i> , cell #5de, Melodyne analysis of Aoki recording, corresponding to m.83 and Example 14.9d	275
14.13a.	Pitch bend at the end of D-B $\flat$ interval, <i>dan 6</i> , cell #3.2, Melodyne analysis of Yamaguchi recording, corresponding to m.42	276
14.13b.	Pitch bend at the end of D-B $\flat$ interval, <i>dan 7</i> , cell #3.2, Melodyne analysis of Aoki recording, corresponding to m.77	276
14.14a.	Pitch bend at the end of D-E $\flat$ interval, <i>dan 8</i> , cell #9ae, Melodyne analysis of Yamaguchi recording, corresponding to m.47	277
14.14b.	Pitch bend at the end of E $\flat$ -D interval, <i>dan 12</i> , cell #2am', Melodyne analysis of Aoki recording, corresponding to m.103	277

14.15a. Pitch bend at the end of A-B $\flat$ interval, <i>dan</i> 3, cell #7, Melodyne analysis of Yamaguchi recording, corresponding to m.26	278
14.15b. Pitch bend at the end of A-B $\flat$ interval, <i>dan</i> 9, cell #11ae', Melodyne analysis of Aoki recording, corresponding to m.85	278
14.16 Pitch bend notated at the end of <i>nayashi</i> pattern on A2, <i>dan</i> 2, Aoki score	279
14.17a. Pitch bend at the end of <i>nayashi</i> pattern on A2, <i>dan</i> 2, Melodyne analysis of Aoki recording, corresponding to m.33 in transcription and notation in Example 14.16	280
14.17b. Pitch bend at the end of <i>nayashi</i> pattern on A2, <i>dan</i> 2, Melodyne analysis of Yamaguchi recording, corresponding to m.23 in transcription	281
14.18a. Pitch bend at the end of 3RC on G2, <i>dan</i> 2, Aoki score	281
14.18b. Transnotation of 3RC on G2, <i>dan</i> 2, Aoki score	281
14.18c. Pitch bend at the end of 3RC on G2, <i>dan</i> 2, Melodyne analysis of Aoki recording, corresponding to m.26 in transcription	281
14.18d. Pitch bend at the end of 3RC on G2, <i>dan</i> 2, Melodyne analysis of Yamaguchi recording, corresponding to m.16 in transcription	281
14.19a. Pitch bend at the end of 3RC on A $\flat$ 2, <i>dan</i> 2, Melodyne analysis of Yamaguchi recording, corresponding to m.19 in transcription	282
14.19b. Pitch bend at the end of 2RC on B $\flat$ 2, <i>dan</i> 6, Melodyne analysis of Aoki recording, corresponding to m.59 in transcription	282
14.19c. Pitch bend at the end of 2RC on B $\flat$ 2, <i>dan</i> 6, Melodyne analysis of Yamaguchi recording, corresponding to m.43 in transcription	283
14.20a. <i>Tome</i> at the end <i>dan</i> 12, Melodyne analysis of Yamaguchi recording	284
14.20b. <i>Tome</i> at the end <i>dan</i> 12, Melodyne analysis of Aoki recording	284
14.21a. Upward bend at the end of A2 in <i>dan</i> 2, directly following G+2 and preceding <i>nayashi</i> slide on A2. Melodyne analysis of Yamaguchi recording, corresponding to m.22 in transcription	285
14.21b. Upward bend at the end of 3 in <i>dan</i> 10, Melodyne analysis of Yamaguchi recording, corresponding to m.65 in transcription	285
14.21c. Upward bend at the end of G+2 in <i>dan</i> 3, Melodyne analysis of Aoki recording, corresponding to m.37 in transcription	286
14.21d. Upward bend at the end of C3 in <i>dan</i> 7, Melodyne analysis of Aoki recording, corresponding to m.66 in transcription	286
15.1a. ス <i>Suri</i> rising slide notated between <i>tsu-meri</i> (E $\flat$ 2) and <i>re</i> (G2), first breath phrase, Aoki score	289
15.1b. 引 <i>Hiku</i> downward bend notated to the right; ニ大ス 2 <i>dai suri</i> rising slide (off of hole 2) notated to the left, between <i>tsu-meri</i> (E $\flat$ 2) and <i>re</i> (G), first breath phrase, Kurahashi score	289
15.1c. 五大ス 5 <i>dai suri</i> rising bend (off of hole 5) notated to the left, between <i>hi</i> (C3) and <i>chi meri</i> (A $\flat$ 2), <i>dan</i> 5, Kurahashi score	289
15.1d. ニ大ス 2 <i>dai suri</i> rising bend (off of hole 2) notated to the right of graphic slide symbol, between <i>go no ha</i> (D3) and <i>hi meri</i> (B $\flat$ 2), <i>dan</i> 10, Kurahashi score	289
15.1e. Rising bend notated graphically between <i>hi</i> (C3) and <i>chi meri</i> (A $\flat$ 2), <i>dan</i> 9, Aoki score	289
15.1f. Downward bend notated graphically between <i>tsu-meri</i> (E $\flat$ 2) and <i>re</i> (G2), <i>dan</i> 4, Aoki score	289
15.1g. Downward-then-upward bend notated graphically between <i>hi-meri</i> (B $\flat$ 2) and <i>chi</i> (A2), <i>dan</i> 2, Aoki score	289

15.2a.	Upward bend at the end of G2 in first breath of <i>dan 1</i> , cell #1. Melodyne analysis of Yamaguchi recording	295
15.2b.	Upward bend at the end of G2 in <i>dan 2</i> , cell #4dm/de. Melodyne analysis of Aoki recording, corresponding to m.24 in transcription	295
15.2c.	Aoki's notation of G-E $\flat$ interval corresponding to Example b	295
15.2d.	Upward bend at the end of C3 in <i>dan 9</i> , cell #5de. Melodyne analysis of Aoki recording, corresponding to m.83 in transcription	296
15.2e.	Aoki's notation of C-A $\flat$ interval corresponding to Example d	296
15.2f.	Upward bend at the end of D3 in <i>dan 10</i> , cell #3.2. Melodyne analysis of Yamaguchi recording, corresponding to m.65 in transcription	296
15.2g.	Upward bend at the end of E $\flat$ 2 in <i>dan 1</i> , cell #2am. Melodyne analysis of Yamaguchi recording, corresponding to m.7 in transcription	297
15.2h.	Upward bend at the end of B $\flat$ 2 in <i>dan 2</i> , cell #6. Melodyne analysis of Aoki recording, corresponding to m.30 in transcription	297
15.2i.	Aoki's notation of B $\flat$ -A interval corresponding to Example h	297
15.3a.	Upward bend between A2 and G+2 in <i>dan 2</i> , cell #6db'. Melodyne analysis of Yamaguchi recording corresponding to m.22 in transcription	298
15.3b.	Upward bend between C3 and B $\flat$ 2 in <i>dan 9</i> , cell #13. Melodyne analysis of Aoki recording corresponding to mm.79-80 in transcription	298
15.3c.	Upward bend between A2 and E $\flat$ 2 in <i>dan 2</i> , cell #4. Melodyne analysis of Aoki recording corresponding to m.21 in transcription	299
15.4a.	Downward bend then rising slide between F2 and G2 in <i>dan 5</i> , cell #10. Melodyne analysis of Aoki recording corresponding to m.47 in transcription	300
15.4b.	Downward bend then rising slide between A2 and C3 in <i>dan 7</i> , cell #12. Melodyne analysis of Aoki recording corresponding to m.66 in transcription	300
15.4c.	Notation of cell #10, <i>dan 5</i> , Aoki score	301
15.4d.	Notation of cell #12, <i>dan 7</i> , Aoki score	301
15.4e.	Downward bend then rising slide between B $\flat$ 2 and D3 in <i>dan 10</i> , cell #3.2 retrograde. Melodyne analysis of Yamaguchi recording corresponding to m.58 in transcription	301
15.5a.	Downward bend then upward slide between E $\flat$ 2 and G2 in <i>dan 1</i> , cell #1. Melodyne analysis of Yamaguchi recording corresponding to m.1 in transcription	302
15.5b.	Downward bend then upward slide between E $\flat$ 2 and G2 in <i>dan 1</i> , cell #1. Melodyne analysis of Aoki recording corresponding to m.1 in transcription	302
15.5c.	Notation of first cell of <i>Sokaku Reibo</i> , Aoki score	303
15.5d.	Notation of first cell of <i>Sokaku Reibo</i> , Kurahashi score	303
15.6	Upward slide between B $\flat$ 2 and D3 in <i>dan 7</i> , cell #3.2. Melodyne analysis of Aoki recording corresponding to m.77 in transcription	304
15.7a.	Downward slide between D2 and B $\flat$ 1 in <i>dan 1</i> , cell #3. Melodyne analysis of Yamaguchi recording corresponding to m.10 in transcription	304
15.7b.	Downward slide between D2 and B $\flat$ 1 in <i>dan 12</i> , cell #3.2. Melodyne analysis of Yamaguchi recording corresponding to m.86 in transcription	305
15.8a.	Transcription of Aoki recording, m.97, <i>dan 12</i>	307
15.8b.	Melodyne analysis of Aoki recording, corresponding to m.97	307
15.8c.	Transcription of Yamaguchi recording, m.74, <i>dan 12</i>	308
15.8d.	Melodyne analysis of Yamaguchi recording, corresponding to m.74	308
16.1a.	Microtonal interval from A2 to G+/A $\flat$ 2, cell #6 then 6db, <i>dan 2</i> , Aoki transcription mm.30-31	312
16.1b.	Microtonal interval from A2 to G+/A $\flat$ 2, cell #6 then 6db, <i>dan 2</i> , Melodyne analysis of Aoki recording	312

16.1c.	Microtonal interval from A2 to G+/A $\flat$ 2, cell #6 and 6db, <i>dan</i> 2, Yamaguchi transcription mm.20-21	312
16.1d.	Microtonal interval from A2 to G+/A $\flat$ 2, cell #6 and 6db, <i>dan</i> 2, Melodyne analysis of Aoki recording	313
16.2	Transcription of mm.13-14, cells #2am' & 2am'', Aoki recording	314
16.3a.	Transcription of m.68, <i>dan</i> 7, Aoki recording	315
16.3b.	Transcription of m.65, <i>dan</i> 10, Yamaguchi recording	315
16.4a.	<i>Yuri</i> notation in Yokoyama's <i>Tsuru no Sugomori</i> score, line 1, <i>dan</i> 1	317
16.4b.	<i>Yuri</i> notation in Yokoyama's <i>Tsuru no Sugomori</i> score, line 2, <i>dan</i> 1	317
16.5a.	<i>Yuri</i> at end of cell #11, <i>dan</i> 6, Praat analysis of Aoki recording, corresponding to m.51 in transcription	318
16.5b.	Transcription of m.51, cell #11, <i>dan</i> 6, Aoki recording	318
16.6a.	<i>Yuri</i> on D3 and B $\flat$ 2 cell #3.2, <i>dan</i> 6, Praat analysis of Aoki recording, corresponding to m.56 in transcription	319
16.6b.	Copy of above example (a) with spectrum removed	319
16.6c.	Transcription of m.56, cell #3.2, <i>dan</i> 6, Aoki recording	319
16.7a.	<i>Yuri</i> on G2 and D2 cell #1, <i>dan</i> 1, Praat analysis of Yamaguchi recording, corresponding to m.1 in transcription	320
16.7b.	Transcription of m.1, cell #1, <i>dan</i> 1, Yamaguchi recording	320
16.8a.	<i>Yuri</i> on D2 cell #3 (1 <sup>st</sup> half), <i>dan</i> 1, Praat analysis of Yamaguchi recording, corresponding to m.10 in transcription	321
16.8b.	Transcription of m.10, cell #3 (1 <sup>st</sup> half), <i>dan</i> 1, Yamaguchi recording	321
16.9a.	<i>Yuri</i> on A2 in <i>nayashi</i> cell, <i>dan</i> 3, Praat analysis of Yamaguchi recording, corresponding to m.30 in transcription	322
16.9b.	Transcription of m.30, <i>nayashi</i> cell, <i>dan</i> 3, Yamaguchi recording	322
16.10a.	<i>Atari</i> and <i>ru</i> finger articulation excerpt from cell #5 (3RC), <i>dan</i> 2, annotated Aoki score	324
16.10b.	Finger articulation excerpt from cell #5 (3RC), <i>dan</i> 2, annotated Kurahashi score	324
16.10c.	Two-finger <i>oshi</i> articulation on repeated C3, <i>dan</i> 10, annotated Aoki score	324
16.10d.	Finger articulation in 2RC, <i>dan</i> 5, annotated Kurahashi score	324
16.11a.	<i>Atari</i> in cell #5, <i>dan</i> 2, Melodyne analysis of Aoki recording, corresponding to m.28	326
16.11b.	<i>Atari</i> in cell #5, <i>dan</i> 2, Melodyne analysis of Yamaguchi recording, corresponding to m.18	326
16.12a.	Notation of <i>uchi</i> hit on $\searrow$ <i>re</i> in cell #10, <i>dan</i> 5, Aoki score	327
16.12b.	<i>Atari</i> on <i>tsu</i> (F) and <i>re</i> (G), circled, in cell #10, <i>dan</i> 5, Praat analysis of Aoki recording	327
16.13a.	Cell 1, first breath phrase, transcription of Aoki recording	331
16.13b.	Cell 1, first breath phrase, transcription of Yamaguchi recording	331
16.13c.	Cell 1, first breath phrase, SPEAR analysis of Aoki recording	331
16.13d.	Cell 1, first breath phrase, SPEAR analysis of Yamaguchi recording	332

## **Notes on language and names**

1. For Canadian English spelling, the *Canadian Oxford Dictionary* and Canadian Press *Caps and Spelling* guide were used.
2. For romanization of Japanese, the modified Hepburn system was used.
3. For romanization of Chinese, the pinyin system was used.
4. Japanese personal names are given with surname first, unless the individual is commonly known in academic circles or published with given name first, e.g., Minoru Miki, Sukehiro Shiba, and Akira Tamba.

## **Labeling of notes**

C1=middle C; an octave higher = C2, etc.

## **Notes on the pdf version**

In the pdf version of this dissertation, references to other sections or chapters are linked to those sections. To go to the linked page, hover over the reference and click. To return to the previous location, press Command + back arrow.

## Chapter 1: Introduction

### 1.1 Introduction and purpose of study

The purpose of this study is to identify and analyze the use of “extended techniques” in the performance practice of traditional flutes and reeds of Japan. In particular, I address techniques of the *shakuhachi* flute and the *gagaku* winds: *hichiriki* and *ryūteki*. The term “extended techniques” in the context of Western art music refers to performance techniques that fall outside the normal course of study for an instrument. In Western woodwind performance, these techniques include multiphonic effects, microtonality, pitch bending, and flutter tonguing. Each of these techniques (as well as others) has its counterpart in traditional Japanese wind practice. In *gagaku* and *shakuhachi* performance practice, techniques such as pulsating breath, pitch bending, timbral alteration, and finger percussion play a role that goes beyond mere ornamentation or highlighting the technical possibilities of the instrument. Indeed, advanced performance techniques play a structural role in the performance of the repertoire, and are thus integral to the tradition.

Extended techniques were not common in Western classical music before the twentieth century, when they gained popularity among musicians and audiences of avant-garde music and jazz. As Hugh Davies writes:

The 20th century saw an unprecedented expansion in the instrumentarium and a host of new approaches by composers and performers to the use of existing instruments...

Extended performance techniques have been thoroughly explored by woodwind players. Flutter-tonguing has become common, and other techniques, such as unorthodox cross-fingerings, multiphonics, split notes, circular breathing, and humming, singing or growling while playing, are

becoming increasingly so. Key noise is specified in a number of works, the earliest of which was probably Varèse's *Density 21·5* (1936).<sup>1</sup>

In contrast, these techniques have been documented as traditional techniques on flutes and reed instruments throughout Asia. In East Asia, the solo classical *honkyoku* repertoire of the Japanese *shakuhachi*, a repertoire canonized in the 18<sup>th</sup> century, calls for *tamane* (a flutter-tonguing technique), *koro-koro* (a finger tremolo that produces multiphonic effects), and pitch bending.<sup>2</sup> Elsewhere in East Asia, the double-reed Chinese *suona*, brought to China from Central Asia by the fifteenth century,<sup>3</sup> has traditionally been played in *chuida* and *guchui* shawm and percussion ensembles using circular breathing to facilitate longer melodic lines than would otherwise be possible;<sup>4</sup> the Korean bamboo flutes *taegeum* and *tungso* manipulate timbre and harmonics through the use of a membrane pasted over a hole bored between the blowhole and the tone holes;<sup>5</sup> and musicians of the Altai Uriangkhai minority in Mongolia play the *tsuur* rim-blown flute by simultaneously vocalizing a drone, creating a polyphonic texture.<sup>6</sup>

Although circular breathing, timbral effects resulting from membrane vibrations, and vocalization are extended techniques that do not appear in

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<sup>1</sup> *Grove Music Online*, s.v. "Instrument modifications & extended performing techniques," by Hugh Davies, accessed April 13, 2014, <http://www.oxfordmusiconline.com.ezproxy.library.yorku.ca>.

<sup>2</sup> Simura Satoshi, "Selections of Potential Playing Techniques on the *Syakuhati*: Changes of Stylistic Needs Through Periods," in *Music Cultures in Interaction—Cases Between Asia and Europe*, ed. Mabuchi Usaburō and Yamaguti Osamu (Tokyo: Academia Music, 1994), 158, 164.

<sup>3</sup> *The Garland Encyclopedia of World Music, Vol. 7, East Asia: China, Japan and Korea*, s.v. "Ensembles: Northern Chinese," by Stephen Jones, accessed April 14, 2014, <http://gnd.alexanderstreet.com.ezproxy.library.yorku.ca>.

<sup>4</sup> Stephen Jones, *Ritual and Music of North China: Shawm Bands in Shanxi* (Aldershot, Hants, England: Ashgate, 2007), 95.

<sup>5</sup> Keith Howard, *Korean Musical Instruments: A Practical Guide* (Seoul: Se-Kwang Music Publishing, 1988), 81, 99.

<sup>6</sup> Carole Pegg, "The Revival of Ethnic and Cultural Identity in West Mongolia: The Altai Uriangkhai *Tsuur*, the Tuvan *Shuur* and the Kazak *Sybyzgy*," *Journal of the Anglo-Mongolia Society* (1991): 71.



traditional wind practice in Japan, I give these examples to show that various modern Western techniques appear throughout the region, with different techniques serving the music of different instruments and ensembles. Nor do I mean to suggest that Western extended techniques travelled directly from Japan or elsewhere in East Asia to the West in the twentieth century, whereupon they were integrated into new compositions. The techniques may have been developed in the West independently of outside influences, or they may have emerged as a result of interaction among performers of multiple genres of music over time; it is beyond the scope of this study to trace the “origins” and global history of extended techniques. The purpose is rather two-fold.

First, through case studies in Japanese *gagaku* court music and *shakuhachi honkyoku* repertoire, I shall show that what are often presented in Western art music as relatively “new,” twentieth-century techniques<sup>7</sup> are not “new” in other performance traditions. Second, through analysis of recorded performances of one piece from each of the two genres on which I focus, namely, *gagaku kangen* and *shakuhachi honkyoku*, I shall show that advanced techniques have been fully integrated into traditional Japanese performance practice since well before the twentieth century and play structural roles with respect to form, mode, metre, and tempo.

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<sup>7</sup> For example, *The Oxford Dictionary of Music* credits Richard Strauss and Gustav Mahler with introducing flutter-tonguing to Western art music, but with no mention of how or where they learned of this technique (s.v. “Flutter-Tonguing,” accessed April 13, 2014, <http://www.oxfordmusiconline.com.ezproxy.library.yorku.ca>). Regarding circular breathing, *The Oxford Companion to Music* points to its use on the Australian Aboriginal *didjeridu*, a reference typically made; however, the text does not refer to circular breathing in traditional music of shawms or flutes such as the Chinese *suona* and the Mongolian *limbe*, an omission also typical (s.v. “Circular Breathing,” by Bryan White, accessed April 13, 2014, <http://www.oxfordmusiconline.com.ezproxy.library.yorku.ca>).

My starting point in this project was to locate extended techniques in Japanese wind performance. This investigation led to an understanding that techniques referred to as “extended” in the West are not used merely for surface-level ornamentation or virtuosic display in Japanese *gagaku* and *shakuhachi* performance practice, as might be expected of pitch bends and finger articulation, for example, but rather serve the music more deeply: they are structurally significant.

## 1.2 Literature review

The Western-language literature on extended techniques lacks detailed study of their history in traditional non-European music. A number of pedagogical sources are now available in the West for the performer who wishes to learn extended techniques or the composer who wants to exploit them. However, these texts do not address the techniques’ use in traditional music genres. Bruno Bartolozzi’s 1967 text *New Sounds for Woodwind* was the first book-length study to explore multiple extended techniques for the entire family of European orchestral woodwinds. Bartolozzi did not, however, address the history or possible origins of these “new sounds.” Subsequent studies and method books have likewise focused on the production and notation of extended techniques for Western winds, disregarding their pre-1960s non-Western use.<sup>8</sup>

Performers and researchers of Japanese winds have mentioned extended techniques in writings on the instruments and performance genres of the

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<sup>8</sup> Widely read texts include Phillip Rehfeldt’s *New Directions for Clarinet*; Robert Dick’s *The Other Flute*; and Peter Veale and Claus-Steffen Mahnkopf’s *The Techniques of Oboe Playing*.

*shakuhachi* flute and the *gagaku* court ensemble, but identifying the influence these instruments have had on Western music has not been their focus. Publications in English by Western writers include Gunnar Jinmei Linder's *Notes on Kinko-ryū Shakuhachi Honkyoku: Performance Techniques: Analysis, Classification, Explanation* and *Music of a Thousand Autumns: The Tōgaku Style of Japanese Court Music* by Robert Garfias. Manuals by Japanese musicians that refer to "extended" performance techniques include Sasamoto Takeshi's *Hajimete no Gagaku* はじめての雅楽 (Beginner's Guide to Gagaku), and *shakuhachi* study guides by Taniguchi Yoshinobu, Tokuyama Takashi, and Yokoyama Katsuya.<sup>9</sup> Issues of pedagogy and transmission are dealt with by Riley Kelly Lee in his dissertation, "Yearning for the Bell: A Study of Transmission in the 'Shakuhachi Honkyoku' Tradition," and by Kwok Wai Ng in "Orality and Literacy in the Transmission of Japanese Tōgaku: Its Past and Present."

Dissertations and other texts on Japanese and Western avant-garde composers' attempts to realize Eastern aesthetic values in composing for Western instruments have also been written;<sup>10</sup> however, the focus has been on the resulting compositions in Western classical styles, and not on the music and techniques that were imitated. For instance, in "Interpretation of Extended Techniques in Unaccompanied Flute Works by East-Asian Composers: Isang Yun, Toru Takemitsu,

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<sup>9</sup> However, as Linder states regarding *shakuhachi* manuals, "In the *shakuhachi* literature, there are few explanations about how to play the ornaments... Each separate sub-lineage within the Kinko-ryū have [sic] their own beginner's manual, but they contain very little of prescriptive and concrete explanations." (Linder, *Notes on Kinko-ryū Shakuhachi Honkyoku: Performance Techniques: Analysis, Classification, Explanation* [Lidingö, Sweden: nipponicom.com, 2010], 31.)

<sup>10</sup> For example, *Locating East Asia in Western Art Music*, edited by Yayoi Uno Everett and Frederick Lau.

and Kazuo Fukushima,” author Seon Hee Jang credits Korean and Japanese flutes for the development of some extended techniques, but the music dealt with is modern and composed in Western genres. The techniques are not considered in their traditional contexts. Exceptionally, Marty Regan has translated into English Minoru Miki’s guide for writing new music for traditional Japanese instruments, *Composing for Japanese Instruments*. Although this text deals only with new music in Western notation, it does outline for the composer traditional Japanese techniques on traditional Japanese instruments.

In both *gagaku* and *shakuhachi* performance practice, rhythm, tempo, and phrasing are connected to the breath. In my analyses of formal elements in the repertoire, I thus touch on the aesthetic concepts of space and time. Sources that consider Japanese music aesthetics include “Japanese Spirituality and Music Practice: Art as Self-Cultivation” by Koji Matsunobu; *La Théorie et l’esthétique musicale japonaises* by Akira Tamba; “Intervals (‘Ma’) in Space and Time: Foundations for a Religio-Aesthetic Paradigm in Japan” by Richard B. Pilgrim; and “Sacred Abjection in Zen Shakuhachi” by Zachary Wallmark.

Of particular relevance to the present study are analyses of specific repertoire or performances in the *gagaku* and *shakuhachi* literature. Publications available in English include Terauchi Naoko’s “Surface and Deep Structure in the *Tôgaku* Ensemble of Japanese Court Music (*Gagaku*),” a chapter in *Analytical and Cross-cultural Studies in World Music* that includes score analysis and transcription of one recording of *Etenraku*, the *gagaku* piece I deal with in Section II; Ng’s “In Search of the Historical Development of Double-Reed Pipe Melodies in Japanese

Tōgaku: Early Hypotheses and New Perspectives,” which includes *gagaku* score analysis; Andreas Gutzwiller’s “Rhythm in *Shakuhachi Honkyoku*,” a study of six recordings of a single piece of the repertoire, a genre on which I focus in Section III; and Gutzwiller and Gerald Bennett’s “The World of a Single Sound: Basic Structure of the Music of the Japanese Flute Shakuhachi.” Gutzwiller and Bennett make use of computer-generated spectral analyses of sound recordings in their analyses, an approach I have also taken.

### 1.3 Methodology and questions of tradition

In my investigation of extended performance techniques in performance practice of Japanese wind instruments, specifically *ryūteki*, *hichiriki*, and *shakuhachi*, I have selected two pieces as case studies: the well-known *gagaku* court music piece *Etenraku*, and the virtuosic classical *shakuhachi honkyoku* piece *Sokaku Reibo*. I analyze three recordings of *Etenraku* by Japanese court ensembles, in addition to recordings of individual wind parts and sung mnemonics, and two recordings of *Sokaku Reibo* by recognized *shakuhachi* masters: Aoki Reibo II and Yamaguchi Gorō.<sup>11</sup> In order to create a comprehensive picture of the role of the relevant performance techniques, I combine the methods of transnotation<sup>12</sup> of tablature scores and mnemonics into staff notation (and lists of pitch cells in the case of the *shakuhachi*), transcription of recordings, and spectral analysis of recorded excerpts.

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<sup>11</sup> See Appendices A (*Etenraku* recordings) and C (*Sokaku Reibo* recordings) for information on locating recordings.

<sup>12</sup> Avigdor Herzog defined transnotation as “transference of notation revised from one form to another” in contrast to “transcription: notation of music already existing in performance” in “Transcription and Transnotation in Ethnomusicology,” *Journal of the International Folk Music Council* 16 (1964): 100fn.

I discuss issues of transcription in Chapters 4 (on *gagaku*) and 9 (on *shakuhachi*).

Regarding spectral analysis, John Latartara and Michael Gardiner write:

Spectrographs facilitate analysis of the musical surface by creating a static picture of the surface details of a musical performance, which can then be examined.<sup>13</sup>

The addition of the spectrograph to the score and performance paradigm can be thought of as forming a cyclical relationship, connecting all three to one another. The score has a prescriptive relationship to the performance, a performance is used to create a descriptive spectrograph, and a spectrograph is a static visualization of a work, like a score, but with a descriptive relationship to the performance.<sup>14</sup>

In my analysis, I use spectral image examples not only as visual evidence of techniques such as pitch bending and timbral alteration, but also to show the interaction and relationships between techniques and elements such as added overtones in a spectrum and changes in intensity.

Nicholas Cook has said, “a musicology of performance really demands the integration of sound, word, and image achievable through current hypermedia technology.”<sup>15</sup> I would state more specifically that an analysis of performance techniques in Japanese wind practice demands the integration of sound (via recordings in this study), word (notation and literature, e.g., study manuals and other analyses), and image (spectral analyses). Further, as John Baily has said, “Learning to perform... is the best way of ‘musicing music’ as part of the process of data collection and analysis in ethnomusicological research.”<sup>16</sup> I have thus

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<sup>13</sup> John Latartara and Michael Gardiner, “Analysis, Performance, and Images of Musical Sound: Surfaces, Cyclical Relationships, and the Musical Work,” *Current Musicology* 84 (2007): 58.

<sup>14</sup> *Ibid.*, 66-67.

<sup>15</sup> Nicholas Cook, “Between Process and Product: Music and/as Performance,” *Music Theory Online* 7.2 (2001): 13 (<http://www.mtosmt.org/issues/mto.01.7.2/mto.01.7.2.cook.html>).

<sup>16</sup> John Baily, “Learning to Perform as a Research Technique in Ethnomusicology,” *British Journal of Ethnomusicology* 10.2 (2001): 93-94.

supplemented this method of sound-word-image with studying the *shakuhachi* flute for the past few years as a novice, an invaluable component to furthering my understanding of performance techniques in Japanese winds. I have found that when I learn to play an instrument, my body forms connections between the physicality of technical production and the sound produced. This then helps me to identify techniques in recorded or live performance as I am able to imagine ergonomically or physicalize the sounds that I hear. Techniques such as *meri-kari* (a type of timbral and pitch alteration technique discussed in Section 12.1) or finger articulation in *shakuhachi* practice thus become more easily identifiable by ear. Learning at least the basics of an instrument therefore has significant value in training the ear of the researcher and analyst.

My use of Japanese sources, in the form of scores and texts, focuses on notation symbols, symbols one can learn to effectively read without knowledge of the Japanese language. Nonetheless, I am aided in this by my basic ability in reading Chinese characters. A number of publications on Japanese traditional music have been written in, or translated into, English or other Western languages and the technical terms I employ have well-established meanings in international scholarship. Since this study is based primarily on recorded performances, limitations in Japanese language competency have had no bearing on the analyses.

To deal with problems of determining the degree to which a particular practice is traditional, I have consulted recordings of several performers and ensembles. For example, flutter tonguing, pitch bending, and *koro-koro* finger tremolos can be heard on several recordings of the *shakuhachi* and are documented

in various sources as well, pointing to their “traditional” nature. In contrast, I have identified a sustained multiphonic in *shakuhachi honkyoku* performance on a single track of a single recording by a *shakuhachi* master who is renowned for also being one of the first to use circular breathing on the instrument.<sup>17</sup> This casts doubt on the traditional nature of sustained multiphonics on the instrument. Mention of this technique is also absent from documentation in the form of music notation and written text sources.

The structure and aesthetic of the music can also indicate whether a technique is traditional. For example, in the *gagaku* court ensemble piece *Etenraku*, pitch bends and slides, as well as breath articulation that results in microtonal pitch alteration, are performed at structurally consistent points rather than *ad libitum*, making them integral to the piece, in much the same sense as the composer’s score is integral to a piece of European concert music. In the *shakuhachi honkyoku* repertoire, the pulsating breath technique heard in the piece *Daha* connects the instrument to its history as an implement of Zen meditation for the Fuke sect, and flutter tonguing and finger tremolos create multiphonic timbral effects that depict the flapping of a crane’s wings in the programmatic pieces *Sokaku Reibo* and *Tsuru no Sugomori*. The character of these pieces would change considerably without the use of “extended techniques.” It follows that the exploitation of these characteristics is part of the traditional aesthetic.

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<sup>17</sup> Aoki Reibo, “Shin Tsuki no Kyoku,” on *Living National Treasure Series Vol. 6 Shakuhachi Kinko*, 2006.



## 1.4 Chapter summary

In each case study (Section II: The *Gagaku* winds and Section III: The *Shakuhachi* flute), I first present a brief history of the genre, the instrument(s), and the repertoire in order to situate the representative piece. I then move on to questions of transmission and notation. Both the *shakuhachi* and *gagaku* repertoire are notated in tablature scores, with Japanese characters representing fingerings (the *hichiriki* and *ryūteki* of the *gagaku* ensemble thus have separate tablature systems); the *gagaku* scores also give corresponding syllables for oral mnemonics (called *shōga*), used in learning and practising the pieces.

I analyze the *gagaku* piece *Etenraku* in Chapters 4 through 7, dealing first in Chapter 4 with elements of mode, form, metre, and tempo, with reference to both traditional and modern scores as well as modern recordings. In Chapter 5, I deal exclusively with the recordings of sung *shōga* for *Etenraku* included on the compact disc that accompanies Sasamoto's guide. Some of the extended techniques relevant to this study are represented even in the sung mnemonics, thereby verifying aspects of the performance tradition that appear in the scores and ensemble recordings. In Chapters 6 and 7, I move on to a detailed analysis of performance techniques in ensemble recordings, and their role in the overall structure of the piece. For information on locating recordings, refer to Appendix A; my transcriptions of the *Etenraku* recordings appear in Appendix B.

In my analysis of *Sokaku Reibo* for *shakuhachi*, I work primarily with two tablature scores (by Aoki Reibo II and Kurahashi Yodo II) and two recordings (by Aoki and Yamaguchi). I devote Chapters 8 and 9 to the history and notation of

*honkyoku*, and then analyze *Sokaku Reibo* in terms of mode, form, and rhythm, as well as pitch content and intervallic relationships in Chapters 10 and 11; I identify 15 recurring pitch cells that make up the piece—listed and analyzed in Appendices F-I. In Chapters 12 through 16, I base my discussions of extended performance techniques on these pitch cells and intervallic relationships. Transnotation of *Sokaku Reibo* scores and transcription of recordings appear in Appendices D and E, respectively. Chapter 17 contains concluding comments on both the *gagaku* and *shakuhachi* repertoire.

Before beginning an analysis of wind performance techniques and their structural roles, I first define the term “extended techniques” for the purposes of this study and give brief explanations of the different types found in *Etenraku* and *Sokaku Reibo*, classified according to pitch, timbre, articulation, and breathing techniques.

## Chapter 2: What are extended techniques?

### 2.1 Definition

As stated in Chapter 1, in the context of Western art music, the term “extended techniques” refers to performance techniques that fall outside the traditional course of study—techniques not called for in the standard canon of pieces for a particular instrument.<sup>1</sup> In woodwind performance, these techniques have “extended” the palette of resources available to the performer and composer for pitch, timbre, articulation, compass, and physical endurance to include, for example, multiphonics, microtones, pitch bending, flutter tonguing, and circular breathing. As these techniques become increasingly popular with performers and composers in the West, the classification “extended” may change.

The terminology for individual extended techniques has evolved alongside the techniques themselves. In this study, I have chosen to use the terms most commonly employed in recent pedagogical texts for extended techniques on Western woodwinds.<sup>2</sup> Such sources, along with new repertoire, comprise an expanded resource of sounds and techniques for the musician and composer in the West. Meanwhile, in non-European-derived music genres, many of these techniques have long been part of the traditional aesthetic.

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<sup>1</sup> Repertoire lists are included in the “Yehudi Menuhin Music Guides” publications: *Bassoon* by William Waterhouse; *Clarinet* by Jack Brymer; *Flute* by James Galway; *Oboe* by Leon Goossens and Edwin Roxburgh; *Saxophone* by Paul Harvey. Although subjectivity is involved in selecting pieces for such lists, the most frequently performed pieces are included.

<sup>2</sup> Recent texts include: Carin Levine and Christina Mitropoulos-Bott, *The Techniques of Flute Playing*, Kassel, Germany: Bärenreiter Verlag, 2002; Libby Van Cleve, *Oboe Unbound: Contemporary Techniques*, Lanham, MD: Scarecrow Press, 2004; Marcus Weiss and Giorgio Netti, *The Techniques of Saxophone Playing*, trans. Laurie Schwartz, Kassel, Germany: Bärenreiter, 2010.

## **2.2 Classification**

In this study of traditional Japanese wind instruments, I identify numerous examples of traditional performance techniques that are considered “extended” in Western art music. I discuss the extended techniques found on Japanese flute and reed instruments according to the following categories:

1. Pitch
2. Timbre
3. Articulation
4. Breathing

### **2.2.1. Pitch**

Pitch-based techniques use or manipulate pitch in ways considered unconventional in the practice of Western classical music. These techniques may involve movement not confined to equal temperament, sliding from pitch to pitch, or a microtonal pitch vocabulary, and often require the musician to develop new approaches to embouchure, fingering or air pressure. Techniques included in the pitch category are:

1. Pitch bends
2. Pitch slides
3. Microtones
4. Beating or roughness (spectral dissonance)
5. Vibrato (through head position)
6. Extended range

**2.2.1.1** For the purposes of this study, “pitch bends” refer to a) gradual changes of pitch either upward or downward, and then return to the original pitch, or b) beginning or ending a tone above or below the main pitch and then moving into or away from it. This can be achieved through changes in embouchure or air pressure,

through gradual movement of the fingers onto or off a vent (i.e., tone hole), or by taking more or less reed into the mouth.

**2.2.1.2** Pitch slides are similar to pitch bends but move from one tone to another tone. Although a usual term for this technique is “portamento,” performers of classical woodwind music generally use the term “glissando.” Pitch bends and pitch slides are common on flute and reed instruments throughout Japan. For examples, refer to Chapter 6 on the *gagaku* winds—*hichiriki* and *ryūteki*—and Chapters 14 and 15 on the *shakuhachi*.

**2.2.1.3** Microtones are a) intervals smaller than the 100-cent semitone of equal temperament, or b) pitches that fall between semitones.

Microtonality is identifiable in performances on flutes and reeds of Japan and appears in different contexts. Sometimes it results from pitch bending and sliding. At other times tones that fall outside the Western tempered scale act as principal tones. In traditional Japanese music, pitches are treated as relatively large regions. For example, in *shakuhachi honkyoku* practice tones are treated as pitch regions to be explored through bends, slides and microtonal embellishments rather than as single fixed points. This “exploration” is not notated and must be learned aurally from a teacher. For examples in context, refer to Chapters 14 and 15 on the *shakuhachi*.

The winds of the *gagaku* ensemble alter pitch microtonally to prepare melodic leaps and to move through pitch areas of tones not considered “principal” in the mode. Section 7.1 offers examples of microtonal pitch alteration in *gagaku*.

**2.2.1.4** Exploiting roughness or beating (spectral dissonance) between parts is a contemporary compositional technique in Western art music. Beating or roughness can occur between the fundamental frequencies and/or overtones of two or more tones played by different instruments, or between the tones of a solo wind instrument and a simultaneously sung or hummed second line (performed by the same solo instrumentalist).

Contemporary Western examples of roughness or beating often involve microtonal intervals or pitch slides.<sup>3</sup> In *gagaku*, pitch slides and microtonal clashes between the *hichiriki* and *ryūteki* and their overtones create roughness.<sup>4</sup> For examples, see Section 7.1.3.

**2.2.1.5** Vibrato is referred to as an extended technique in this study when it is produced in a manner that contrasts with common practice in Western woodwind performance, that is, by movement of the head position in relation to the instrument. Movement of the head produces a wide vibrato on the *shakuhachi*. *Shakuhachi* tradition makes use of several head movements (circular, side-to-side,

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<sup>3</sup> For example, in the third of Robert Dick's "Flying Lessons: Six Contemporary Concert Etudes, Volume 1," the flute soloist must simultaneously sing and play. Dick calls for the two parts to begin in unison, followed by a narrow pitch slide (glissando) in the sung part as the flute sustains its tone. Dick notes: "beats appear." In Ernest H. Papier's saxophone quartet, "Axe à quatre: figure de concert pour double couple en sax," the four saxophones perform microtonal pitch slides in varying directions but beginning on a common tone, resulting in beating and roughness.

<sup>4</sup> Another non-Western traditional example of beating resulting from detuning in wind instruments can be heard in duets of the dung-khar conch shell of the Monpa tribe in northeastern India. For an audio example, refer to: "Music from India: Monpa dung-khar conch shell duet," *British Library Sounds*, <http://sounds.bl.uk/World-and-traditional-music/Music-from-India/025M-RKDATX0042XX-0300V0> (accessed April 1, 2014).

diagonal, etc.) for creating vibrato effects, called *yuri*.<sup>5</sup> Although vibrato is possible on the *gagaku* winds, it is not called for.

**2.2.1.6** Extending the range of the instrument to include tones above or below the standard compass is commonly referred to as an extended technique in Western avant-garde music. Woodwind musicians have experimented with fingerings, embouchure pressure, and placing the teeth directly on the reed to produce higher and higher tones, and have added extra piping to their instruments to extend the compass downward.

Identifying extended range as a traditional technique in Japanese winds poses many challenges and so will not be addressed in this study. I will note, however, that *shakuhachi* master Watazumi Dōso Rushi<sup>6</sup> (1911-1992) introduced very large unlacquered *shakuhachi* flutes called *hocchiku* or *dōgu* to the *Dokyoku* school of *shakuhachi honkyoku*, a school he founded in the 1950s.<sup>7</sup> These large bass flutes are used as implements for Zen meditation practice and challenge the breath control of the player.

## **2.2.2 Timbre**

A timbral technique results in perceptible differences in the quality or character of sound produced by an instrument. To produce an extended timbral technique in Western art music, tone quality is altered to the extent that it would be

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<sup>5</sup> Simura, "Selections," 163.

<sup>6</sup> Also known as Watazumidō and Watazumi Fumon.

<sup>7</sup> Liner notes: *Watazumido-so: His Practical Philosophy*, Columbia Music Entertainment COCJ-35936, 2009, compact disc, recorded 1973-74.

deemed “uncharacteristic” of the instrument. In contrast, the timbral techniques addressed in this study of Japanese woodwinds are considered idiomatic.

Techniques included in the timbre category are:

1. Embouchure and air pressure changes
2. Timbral breath sounds
3. Multiphonic timbral effects

**2.2.2.1** In the realm of extended techniques for Western woodwinds, unconventional fingerings, often called “timbral fingerings,” among other terms,<sup>8</sup> are explored to bring out tone colours that differ from the expected, or standard classical tone ideal of an instrument. In Japanese genres, altering the timbre of the wind instrument is common and is done through changes in embouchure shape and air and lip pressure, in addition to choosing different fingerings for the same pitch. Timbral modifications are especially varied in *shakuhachi* practice and will be addressed in Chapters 12 and 13.

**2.2.2.2** Timbral breath sounds, also called air sounds in Western extended-techniques terminology,<sup>9</sup> are produced by blowing air through the instrument without the pressure or embouchure needed to produce a characteristic pitched tone. Such sounds are commonly used as a timbral resource on the *shakuhachi*. The *shakuhachi* has a history as a Zen Buddhist meditation implement used to explore

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<sup>8</sup> Other terminology used to denote timbral fingerings: artificial harmonics, bamboo tones, color fingerings, diffuse tones, ghost sounds, hollow tones, residual tones, strong fingerings, velvet sounds, weak tones. (Refer to Bruno Bartolozzi, *New Sounds for Woodwind*; Robert Dick, *The Other Flute* and *Tone Development through Extended Techniques*; Pascal Gallois, *The Techniques of Bassoon Playing*; Thomas Howell, *The Avant-Garde Flute*; Wil Offermans, *For the Contemporary Flutist*; Phillip Rehfeldt, *New Directions for Clarinet*.)

<sup>9</sup> For example, in Levine and Mitropoulos-Bott, *The Techniques of Flute Playing*, 34-38; Rehfeldt, *New Directions for Clarinet*, 69.



the breath. It is fitting, therefore, that the sound of the breath be used as a timbral resource in its repertoire. One such technique is called *muraiki* – the “billowing” or “scattered” breath.<sup>10</sup> Timbral alteration through “breathiness” is discussed in Section 13.3.

**2.2.2.3** Multiphonic effects in Japanese woodwinds do not resemble those in Western practice. In Western composition and improvisation, multiphonics – the production of more than one pitch at a time through acoustic manipulation of the air column – are often sought as a special chordal effect on melody instruments.<sup>11</sup> A multiphonic is often sustained or multiple multiphonics are played in succession. In traditional Japanese *shakuhachi* practice, however, multiphonics emerge as the result of a broader timbral aesthetic.

Multiphonic timbral effects can result from finger tremolos and flutter tonguing. One of the most popular *shakuhachi honkyoku* pieces, *Tsuru no sugomori* (or *Sokaku Reibo*), a programmatic piece about nesting cranes, calls for the tremolo technique called *koro-koro*. In *koro-koro*, a gentle blowing technique (*meri*) and partially-covered tone holes are combined with an alternating finger tremolo<sup>12</sup> that can produce simultaneous overtones, especially when combined with flutter tonguing. Examples are discussed in Chapter 13.<sup>13</sup>

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<sup>10</sup> Simura, “Selections,” 164.

<sup>11</sup> Rehfeldt states: “It might be noted...that multiphonics really cannot be equated with chords. The reason for this is that the pitches characteristically appear at varying degrees of intensity.” (*New Directions*, 43)

<sup>12</sup> Tanimura Kō, Kitahara Ikuya, et al, *The Encyclopedia of Musical Instruments: The Shakuhachi*, (Tokyo: Tokyo Ongskusha, 1990), 107.

<sup>13</sup> Modern influence of the Western avant-garde on Eastern musicians has produced non-traditional exceptions. Sustained multiphonics are heard on a *shakuhachi* recording by Aoki Reibo II (“Shin Tsuki No Kyoku” on *Living National Treasure Series Vol. 6 Shakuhachi Kinko*, CD).

### 2.2.3 Articulation

Articulation techniques affect how tones are begun, separated, ornamented, or ended, and can involve the air, tongue, fingers, and embouchure. Techniques included in the articulation category are:

1. Flutter tonguing (also a timbral effect)
2. Finger percussion
3. Finger articulation

**2.2.3.1** Flutter tonguing is a rolling tone produced with a quick repetitive movement of the tongue against either the hard or soft palate, depending on the instrument or the individual performer's ability. On *shakuhachi*, flutter tonguing (called *tamane*) can be heard on its own or in combination with other techniques, such as the finger tremolo *koro-koro*. In addition to being a means to begin or ornament a tone, flutter tonguing produces timbral multiphonic effects (see Section 13.1). Flutter tonguing is not used in *gagaku*.

**2.2.3.2** On Western woodwind instruments, the keys can be exploited to create clicking or percussive sounds, referred to as key percussion. On traditional Japanese instruments, the direct contact between the fingers and the tone holes allows for a percussive popping sound to emerge, that is, finger percussion.

A somewhat forceful and deliberate "hit" is sometimes called for in the winds. In this case, an open hole is quickly closed then reopened, creating a percussive sound. Also common is a percussive "release" that involves removing all or most of the fingers simultaneously at the end of a breath phrase. The release of air pressure from the bore of the instrument creates a popping sound and signals

the end of the phrase. In *shakuhachi* practice, this popping sound can be more or less audible, depending on the technique of the player and the aesthetic of the particular school of playing.

**2.2.3.3** On East Asian woodwinds, repeated tones are often separated by finger articulation rather than by tongue strokes, as is practiced in Western music. In fact, tongued articulation is not heard at all in traditional Japanese *shakuhachi* practice or in *hichiriki* and *ryūteki* performance of *gagaku* works. Although this may not necessarily be considered an instance of “extended” technique, it is an example of a different approach.

In *gagaku* practice, repeated tones can be re-articulated with breath pulses or with a flick of the finger (see Section 7.3). In *shakuhachi*, the player re-articulates a tone with the *atari* technique—a brief opening or closing of one or more tone holes (see Section 16.3).

## **2.2.4 Breathing**

Breathing techniques involve the manner of inhalation and exhalation and the effect on the sound. Techniques in the breathing category are:

1. Pulsating breath
2. Circular breathing

**2.2.4.1** Pulsating breath is a blowing technique used on the *shakuhachi* in many guises. One such technique is called *komi-buki*—the lips, throat and/or diaphragm

are used to give an audible pulse to the breath.<sup>14</sup> Breath pulses are also heard in *gagaku* as a means for the *hichiriki* and *ryūteki* to emphasize metre (see Section 7.2).

**2.2.4.2** In circular breathing, the player stores air in the cheeks so that he or she can inhale through the nose while still pushing air through the mouth into the instrument. Although this technique has long been used in Asian practices, perhaps learned from blacksmiths<sup>15</sup> and glass blowers,<sup>16</sup> it is a more recent technique in the West, unnecessary for the performance of classical repertoire.

Circular breathing is used traditionally on Asian double reed instruments to create drone effects or extended melody lines. Value is placed on continuous sound. In East Asia, it is especially common on the small double-reed pipes *suona* of China and *rgya-gling* of Tibet. Although the practice is less common on flutes, it is considered important to the tradition of Mongolian *limbe* playing. Indeed, the circular breathing technique on *limbe* has been inscribed on the “UNESCO List of Intangible Cultural Heritage in Need of Urgent Safeguarding.”<sup>17</sup> Although some modern *shakuhachi* players have adopted circular breathing, it is not a traditional *shakuhachi* technique; nor is it used by the *gagaku* winds.

### **2.3 Comments on aesthetic factors**

Most of the techniques presented in this study are not bound by the construction of the instrument or national borders. Whether a technique is applied

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<sup>14</sup> Simura, “Selections,” 165.

<sup>15</sup> *Folk Long Song Performance Technique of Limbe Performances—Circular Breathing*, UNESCO, 2011, [http://www.unesco.org/archives/multimedia/index.php?s=film\\_details&id\\_page=33&id\\_film=2197](http://www.unesco.org/archives/multimedia/index.php?s=film_details&id_page=33&id_film=2197) (accessed April 1, 2014).

<sup>16</sup> Bernard D. Bolas, *A Handbook of Laboratory Glass-Blowing* (London: Routledge, 1921), 83.

<sup>17</sup> *Folk Long Song Performance*, UNESCO.

to a certain instrument tends instead to depend on the aesthetic of the genre. For example, the pulsating breath in *shakuhachi* performance is part of the Zen meditation aesthetic of the instrument, whereas the breath pulses in *gagaku* articulate the formal structure of the music. Even though pitch bends and microtonal embellishments are easier to produce on *hichiriki* than *ryūteki*, they are heard on both instruments to some degree because the aesthetic of the court repertoire calls for them.

## Section II:

### The *Gagaku* winds: *Hichiriki* and *ryūteki*, Japanese large double reed and transverse flute

#### Chapter 3: The *Gagaku* ensemble

The bamboo *hichiriki* double-reed pipe and *ryūteki* transverse flute are instruments of the Japanese *gagaku* imperial court orchestra. A music and dance performance tradition that reached its height of popularity in the Chang'an court in Tang China, *gagaku*<sup>1</sup> court music came to Japan from the Asian mainland beginning in the 5<sup>th</sup> century. In Japan, it has been promoted with nationalistic pride as the "world's longest continuous orchestral tradition"<sup>2</sup> and has survived periods of acculturation, simplification, decline, revival, and hybridization.

#### 3.1 Brief history of *gagaku*

The first recorded travel of musicians from the Asian mainland to Japan was in 453 CE for the funeral of Emperor Ingyō.<sup>3</sup> Korean musicians of the Silla Kingdom<sup>4</sup> brought with them the music of their court—likely a mixture of the music of China and the three Korean kingdoms.<sup>5</sup> Whether music from the mainland travelled to Japan earlier is unclear; however, for the next few centuries, Chinese court music was repeatedly brought to the islands of Japan directly from China and indirectly through Korea. As Japanese scholars and musicians went to study in China, Chinese

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<sup>1</sup> *Ga*=elegant, *gaku*=music; The term is of Chinese origin and shares its Chinese characters (雅樂) with *yǎyuè* from China and *a-ak* from Korea.

<sup>2</sup> David W. Hughes, "The Picken School and East Asia: China, Japan and Korea," *Ethnomusicology Forum* 19.2 (2010): 235.

<sup>3</sup> *Nihon Shoki, Book 13* (Japanese records from 720 CE), cited in Robert Garfias, *Music of a Thousand Autumns: The Tōgaku Style of Japanese Court Music* (Berkeley: University of California Press, 1975), 7.

<sup>4</sup> Tōgi Masataro, *Gagaku: Court Music and Dance*, translated by Don Kenny (New York: Walker/Weatherhill, 1971), 191.

<sup>5</sup> Garfias, *Music of a Thousand Autumns*, 7.

musicians likewise emigrated to Japan.<sup>6</sup> In the year 701, the Japanese Imperial Music Bureau (*Gagakuryō*) was established in Nara, the imperial capital from 710-784, and by 702, “T’ang music (Tōgaku) by far surpassed other kinds of foreign music in popularity.”<sup>7</sup>

During the Heian period, from about 833, emperors Saga (r.809-823) and his son Ninmyō (r.833-850) had the court ceremonies reorganized and simplified.<sup>8</sup> The “official changes in music” (*Gakusei-Kaikaku*) involved a division of the repertoire into “Music of the Left” (*sa-hō*) and “Music of the Right” (*u-hō*). “Music of the Left” was called *tōgaku* and included mostly repertoire from the Tang Chinese court. “Music of the Right,” *komagaku*, primarily included pieces from the Korean kingdoms and Manchuria.<sup>9</sup> Each division also included Japanese pieces composed in the style of the Left or the Right.<sup>10</sup> Instrumental forces and the number of modes used in the pieces performed were also reduced with the *Gakusei-Kaikaku*.

The *tōgaku* orchestra was originally similar to the contemporary Chinese orchestra in size and instrumentation. Although the ensemble always comprised three sections—bamboo winds,<sup>11</sup> plucked strings and percussion—many instruments were eliminated in the Heian-period reorganization. Nara-period ensembles had included the *shakuhachi* flute, two sizes of the *hichiriki* double-reed pipe, multiple sizes of the *shō* mouth organ, and panpipes. The wind instruments

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<sup>6</sup> Ibid., 7-9.

<sup>7</sup> Ibid., 9

<sup>8</sup> Ibid., 15.

<sup>9</sup> Ibid., 15-16.

<sup>10</sup> Steven G. Nelson, “Court and Religious Music (1): History of *Gagaku* and *Shōmyō*,” in *The Ashgate Research Companion to Japanese Music*, edited by Alison McQueen Tokita and David W. Hughes (Aldershot, England; Burlington, VT: Ashgate, 2008), 40.

<sup>11</sup> Sukehiro Shiba points out that the instruments are all bamboo winds, not woodwinds. (*Score of Gagaku: Japanese Classical Court Music*, Vol. 1 [Tokyo: Ryuginsha, 1955], 31.)

retained in the Heian period and still used today are the *ryūteki* transverse flute, the small *hichiriki*, and a single size of *shō*. The *tōgaku* string section comprises the *biwa* lute and *koto* zither, while the percussion section includes the *shōko* gong and two drums—the large *taiko* and the double-headed *kakko*. The strings are omitted in pieces that accompany dance (*bugaku*).

The *komagaku* wind section retained the *komabue* flute and small *hichiriki* but no other winds. Strings are absent from *komagaku* but the percussion section resembles that of *tōgaku*, with the substitution of the *san-no-tzuzumi* drum for the *kakko*.<sup>12</sup>

Despite changes in instrumentation with the *Gakusei-Kaikaku*, “each instrumental version was a complete piece of music, perfectly satisfying in itself, not requiring the addition of any other melodic instrument to make it complete.”<sup>13</sup> Meanwhile, new Japanese compositions were commissioned (although composition stopped after the Heian period).<sup>14</sup>

*Gagaku* encompasses several sub-genres of music performed at the imperial court. *Tōgaku* is further divided into *bugaku* (dance pieces) and *kangen* (instrumental pieces; *kan* = pipes, *gen* = strings). *Komagaku* comprises only *bugaku*, as *kangen* was not preserved after the Heian period.<sup>15</sup> The orchestra also accompanies vocal forms including *rōei*, recitations of Chinese poetry, and *saibara*,

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<sup>12</sup> Terauchi Naoko, “Gagaku,” in *The Garland Encyclopedia of World Music, Vol. 7, East Asia: China, Japan and Korea*, edited by Robert C. Provine, Yosihiko Tokumaru and J. Lawrence Witzleben (New York: Garland Pub., 1998), 621.

<sup>13</sup> Laurence Picken, *Music from the Tang Court*, Vol. 5 (Cambridge: Cambridge University Press, 1990), 107.

<sup>14</sup> Nelson, “Court and Religious Music (1),” 40.

<sup>15</sup> Terauchi, “Gagaku,” 621.



songs said to be derived from folk songs and adapted to the court by 859.<sup>16</sup> *Saibara* has been accompanied by flute, *biwa* and *koto* since the 10<sup>th</sup> century.<sup>17</sup>

Three recognized schools of *gagaku* performance developed in Nara, Osaka, and Kyoto,<sup>18</sup> primarily at shrines and temples as well as at private residences of the aristocracy. The Kyoto tradition was established when the imperial court moved from Nara to Kyoto at the end of the 8<sup>th</sup> century. Some musicians stayed behind in Nara, maintaining the Nara tradition until the Meiji period (1868-1912). The Shitennoji temple, built in 593 in Osaka, housed a *gagaku* ensemble as well, but the recognized Osaka tradition began at the end of the 16<sup>th</sup> century when Toyotomi Hideyoshi formed a new court, and with it a *gagaku* ensemble.<sup>19</sup>

When the imperial court was in danger in times of warfare, the court ceremonies suffered. However, despite shogunate rule in the Kamakura period (1192-1333), court music kept thriving.<sup>20</sup> Nevertheless, in war time during the Muromachi period (1392-1568), specifically the Onin Rebellion of 1467-1477, the musicians fled the capital at Kyoto, leading to the “almost complete destruction of the culture of the imperial court in Kyoto.”<sup>21</sup> The vocal forms *saibara* and *rōei* did

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<sup>16</sup> Elizabeth J. Markham, *Saibara: Japanese Court Songs of the Heian Period*, Vol. 1 (Cambridge: Cambridge University Press, 1983), xvii.

<sup>17</sup> Some of the flute parts are preserved in the 10<sup>th</sup>-century *Hakuga no Fue-fu* (Markham, *Saibara I*, 193) and *Saibara Ōteki-fu* (1193) flute manuscripts (Ibid., II, 341-3). The six *saibara* still performed are included in the *Meiji Sentei-fu* compilation of 1876 (Eta Harich-Schneider, “Koromogae: One of the Saibara of Japanese Court Music,” *Monumenta Nipponica* 8.1 (1952): 399).

<sup>18</sup> Garfias, *Music of a Thousand Autumns*, 24.

<sup>19</sup> Koizumi Fumio and Kazuo Okada, *Gagaku: the Noble Music of Japan* (Göttingen: Institut für den Wissenschaft-lichen Film, 1974), 3-4.

<sup>20</sup> Nelson, “Court and Religious Music (1),” 45.

<sup>21</sup> Ibid., 46.

not survive intact, but were reconstructed in the Edo and Meiji periods, respectively.<sup>22</sup> *Bugaku* and *kangen* continued outside the capital.<sup>23</sup>

With the priority of preservation in times of peace during the 16<sup>th</sup> century, musicians were brought from Osaka and Nara to reinforce the weakened ensemble at Kyoto,<sup>24</sup> forming the *Sanpō-gakuso* (the collective name for the three groups of musicians in the Music Department of the Imperial Court).<sup>25</sup>

The 17<sup>th</sup> century saw a revival of *gagaku* court traditions, the establishment of performance groups in Edo (Tokyo),<sup>26</sup> and the formation of the Silk and Bamboo Society (*Shichiku-kai*) in Kyoto, whose aim it was to counter the deterioration of the *gagaku* tradition and promote private study and performance.<sup>27</sup> The *Gakkaroku* (“Record of *Gagaku* Families”), an encyclopedic compendium, was also compiled in 1690.<sup>28</sup>

With the Meiji period (1868-1912) came a new effort to “restore” court ceremonies, including dance and vocal forms that had been lost.<sup>29</sup> This “restoration” also involved a codified hybridization of the three traditional schools of performance into what Steven G. Nelson has called “a sanitized and sanctified tradition.”<sup>30</sup> The Gagakukyoku ensemble was formed in Tokyo at the Imperial Palace in 1870 and brought together musicians from the three *gagaku* centres to compile

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<sup>22</sup> Terauchi, “Gagaku” in *Garland*, 625.

<sup>23</sup> Nelson, “Court and Religious Music (1),” 46.

<sup>24</sup> *Ibid.*, 47.

<sup>25</sup> Minamitani Miho, “*Gagaku*-Musicians in the Azuchi-Momoyama Period: A Study on the Organization of the *Sanpō-gakuso*,” in *Music Cultures in Interaction: Cases between Asia and Europe*, edited by Machubi Usaburō and Yamaguti Osamu (Tokyo: Academia Music, 1994), 75.

<sup>26</sup> Nelson, “Court and Religious Music (1),” 47.

<sup>27</sup> Eta Harich-Schneider, *A History of Japanese Music* (London: Oxford University Press, 1973), 491.

<sup>28</sup> Nelson, “Court and Religious Music (1),” 47.

<sup>29</sup> *Ibid.*

<sup>30</sup> *Ibid.*, 48.

standard scores of the entire repertoire—the *Meiji Sentei-fu* (“Notation Edited in the Meiji Period”)—with editions completed in 1876 and 1888.<sup>31</sup> Over time, the three schools had developed divergent practices of ornamentation.<sup>32</sup> *Gagaku* was still protected by the court in the Meiji period but this formerly secret tradition was given its first public performances in 1878 at the new *Gagaku* Rehearsal Hall; the cabinet had also decided to make *gagaku* instruction open to the public in 1873. In addition, the court musicians were required to learn and perform Western music on Western instruments beginning in 1874.<sup>33</sup>

### 3.2 Preservation

Court musicians belonged to a hereditary tradition of family guilds that passed their traditions of interpretation and ornamentation through the male line mainly through oral methods of imitation and memorization. This form of transmission was guarded and the repertoire kept secret within the court. The musicians placed great value on passing the music on just as they had learned it;<sup>34</sup> this was considered a “sacred obligation.”<sup>35</sup> The public would not have the opportunity to hear this music, let alone learn it. Prior to the Meiji period, *gagaku* was an isolated ceremonial tradition, reserved for the imperial court and religious centres.

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<sup>31</sup> Terauchi Naoko, “Beyond the Court: A Challenge to the *Gagaku* Tradition in the ‘Reconstruction Project’ of the National Theatre,” in *Performing Japan: Contemporary Expressions of Cultural Identity*, edited by Henry Mabley Johnson and Jerry C. Jaffe (Folkestone, UK: Global Oriental, 2008), 95.

<sup>32</sup> Garfias, *Music of a Thousand Autumns*, 25.

<sup>33</sup> Tōgi Masataro, *Gagaku*, 195.

<sup>34</sup> Regarding the challenges they faced in keeping the tradition “unchanged,” I refer the reader to Harich-Schneider, *A History of Japanese Music*, 550-560, and Garfias, *Music of a Thousand Autumns*, Chapter IX (“Conclusion: The Continuous Evolution of the Tōgaku Style”).

<sup>35</sup> Koizumi and Okada, *Gagaku*, 5.

*Shōga*, a system of mnemonics to aid memorization and transmission, developed in the eighth century<sup>36</sup> and minimal tablature notation is dated to as early as the 10<sup>th</sup> century. These two resources were used in teaching younger generations within the family guilds of *gagaku* court musicians.<sup>37</sup> Performance practice of ornamentation and embellishment was passed down orally.

The tablature system differs for each instrument of the ensemble, and in the case of the *hichiriki* and *ryūteki*, is based on fingerings. As a result, although today we have a guide to the fingerings employed in Heian times, we have no means of knowing in detail how the resulting music sounded.<sup>38</sup> According to Nelson, the tablature systems used by Japanese musicians seem to be based on “ancient Chinese models.”<sup>39</sup> This tablature, an outline of fingerings and metric structure, supplemented *shōga* mnemonics in transmission practices. Orally-transmitted mnemonics helped musicians learn and perform—as all music had to be played from memory—through codes for phrasing and pitch. Consonant sounds held clues to performance techniques and phrasing, while vowels instructed the musician concerning pitch relationships and melodic direction.<sup>40</sup> The mnemonics were to be memorized and sung before the student musician was permitted to play the piece being learned.<sup>41</sup> *Shōga* syllables were written down and added to the tablature

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<sup>36</sup> Shōno Susumu, “The Role of Listening in Gagaku: Interview with Shiba Sukeyasu, Master Musician of Gagaku, Conducted on 24<sup>th</sup> March, 1986,” *Contemporary Music Review* 1:2 (1987): 20.

<sup>37</sup> Garfias, *Music of a Thousand Autumns*, 24-25.

<sup>38</sup> Harich-Schneider, *A History of Japanese Music*, 132.

<sup>39</sup> Nelson, “Court and Religious Music (2),” 52.

<sup>40</sup> *Ibid.*

<sup>41</sup> Alison McQueen Tokita and David W. Hughes, “Context and Change in Japanese Music,” in *The Ashgate Research Companion to Japanese Music*, edited by the authors (Aldershot, England; Burlington, VT: Ashgate, 2008), 17.

notation in the Meiji scores (*Meiji-senteifu*)<sup>42</sup> and are still given in modern pedagogical publications.<sup>43</sup> The oral tradition of transmission continues though.

David W. Hughes writes:

Still today, despite the existence of written notations, a flute player in a *gagaku* or *nō* ensemble will learn each piece first by singing it, thus acquiring subtleties of expression that elude writing.<sup>44</sup>

FIGURE 3.1 Meiji-style *ryūteki* score of tablature and mnemonics for *Etenraku* in *Hyō-jō* mode.

テ	タ	フ	ト	六	ト
	ア	中	ヲ	テ	ラ
ノ	ハ	ノ	ホ	中	ロ
	ア		ヲ		ヲ
六	ラ	夕	ロ	夕	ル
下	ロ	五	ル	中	ロ
	。	上	イ	テ	タ
五	ト	中	ト		ア
上	ラ	夕	ル	六	ロ
ノ	ハ	中	ロ	テ	ラ
中	リ	セ	タ		ア
夕	ラ	テ	ロ	六	。
	ア	中	ロ	テ	ト
	ア	夕	。	六	ラ
	。	セ	ト	テ	ハ
下	ト	五	ロ	ノ	ト
六	ロ	上	ラ	五	ヲ
下	ト	夕	チ	上	ロ
	ヲ	中	ヤ	夕	ラ
	イ	夕	ル	五	ル
夕	ロ	上	イ	上	イ
ノ	ホ	テ	タ	テ	タ
	ヲ		ア	六	ア
	引	六	ロ	テ	ラ
	引	テ	ラ		ア
	。		ア		。

Manuscripts dating back as far as 920 have contributed to the preservation of the *gagaku* repertoire. The earliest examples include *Shinsen Ojo-fu* (“Newly Edited

<sup>42</sup> Terauchi, “Gagaku” in *Garland*, 626.

<sup>43</sup> For example: Sasamoto, *Hajimete no Gagaku* はじめての雅楽 (Beginner’s Guide to Gagaku).

<sup>44</sup> David W. Hughes, “Japan, III, 4, Oral Mnemonics,” *Grove Music Online*, Oxford University Press, accessed May 30, 2014, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/43335pg3>.

Score for Transverse Flute”) by Prince Sadayasu in 920,<sup>45</sup> and Minamoto no Hiromasa’s flute tablature scores *Hakuga Sanmi Fue Fu* from 966.<sup>46</sup> According to Allan Marett, the *Hakuga Sanmi Fue Fu* includes tablature fingerings, *taiko* drum strokes, and additional indications of phrasing, sustained tones (*hiku*), and mordent-like ornamentation.<sup>47</sup> Later manuscripts that include details on wind performance are the *Zoku-Kyōkunshō*, compiled by Koma no Tomokuzu between 1270 and about 1322,<sup>48</sup> and which gives drawings of wind instruments along with their pitch relationships;<sup>49</sup> *Nakahara Reseishō*, a 14<sup>th</sup>-century *hichiriki tōgaku* score for which an Edo-period copy has been preserved;<sup>50</sup> and *Taigensho*, a compendium from 1510-12 by Toyohara no Sumiaki that includes information on *ōteki (ryūteki)* flute ornamentation.<sup>51</sup> According to court musician Tōgi Masataro, about 300 works of *gagaku* have survived through to at least the mid-20<sup>th</sup> century,<sup>52</sup> though Robert Garfias stated in 1960, “the present tradition still makes use of about 150 pieces.”<sup>53</sup>

Although extant instruments cannot give the full picture of the music performed on them, they nonetheless hold value in the preservation of a tradition. A comparison of 8<sup>th</sup>-century instruments and those used in the meantime can offer insight into changes that occurred in the tradition.

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<sup>45</sup> Nelson, “Court and Religious Music (1),” 42.

<sup>46</sup> The original is lost; extant copies are from the 18<sup>th</sup> century or later. Allan J. Marett, “Tunes Notated in Flute-tablature from a Japanese Source of the Tenth Century,” *Musica Asiatica* 1 (1977), 1-2.

<sup>47</sup> *Ibid.*, 1-14.

<sup>48</sup> Nelson, “Court and Religious Music (1),” 45.

<sup>49</sup> Harich-Schneider, *A History of Japanese Music*, 384-5.

<sup>50</sup> Kwok Wai Ng, “In Search of the Historical Development of Double-Reed Pipe Melodies in Japanese Tōgaku: Early Hypotheses and New Perspectives,” *Asian Music* 42.2 (2011), 92.

<sup>51</sup> Harich-Schneider, *A History of Japanese Music*, 387.

<sup>52</sup> Tōgi Masataro, *Gagaku*, 59.

<sup>53</sup> Robert Garfias, “Modifications of the Gagaku Tradition,” *Ethnomusicology* 4.1 (Jan. 1960): 18.

The Imperial Shōsōin in Nara, Japan preserves the household goods of Emperor Shōmu from the 8<sup>th</sup> century. Among these goods are numerous instruments, including eight six-hole *shakuhachi* flutes (an original member of the *gagaku* ensemble) and four transverse flutes.<sup>54</sup> These flutes are slightly different in construction from the flutes played today. Most *shakuhachi* played today have five holes, not six, and modern transverse flutes have wider bores than those preserved in the Shōsōin. The bores of the preserved Shōsōin flutes are also unlacquered. Garfias points out that the flutes with narrow unlacquered bores would be softer in timbre than those played today. He suggests that these flutes would not respond as well to changes in air pressure as do modern flutes and that it is therefore likely that ornamentation practices relied more on fingering technique than on variation in air pressure. He refers to the instruments and performance practice of Korean court music for comparison—the modern Korean instruments resemble the Shōsōin instruments more closely.<sup>55</sup> Marett adds that the finger holes have also been enlarged in modern transverse flutes. This allows for greater variation in pitch.<sup>56</sup> How early and in which order the bore was widened and the finger holes enlarged is not clear.

### 3.3 *Gagaku* today

After World War II, the *gagaku* tradition was in decline because many young members of hereditary families had died in the war<sup>57</sup> and others had to leave the

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<sup>54</sup> Tōgi Masataro, *Gagaku*, 59.

<sup>55</sup> Garfias, *Music of a Thousand Autumns*, 14-15.

<sup>56</sup> Marett, "Tunes Notated," 9.

<sup>57</sup> Nelson, "Court and Religious Music (1)," 48.

court when cuts were made to the Music Department.<sup>58</sup> The wind section of the orchestra reduced its size to three each of *hichiriki*, *ryūteki*, and *shō*, an ensemble that was “deplorably small” according to Sukehiro Shiba,<sup>59</sup> with a total of only 25 musicians employed in the Music Department of the Imperial Household Agency (the *Kunaichō Gakubu*).<sup>60</sup> According to Garfias,

At the beginning of the Meiji period (mid-nineteenth century) there were gathered about 100 court musicians in Edo (now Tokyo) from the various shrines and temples in Japan. This number gradually dwindled to forty-six just before World War II.<sup>61</sup>

Keepers of this ancient secret tradition chose to take steps to de-mystify *gagaku* in the face of decline. The ensemble opened itself up to increased public performance, international tours, and recordings by court musicians; composition and performance of new works; and instruction for amateurs and non-hereditary musicians. Females and non-Japanese were eventually accepted as students in amateur groups.<sup>62</sup> There remained, however, hesitation within the guilds to release centuries of performance secrets to the public and to researchers.<sup>63</sup>

Professional *gagaku* ensembles performing outside the court system today include the Tokyo Gakuso, founded in 1978 to promote traditional repertoire and

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<sup>58</sup> Tsukahara Yasuko, “Aspects of *Gagaku* in the Late Nineteenth and Early Twentieth Centuries,” in *Musicology and Globalization: Proceedings of the International Congress in Shizuoka 2002: in Celebration of the 50th Anniversary of the Musicological Society of Japan*, edited by the Musicological Society of Japan (Tokyo: Musicological Society of Japan, 2004), 75.

<sup>59</sup> Shiba, *Score of Gagaku*, Vol.1, 32.

<sup>60</sup> Tōgi Hideki, “Gagaku’s Pleasures and Possibilities,” *Japan Quarterly* 46.3 (July-September 1999): 32.

<sup>61</sup> Garfias, “Modifications,” 18.

<sup>62</sup> Nelson, “Court and Religious Music (1),” 37.

In 1946, a linguist named Leo M. Traynor was permitted to study *shō* and *shakuhachi*. (Harich-Schneider, *Japanese Music*, 578.)

<sup>63</sup> Harich-Schneider, *A History of Japanese Music*, 559.



new music,<sup>64</sup> and Reigakusha Ensemble, directed by a former musician of the Imperial Household Music Department, Sukeyasu Shiba, and formed in 1985 to promote both traditional and new pieces, such as "In an Autumn Garden" by Tōru Takemitsu.<sup>65</sup> Tōgi Hideki, a *hichiriki* player from a hereditary *gagaku* family traceable to the Nara period, left the court ensemble in the 1990s to pursue a solo career. He has recorded arrangements of *gagaku* pieces as well as new music for *hichiriki* and synthesizer.<sup>66</sup> Abroad, ensembles have been formed in Hawaii<sup>67</sup> and at universities in Europe and the United States.<sup>68</sup> UNESCO inscribed *gagaku* on the Representative List of the Intangible Cultural Heritage of Humanity in 2009.<sup>69</sup>

### 3.4 The *Gagaku* winds

The *gagaku* winds are the *shō* mouth organ, the *hichiriki* double-reed pipe, and the *fue* (the generic term for flute). In this study I focus on the *hichiriki* and the *ryūteki* flute. Extended techniques are not applicable to the *shō* mouth organ.

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<sup>64</sup> "Tokyo Gakuso and its leader, Tadaaki Ohno," *Celestial Harmonies*, accessed July 27, 2012, <http://www.blacksun.com/biographies/tokyogakuso.htm>.

<sup>65</sup> "Reigakusha Gagaku Ensemble: About Us," *Reigakusha Gagaku Ensemble*, accessed April 1, 2014, [http://reigakusha.com/English/index\\_e.html](http://reigakusha.com/English/index_e.html).

<sup>66</sup> Terence Lancashire, "The Gagaku of Tōgi Hideki," *Popular Music* 22.1 (Jan. 2003): 27.

<sup>67</sup> For example, the Hawaii Gagaku Society and the Gagaku ensemble at the University of Hawai'i at Mānoa.

<sup>68</sup> Columbia University formed an ensemble in 2006. Also in New York, the Tenri Gagaku Music Society of New York was founded in 1979. Ensembles were also formed at the University of California, Los Angeles in 1969, and the University of Washington in 1962. In Europe, the Cologne Gagaku Ensemble was started at the University of Cologne in 2000.

<sup>69</sup> "Gagaku," UNESCO video, 9:52, Mainichi Productions, 2000, posted 2009, <http://www.unesco.org/culture/ich/en/RL/00265>.

### 3.4.1 *Hichiriki*

The body of the bamboo *hichiriki* has a reverse conical bore and is approximately 18.2 cm long (or six *sun*).<sup>70</sup> The top of the bore is about 15 mm in diameter, the bottom about 10 mm. The body is wrapped in the bark of birch, cherry, or wisteria but for the finger holes (seven on the front, two for the thumbs on the back) and lacquered both inside and out. A large reed of *ashi* (mountain bitter bamboo) extends from the top of the bore about 4 cm and is fitted with a bamboo ring for adjustments in volume and tone. The *hichiriki* has a range of a little over an octave, from G1 to A2.<sup>71</sup> A larger size, the *dai-hichiriki*, existed in the early history of *gagaku* and was pitched a fourth lower. The ancestor of the *hichiriki* is the Chinese *bili* (predecessor to today's *guanzi*); it is also related to the Korean *piri*.<sup>72</sup>

### 3.4.2 *Ryūteki*

*Gagaku* flutists learn to play three transverse flutes: *ryūteki*, primarily for “Music of the Left,” *komabue* for “Music of the Right,” and *kagurabue* for indigenous ritual music. They share basic characteristics of construction. Similar to the *hichiriki*, the flutes are made of bamboo, wrapped in bark, and lacquered. The blowhole end is stopped with wood covered in fabric embroidered in colours that correspond to the Left or Right and plugged with wax for intonation. A metal weight is also inserted to improve balance.<sup>73</sup> The *komabue* is about 37 cm long, the *ryūteki* 40 cm, and the *kagurabue* 45 cm. The bore of the *ryūteki* is the widest of the three and has seven

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<sup>70</sup> Minoru Miki, *Composing for Japanese Instruments*, translated by Marty Regan, edited by Philip Flavin (Rochester, NY: University of Rochester Press, 2008), 54.

<sup>71</sup> Middle C = C1; an octave higher = C2, etc.

<sup>72</sup> David W. Hughes, “Hichiriki,” *Grove Music Online*, Oxford University Press, accessed April 1, 2014, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/12985>.

<sup>73</sup> Hugh De Ferranti, *Japanese Musical Instruments* (New York: Oxford University Press, 2000), 58-59.

finger holes, whereas the *komabue* and *kagurabue* have six. The range of the *ryūteki* is C#2 to F#4, the *komabue* F#2 to G#4, and the *kagurabue* D2 to D4.<sup>74</sup>

### 3.4.3 The Wind section

The winds of the *gagaku* ensemble carry the melodic line in a heterophonic texture, with the *ryūteki* and *hichiriki* parts differing in ornamentation and certain tones. The *ryūteki* usually plays an octave higher than the *hichiriki*, with the *shō* filling in the space between them with chordal tone clusters above a lowest tone that follows the basic line of the melody.<sup>75</sup> Picken and his student-colleagues at Cambridge advanced the “revelation” that “the basic melodies of *Tōgaku* are preserved in the lowest notes (for the most part) of the mouth-organ” sonorities.<sup>76</sup> They claimed that when ornamentation and repeated notes are removed, an “unadorned, ancient melody” is uncovered in the *shō* parts, and that the *ryūteki* and *hichiriki* parts are “elaborate variations on ancient tunes, originally minimally embellished.”<sup>77</sup>

According to Tōgi Hideki, the *shō* is traditionally thought to represent “a ray of heavenly light” and is built in the shape of a phoenix at rest; the *hichiriki* represents “the voice of those who live on earth”; and the *ryūteki* represents the dragon, for which it is named, flying “in the space between heaven and earth.” Together, they represent the universe.<sup>78</sup> Although the *hichiriki* and *ryūteki* play the

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<sup>74</sup> Jarosław Kapuściński, and François Rose, “Orchestration in *Gagaku* Music: Ryūteki,” Center for Computer Research in Music and Acoustics, Stanford University, last modified October, 2010, <https://ccrma.stanford.edu/groups/gagaku/woodwinds/ryuteki.html>.

<sup>75</sup> Ibid., “Orchestration: Woodwinds.”

<sup>76</sup> Picken, *Tang Court*, 110.

<sup>77</sup> Ibid., 112.

<sup>78</sup> Tōgi Hideki, “Gagaku’s Pleasures,” 31-32.

same basic line, they embellish it differently, according to the idiomatic style of each instrument. For example, wide pitch bends and slides are easier to execute on the flexible large double reed than on the high-pitched flute and are thus employed more often on the *hichiriki*.<sup>79</sup> Because the timbres of the *gagaku* wind instruments do not blend, the individual tones of each kind of instrument are usually quite clear.

The techniques of the *gagaku* winds have been passed down orally since the court music first came to Japan from the mainland beginning in the 5<sup>th</sup> century. Although these techniques have surely undergone some degree of transformation and may or may not all date back to the earliest performances of *gagaku* in Japan, they are nonetheless integral to the tradition. Throughout its history, *gagaku* musicians have sought to preserve the tradition by transmitting the pieces orally through mnemonics, publishing manuscripts, and reorganizing the repertoire. Thus, this ancient music and dance is still performed in Japan today. In the following chapters, I analyze the performance techniques of the *hichiriki* and *ryūteki* in the best-known piece of the *gagaku* repertoire, *Etenraku*, as they pertain to Western extended techniques and the formal structure of the piece.

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<sup>79</sup> According to Koizumi and Okada, the *ryūteki* player would have to use “rather undignified motions with his hands and mouth” to match the flexibility of the *hichiriki*. These movements would compromise the solemnity of the performance. Pitch deviations from the mode are nonetheless achievable (*Gagaku*, 39).

## Chapter 4: *Etenraku*

For the purpose of identifying Western extended techniques in the practice of traditional Japanese wind instruments, I have analyzed the performance techniques of the *hichiriki* and *ryūteki* in the *tōgaku* piece *Etenraku* in the *hyō-jō* mode. In this chapter, I discuss the traditional notation of tablature and *shōga* mnemonics for *Etenraku* as well as mode, form, metre, and tempo. In Chapters 5-7, I analyze recordings of both sung *shōga* and instrumental performance.

*Etenraku* (“Music of Divinity”) is the best-known *gagaku kangen* piece, both in Japan and abroad. It may have been composed in Japan in the 11<sup>th</sup> century, in the late Heian period, or it may have come from China,<sup>1</sup> and is one of the 94 main pieces of the *tōgaku* repertoire, not including the *netori*<sup>2</sup> or *chōshi*<sup>3</sup> pieces used to introduce the mode.<sup>4</sup> Its popularity is owed in part to later additions of lyrics. These popular versions are called *Etenraku imayo*.<sup>5</sup> The instrumental version of *Etenraku* is also commonly played at weddings,<sup>6</sup> making it the only *gagaku* piece that many Japanese today are familiar with.<sup>7</sup>

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<sup>1</sup> Harich-Schneider, *A History of Japanese Music*, 410.

<sup>2</sup> “a short introductory piece... played by only one member, the leader or *ondō*, of each instrumental group” at the beginning of a *kangen* performance (Garfias, *Music of a Thousand Autumns*, 74).

<sup>3</sup> “a considerably more complex form of introduction” than the *netori* acts as a prelude to a *bugaku* performance (Ibid., 76).

<sup>4</sup> Ibid., 77.

<sup>5</sup> William P. Malm, *Traditional Japanese Music and Musical Instruments*, New ed., (Tokyo; New York: Kodansha International, 2000), 101.

<sup>6</sup> William P. Malm, Sidney D. Brown, and Eugene Enrico, *Gagaku: The Court Music of Japan*, VHS, produced and directed by Eugene Enrico and David Smeal (Norman, Okla.: University of Oklahoma, 1992), citation at 28:10.

<sup>7</sup> Picken, *Tang Court*, 117.

#### 4.1 Shōga mnemonics and tablature notation

The *tōgaku* repertoire, including *Etenraku*, is traditionally learned through the singing of *shōga* mnemonics. As discussed in Chapter 3, *shōga* has been passed down orally and the entire *gagaku* repertoire is preserved in the *Meiji Sentei-fu*, compiled in 1876 and 1888 by the Gagakukyoku ensemble. Figure 4.1 shows the *ryūteki* and *hichiriki* parts for *Etenraku* in the *hyō-jō* mode from the *Meiji Sentei-fu*.

FIGURE 4.1 a. *Etenraku* in *hyō-jō* from the *Meiji Sentei-fu* (Meiji 21, 1888), *ryūteki* part (Courtesy of Steven Nelson and Allan Maret)

The image displays handwritten musical notation for the *ryūteki* part of *Etenraku* in *hyō-jō* mode. The notation is organized into several vertical columns within a rectangular frame. On the far left, there is a vertical title '外 二返' (Gai Ni Hō) and a circled '二' (2). Below this, the characters '楽譜' (Gakufu) and '式部職' (Shikibu no Shokun) are written vertically. The main body of the notation consists of four columns of characters, including '重頭' (Chūgō), '二返' (Ni Hō), and 'ハト' (Hato), with various symbols and dots indicating pitch and rhythm. To the right of the main notation, there is a separate vertical box containing the title '越 殿 楽' (Etsuden Gaku) and performance instructions: '十曲 早稲拍子 拍子八' (Jūkyoku Hayashinobori Uchiwa) and '末三拍子如 後履十二' (Sue-san Uchiwa no Kōriji). The entire page is written in traditional Japanese calligraphy.



uninflected nature of a tone. Hughes demonstrates that “vowel-pitch solfège systems” such as *shōga* follow relative pitch patterns: the vowels *i, e, a, o, u* tend to descend from higher to lower.<sup>9</sup> Consonants are coded for articulation and movement from tone to tone. For example, a T or Ch sound is used to begin a breath phrase; an R sound indicates motion to a new tone, but within the same breath; and an F or H sound signals a metric pulse through finger articulation.<sup>10</sup> Figure 4.2 gives the *shōga* syllables used in *Etenraku* in both their *katakana* and transliterated forms.

FIGURE 4.2 *Shōga* syllables used in *Etenraku hichiriki* and *ryūteki* parts

vowels <i>sustain</i>		t/ch <i>phrase beginning</i>		r/y <i>pitch change/slur</i>		f/h <i>finger articulation</i>	
イ	i	チ	chi	リ	ri		
エ	e	テ	te	レ	re		
ア	a	タ	ta	ラ	ra	ハ	fa
				ヤ	ya		
ヲ	o	ト	to	ロ	ro	ホ	ho
				ル	ru		

Traditional notation for Japanese instruments is not based on fixed pitches as had been the case since approximately 2700 BCE in the Chinese *lü-lü* system.<sup>11</sup> Instead each instrument follows its own version of *shōga* and tablature notation. In addition to tablature fingerings, *hichiriki* and *ryūteki* scores have indicated *shōga*

<sup>9</sup> David W. Hughes, “Oral Mnemonics in Korean Music: Data, Interpretation, and a Musicological Application,” *Bulletin of the School of Oriental and African Studies* 54.2 (1991): 310-311.

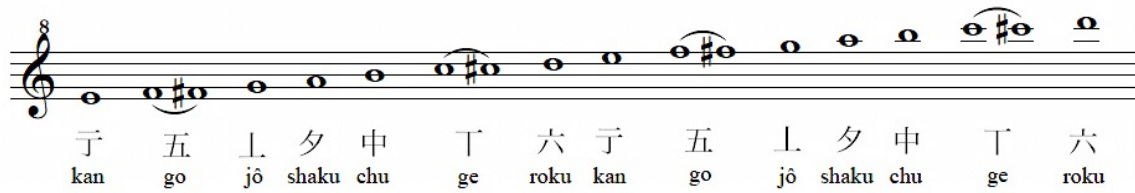
<sup>10</sup> Garfias, *Music of a Thousand Autumns*, 68; Hughes, “Oral Mnemonics,” *Grove Music Online*.

<sup>11</sup> Edith Gerson-Kiwi, “Solmization, II, 2, China and Korea,” *Grove Music Online*, Oxford University Press, accessed April 1, 2014, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/26154>.

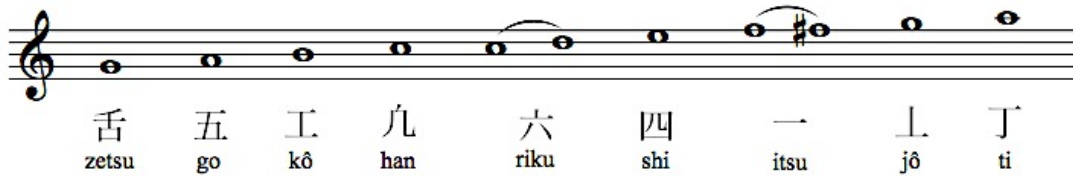


mnemonics for articulation and phrasing since the 17<sup>th</sup> century.<sup>12</sup> The tablature for *hichiriki* and *ryūteki*, with corresponding notes, is given in Figure 4.3.

FIGURE 4.3 a. Tablature for *ryūteki* from Sasamoto, *Hajimete no Gagaku*, 109.



b. Tablature for *hichiriki* from Sasamoto, *Hajimete no Gagaku*, 94.



The tone-hole layout on Japanese winds is relatively simple. Because of this and the ease with which the player is able to lower and raise pitch, a single fingering can yield more than one tone. For example, the *hichiriki* uses the 六 (*riku*) fingering for the tones C-C#-D and 一 (*itsu*) for F-F#, while the *ryūteki* can likewise make embouchure adjustments to the 五 (*go*) fingering to produce F-F# or the 丁 (*ge*) for C-C# in both octaves. Other tones can also be adjusted. The implications of these shared fingerings will be discussed further in the sections on mode (Section 4.2) and pitch slides and bends (Chapter 6).

Figure 4.4 gives a transnotation in Western notation of an unembellished version of the *ryūteki* and *hichiriki* parts, based on the *Meiji Sentei-fu* scores, without

<sup>12</sup> Terauchi Naoko, “Surface and Deep Structure in the *Tôgaku* Ensemble of Japanese Court Music (*Gagaku*)” in *Analytical and Cross-cultural Studies in World Music*, edited by Michael Tenzer and John Barlow Roeder (New York: Oxford University Press, 2011), 27.

reference to recordings or information that would be transmitted from teacher to student regarding altered tones or fingerings. Because this transnotation follows the *hyō-jō* mode strictly in interpreting the tablature (by including F# and C#), it is not an accurate depiction of how the melody is performed. Nevertheless, it is used here as a starting point in the analysis of *Etenraku* performance practice. *Shōga* syllables are indicated beneath the notes.

FIGURE 4.4 Transnotation of *Etenraku* in *hyō-jō* based on *ryūteki* and *hichiriki* parts in *Meiji Sentei-fu* (Meiji 21, 1888). *Shōga* syllables are indicated beneath notes.

### Etenraku (Hyo-jo)

Based on mnemonics and tablature

The score consists of three systems of music, each with a Ryuteki (top staff) and Hichiriki (bottom staff) part. The key signature has one sharp (F#) and the time signature is 4/4. The syllables are written below the notes.

**System 1:**

Ryuteki: to ra ro ru ro ta a ro ra a to ra fa to o ro ra ru i ta a ro ra a

Hichiriki: chi ra ro ru ro ta a ru ra a chi ra fa te ri re ta a ru ra a

**System 2:**

Ryuteki: to o ho o ro ru i to ru ro ta ro ro to ro ra chi ya ru i ta a ro ra a **Fine**

Hichiriki: to o ho ro ru to ru ro ta ro ru te ri ra ro ru ro ta a ru ra a

**System 3:**

Ryuteki: ta a fa a ra ro to ra fa ri ra a to ro to o i ro ho o o o

Hichiriki: ta a fa a ta a ri i to ro to ro o ru ri i i i **D.C. al Fine**

## 4.2 Mode

*Etenraku* is performed in the three different modes (or *chōshi*) of the *ritsu* system of modes,<sup>13</sup> but the *hyō-jō* mode version is the one most commonly heard. The other two *ritsu* modes are *oshiki-chō* and *banshiki-chō*. Both the *banshiki-chō* and *hyō-jō* versions appear in the c.1171 manuscripts *Jinchi-yōroku* and *Sango-yōroku* by Fujiwara no Moronaga. The 1201 manuscript *Ko fu/Hōshō-fu ritsu/ryōkan* by Toyohara no Toshiaki points to the *hyō-jō* version as the original.<sup>14</sup>

The *hyō-jō* mode is centred on what would in modern Western practice be the tone E at A=430 Hz.<sup>15</sup> The frequency of such an E in the Heian version of the mode is impossible to ascertain. Relative to A=430Hz, the tones E, A, and B are emphasized in the *hyō-jō* mode. Although these tones might imply a chordal relationship of I, IV, and V in Western harmony, linear motion in Japanese music is not based on such a framework. Instead these are the melodic tones most often sustained and least altered microtonally. Garfias refers to E, A, and B as the “uninflected” tones in the *hyō-jō* mode, whereas F♯, G, C♯ and D are the “inflected” tones.<sup>16</sup> The full scale of the *hyō-jō* mode notated in Western terms is:

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<sup>13</sup> *Ritsu* is one of two systems of modes in *gagaku*; the other is *ryo*. “In the case of *ryo* modes the underlying anhemitonic pentatonic modal structure remains essentially the same as in Chinese theory, that is T T m3 T m3. In the *ritsu* modes, however, it becomes T m3 T T m3.” (Allan Marett, “Mode, V, 5, ii, Japan: Chōshi,” *Grove Music Online*, Oxford University Press, accessed April 3, 2014, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/43718pg5>.)

<sup>14</sup> Picken, *Tang Court*, 119.

<sup>15</sup> This frequency of A=430Hz is according to Kapuściński and Rose, “Orchestration: Hichiriki,” and Minoru Miki, *Composing*, 5. The Kyoto Imperial Court Orchestra recording that I have transcribed is pitched at A=430Hz. However, the Imperial Court Ensemble is at approximately A=435Hz, while the Imperial Household Agency recording is at A=440Hz.

<sup>16</sup> Garfias, *Music of a Thousand Autumns*, 67.

**FIGURE 4.5** Scale of the *hyō-jō* mode; Tang-period and modern Japanese note names given (Chinese Tang names in parentheses).<sup>17</sup>

Tang names:	u	henkyū	kyū	shō	kaku	henchi	chi	u
	(yu	biangong	gong	shang	jue	bianzhi	zhi	yu)
Modern ritsu:	kyū	shō	eishō	kaku	chi	u	eiū	kyū

However, Koizumi Fumio and Okada Kazuo point out:

Since the discrepancy between theory and performance has become wide, it is impossible to precisely designate a sequence of notes, or even the exact number of notes, to any mode. Actually, the prescribed notes found within any one composition (in a designated mode), will vary in pitch from instrument to instrument and/or voice.<sup>18</sup>

For example, on both *hichiriki* and *ryūteki*, F and F# are played with the same fingering. It is common for these winds to stray from the F# of the mode, replacing it with an F, or sliding from the F to the F# while other instruments play F#, thereby creating dissonance.<sup>19</sup> According to Koizumi and Okada, in the *hyō-jō* mode, the *hichiriki* will often replace the F# with F, and will play C or D in place of C#, and the *ryūteki* will produce a tone that wavers between C and C#.<sup>20</sup> Marett states: “such modal deviations are for the most part not notated but are carried in the oral tradition.”<sup>21</sup>

<sup>17</sup> Kwok Wai Ng, “The Modes of *Tōgaku* from Tang-period China to Modern Japan: Focusing on the *Ōshikichō*, *Banshikichō* and *Hyōjo* Modal Categories,” PhD diss. (Univ. of Sydney, 2007), 372.

<sup>18</sup> Koizumi and Okada, *Gagaku*, 39.

<sup>19</sup> Sukehiro Shiba, *Score of Gagaku*, Vol.1, 33.

<sup>20</sup> *Gagaku*, 84.

<sup>21</sup> Marett, “Japan: Chōshi,” *Grove Music Online*.

These “modal deviations” have been explained by scholars as both *bian* (“exchange”) tones in Chinese music theory, and bi-modality resulting from the influence of either the *in* scale<sup>22</sup> or the similar *miyakobushi* scale of the Edo Period.<sup>23</sup> A *bian* tone in Chinese theory is a flattened tone, called a *hen* tone in Japanese; a sharpened tone is *ying* in Chinese, *ei* in Japanese. Two auxiliary *bian/hen* tones were added to the pentatonic scale to form the heptatonic scale—*biangong/henkyū* (flattened *gong/kyū*) and *bianzhi/henchi* (flattened *zhi/chi*). In the Tang period, F♯ (G♭) and C♯ (D♭) were considered the altered “exchange” tones in the *yu/u* scale. As Japanese music evolved independently of Chinese music theory, the “exchange” tones shifted from the second and sixth degrees of the *u* scale to the third and seventh degrees of the *kyū* scale. In the *kyū* scale, the third degree (*eishō*, G) is a sharpened *shō* (F♯) and the seventh degree (*eiū*, D) is a sharpened *u* (C♯). The tones of the *kyū* pentatonic scale are therefore E-F♯-A-B-C♯. The tones G and D are auxiliary exchange tones.<sup>24</sup> (See the note names in Figure 4.5) Exchange tones (*ei* tones) will be useful in Chapter 6 in explaining variations from performance to performance of *Etenraku*, in particular regarding the tones D and C♯ (*eiū* and *u*).

The argument for bi-modality in *hyō-jō* pieces stems from the 16<sup>th</sup> century, when the *in* scale was prevalent in traditional Japanese music.

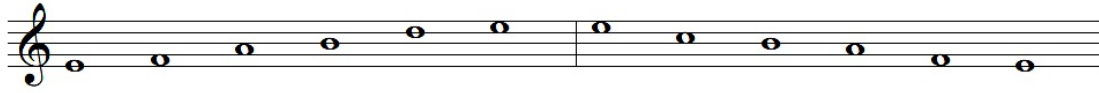
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<sup>22</sup> See Maret, “Japan: Chōshi,” *Grove Music Online*.

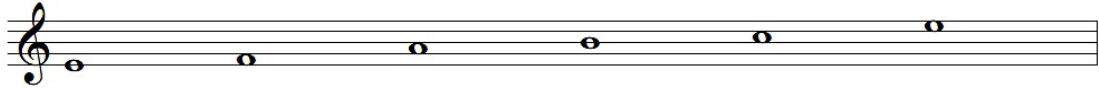
<sup>23</sup> See Akira Tamba, *La Théorie et l'esthétique musicale japonaises, du 8<sup>e</sup> à la fin du 19<sup>e</sup> siècle* (Paris: Publications Orientalistes de France, 1988), 92, 123; Koizumi Fumio, “Musical Scales in Japanese Music,” in *Asian Musics in an Asian Perspective*, edited by Koizumi et al (Tokyo: Academiz Music, 1977), 74-77.

<sup>24</sup> Ng, “The Modes of *Tōgaku*,” 372; Maret, “Japan: Chōshi,” *Grove Music Online*; Willem Adriaansz, *The Kumiuta and Danmono Traditions of Japanese Koto Music* (Berkeley: Univ. of California Press, 1973), 31-33.

FIGURE 4.6 a. The Japanese *in* scale



b. The *miyakobushi* scale



In the “Japan: Chōshi” entry in *Grove Music Online*, Maretts summarizes the work of Willem Adriaansz, who identified the influence of the *in* scale on *koto kumiuta* song cycles:

It has been shown that just such a transformation of a *ritsu*-scale tuning into an *in*-scale tuning in practice was responsible for the composition effectively launching the modern *koto* traditions... It involves a chain of tuning transformations and structural elaborations, leading from the *ritsu*-scale *Hyōjō* version of *Etenraku* to the *in*-scale form of *Fuki* as it existed in the late 17th century.<sup>25</sup>

*Fuki* was the first *kumiuta* song cycle composed for *koto*. It is an *Etenraku imayo*, that is, it is based on the melody of *Etenraku*.<sup>26</sup> Maretts also states:

It has been suggested that this characteristically Japanese *in* scale may have influenced the intonations of the *hichiriki* to bend in its direction over the centuries.<sup>27</sup>

Kwok Wai Ng, a student of Maretts’s, adopts this view and expounds on the resulting bi-modality in the *ritsu*-mode *tōgaku* pieces in “The modes of *tōgaku* from Tang-period China to modern Japan: focusing on the *ōshikichō*, *banshikichō* and *hyōjō* modal categories.”

<sup>25</sup> Maretts, “Japan: Chōshi,” *Grove Music Online*.

<sup>26</sup> Willem Adriaansz, “The Yatsuhashi-Ryu: A Seventeenth Century School of Koto Music,” *Acta Musicologica* 43.1 (1971): 59.

<sup>27</sup> Maretts, “Japan: Chōshi,” *Grove Music Online*.

Koizumi Fumio took a different approach to modality. He identified four “tetrachords”<sup>28</sup> in Japanese music, including the *miyakobushi* (e.g. E-F-A; B-C-E) and the *ritsu* (e.g. E-F♯-A; B-C♯-E). Regarding the *ritsu* “tetrachord,” or more appropriately, “trichord,” he writes,

In practice, the intermediate tone... tends to be flatted to various degrees, from very slightly to as low as the flatted second, thus becoming tetrachord II [*miyakobushi*].<sup>29</sup>

Akira Tamba follows Koizumi’s work in arguing for bi-modality between the *hyō-jō* mode and the *miyakobushi* scale (two disjunct *miyakobushi* tetrachords):

Si, à present, on analyse les pièces de *ritsu* du *gagaku*, on s’aperçoit qu’elles tendent, en règle générale, à glisser vers le mode hémitonique, *miyakobushi*. Cependant, la modification en *ritsu* varie en fonction du mode employé et des instruments: *koto* (cithare à 13 cordes), *biwa*, (luth à 4 cordes), *shō* (orgue à bouche) gardent fidèlement le mode original, à cause de sa facture instrumentale fixe; par contre les instruments mélodiques, *ryūteki* (flûte traversière à 7 trous), *hichiriki* (hautbois primitif) évoluent davantage.<sup>30</sup>

Regardless of the approach to analyzing bi-modality,<sup>31</sup> the F♯ and C♯ of the *hyō-jō* mode are frequently lowered in *Etenraku* in the *hichiriki* and *ryūteki* parts (compared to, for example the parts of the *shō*, which does not have an F♯ at its disposal). Adriaansz comments:

Actually, these two scale degrees had been unstable degrees for centuries: whenever possible (that is, when the voice or instruments with flexible intonation were involved) they were intoned considerably lower than the system officially prescribed.<sup>32</sup>

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<sup>28</sup> Koizumi used the term “tetrachord” to mean a set of three notes, the outer two of which are a perfect 4<sup>th</sup> apart. Since the set includes three notes, not four, I use the term “trichord” instead.

<sup>29</sup> Koizumi, “Musical Scales,” 75.

<sup>30</sup> Tamba, *La Théorie*, 123.

<sup>31</sup> Henry Burnett argues that analysis based on the fourth is “misleading” in “Voice-Leading Considerations in Edo-Period *Jiuta-Tegotomono*: A New Analytical Approach,” *Analytical Approaches to World Music* 1.2 (2011): 280.

<sup>32</sup> Adriaansz, “The Yatsunashi-Ryu,” 69.

Ng explains that on *hichiriki*, the ㇇ *jō* (G) fingering in tablature notation is commonly replaced in modern practice by the ㇇ *itsu* fingering, played *meri* (lowered) as F. Likewise, the *itsu* fingering itself, which could be played as F or F♯, tends to be played as F, and the ㇇ *riku* fingering is played *meri* as C in place of the “standard” D. The ㇇ *han* fingering is played as C, not C♯.<sup>33</sup> Similar adjustments are made to the *ryūteki* part, although to a lesser degree. If this replacement were complete in all parts, it would result in the pentatonic scale: E-F-A-B-C; however, in *Etenraku*, all seven tones of the *hyō-jō* mode are present in performance alongside the F and C, hence the argument for bi-modality. My initial transnotation (Figure 4.4), based solely on the notated tablature and mnemonics, is clearly inaccurate in light of pitch alterations that are transmitted orally and include not only semitone alterations but microtonal alterations as well. In order to draw a clearer picture of performance traditions, transcriptions based on recordings are explored in Chapters 5-7.

The annotated engravings of the *ryūteki* and *hichiriki* parts for *Etenraku* in Figure 4.7 show transliteration of the notated tablature as well as preliminary adjustments to the tones. With respect to performance techniques, finger articulation is indicated as “flick” in the “Tab Notes” column (ノ in the tablature; ノ *fa* or ホ *ho* in the *shōga*) and the metre is emphasized on sustained tones (notated | in “Tab Notes”) by either a breath pulse or a reiteration after a brief rest (both indicated as simple vowel sounds in *shōga*: ア *a*, エ *e*, イ *i*, オ *o*). The musician makes

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<sup>33</sup> Ng, “The Modes of *Tōgaku*,” 373.



further adjustments by incorporating pitch bends and slides as well as microtonal inflection. However, these pitch adjustments are transmitted orally.

FIGURE 4.7 a. Annotated engraving of *ryūteki* part, *Etenraku* in *hyō-jō*. (Engraving based on Sasamoto, *Hajimete no Gagaku*, 117.)

		<b>C</b>				<b>B</b>					<b>A</b>				
	E	テ	タ	•		B	中	ト	•	<b>Played</b>	D	六	ト	•	Shōga mnemonics
			ア					ヲ		E	テ	ラ			
	flick	ノ	ハ	•		flick	ノ	ホ	•	B	中	ロ	•	Tablature (fingerings)	
			ア					ヲ				ヲ			
	D	六	ラ			A	夕	ロ		A	夕	ル			
C#	C-C#	丁	ロ	•		F	F-F#	五	ル		B	中	ロ	•	
			•					イ			E	テ	タ	•	
F	F-F#	五	ト	•		B	中	ト	•						
								ル					ア		
	G	上	ラ			A	夕	ル			D	六	ロ		
	flick	ノ	ハ			B	中	ロ			E	テ	ラ	•	
	B	中	リ			E	セ	タ	•				ア		
	A	夕	ラ			B	中	タ	•				ア		
			ア			A	夕	ロ	•				ア		
			ア					•					ト	•	
			•					ト	•		D	六	ト	•	
C#	C-C#	丁	ト	•		F	F-F#	セ	ト		E	テ	ト	•	
								五	ト		flick	ノ	ト	•	
	D	六	ロ			G	上	ト	•		F	F-F#	ハ	•	
						A	夕	ラ					ト		
C#	C-C#	丁	ト	•		B	中	ラ	•		G	上	ヲ		
						A	夕	チ			A	夕	ロ		
			ヲ					ヤ			F	F-F#	ラ		
								ル			G	上	ル		
D			イ			F	F-F#	五	イ		F	F-F#	イ	•	
	A	夕	ロ			G	上	イ	•		E	テ	イ	•	
	flick	ノ	ホ	•		E	テ	タ	•				ア		
			ヲ					ア			D	六	ア		
			引	•		E	六	ラ	•		E	テ	ラ		
			引	•				ア					ア		
			•					•					ア		

← *Hiku* (sustain)

← *Hyōshi* (Taiko stroke)

← *Kobyōshi* (measure)

b. Annotated engraving of *hichiriki* part, *Etenraku* in *hyō-jō*. (Engraving based on Sasamoto, *Hajimete no Gagaku*, 102.)

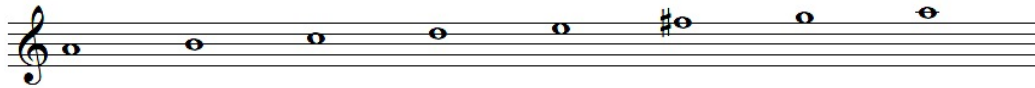
C			B			A				
E	四	タ・	B	エ	ト・	Played	Tab Notes	六	チ	Shōga
		ア			ヲ	D	C-D	四	ラ	mnemonics
flick	ノ	ハ・	flick	ノ	ホ・		E	エ	ロ	
		ア			ヲ		B		ヲ	Tablature
		ア	A	五	ロ		A	五	ル	(fingerings)
		・	F#	G	香		B	エ	ロ	
F	F-F#	ー	B	エ	ト		E	四	タ	
		ア	A	五	ル				ア	
A2	T	リ	B	エ	ロ	D	C-D	六	アル	
		イ	E	四	タ		E	四	ラ	
		イ	B	エ	ロ				ア	phrase ending
		・	A	五	ル				ア	(breath)
B	エ	ト	F	G2	上	D	C-D	六	チ	
C	九	ロ	A2	T	テ		E	四	ラ	
		・	F#	F-F#	ー	flick	ノ	ハ	テ	
B	エ	ト	B	エ	ト	F	G2	上	テ	
A	五	ロ			ヲ				エ	
		ヲ	A	五	ロ	A2	T	上	リ	Hyōshi
C	C-D	六	F#	G	香	F	G2	上	レ	(Taiko stroke)
A2	T	リ	E	四	タ	E	E	四	タ	
		イ			ア				アル	
		引	D	C-D	六	D	C-D	六	アル	
		引	E	四	ラ	E	E	四	ラ	
		・			ア				ア	Kobyōshi
		← Hiku			ア				ア	(measure)
		(sustain)			・				・	

In another modal theory, Terauchi argues for a modulation from *hyō-jō* to the *ōshiki-chō* mode (also of the *ritsu* group) in the C section of *Etenraku*. The first two sections emphasize the main tone E of the *hyō-jō* mode, whereas the C section emphasizes the tone A.<sup>34</sup> Sukeyasu Shiba contends it is only the *hichiriki* that modulates to *ōshiki-chō*, while the *ryūteki*, *shō* and *biwa* move to *sui-chō*, an ancient

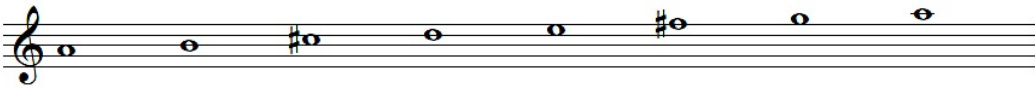
<sup>34</sup> Terauchi, "Surface and Deep Structure," 41.

Heian mode of the *ryo* group also based on A. The *sui-chō* mode accounts for the sounding of a C# in the *ryūteki* alongside a C (of the *ōshiki-chō*) in the *hichiriki*, an effect called *seruru*.<sup>35</sup>

FIGURE 4.8 a. Scale of the *ōshiki-chō* mode



b. Scale of the *sui-chō* mode



### 4.3 Form and metre: Quadratic structure

There is no improvisation in *gagaku* and no “development” in the Western sense of the term. However, every section of a piece is repeated at least once and these repeated sections can differ slightly in embellishments and in the number of instruments playing. For example, *kangen* pieces such as *Etenraku* always begin *fue-ōndo* (“solo flute”), with the first A section played by the solo *ryūteki*.<sup>36</sup> Staggered entrances by the percussion, other winds, then strings follow in fixed order. The repeat of A thus differs in that the entire ensemble has gradually joined the flute. The instruments also exit at the end of the piece in the *tomede* coda-like closing in prescribed order, with the winds stopping first.<sup>37</sup>

*Etenraku* is performed in three different forms:<sup>38</sup>

<sup>35</sup> In Shōno, “The Role of Listening in Gagaku,” 28-29.

<sup>36</sup> Garfias, *Music of a Thousand Autumns*, 72.

<sup>37</sup> Kapuściński and Rose, “Orchestration: Form.”

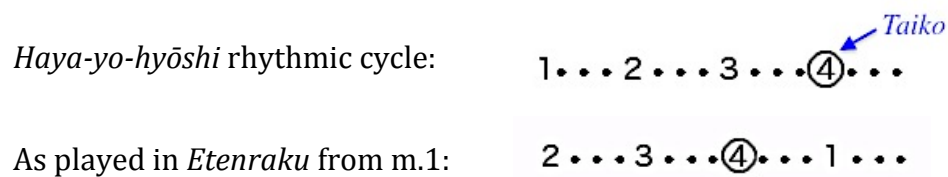
<sup>38</sup> Terauchi, “Surface and Deep Structure,” 23.

Short form	AABB
Standard form	AABBCCAABB
Nokorigaku <sup>39</sup> (Long form)	AABBCCAABBCCAABB

Since there is no development of material, I have labeled repeated sections in my transcriptions as follows:<sup>40</sup>

Standard form: A1-A2-B1-B2-C1-C2-A3-A4-B3-B4

Japanese metre is typically organized into units of 2, 4, or 8.<sup>41</sup> In *Etenraku*, each A, B, or C section is eight measures long and consists of two four-measure phrases marked by rhythmic cycles in the percussion, with four beats to a measure. This particular metric organization is called *Haya-yo-hyōshi*.<sup>42</sup> In *Haya-yo-hyōshi*, the large *taiko* drum is struck on the downbeat of the fourth measure of the rhythmic cycle. *Etenraku* begins on the second measure of this rhythmic cycle so the *taiko* downbeat lines up with the third and seventh measures of each section.<sup>43</sup> The first *taiko* downbeat (m.3 in the long form; m.7 in the short and standard) is called the *tsuke-dokoro* (“joining place”), where the remaining winds also enter.<sup>44</sup>



<sup>39</sup> *Nokorigaku* means “remaining music.” In this repeat form, the instruments of the ensemble stop playing one at a time (beginning in the B3 section on the consulted recording) until only the *biwa* and *koto* are left to display their technique (Koizumi and Okada, *Gagaku*, 2).

<sup>40</sup> Transcriptions appear in Appendix B.

<sup>41</sup> “Irregular” metres of 2+3 or 2+4 are also found (Koizumi and Okada, *Gagaku*, 34).

<sup>42</sup> Kapuściński and Rose, “Orchestration: Form.”

<sup>43</sup> Terauchi, “Surface and Deep Structure,” 22.

<sup>44</sup> *Ibid.*, 33.

*Etenraku* presents a consistently quadratic structure on multiple levels. Most simply, the four-beat measures are grouped in four-measure phrases. Each section (A, B, and C) contains two of these phrases but is repeated, resulting in four-phrase sections. A two-beat pulse heard throughout the piece emphasizes the quadratic structure of the piece by turning the two-measure sub-phrases into four-pulse cells, the second of which (mm.3-4) is heard twice in the A section and once in B. As is shown in the following chapters, the performance techniques of the *hichiriki* and *ryūteki* serve in part to emphasize the quadratic structure of the piece.<sup>45</sup>

#### 4.4 Tempo

*Gagaku* is characterized by the gradual acceleration aesthetic of *Jo-Ha-Kyū*. The *Jo* (lit. “prelude”) section serves as an introduction and is slow; *Ha* (lit. “broken”) is a “development” section in which the tempo accelerates; *Kyū* (lit. “hurried”) is a fast-paced conclusion.<sup>46</sup>

I have compared three recordings of *Etenraku* with regard to initial tempo and acceleration, each in one of the three repeat forms. In Figure 4.9, I have indicated the length in seconds of each eight-measure section of the piece in recordings by the Imperial Household Agency (IHA) from 1941, the Kyoto Imperial Court Orchestra (Kyoto) from 1960, and the Imperial Court Ensemble (ICE),

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<sup>45</sup> The quadratic structure of *Etenraku* further connects *gagaku* to *koto kumiuta* (see Section 4.2 on Mode). “Kumiuta normally consists of six songs, each of thirty-two measures of 4/4 or 2/2” (Adriaansz, *Kumiuta and Danmono*, 8).

<sup>46</sup> Shōno, “The Role of Listening in Gagaku,” 43 (note 18).

released in 1994.<sup>47</sup> The chart in Figure 4.10 shows the acceleration of the piece in each recording in more detail, measure by measure.

FIGURE 4.9

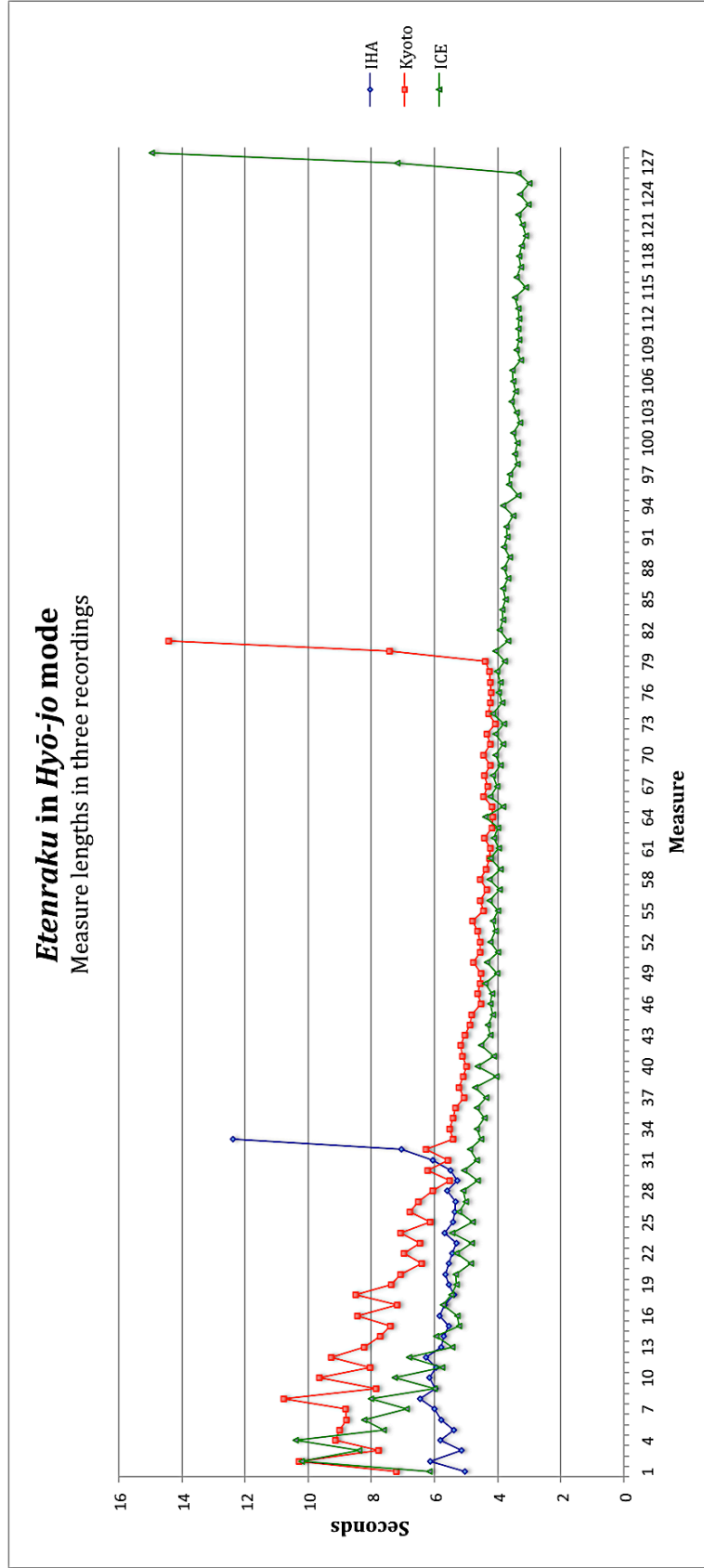
***Etenraku in Hyō-jō mode***

Section lengths (in seconds) in three recordings

	Imperial Household Agency	Kyoto Imperial Court Orchestra	Imperial Court Ensemble
Section	<i>Short form</i>	<i>Standard form</i>	<i>Nokorigaku form</i>
A1	45.7	71.8	66.9
A2	47.2	66.5	47.7
B1	44.2	57.0	42.2
B2	45.6 (+ 12.4, string <i>tomede</i> )	49.1	39.3
C1		42.0	36.0
C2		38.8	34.1
A3		36.8	33.1
A4		34.5	32.8
B3		34.5	32.1
B4		37.1 (+ 14.4, string <i>tomede</i> )	31.5
C3			30.3
C4			29.2
A5			27.5
A6			27.1
B5			26.2
B6			41.4

<sup>47</sup> *Japanese Traditional Music: Gagaku & Buddhist Chant*, Kokusai Bunka Shinkokai, Qualiton - World Arbiter, 2009, compact disc, recorded 1941, Gagaku performed by Music Section, Imperial Household Agency; Kyoto Imperial Court Music Orchestra, *Gagaku: The Imperial Court Music of Japan*, Lyricord 7126, 2006, compact disc, recorded 1960; Imperial Court Ensemble, *Gagaku: Ancient Japanese Court and Dance Music*, Essential Media Group, 2008, compact disc, released 1994.

FIGURE 4.10



#### 4.4.1 Free-rhythm opening

The *fue-ondo* section is a free-rhythm solo flute section that begins the piece. In the standard and short forms, represented by the Kyoto and IHA recordings, respectively, this section spans the first six measures. In the long form, the ICE recording, it is only two measures long. It is during this *fue-ondo* section that the measure lengths differ the most. In each of the three recordings, the greatest change in measure lengths, not including the deceleration at the end, occurs between the first and second measures. In the IHA recording (short form), m.1 is 5.03 seconds long and m.2 is 6.13 seconds – a lengthening of 22 per cent. In the Kyoto recording, the difference is greater – 43 per cent (m.1 = 7.21 sec.; m.2 = 10.28 sec.). In the ICE long version it is greater still – 66 per cent (m.1 = 6.17 sec.; m.2 = 10.22 sec.).

#### 4.4.2 Deceleration in closing

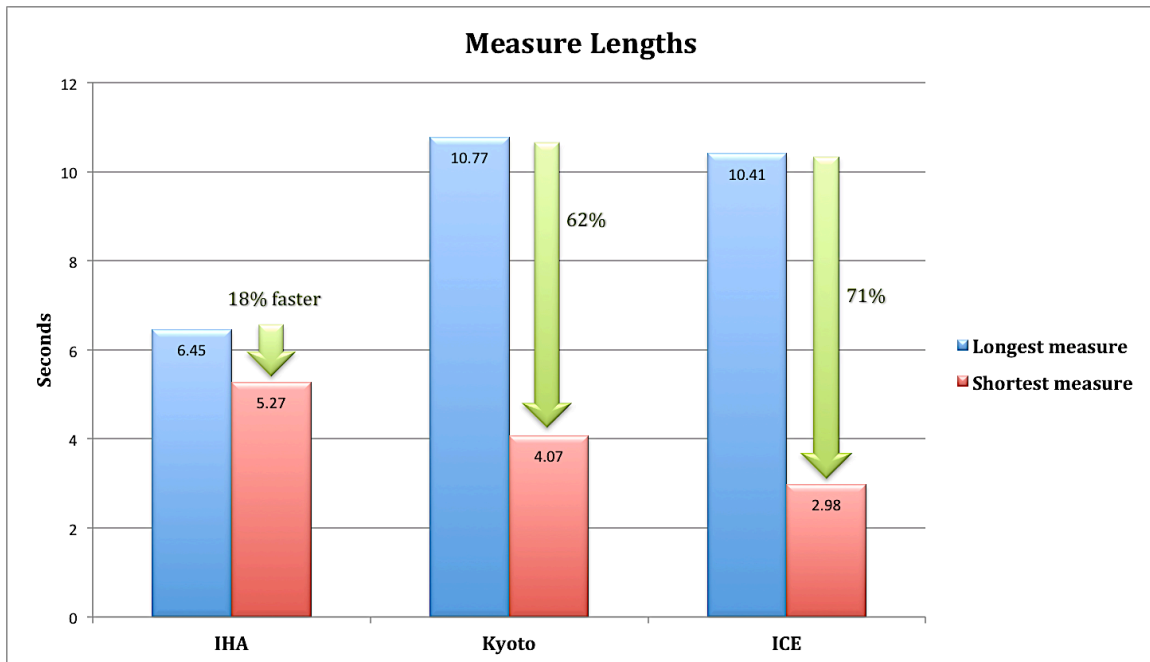
Although the tempo primarily accelerates throughout each performance, a marked deceleration is heard in the final measures, as shown in Figure 4.10. In the short and standard versions a coda-like *tomede* measure is added after the final B section. During the *tomede*, the strings slow down substantially. In the long version, the instruments gradually drop out, leaving the solo *hichiriki*, *biwa* and *koto* to play the final repeats of the C, A and B sections. The *hichiriki* plays only fragments of its part until dropping out completely after the third measure of the B6 section. The strings then begin to slow down as was done in the *tomede* of the other two versions. The final measure in each version is the longest of the piece and is preceded by one to two measures of deceleration in the entire ensemble.



#### 4.4.3 Acceleration between *fue-ondo* and *tomede*

Apart from the closing measures, the longest measure in each version occurs two measures after the *fue-ondo*, that is, in m.8 of the short and standard versions (IHA and Kyoto), and m.4 of the long version (ICE). The piece accelerates for the most part from there, reaching the shortest measure near the end, just before the *tomede* deceleration. Measure 8 is 6.45 seconds long in the IHA recording and 10.77 seconds in Kyoto. Measure 4 in the ICE recording is 10.41 seconds long. The longest measures are comparable in the Kyoto and ICE recordings but the ICE long version speeds up more. Its shortest measure is 2.98 seconds (m.125 of 128), whereas the Kyoto recording reaches 4.07 seconds (m.73 of 81), a difference between versions of a little over one second. The shortest measure of the IHA short version recording is actually its first measure (5.03 seconds). However, after the *fue-ondo* section, the shortest measure is near the end, at m.29 of 33 (5.27 seconds). The difference between this measure (m.29) and the longest measure (m.8) is 18 per cent – a change not nearly as perceptible as in the ICE and Kyoto recordings (62 per cent and 71 per cent, respectively). See Figure 4.11.

FIGURE 4.11



#### 4.4.4 “Breath rhythm”

Whether the tempi at which *gagaku* is performed in recorded history are comparable to those used prior to the invention of recording technology is unknown. However, Garfias suggests that since multiple breaths per phrase are required by the winds in modern practice, and since some *tōgaku* pieces were originally performed at horse racing events or to accompany acrobatics and other entertainment, the tempo has likely slowed down.<sup>48</sup> The “breath rhythm” of the ensemble is an integral part of the music’s execution and part of the aesthetic in *gagaku* performance practice. The entire ensemble, strings and percussion included, must breathe together.<sup>49</sup> Garfias further states (in 1975) that circular breathing is

<sup>48</sup> Garfias, *Music of a Thousand Autumns*, 113.

<sup>49</sup> William P. Malm, “Introduction,” in Tōgi Masataro, *Gagaku: Court Music and Dance* (New York: Walker/Weatherhill, 1971), 24-25.

“unknown in Japan.”<sup>50</sup> Picken contends the *tōgaku* melodies “originally moved eight to sixteen times more rapidly than they do today,”<sup>51</sup> based on the hypothesis that the original melody is found in the *shō* and strings; this core melody is played too slowly today to be heard as “melody.”<sup>52</sup>

#### 4.5 Transcribing *Etenraku*

Transcription of East Asian music into staff notation for cross-cultural comparison (and in this case, specifically for the identification of comparable performance techniques) is useful to those who can read it but it comes with limitations. Intervals smaller than the semitone cannot be notated accurately unless a precise division of the interval is called for, such as a quarter tone—*gagaku* does not feature quarter tones. Notation of pitch slides and bends—techniques common in *gagaku*—is also vague, as the amplitude and duration of a slide or bend are difficult to represent. Twentieth-century avant-garde composers in the West found that symbols had to be designed for techniques new to their instruments, and likewise, special techniques of Japanese winds have no counterparts in five-line staff notation.

When existing symbols are borrowed from Western notation and given new meaning in transcription, misinterpretation could result if the reader is not clear on the appropriation. Symbols that have been used in transcribing Japanese *gagaku* and *shakuhachi* into Western notation include the *tenuto* symbol, slurred *staccato*,

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<sup>50</sup> Garfias, *Music of a Thousand Autumns*, 128.

<sup>51</sup> Picken, *Tang Court*, 110.

<sup>52</sup> Nelson, “Court and Religious Music (2),” 60.

and note durations. In his *Score of Gagaku* transcriptions,<sup>53</sup> Sukehiro Shiba indicated *osu* and *ateru* metric breath accents with a *tenuto* symbol that generally indicates a broadening of the tone in Western practice and does not account for the slight change in pitch that occurs in *gagaku*. Jeffrey Lependorf uses a repeated slurred *staccato* figure to notate the pulsating breath technique *komi-buki* on *shakuhachi*.<sup>54</sup> This could be misread instead as *legato* tongued articulation. Riley Lee reassigns note values from beats to seconds in his *shakuhachi* transcriptions. For example, he gives the whole note 4 or more seconds, the half note 2-4 seconds, etc.<sup>55</sup> With regard to representing metre in *gagaku*, Sukeyasu Shiba cautioned:

A single measure of the music is not represented by a standard length—sometimes it is short, while sometimes it is longer. In any case, performance from Western staff notation loses the flexibility of *gagaku*.<sup>56</sup>

Symbols in staff notation carry with them connotations that do not necessarily belong to the idiom of the music being transcribed. James Reid points out that the grace note has also been used in transcriptions of *hichiriki* to represent finger percussion, breath accents, and pitch inflections.<sup>57</sup> He says that even though the grace note is somewhat related to finger percussion (though not to the other two techniques as they do not involve the fingers), it still is not an accurate representation and does not communicate the precise timing and accentuation of *embai* figures. He writes:

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<sup>53</sup> Sukehiro Shiba, *Score of Gagaku: Japanese Classical Court Music*, Vol. 1 (Tokyo: Ryuginsha, 1955).

<sup>54</sup> Jeffrey Lependorf, "Contemporary Notation for the Shakuhachi: A Primer for Composers," *Perspectives of New Music* 27:2 (Summer 1989): 236.

<sup>55</sup> Riley Lee, "Shakuhachi Honkyoku Notation: Written Sources in an Oral Tradition," *Musica Asiatica* 6, edited by Allan Marett (1991): 31.

<sup>56</sup> In Shōno, "The Role of Listening in Gagaku," 25.

<sup>57</sup> James Reid, "Transcription in a New Mode," *Ethnomusicology* 21:3 (Sep. 1977): 417.

*Embai* is one of the most important and characteristic features of *hichiriki* style, and occurs in many varieties depending on the melodic context. Should we attempt to use grace notes and connecting lines to try to convey all this crucial melodic detail?<sup>58</sup>

The meaning of re-defined and newly created symbols must therefore be clearly stated.

As pointed out by Andreas Gutzwiller, all forms of transcription require that the reader acquire the skill to interpret them.

Even a bad recording gives a better impression of *hichiriki* music than the finest transcription can hope to convey to somebody who has never heard this instrument before. Transcription cannot successfully introduce an unknown musical style to the reader; this must be done by performance. Transcription can, however, be a useful device in discussing certain aspects of music, and a prime criterion for its quality is whether it visually represents those aspects.<sup>59</sup>

Even Western art music performance practice has not relied entirely on Western scores, as the interpretation of notation has had to be learned orally and has varied from genre to genre, era to era. For cross-cultural comparison and analysis of performance techniques, transcription into staff notation is still used as a starting point for communication. However, it begs to be supplemented by other tools now readily available, in addition to a reading of the indigenous tablature or other notation of the tradition itself. Regarding *gagaku* notation specifically, Picken points out that “the characteristic melodic surface of *Kangen*-performance is generated by performance-practice and does not reside in the specifications of flute- and *hichiriki*-*tablatures*.”<sup>60</sup> Therefore, in identifying “extended techniques” in the performance

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<sup>58</sup> Ibid.

<sup>59</sup> Andreas Gutzwiller, “Stone Age and Promised Land: An Answer to James Reid,” *Ethnomusicology* 23.1 (Jan. 1979): 106.

<sup>60</sup> Picken, *Tang Court*, 115.




practice of East Asian winds, I show excerpts of spectral analysis obtained via the software programs SPEAR, Melodyne, Praat and Transcribe!<sup>61</sup> alongside transcriptions of recordings in staff notation.

Spectral analysis provides a visual representation of the music that is especially informative with respect to pitch slides, pitch bends, and microtonal inflection. It allows for a reading of pitch frequencies against a timeline and thus provides much more detail than the number-graph notation suggested in 1977 by Reid,<sup>62</sup> the hand-drawn graphics added to staff notation by Garfias (see Example 4.1 below), or the computer-generated symbols draw-able in notation software such as I have used in my transcriptions (see Figure 4.12).

**FIGURE 4.12** Symbols used in transcription of *Etenraku* recordings

### ***Etenraku* transcription legend**

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	<p>Pitch on recording is microtonally lower/higher than notated. The +/- value is measured in cents. Variations &lt;12 cents are not recorded. Note that frequencies can vary within a tone; values are therefore approximations.</p>
	<p>Form of articulation, gives metric pulse through breath accent—changes in air pressure and embouchure result in brief rise or fall in pitch.  <i>Osu</i> = pulse on strong beat (1 or 3)  <i>Ateru</i> = pulse on weak beat<sup>63</sup></p>
	<p>Indicates stronger breath accent on metric pulse than usual</p>

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<sup>61</sup> “SPEAR: Sinusoidal Partial Editing Analysis and Resynthesis,” version 0.7.4, updated Nov. 29, 2009, <http://www.klingbeil.com/spear/>.

“Melodyne Demo,” version 3.2.1.5, [http://www.celemony.com/cms/index.php?id=products\\_essential](http://www.celemony.com/cms/index.php?id=products_essential).







“Praat: Doing phonetics by computer,” version 5.3.32, updated Oct. 17, 2012, <http://www.fon.hum.uva.nl/praat/>.

“Transcribe!” version 8.21.0, updated Sept. 12, 2011, <http://www.seventhstring.com/>.

<sup>62</sup> Reid, “Transcription,” 427-430.

<sup>63</sup> Miki, *Composing*, 19; Kapuściński and Rose, “Orchestration: Ryūteki.”

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	Tone is approached from below, commonly used to begin a phrase; arc of bend varies
	Tone is approached from above; arc of bend varies
	Various shapes show approximate direction of pitch bends
	Slide from tone to tone
	Grace notes indicate quick finger articulation. <i>Tataku</i> = lower grace note, grace note is accented ( <i>Ugoku</i> = upper note, accent falls on returning tone—not used in <i>Etenraku</i> transcription) <sup>64</sup>
	Slurred phrases are begun with diaphragmatic onset, without tongued articulation as in Western practice. (Tongued articulation is not used in <i>gagaku</i> performance practice.)

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Further notes on terminology for pitch bends and slides:

- a) On the *hichiriki*, lowering the pitch by moving the reed gradually out of the mouth is called *enbai* (or *embai*).<sup>65</sup> The opposite is also possible.
  - b) Ascending pitch slides that are quickly followed by a lower pitch (produced with the fingers or reed position) are called *mawasu*.<sup>66</sup>
  - c) On the flute, *fukikomi* means “to breathe into” and is the “initial upward glide of a pitch with the use of full breath force.”<sup>67</sup>
  - d) A sliding effect is produced on *ryūteki* when the finger closest to the blowhole is gradually slid off its hole and then returned; this is called *ugoku*.
  - e) A *yuru* on *ryūteki* is a slight downward bend that then returns to pitch.<sup>68</sup>
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*Etenraku* in the *hyō-jō* mode has been transcribed into staff notation in part or in full in previous publications, but with limited attention paid to the details of

<sup>64</sup> Miki, *Composing*, 21.

<sup>65</sup> *Ibid.*, 57-58.

<sup>66</sup> Kapuściński and Rose, “Orchestration: Hichiriki.”

<sup>67</sup> Miki, *Composing*, 20.

<sup>68</sup> *Ibid.*, 21.

microtonal pitch adjustments or slides between tones. Garfias has given indications of pitch slides and microtonal treatment in his transcriptions in *Music of a Thousand Autumns*, but his *Etenraku* transcription is in *banshiki-chō*. The excerpt in Example 4.1 from another piece in *hyō-jō* shows how Garfias indicates pitch changes:

EXAMPLE 4.1 *Keitoku* in *hyō-jō*, mm.9-12, *hichiriki* part (Garfias 213)



Master *gagaku* musician Sukehiro Shiba of the Nara school lineage transcribed several volumes of traditional music for *gagaku* ensemble in the collection *Score of Gagaku: Japanese Classical Court Music* (1955). In Volume One, he gave full transcriptions of seven *kangen* pieces, including *Etenraku* in the *hyō-jō* mode. I will refer to his transcription as well as excerpts published by Terauchi Naoko and Minoru Miki, and posted online by Jarosław Kapuściński and François Rose at Stanford University.<sup>69</sup>

To deal with issues of performance variability, I have transcribed three recordings of *Etenraku* in *hyō-jō* mode into staff notation—one in full, two in part. The Kyoto Imperial Court Music Orchestra recorded *Gagaku: The Imperial Court Music of Japan* in 1960. *Etenraku* is recorded at A=430Hz and is performed in the standard AABBCCAABB form. I have transcribed the *hichiriki* and *ryūteki* parts of

<sup>69</sup> Terauchi, “Surface and Deep Structure,” 32-33; Minoru Miki, *Composing*, 19-20; Kapuściński and Rose, “Orchestration: Hichiriki & Ryūteki.”



this performance in full to identify pitch-based extended techniques of the *gagaku* winds. For purposes of comparison, I have also transcribed the A section of *Etenraku* and its first repeat from the 1941 recording by the Music Section of the Imperial Household Agency on the compact disc, *Japanese Traditional Music: Gagaku & Buddhist Chant*. This is an example of the short version of the piece (AABB) and is recorded at A=440Hz. Finally, I have transcribed the first A section of the long version, *Etenraku Nokorigaku Sanben*, as performed by the Imperial Court Ensemble on *Gagaku: Ancient Japanese Court and Dance Music*, released in 1994. This recording settles on A=435Hz in the third measure when the *hichiriki* enters. The two-measure flute solo at the beginning is heard at approximately A=440Hz.

Sukehiro Shiba claims that the *ryūteki* "does not easily lend itself to transcription in European notation."<sup>70</sup> He addresses shortcomings in the following ways. He uses grace notes for finger articulation, remarking that these notes are to be played faster than they would be in Western interpretation, and *tenuto* markings for metric pulses of air. He does not indicate pitch slides or bends in the score, nor does he attempt to notate microtonal adjustments.

The legend in Figure 4.12 gives an explanation of symbols used in my transcriptions of recordings of *Etenraku* that pertain to extended techniques. The following chapters deal with my analysis of wind techniques in *Etenraku* with the help of spectral analysis software and transcription. Transcriptions appear in Appendix B.

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<sup>70</sup> Shiba, *Score of Gagaku*, Vol.1, 33.

## Chapter 5: Wind techniques in *Etenraku*—Sung *shōga*

The *Gagaku* wind techniques that correspond to Western extended techniques are a) pitch bends and slides, b) microtonal pitch alteration, c) breath pulse, and d) pitched finger percussion. Garfias writes that the verb *meguru* (“to come around” or “to return”), with “the connotation of making a tour or going from one place to another” based on the mode, can help in understanding the aesthetic of microtonal adjustments and ornamentation used in the *tōgaku* winds, the *hichiriki* in particular.<sup>1</sup> The performance techniques of the *hichiriki* and *ryūteki* are significant because they outline both the quadratic structure of *Etenraku* and the *ei*-tone and bi-modal departures from the *hyō-jō* mode.

In the following chapters, through staff notation and spectral analysis excerpts, I show examples of traditional techniques of the *hichiriki* and *ryūteki* that correspond to extended techniques on Western woodwinds. Further examples appear in Transcriptions 1-5 in Appendix B.

### 5.1 Extended techniques and *shōga*

The extended techniques analyzed in this chapter are present not only in ensemble recordings but also in the performance of *shōga* mnemonics. *Gagaku* musician and student of *ryūteki* master Sukeyasu Shiba,<sup>2</sup> Sasamoto Takeshi has included an instructional compact disc with his text *Hajimete no Gagaku* (Beginner’s Guide to Gagaku, 2003). The recordings include solo performances of sung *shōga* for

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<sup>1</sup> Garfias, *Music of a Thousand Autumns*, 122.

<sup>2</sup> Music director of the Reigakusha Gagaku Ensemble, former member of the Music Department of the Imperial Household Agency, and son of Sukehiro Shiba. (“Reigakusha Gagaku Ensemble: About Us,” *Reigakusha Gagaku Ensemble*, accessed April 1, 2014, [http://reigakusha.com/English/index\\_e.html](http://reigakusha.com/English/index_e.html).)

each of the wind parts in *Etenraku* in *hyō-jō*. In Sasamoto's recordings of the *ryūteki* and *hichiriki shōga*, the extended techniques discussed in this chapter are audible, though some are subtle and others more prominent.

*Gagaku* musician families have passed down *shōga* mnemonics orally for centuries, long before they were included in the Meiji scores. I consider these relatively simple sung versions of the melodic line as a second step towards clarifying the use and role of performance techniques in *gagaku*.

As seen in Chapter 4, the metric indicators of finger percussion (as articulation), breath pulses, and tone reiteration are identifiable in the notated tablature and mnemonics of *gagaku*. Finger articulation is notated in the tablature as *ノ* and in the *shōga* as *ゝ* (*fa*) and *ホ* (*ho*). Sustained vowel sounds in the *shōga* (*ア a*, *エ e*, *イ i*, *オ o*) are performed as either metric breath pulses or as a reiteration of the preceding tone after a brief break in the sound (a rest). In contrast, microtonal pitch alteration and pitch bends and slides are not indicated in traditional notation. These techniques are learned orally. Examining examples of orally-transmitted sung *shōga* increases what one can learn from traditional notation.

Figure 5.1 shows *Etenraku* in *hyō-jō* as sung on Sasamoto's *Hajimete no Gagaku* CD, in addition to transnotation of the *Meiji Sentei-fu* parts, as given in Figure 4.4, Chapter 4. Repetitions are indicated in the transcription to show the standard form but are not performed on the *shōga* recordings. *Shōga* symbols and their transliteration are given below the staves; the *ryūteki* and *hichiriki shōga* are similar but not identical. Note names are added in parentheses when the tone called for in the tablature and/or performed instrumentally is sung differently (*ryūteki*: C#

in m.18; *hichiriki*: F# in mm.10, 14). The notated C in the third last measure of the *hichiriki* part is part of an *embai* figure that colours the octave leap from A1 to A2.

With respect to this note, Sukeyasu Shiba comments, “The pitch C is passed through in a way that makes it indefinite.”<sup>3</sup>

**FIGURE 5.1** Transnotation of *ryūteki* and *hichiriki* parts in the *Meiji Sentei-fu* (Meiji 21, 1888); transcription of *ryūteki* and *hichiriki shōga* as sung on Sasamoto, *Hajimete no Gagaku* CD (2003).

**Etenraku (Hyo-jo)**  
 Transnotation based on *Meiji Sentei-fu* score mnemonics and tablature  
 Shoga as sung on *Hajimete no Gagaku* CD

A

Metric accentuation on sustained vowels

○ Breath accent	□ Note repeated after rest
□ Fingered articulation	○ Downward embai to prepare leap to high A on beat 1 or 3

<sup>3</sup> In Shōno, “The Role of Listening in Gagaku,” 29.

**B**

Ryuteki (Meiji)

Sung ryuteki

Hichiriki (Meiji)

Sung hichiriki

to o ho o ro ru i to ru ro ta ro ro  
 ト ヲ ホ ヲ ロ ル イ ト ル ロ タ ロ ロ

to o ho ro ru to ru ro ta ro ru  
 ト ヲ ホ ヲ ロ ル(F#) ト ル ロ タ ロ ル

Ryuteki (Meiji)

Sung ryuteki

Hichiriki (Meiji)

Sung hichiriki

to ro ra chi ya ru i ta a ro ra a  
 ト ロ ラ チ ヤ ル イ タ ア ロ ラ ア ア

te ri ra ro ru ro ta a ru ra a  
 テ リ ラ ト ヲ ロ ル(F#) タ ア ル ラ ア ア

**Fine**

**C**

Ryuteki (Meiji)

Sung ryuteki

Hichiriki (Meiji)

Sung hichiriki

ta a fa a ra ro to ra fa to ra a  
 タ ア ハ ア ラ ロ(C#) ト ラ ハ リ ラ ア ア

ta a fa a ta a ri i  
 タ ア ハ ア ア タ ア リ イ イ

2/ 8

Ryuteki (Meiji)  
to ro to o i ro ho o o o

Sung ryuteki  
to ro to o i ro ho o o o  
ト ロ ト ヲ イ ロ ホ ヲ ヲ ヲ

Hichiriki (Meiji)  
to ro to ro o.ru ri i i i

Sung hichiriki  
to ro to ro o.ru ri i i i  
ト ロ ト ロ ヲル リ イ イ イ  
C not reached

D.C. al Fine

FIGURE 5.2 Symbols used in transnotation of *Etenraku* parts and transcription of *shōga* recordings

### *Etenraku* transnotation and transcription legend

	Pitch on recording is microtonally lower/higher than notated.
	<i>Osu</i> —Form of articulation, gives metric pulse through breath accent—changes in air pressure and embouchure result in brief rise or fall in pitch.
	Tone is approached from below, commonly used to begin a phrase; arc of bend varies
	Tone is approached from above; arc of bend varies
	Various shapes show approximate direction of pitch bends
	Slurred phrases are begun with diaphragmatic onset, without tongued articulation as in Western practice. (Tongued articulation is not used in <i>gagaku</i> performance practice.)

### 5.1.1 Metric accentuation

Metric reiteration of tones through finger articulation and breath pulses is prominent in Sasamoto's sung *shōga*. Throughout *Etenraku*, breath pulses (*osu*) occur primarily on the sustained "uninflected" non-*ei*-tone principal tones of the *hyō-jō* mode—E, B, and A—and once in each instrument's part on a sustained F. They are heard in each measure of the four-measure phrase, but are relatively rare in the second measure. In the *hichiriki* part, the breath pulse generally occurs on the third beat of a measure, with the exception of the final measure of section C, where the sustained tone A is emphasized on the first and third beats, emphasizing the two-beat pulse of the quadratic structure. In the sung *ryūteki shōga*, a breath pulse also happens once on the second beat.

Finger articulation is used in only three places in the *hichiriki* parts—once per section—and again adds metric pulse to the sustained principal tones E and B (section A: m.5; B: m.2; C: m.2). The *ryūteki* articulates with the fingers in these same three places, but adds two more in section C on beats where the *hichiriki* instead performs idiomatic *embai* techniques to prepare for leaps (C: m.3, beat 4; m.7, beat 1).

The extended techniques of the breath pulse and finger percussion are supported in the task of articulating the metre elsewhere by the insertion of brief rests. When vowels are sung in *shōga* without initial consonants, the music calls for either a breath pulse or a restarting of the tone after a short break. Based on my transcriptions of Sasamoto's sung *shōga*, I conclude that if the vowel occurs on beat 3, a breath pulse is usually performed (this is the case 91 per cent of the time in the

*ryūteki* part, 85 per cent in the *hichiriki* part); if the vowel occurs on beat 2, a rest is inserted on the second half of beat 1 (89 per cent of the time in the *ryūteki* part, 100 per cent in the *hichiriki* part). The tone is then reiterated on beat 2. When the *shōga* syllable to be sung is a vowel, breath pulses and tones reiterated after rests are each performed approximately 50 per cent of the time in Sasamoto's recordings.

As will be seen later in a comparison of transcriptions of sung and played versions of *Etenraku*, there is a small degree of variation in performance practice of metric accentuation. However, the quadratic structure at the two-beat level is articulated on beats 1 and 3 of every measure in the *shōga* by 1) a change of note, 2) a breath pulse, 3) finger percussion, 4) a reiteration of the tone after an inserted second-beat rest, or 5) a *hichiriki embai* figure.

### 5.1.2 Pitch bends and slides

Pitch bends and slides are much more subtle in Sasamoto's *shōga* recordings than in the ensemble recordings analyzed later in the following chapters. Subtle glottal-onset upward bends into the beginnings of breath phrases are rare. However, they are slightly more frequent in the *hichiriki shōga* performance (audible twice in the six four-measure phrases) than in the *ryūteki shōga* (audible once), as is consistent with the performance practice of the two instruments.

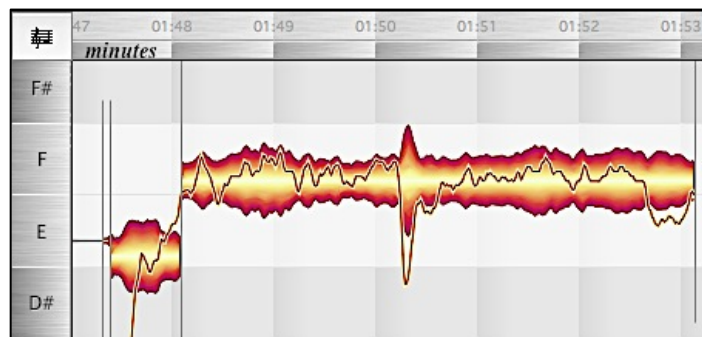
In the *ryūteki* part, slight pitch bends are heard more in the A section than in the B and C sections. This is likely due to the role of the *ryūteki* in the *fue-ondo* opening of the piece. This solo section is played relatively freely with respect to rhythm, metre and intonation until the rest of the ensemble joins at the *tsuke-dokoro* (m.7 in standard and short forms; m.3 in long form). The *hichiriki* then takes over



the prominent role. The *hichiriki* performs bends and slides more easily than the *ryūteki* does, so it follows that such techniques could be used throughout all sections of the piece. However, these onset bends in both the *hichiriki* and *ryūteki* parts are much more prominent in instrumental performance than in Sasamoto's sung *shōga*.

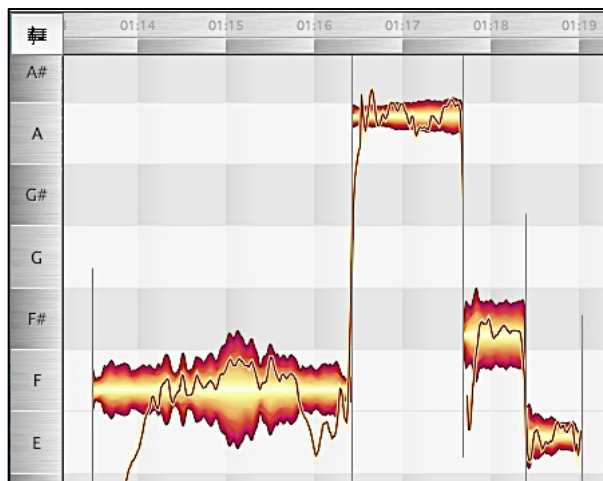
The most audible pitch bend or slide in the *shōga* performance of both parts is on the approach to the tone F, whenever it occurs on the first beat of a measure, emphasizing both the quadratic structure of the piece and the role of the F outside the *hyō-jō* mode. Most measures begin with one of the principal tones (E, B, A), with the exception of the first and fifth measures of the A section, beginning on D, and the three measures beginning on F (section A: m.6; B: m.5; C: m.3). When the first tone of the measure is F, it is treated with a pitch bend approach from below (see Example 5.1). Although this technique is quite audible on the F in the *shōga* performance, the *hichiriki* and *ryūteki* do also start the D from below in instrumental practice when it begins a measure. Other phrases are begun and tones reiterated after rests with pitch bends as well, but the bends are much subtler in the sung *shōga*.

**EXAMPLE 5.1** Bend to F, C section, m.3, sung *hichiriki shōga*. The lowering of pitch in the centre is a breath accent, at the end an *embai* preparation for the leap to follow. (*Hajimete no Gagaku* recording, Melodyne analysis)



As will be identified in the ensemble recordings, pitch bends and slides in the *shōga* performances are heard not only at the beginning of phrases and measures but also between tones within particular melodic patterns and at the end of certain measures. The *ryūteki* bends the F upward at the end of m.6 in both the A and B sections before stepping down to an E on beat 1 of the next measure, thereby playing with the ambiguous F-F# pitch area and preparing for both a repetition of the melodic cell first heard in mm.3-4, and the m.7 *taiko* downbeat, thus emphasizing the quadratic structure. The *hichiriki* approaches melodic leaps to high A on beat 1 or 3 with idiomatic *embai*, bending the preceding F (in section A: m.6; B: m.5; C: m.3) or low A (C: m.6) downward microtonally before leaping up. As with the *ryūteki* bends, these *embai* bends prepare an accentuation of the two-beat pulse and contribute to the ambiguity between the *hyō-jō* mode and *in/miyakobushi* scale.

EXAMPLE 5.2 *Embai* at end of F, B section, m.5, sung *hichiriki shōga* (*Hajimete no Gagaku* recording)



### 5.1.3 Microtonal inflection and dissonance

Microtonal inflection is difficult to identify with certainty in the solo *shōga* recordings because there is no absolute pitch reference. The *ryūteki* part is sung at about A=430Hz and the *hichiriki* part at around A=440Hz. The singer's pitch also rises in the C section of the *ryūteki* performance so that from the second measure, all of the pitches are high. Nonetheless, some conclusions can be advanced.

In the instrumental ensemble recordings, certain pitch areas are quite variable with regard to performed pitch. Notably, the F-F# fingering is often played somewhere between the two tones, complicating attempts to clearly identify the *hyō-jō* and *in/miyakobushi* modes in practice in *Etenraku*. In the sung performance, although the F is usually treated with *embai* in the *hichiriki* part or with pitch slides in both parts, the F-F# pitch area is generally more stable.

The tones in the upper range (*hichiriki*: A2; *ryūteki*: A3 and B3) are also stable but consistently sung high—approximately a quarter tone high in both parts. This is not found on the instrumental recordings, where the tones are instead played at variable levels by the *ryūteki*, either at pitch or below. Consultation of additional recordings of *shōga* would be needed to make firm conclusions about this contrast.<sup>4</sup> Likewise, the lowered Ds and sometimes Bs in the *hichiriki* part beg comparison.

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<sup>4</sup> I have not located additional recordings of *Etenraku shōga* at this point.

EXAMPLE 5.3 Raised B and A, B section, m.6, sung *ryūteki shōga* (*Hajimete no Gagaku* recording)



Dissonance between parts will be addressed with regard to ensemble recordings but is not necessarily an element to be analyzed in the solo singing of *shōga*. However, it is notable that the *ryūteki* player sings the *hichiriki*'s tones B-C-B in the fifth and sixth measures of the C section, rather than the C $\sharp$ -D-C $\sharp$  figure that is indicated in the tablature and performed on the flute. One can speculate that the musician would hear the dissonance between these parts internally while playing the line. Sukeyasu Shiba remarks: "This is a place where C and C $\sharp$  are played together, an effect referred to by *gagaku* players as '*sureru*' (lit. rubbed)."<sup>5</sup> He also says that in the *gagaku* repertoire, the *ryūteki*'s sung *shōga* corresponds to its played melody only 75 per cent of the time, whereas the *hichiriki* parts correspond 90 per cent of the time.<sup>6</sup> Therefore, although the orally-transmitted *shōga* parts comprise more information about performance practice than do the scores or tablature, they still do not perfectly represent actual ensemble practice.

<sup>5</sup> In Shōno, "The Role of Listening in Gagaku," 29.

<sup>6</sup> *Ibid.*, 22.

#### **5.1.4 Preliminary conclusions based on *shōga* recordings**

Despite difficulties identifying and analyzing microtonality in the sung *shōga*, Sasamoto's recordings confirm the performance practice of metric breath and finger articulation as well as pitch bends and slides in Japanese *gagaku* winds. Since microtonality is present when a breath pulse raises or lowers the frequency of a tone slightly or when a pitch is bent less than a semitone or approached from below by a variable degree, the presence of this extended technique can also be supported.

## Chapter 6: Wind techniques in *Etenraku*—Pitch bends and slides in ensemble recordings

The next step in locating Western extended techniques in *gagaku* performance practice and confirming their structural and modal importance is to consult ensemble recordings. In this and the following chapter, I present and analyze extended techniques heard on three primary recordings of *Etenraku*, performed by the Music Section of the Imperial Household Agency (recorded 1941), the Kyoto Imperial Court Music Orchestra (recorded 1960), and the Imperial Court Ensemble (released 1994), as well as supplementary recordings from the website of Robert Garfias (recorded 1920s) and Sasamoto's *Hajimete no Gagaku* compact disc (2003).

Pitch bends and slides are used in *Etenraku* to lead into phrases, introduce reiterated tones, and move to or between tones in certain melodic patterns and at important structural points. They emphasize the principal tones of the *hyō-jō* mode while contributing to ambiguity with regard to modulation and *ei* exchange tones. Pitch bends in particular also serve to outline the quadratic structure of *Etenraku* at the level of the four-measure phrase.

### 6.1 Initial pitch bends at beginning of four-measure phrases

Each of the recordings of *Etenraku* mentioned above begins with a pitch bend in the solo *ryūteki* approaching the first tone from below. Based on transcriptions by Shiba, Terauchi, and Miki, as well as Sasamoto in the modern instructional text *Hajimete no Gagaku*, the first two tones of *Etenraku* correspond to D and E, played by the *ryūteki*. These scores do not indicate the approach from below to the D, nor to

the first tone of other phrases throughout the piece. However, the pitch bend is clearly audible in each recording, confirming its use in performance practice.

**EXAMPLE 6.1** *Etenraku*, mm.1-4, as transcribed by Sukehiro Shiba in *Score of Gagaku: Japanese Classical Court Music*, 9. The *ryūteki* sounds one octave higher than notated.

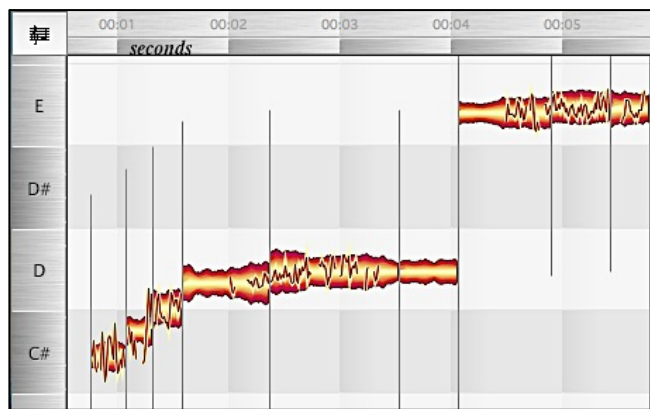


Spectral analysis of *Etenraku* recordings from the Imperial Court Ensemble (ICE), the Imperial Household Agency (IHA), and *Hajimete no Gagaku* (Sasamoto) show the approach to the first tone D, followed by E.

**EXAMPLE 6.2**

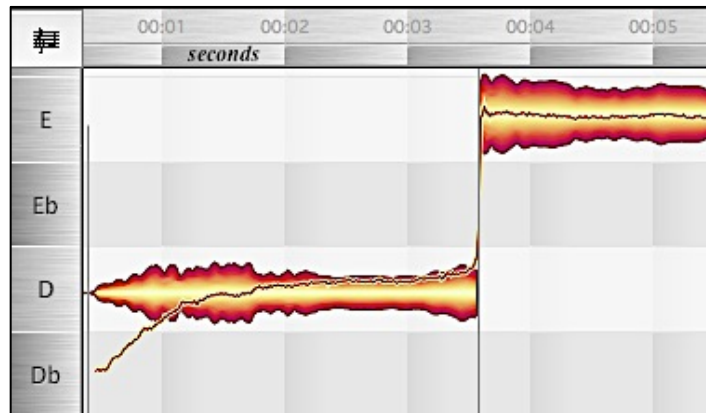
a. Approach to first tone, D (A=440Hz,<sup>1</sup> ICE recording), *ryūteki*, Melodyne analysis

b. Approach to first tone, D (A=440Hz, IHA recording), *ryūteki*



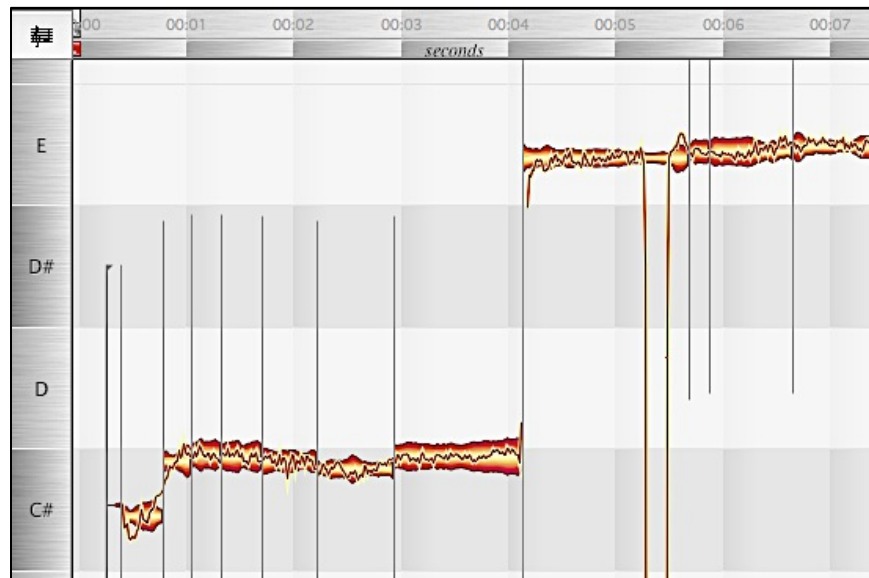
<sup>1</sup> The ICE recording begins at approximately A=440Hz but moves to A=435Hz in m.3.

c. Approach to first tone, D (A=430Hz, Sasamoto CD, track 5), *ryūteki*



The Kyoto Imperial Court Orchestra (Kyoto) recording also begins below pitch; however, the *ryūteki* does not reach the D in the first measure, demonstrating performance variability in the opening flute solo. The initial bend settles approximately one quarter tone short of D.

**EXAMPLE 6.3** Bend to first tone does not reach D (A=430Hz, Kyoto recording), *ryūteki*



Therefore, I have notated the first note in the Kyoto transcription as a microtonally lowered D moving between 54 and 71 cents below D:



EXAMPLE 6.4 Kyoto transcription, m.1, *ryūteki*

Ryuteki

but in the ICE, IHA, and Sasamoto transcriptions as an unaltered D:

EXAMPLE 6.5 ICE, IHA, and Sasamoto transcriptions, m.1, *ryūteki*

Ryuteki

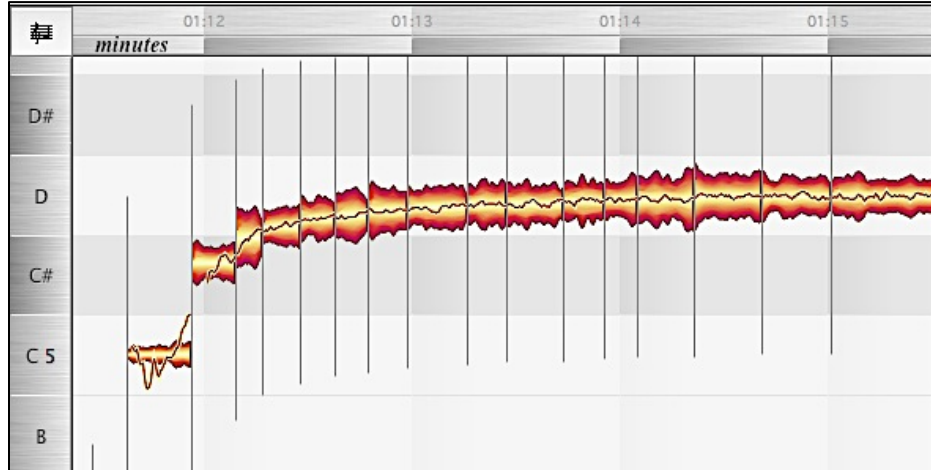
The tone D is an *ei* tone (sharpened exchange tone) in the *hyō-jō* mode. Since the first sustained tone in the Kyoto recording is actually closer to a C $\sharp$  than a D, this tone could also be transcribed as C $\sharp$ , raised between 29 and 46 cents. However, I have decided to follow convention, and notate the first tone as a D, but lowered.

Subsequent repeats of the A section in the Kyoto recording, in both the *ryūteki* and *hichiriki* parts, begin the first measure with an unaltered D. Example 6.6 shows the wide pitch bend approach to the D on the first beat of measure 9 (A2: m.1) in the *hichiriki* part of the Kyoto recording. This particular pitch bend ranges greater than 200 cents. According to Ng, “it is common to first generate a C natural before performing a prolonged D.”<sup>2</sup> Since pitch bends are produced with greater facility on the *hichiriki* than on the *ryūteki*, it is not surprising that the *hichiriki*’s bends are wider.

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<sup>2</sup> Ng, “The Modes of *Tōgaku*,” 378.

EXAMPLE 6.6 Approach to D in m.9, *hichiriki* (Kyoto recording)



An additional noteworthy recording is available online on the webpage of Robert Garfias at the University of California, Irvine *Electronic Educational Environment* website. Garfias has uploaded recordings he obtained in Japan, including a recording of *Etenraku* likely made in the late 1920s:

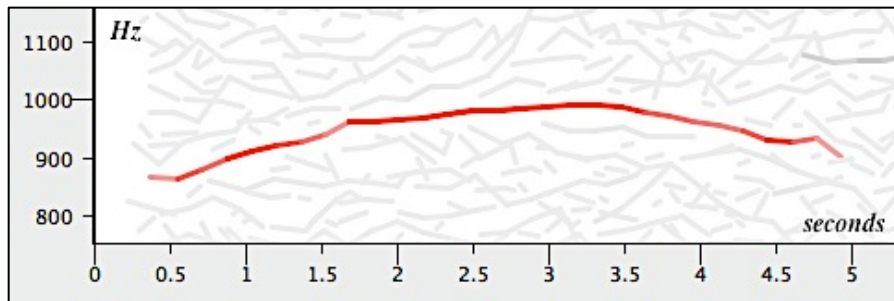
These recording [sic] were made with the acoustic rather than the later electronic system... I obtained copies of these in 1959 and I recall being told that they were recorded in the late 1920s...

Many of the recordings show speed deviations which affect the correct pitch. In an effort to leave these recordings pretty much as is, I have not adjusted the speed/pitch of these originals.<sup>3</sup>

Regardless of the stated shortcomings in quality on these recordings, pitch bends and slides can be clearly heard. Example 6.7 shows the bend into and away from the first tone in the *ryūteki*.

<sup>3</sup> Garfias, "Japan: Pre World War II Recordings," *Electronic Educational Environment*, University of California, Irvine, accessed April 13, 2014, <https://eee.uci.edu/programs/rgarfias/sound-recordings/japan.html>.

EXAMPLE 6.7 *Ryūteki*, m.1, first tone (Garfias recording), SPEAR analysis



In my transcriptions of *Etenraku*, I have notated several other phrase beginnings with  $\smile$  to indicate an upward pitch bend approach to the first tone. This is commonly done on E and B and is heard most frequently in the *hichiriki* part (especially in the first half of the Kyoto recording) as it is relatively easy to create this effect by starting with less reed held in the mouth, then gradually taking more reed until the desired pitch is reached; changes in embouchure pressure and jaw position also contribute. The *ryūteki* player must instead rely on altering air pressure or changing the position of the flute against the chin.<sup>4</sup>

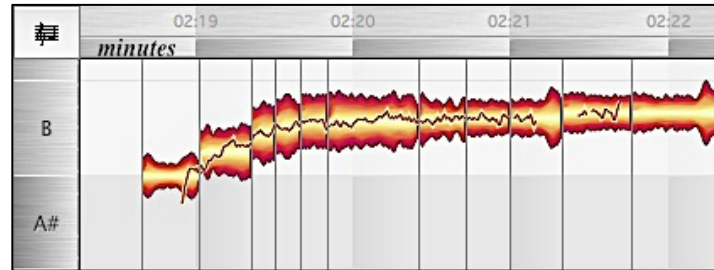
Examples 6.2, 6.3, 6.6, and 6.8 show that pitch bends with a range of one to two semitones are used to begin phrases in each section of *Etenraku* (A, B, and C) and in each of the three ensemble recordings (ICE, IHA, Kyoto). These pitch bends are significant because they introduce the piece's four-measure phrases, important markers in the quadratic structure. Tones approached by slides also seem to be variable in pitch. Examples 6.8a and b show the same tone in m.17 of the Kyoto and

<sup>4</sup> Garfias, *Music of a Thousand Autumns*, 123.

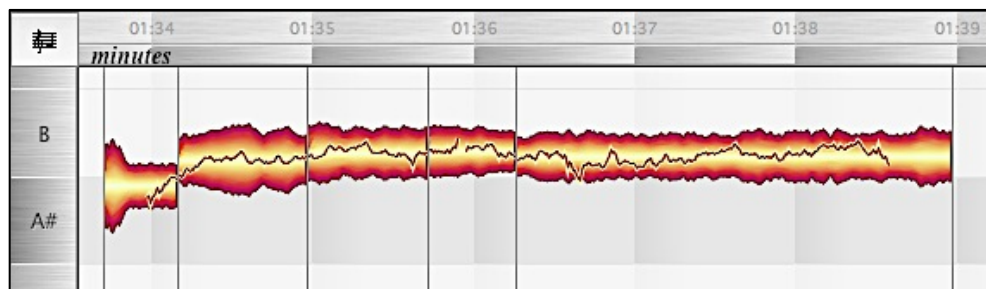
IHA recordings, yet in the IHA version, the *hichiriki* remains below the target pitch of B.

**EXAMPLE 6.8**

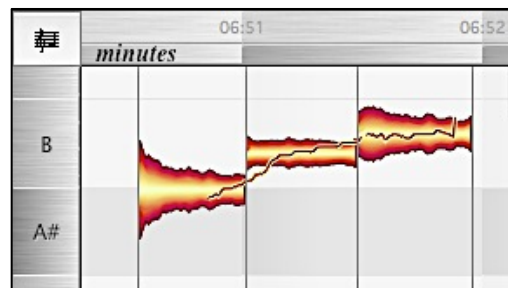
a. *Hichiriki* bend to B, m.17, 1<sup>st</sup> beat of B1 (Kyoto recording)



b. *Hichiriki* bend to a low B, m.17, 1<sup>st</sup> beat of B1 (IHA recording)



c. *Hichiriki* bend to B, m.85, C3 m.5 (ICE recording)



In Appendix B, I have included transcriptions of the Kyoto, ICE and IHA recordings (see Transcriptions 1-3). I have also transcribed the wind parts on Sasamoto's *Hajimete no Gagaku* CD as played solo by the actual instruments and as sung in *shōga*. To compare performances and identify patterns, I have compiled all

five versions into a single score for each wind instrument (see Transcriptions 4-5). These two scores confirm that initial bends at the beginning of four-measure phrases are significant. A pitch bend from below begins the first tone of every four-measure phrase of *Etenraku* in at least one recording on at least one of the two instruments. Therefore, where a pitch bend is not heard at the beginning of a phrase in a particular recording, it could be. Its absence could be due to such factors as stylistic variation on repeats or tempo adjustment. The faster the tempo becomes as the piece progresses, the more difficult it is to insert bends. In the Kyoto recording, the solo *ryūteki* begins the first two free-rhythm phrases with a bend. The *hichiriki* then continues the pattern for the next 10 phrases, through section C2. Together, they begin 70 per cent of phrases with a bend, compared to 33 per cent in the sung *shōga* recording.

A comparison of recordings in transcription reveals that most tones that follow rests within a phrase can also begin below pitch, especially in the *hichiriki* part.

## **6.2 Initial bends on reiterated tones within four-measure phrases**

When the *hichiriki* reiterates a tone after a brief rest within a four-measure phrase (an eighth or quarter rest in the transcriptions), the tone also often begins with a bend from below. As with phrase-beginning bends, these bends frequently lead into the tones E and B, but also A. Example 6.9a shows the melodic line E-D-E-rest-E in mm.63 to 64 of the A4 section, ICE recording. The E following the rest is approached from below. Likewise, Examples 6.9b and c from the IHA recording

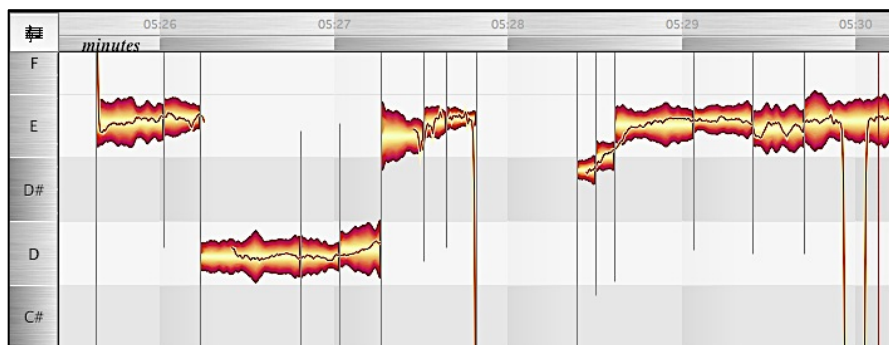
show the final E of the same melodic pattern. The Kyoto and Sasamoto recording examples (6.9d-f) show bends to repeated tones B and A.

Although these bends don't serve the quadratic structure of the piece the way bends do at the beginning of phrases, they nonetheless call attention to the three principal tones (E, B, A) of the *hyō-jō* mode (and the A of the *oshiki-chō/sui-chō* modes in section C if the theory of modulation is accepted). As is the case with phrase-beginning bends, bends on reiterated tones after rests in the *hichiriki* part are consistent at the beginning of the Kyoto recording but are less frequent as the piece speeds up, reappearing in the slow *tomede* ending.

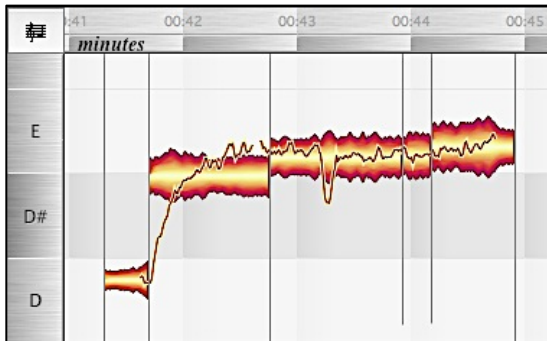
The *ryūteki* occasionally begins a reiterated tone with a bend—notably in the *fue-ondo* opening—but generally simply restates the tone at pitch. The *ryūteki* will, however, slide or bend the pitch when moving directly from tone to tone.

**EXAMPLE 6.9**

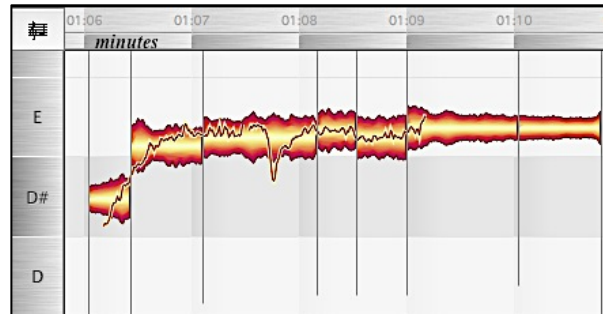
a. *Hichiriki*, m.63 beat 3 through m.64 (A4), bend to reiteration of E after rest (ICE recording)



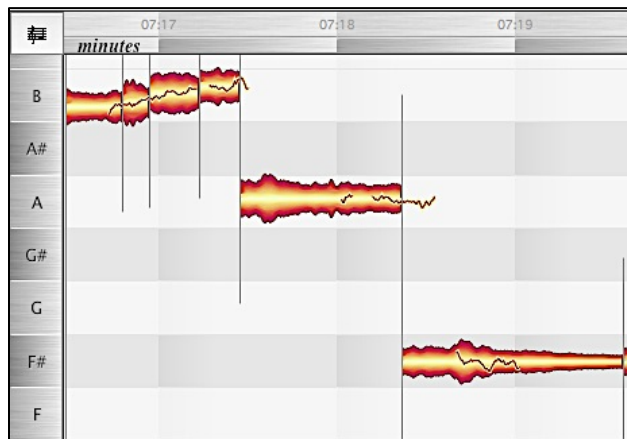
b. *Hichiriki*, m.8 (A1), bend to reiteration of E on beat 2 after rest (IHA recording)



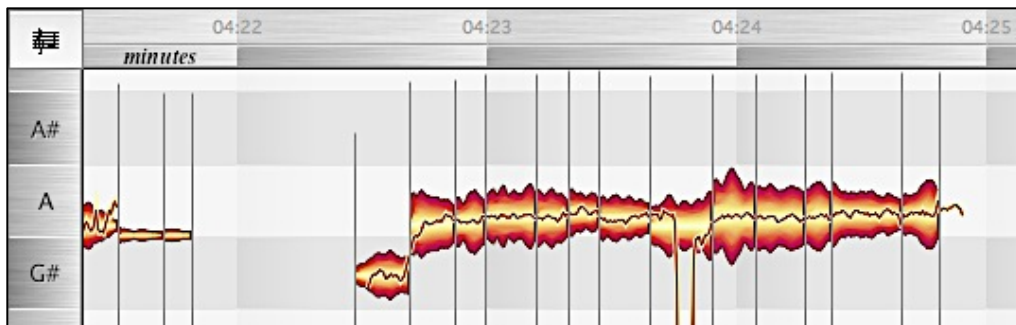
c. *Hichiriki*, m.12 (A2), bend to reiteration of E on beat 2 after rest (IHA recording)



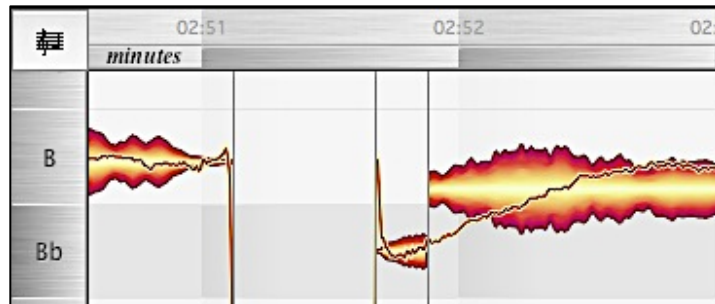
d. *Hichiriki*, m.74 (B4), bend to reiteration of B on beat 2 after rest, followed by A-F# (Kyoto recording)



e. *Hichiriki*, m.36 (C1), bend to reiteration of A on beat 2 after rest (Kyoto recording)



f. *Hichiriki*, m.2 (A section, da capo), bend to reiteration of B on beat 2 after rest (Sasamoto CD, track 5)



### 6.3 Pitch bends between tones

Pitch bends also occur between tones without an intervening rest. For example, dark lines in the SPEAR analyses of the Kyoto recording in Example 6.10 show the changing frequencies of tones played by the *ryūteki* in the sixth measure of the C section (m.38, m.46) of *Etenraku*. The “inflected” tone C# of the *hyō-jō* mode is embellished on the second beat of this measure. Occurring first in m.38 and then again on the repeat in m.46, the *ryūteki* bends down from an already low C# to a C before sliding up to D (the *riu* degree of the mode, i.e., a sharpened C#), creating dissonance against the B in the *hichiriki* part. The *shōga* syllables in the measure (ㄉ o – ㄨ i) indicate the rise in pitch from tone to tone. The tablature (ㄩ), however, does not change. Therefore, the entire figure is performed with a single fingering, accounting for the variation in the arc of the bend heard on different recordings.

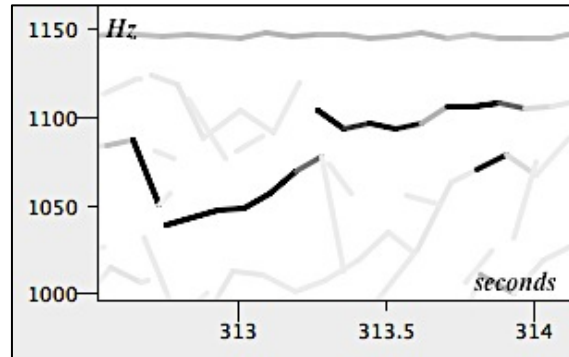
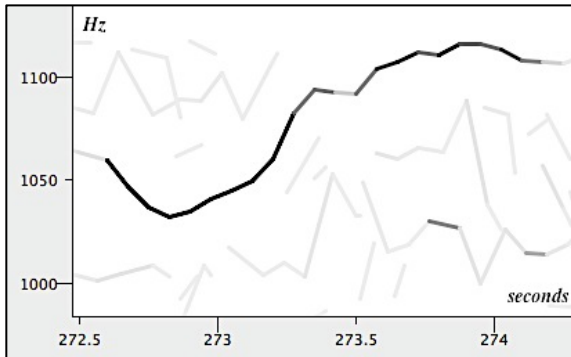
In m.38 of the Kyoto recording, the *ryūteki* bends down 57 cents before sliding up 138 cents to the D. In m.46, the initial downward interval is 74 cents, followed by a slide upwards of 117 cents.

#### EXAMPLE 6.10

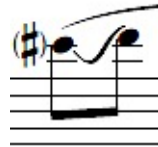


a. *Ryūteki*, m.38, beat 2 (Kyoto recording)  
 \*[relative to A=430Hz: C#2=1083.5Hz;  
 D2=1148Hz]

b. *Ryūteki*, m.46, beat 2 (Kyoto recording)



c. Transcription of bend

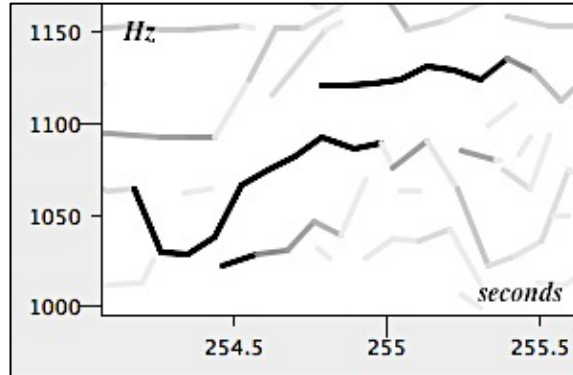
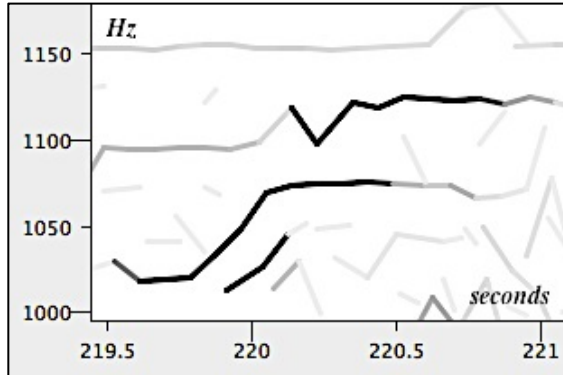


This bend is also heard in the ICE recording; Example 6.11 shows the same two measures as in the Kyoto recording. In the first example, the flute bends down 22 cents then up 174 cents; in m.46, a 59-cent downward bend is followed by a rise of 163 cents, neither time quite reaching the D. Section C is not played in the IHA version. Latency in the SPEAR software's response to frequency change causes the overlapping frequencies seen in these and further analyses of the *ryūteki* tone.

**EXAMPLE 6.11**

a. *Ryūteki*, m.38, beat 2 (ICE recording)  
\*[relative to A=435Hz: C#2=1096Hz;  
D2=1161Hz]

b. *Ryūteki*, m.46, beat 2 (ICE recording)



The *hichiriki* also bends pitch to travel between tones in certain melodic patterns, in particular to prepare wide upward leaps. These leap-preparing bends, called *embai*, are commonly referred to as “microtonal ornaments,”<sup>5</sup> so will be dealt with in Chapter 7, Section 7.1 on microtonal pitch alteration.

Pitch bends and slides between tones on both *ryūteki* and *hichiriki* are structurally significant because they reinforce the two-beat pulse of the piece. The C#-D *ryūteki* figure discussed above, *hichiriki embai*, and the pitch slide patterns introduced in the following sections all typically lead into beat 1 or 3. The pitch manipulation in these figures contrasts with the stable landing point that directly follows them on a strong beat.

<sup>5</sup> Garfias, *Music of a Thousand Autumns*, 122.

## 6.4 Downward pitch slides between tones

The melodic figure B-A-B, heard first in *Etenraku* in the second measure in the *ryūteki*, is commonly treated with a slide between the first two tones, leading into beat 3. This B-slide-A figure is called *orute*.<sup>6</sup> Terauchi shows the un-embellished line:

EXAMPLE 6.12 Terauchi transcription, mm.1-2, *ryūteki* (Terauchi 32)



Whereas Shiba shows a B $\flat$  passing tone:

EXAMPLE 6.13 Shiba transcription, mm.1-2, *ryūteki* (Shiba 9)



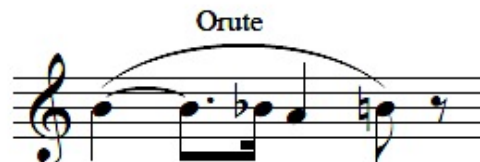
Kapuściński and Rose offer alternative forms of notation:

**EXAMPLE 6.14**

a. Kapuściński and Rose, general *orute* (B-A figure) example<sup>7</sup>



b. Kapuściński and Rose transcription, *Etenraku*, m.18 (same melodic figure as m.2)<sup>8</sup>



None of these transcriptions notates the slide downward from the second-beat B, as shown in the spectral analysis images (Examples 6.15a-c) for each of the

<sup>6</sup> Kapuściński and Rose, "Orchestration: Ryūteki."

<sup>7</sup> Ibid.

<sup>8</sup> Ibid.

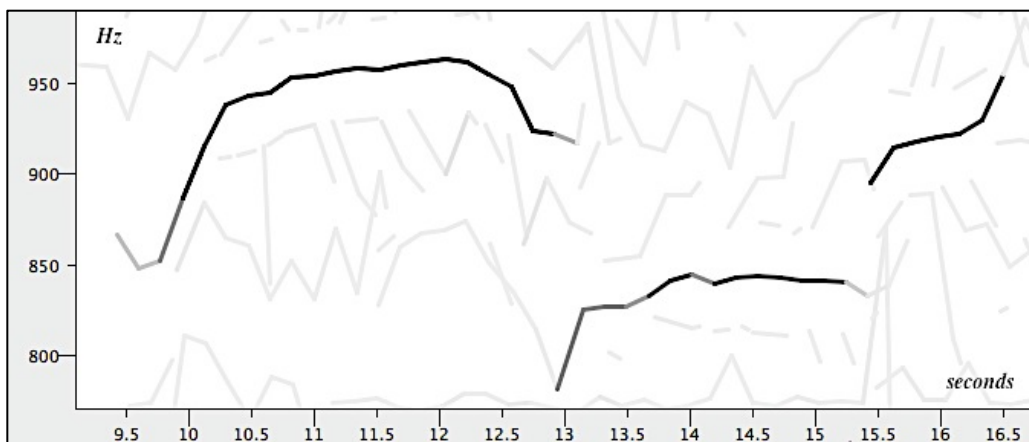
three recordings in this study. Nor do they indicate the performance variability of the actual pitches: the B $\flat$  is not always reached. The downward slide thus seems more essential to the interpretation than does the pitch of the B $\flat$ . In the Kyoto recording, the downward slide from the B covers an interval of about 77 cents; in the ICE recording, about 95 cents; and in the IHA recording, about 55 cents—a range of a quarter tone to a semitone. Regarding this figure, Garfias writes:

These two tones, Banshiki (B) and Ōshiki (A), are uninflected in most chōshi. Whenever they are played by the fue the second finger gradually covers the second hole, stopping for a moment at half-covered position before completely covering the hole for Ōshiki. ... Because the intermediate pitch is produced by a half-covered hole, it is much less distinct than transcription into Western notation makes it seem. There is also some divergency in its execution among different fue players.<sup>9</sup>

**EXAMPLE 6.15**

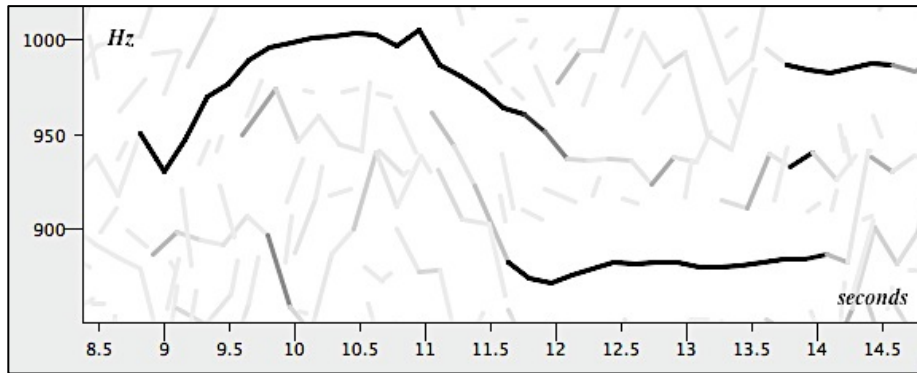
a. *Ryūteki*, m.2, beats 2-4 (B-A-B) (Kyoto recording)

\*[relative to A=430Hz: A2=860Hz; B2=965Hz]

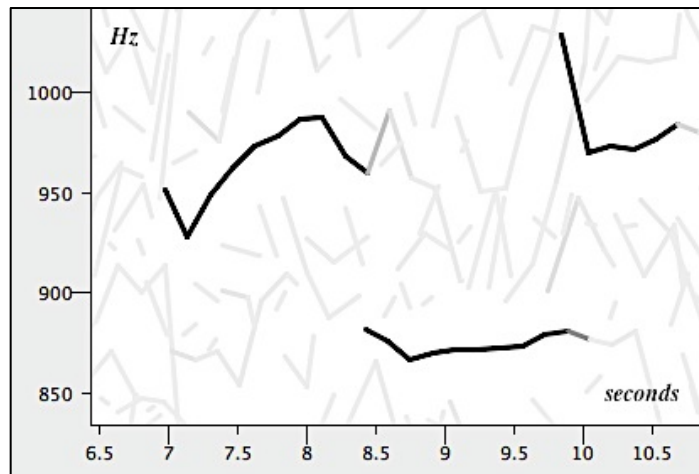


<sup>9</sup> Garfias, *Music of a Thousand Autumns*, 126.

b. *Ryūteki*, m.2, beats 2-4 (B-A-B) (ICE recording)  
 \*[relative to A=435Hz: A2=870Hz; B2=976.5Hz]



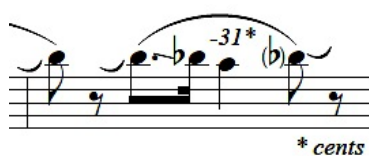
c. *Ryūteki*, m.2, beats 2-4 (B-A-B) (IHA Recording)  
 \*[relative to A=440Hz: A2=880Hz; B2=988Hz]



I have transcribed this measure as shown in Example 6.16; however, it is even better represented in the images in Example 6.15, without the precise rhythmic connotations of the sixteenth note.

**EXAMPLE 6.16**

a. Kyoto transcription, m.2, *ryūteki*



b. ICE transcription, m.2, *ryūteki*

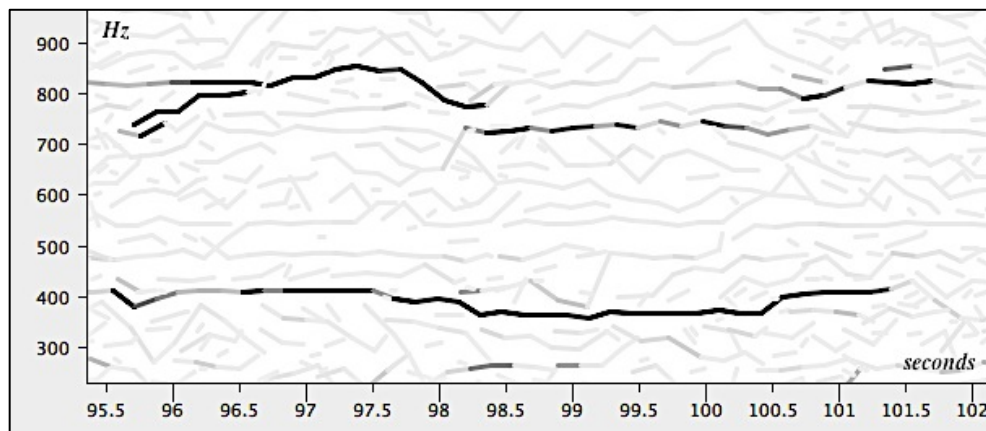


c. IHA transcription, m.2, *ryūteki*



Spectral analysis of the circa 1920s recording of *Etenraku* accessed at Garfias's webpage also shows frequency variation in the B-A-B melodic figure on the repeat in measure 10, from 95.5 to 101.5 seconds on the recording. Example 6.17 shows the *hichiriki* sounding at approximately 400Hz and the *ryūteki* above it at 700-850Hz.

EXAMPLE 6.17 *Ryūteki* and *hichiriki* m.10, beats 2-4 (B-A-B) (Garfias recording)



This pitch slide does not have modal implications. It does, however, serve to emphasize the stable A that follows it on beat 3, thus establishing the two-beat pulse and quadratic structure of the piece within the first two measures.

### 6.5 Upward pitch slides between tones

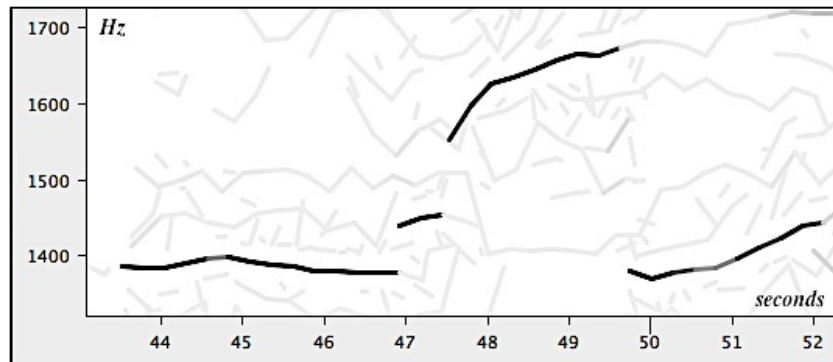
In another example of a pitch slide, in m.6 of the Kyoto recording, the *ryūteki* begins on F, moves briefly to F#, then slides upward to what is usually transcribed as A on beat 3 (see Shiba transcription, Example 6.18). In this performance, the flute does not reach A=1720Hz, but rather 1684Hz after a slide upwards of about 132 cents. On the A2 and A4 repeats, the *ryūteki* and *hichiriki* do play the tone A, but

without a sliding approach from below; the A in section A3 is again low. In each section the A is generally followed by another slide upwards from F at the end of the measure.

EXAMPLE 6.18 *Ryūteki*, m.6 (Shiba 9)



EXAMPLE 6.19 *Ryūteki*, m.6 (Kyoto recording)  
\*[relative to A=430Hz: F2=1365Hz; A3=1720Hz]

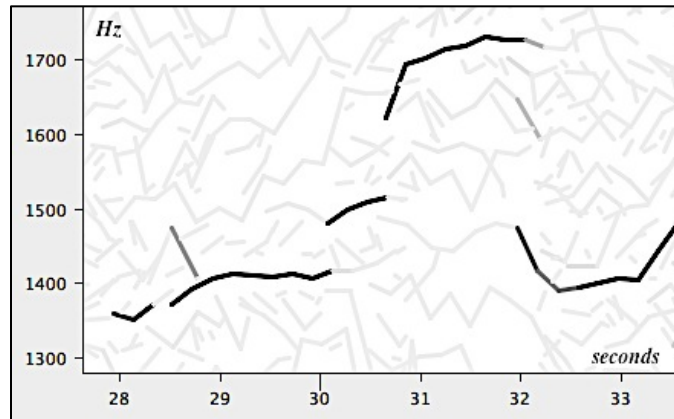


The F/F# pitch area at the beginning of this measure is written in the tablature as 五—the shared fingering for F and F#. Shiba notates the F/F# pitch area in the first half of m.6 as focused more on the F# (of the *hyō-jō* mode) than on the initial F (of the *in/miyakobushi* scale). Miki follows Shiba's transcription, but for the addition of *shōga* mnemonics under the staff notation. However, Example 6.19 shows that an F about 31 cents high is sustained in the Kyoto recording. The ICE, IHA, and Sasamoto recordings also differ in their interpretations of this measure. For example, the upward slide preceding the A in the IHA recording covers an interval of about 49.5 cents but on the Sasamoto track about 164 cents.

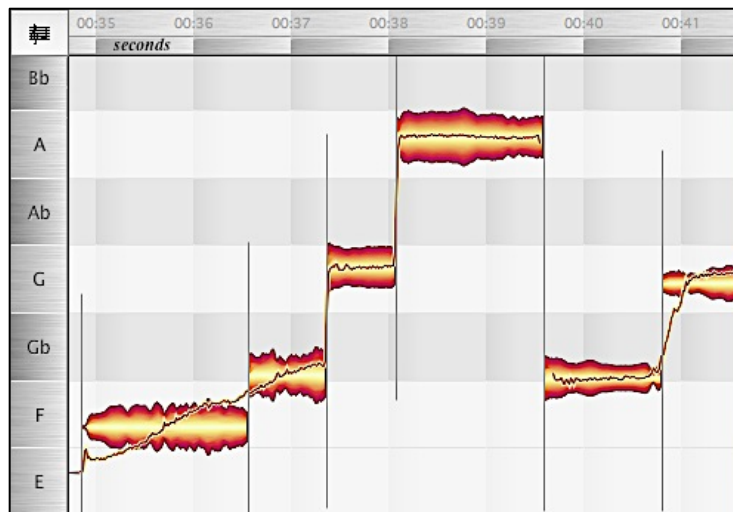
**EXAMPLE 6.20**

a. *Ryūteki*, m.6 (IHA recording)

\*[relative to A=440Hz: F2=1397Hz; A3=1760Hz]



b. *Ryūteki*, m.6 (Sasamoto CD, track 5)

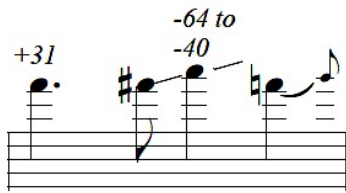


I have therefore notated the tones and slides in m.6 in the following ways (note that each repeat within each recording varies microtonally; see the full Kyoto transcription):

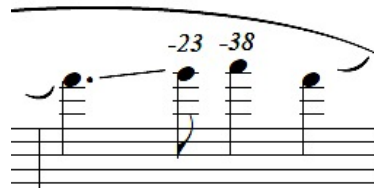


**EXAMPLE 6.21**

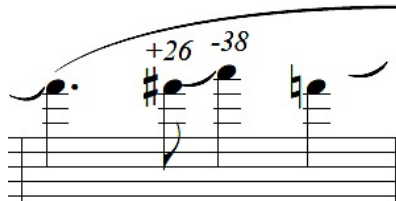
a. Kyoto transcription, m.6, *ryūteki*



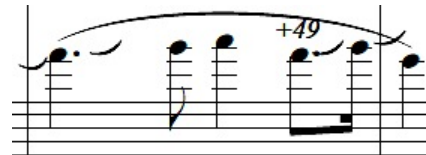
b. ICE transcription, m.6, *ryūteki*



c. IHA transcription, m.6, *ryūteki*



d. Sasamoto CD, track 5 transcription, m.6, *ryūteki*



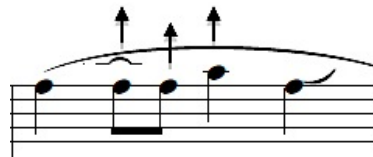
Terauchi gives only an F at the beginning of this measure, with no indication of moving to or through F#. She does show a slide at the end of the measure in the *ryūteki* part. The *shōga* is similarly sung on F in the Sasamoto recording, although the pitch rises microtonally and a breath pulse articulates the metre on the second beat.

**EXAMPLE 6.22**

a. Terauchi transcription, m.6, *ryūteki* (Terauchi 32)



b. Transcription of Sasamoto sung *shōga*, m.6, *ryūteki*



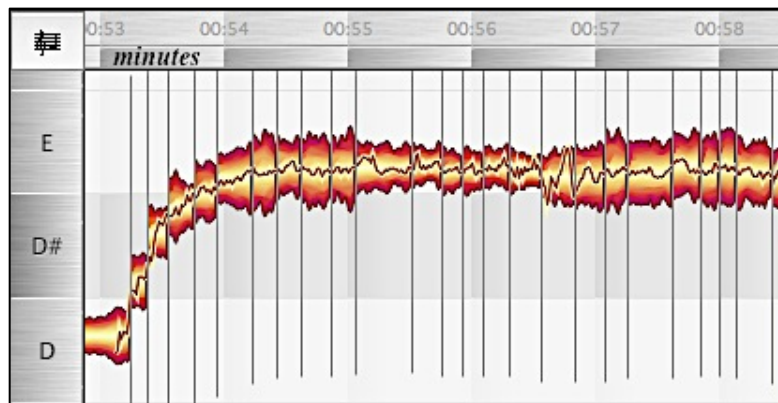
As seen in these examples and in my comparison scores in Appendix B, a distinction between the F# of the *hyō-jō* mode and F of the *in/miyakobushi* scale is not clear, nor is it easily notated on the five-line staff.

## 6.6 Pitch bends at the end of measures and at the *tsuke-dokoro*

Measure 6, shown in Examples 6.18-22, directly precedes the *tsuke-dokoro* (“joining place”) on beat 1 of m.7 (in the short and standard forms), where the *taiko* is struck for the first time and the full wind section enters. The *hichiriki* makes its entrance in the Kyoto recording on a wide pitch bend to the first tone of the *tsuke-dokoro*.

### EXAMPLE 6.23

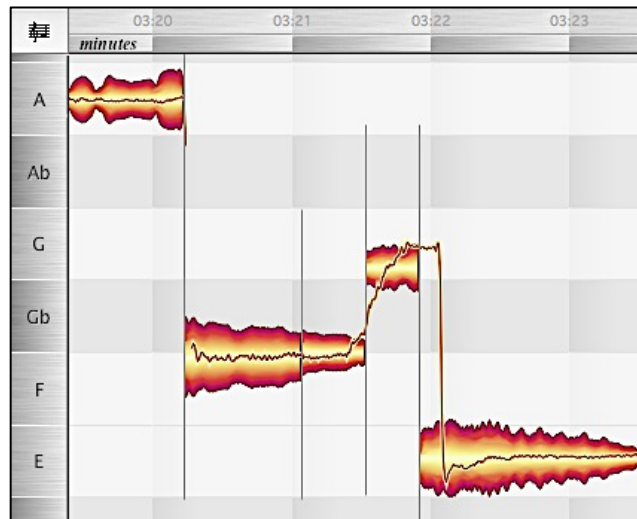
*Hichiriki* entrance on bend to a low E, m.7, (Kyoto recording)



Just before the *tsuke-dokoro*, the tempo is held back slightly. The beat preceding the *tsuke-dokoro* is structurally important because it signals the end of the flute solo (*fue-ondo*). The stretched time on this beat is accompanied by an upward bend in the *ryūteki* at the end of the measure, setting up the accentuated pulse on the downbeat. This pattern is heard again on repeats of the A section, with

the *hichiriki* also adding a bend (upward or downward) at the end of the sixth measure of the section. The *ryūteki* continues the pattern in the sixth measure of the B section, again with an upward bend at the end of a fourth-beat F, before an E on the downbeat. The *hichiriki* takes over the structural role in section C, treating the A in the sixth measure with an *embai* bend before leaping an octave to A2 on the following downbeat. (Refer to Section 7.1.1 for further discussion of *embai*.)

**EXAMPLE 6.24** *Hichiriki* bend at end of m.6 of A section, da capo, before E on downbeat (Sasamoto CD, track 5)



## Chapter 7: Wind techniques in *Etenraku*—Further techniques in ensemble recordings and conclusion

### 7.1 Microtonal pitch alteration

The chordal responsibilities of the *sho* (a kind of mouth organ), and the microtonal inflections of the *ryuteki* (the flute) and the *hichiriki* (a short oboe) demand an extremely sensitive ear and finely coordinated action between fingers and breath control. Accurate performance of these subtle embellishments can only be achieved through intense imitative practice and of course an aural perception that has been entirely freed from the twelve-tone tempered scale.<sup>1</sup>

The *gagaku* winds use microtonal pitch inflection techniques to prepare leaps and move through pitch areas of non-principal tones (e.g. the F/F# pitch area). The *hichiriki* in particular employs *embai* techniques to move within certain melodic patterns. Microtonal clashes between the *hichiriki* and *ryūteki* and their overtones are also heard when they move into or away from perfect octave intervals.

#### 7.1.1 *Embai*: Microtonal inflection to prepare upward leaps

Regarding *embai* in *hichiriki* technique, Garfias writes:

The word is used in Tōgaku to describe the practice of small microtonal ornaments on the *hichiriki* to embellish certain pitch connections. One of the most frequently employed *embai* techniques for the *hichiriki* occurs whenever the melody of the *hichiriki* part moves up more than one degree. In such instances, the lower pitch is lowered slightly and the air pressure is decreased, reducing the volume of sound and modifying the quality of the tone.<sup>2</sup>

In *Etenraku*, this technique is applied to the tones A1 and F/F#2. Leaps upward from these tones are prepared with narrow downward bends. According to Miki, the *hichiriki* player performs this “lowered ornamental inflection” by pulling the reed

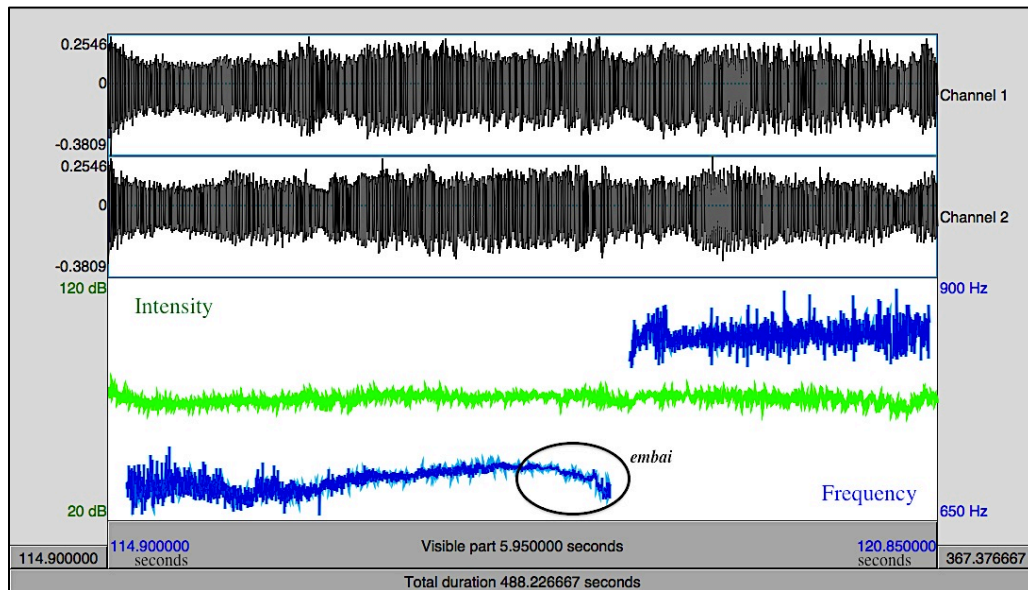
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<sup>1</sup> Mantle Hood, “The Challenge of ‘Bi-Musicality,’” *Ethnomusicology* 4.2 (1960): 57.

<sup>2</sup> Garfias, *Music of a Thousand Autumns*, 122.

further out of the mouth, thus lengthening the instrument.<sup>3</sup> The Praat software analysis in Example 7.1 shows a dip in frequency at the end of a slide upward from F to a low F# in m.14 (sixth measure of A section) of the Kyoto recording. This dip prepares a leap to A2 and is mirrored by an upward bend at the end of the measure in the *ryūteki* part. As discussed in the previous section, these pitch inflections call attention to the downbeat that follows in m.7, punctuated by a strike of the *taiko* drum.

**EXAMPLE 7.1** *Hichiriki*, m.14, F-F#-embai-A (Kyoto recording), Praat analysis

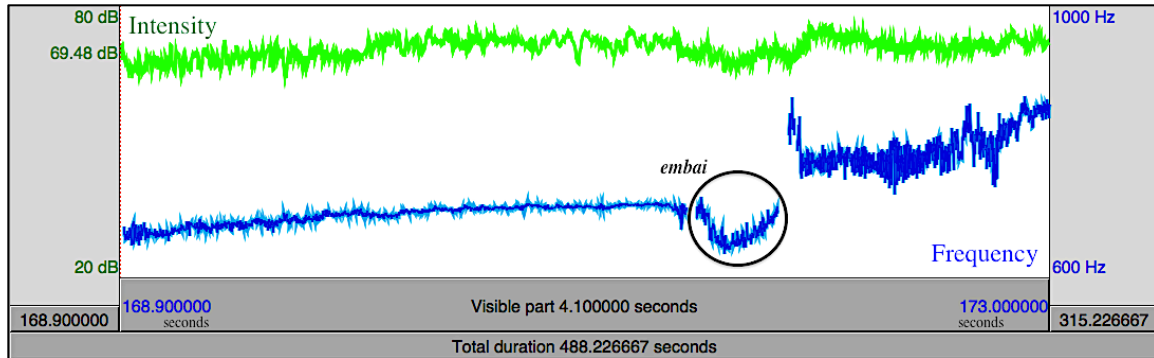


Similar melodic *embai* patterns occur in the fifth measure of the B section and third measure of the C section and colour the two-beat pulse. Examples 7.2a-b show mm.21 (B section) and 35 (C section) from the Kyoto recording.

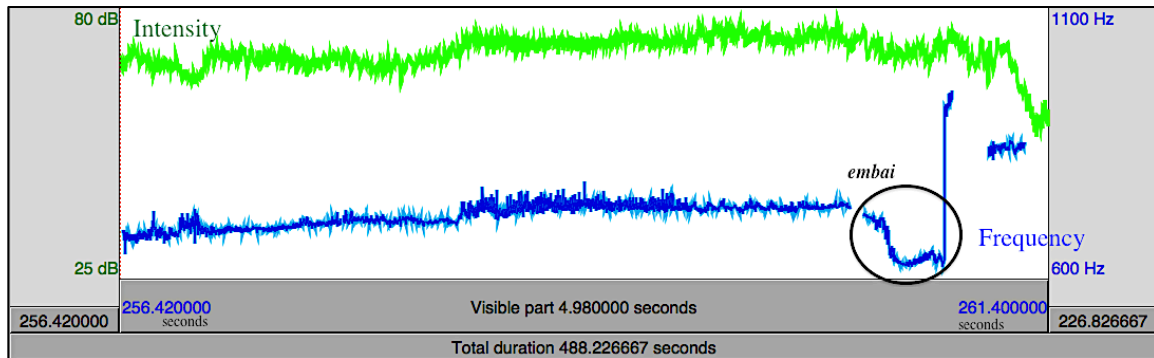
<sup>3</sup> Miki, *Composing*, 57.

**EXAMPLE 7.2**

a. *Hichiriki*, m.21, F-F#-*embai*-A (Kyoto recording)

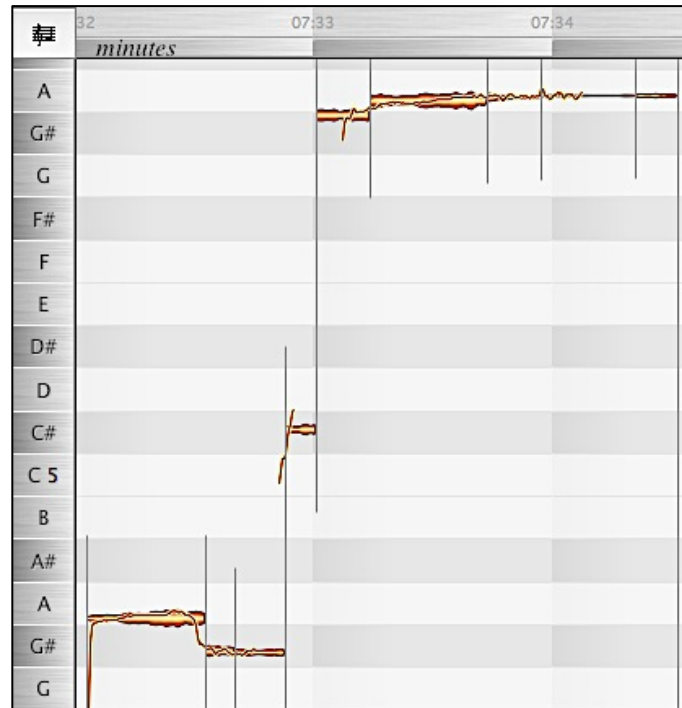


b. *Hichiriki*, m.35, F-F#-*embai*-A (Kyoto recording)



An octave leap in the *hichiriki* part at the end of the sixth measure of the C section is also prepared with an *embai* lowering of pitch. In the ICE recording, an already low A in m.94 is lowered less than a semitone before the *hichiriki* jumps an octave to its highest tone, in this instance also passing briefly through C#, a tone referred to in Section 5.1 as an indefinite passing tone.

EXAMPLE 7.3 *Hichiriki*, m.94, A1-embai-A2 (ICE recording)

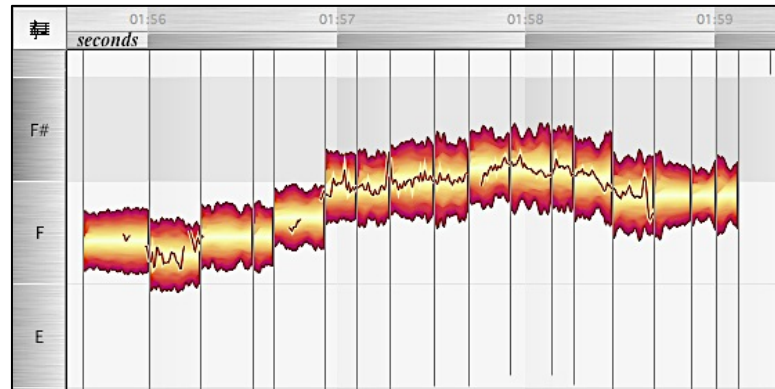


### 7.1.2 The F/F# pitch area

F# is one of the non-principal “inflected” tones of the *hyō-jō* mode,<sup>4</sup> along with G, C# and D, and since it shares its fingering with F on both the *hichiriki* and *ryūteki*, the actual performed pitch can fall between the two tones, move between them, or be played simply as F, inspiring theories of bi-modality. These theories are supported by the fact that the fixed-pitch *shō* mouth organ can only play F#, not F. However, theories of bi-modality are based on semitone intervals, whereas actual performance practice can tend towards microtonal colouring. For example, as seen in Example 7.4 of the Kyoto recording, the *hichiriki* begins m.14 approximately on F relative to A=430Hz, but then moves upward less than a semitone.

<sup>4</sup> Garfias, *Music of a Thousand Autumns*, 67.

EXAMPLE 7.4 *Hichiriki*, m.14, F-F# pitch area (Kyoto recording)



Terauchi notates this simply as F, supported by Sasamoto's *shōga* performance, whereas Sukehiro Shiba gives the following guide:

EXAMPLE 7.5 Shiba transcription, mm.14-15, *hichiriki* (Shiba 9)



I have transcribed it as follows for the Kyoto recording:

EXAMPLE 7.6 Kyoto transcription, mm.14-15, *hichiriki*



It is useful to keep in mind that notes on Japanese winds are referred to by their fingerings, rather than as specific tones or pitches. F and F# are produced with a single fingering. Shiba refers to this fingering as a “special tone” and adds the following caveat to his scores:

In the present transcription this peculiar tone has been written down as F or F# according to the trend of the melodic movement. Hence arises an

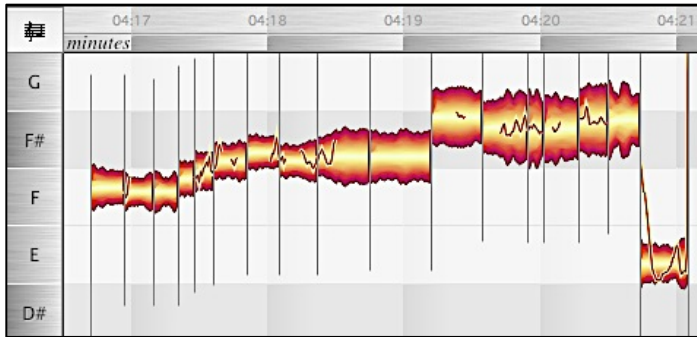


unsatisfactory representation in the notation in some part of the *ryūteki* melodies.<sup>5</sup>

Example 7.7 shows additional cases of microtonal treatment of the F-F# fingering, each in the third measure of the C section. In the Kyoto example, the *hichiriki* reaches a high F#, in contrast to the low F# and high F $\flat$  of the ICE examples. This demonstrates that repeated sections may differ microtonally from performance to performance, or even within a single performance.

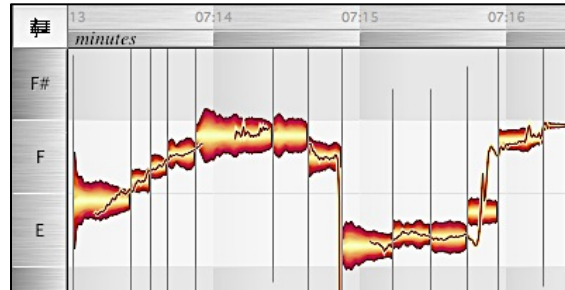
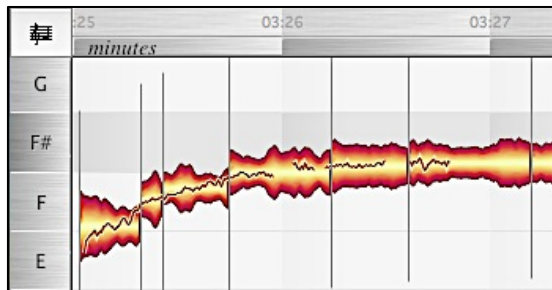
EXAMPLE 7.7 a. *Hichiriki*, m.35, F-F# pitch area, followed by *embai* to E (Kyoto recording)

b. Kyoto transcription, m.35-36, *hichiriki*



c. *Hichiriki*, m.35, F-F# pitch area (ICE recording)

d. *Hichiriki*, m.91, F-F# pitch area (ICE recording)



<sup>5</sup> Shiba, *Score of Gagaku*, Vol.1, 33.

### 7.1.3 Spectral dissonance: Roughness

The *hichiriki* and *ryūteki* frequently play in octaves. However, the approach of each instrument to the melodic line, especially when it comes to microtonally-raised or -lowered tones and pitch slides, contributes to the timbral effects in *gagaku* performance. The *hichiriki* has a harmonically complex tone. When either it or the flute produces a microtonally-inflected pitch, or slides between tones, the harmonics of the *hichiriki* can clash with the fundamental of the *ryūteki*, usually playing one or two octaves above. This dissonance is reinforced further when multiple *hichiriki* play in unison against multiple *ryūteki*.

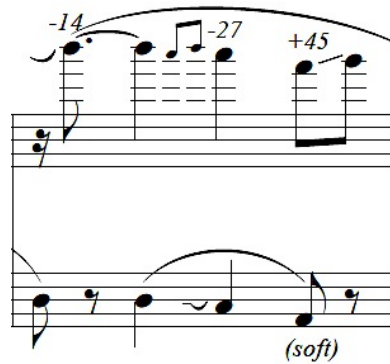
In m.30 of the Kyoto recording, the *ryūteki* slides into the tone B3 from below. It settles about 14 cents shy of B. Towards the end of this two-beat tone, the *ryūteki* raises the pitch again to an “in-tune” B relative to A=430Hz. The *hichiriki* plays B1, two octaves lower, on beat 2, but then slides downward as much as 35 cents below B in its approach to the third-beat A. Thus, at the end of the beat, the *ryūteki* is playing B at ~1932 Hz and the *hichiriki* at ~473 Hz. The third overtone of the *hichiriki* will be ~473 Hz x 4, that is, ~1892 Hz. The difference of ~40 Hz, or ~36 cents, between the *hichiriki* harmonic and the *ryūteki* fundamental creates a roughness to the overall sound.<sup>6</sup> As with other pitch-based techniques, this effect is

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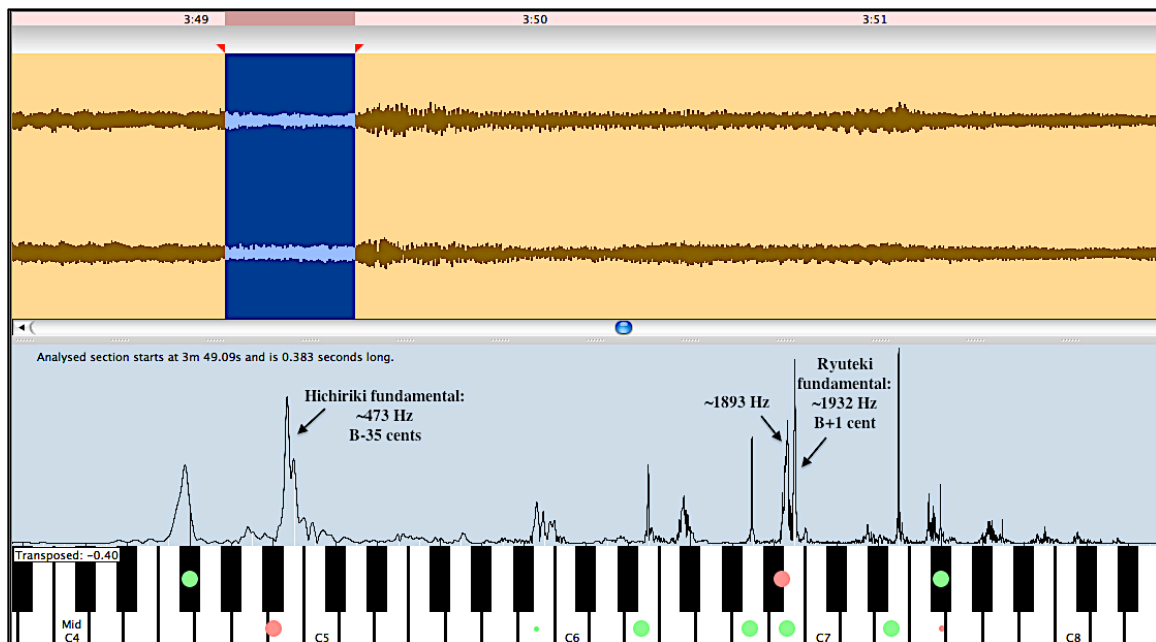
<sup>6</sup> According to Stanley Smith Stevens and Hallowell David, “When two tones are sounded simultaneously and the difference between their frequencies is gradually increased from zero, three successive stages of the phenomenon are distinguished: (1) the loudness appears to surge up and down continuously, (2) the beats are heard as a series of intermittent impulses, and (3) there is roughness without intermittence.” Also, “just as two primary tones may produce beats, so may any of the harmonics of these tones, regardless of how the harmonics are generated. ...The presence or absence of roughness created by the beating of aural harmonics may determine... whether two objectively pure tones appear consonant or dissonant, when sounded together.” Stevens and David, *Hearing: Its Psychology and Physiology* (New York: American Institute of Physics, 1938, 1983), 242, 244.

heard just before the first or third beat—in this case the third—therefore contrasting the more stable two-beat pulse.

EXAMPLE 7.8 a. Kyoto transcription, m.30



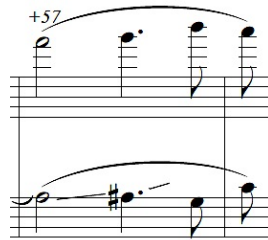
b. Frequency analysis, m.30, beat 2 (Kyoto recording), Transcribe! software



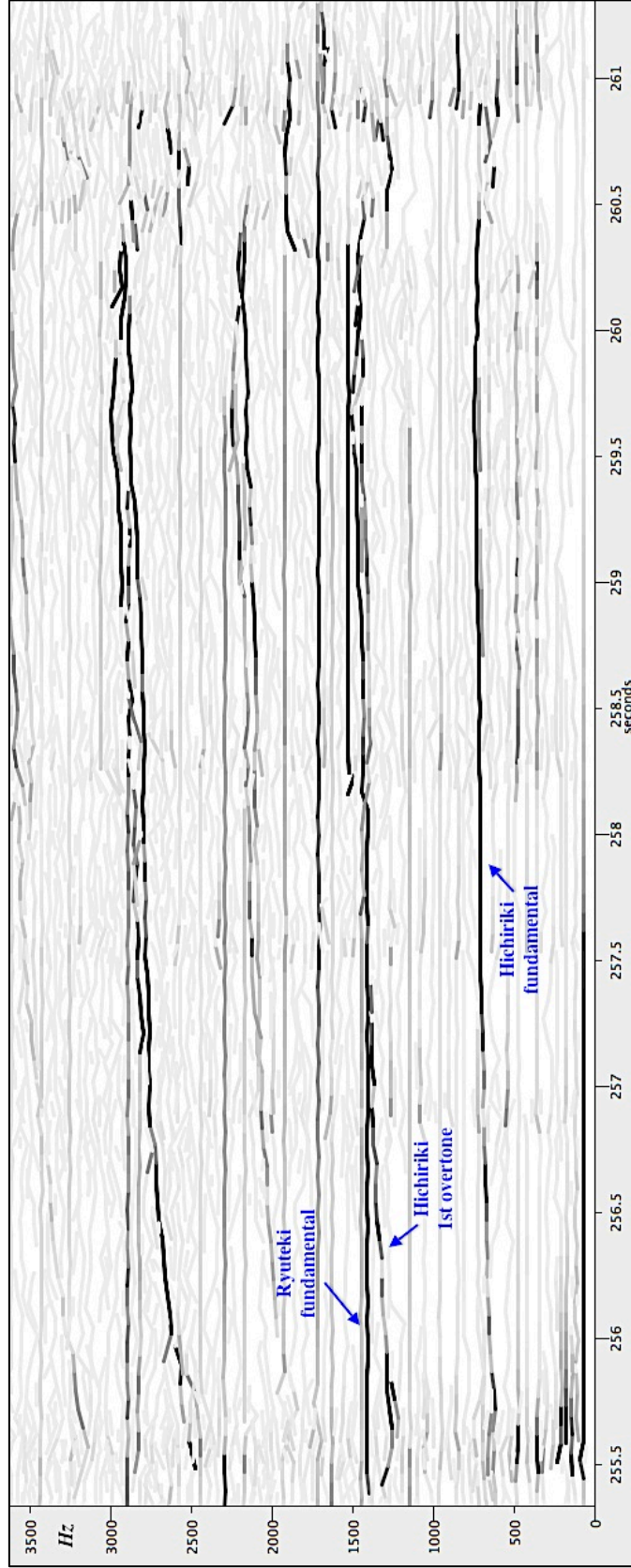
Similarly, in m.35, the *ryūteki* sustains the tone F3 raised 57 cents. Meanwhile, the *hichiriki* slides upward to F2, one octave below the flute, and then continues to slide upward. The SPEAR analysis in Example 7.9b shows this movement over time (from about 4:15:15) while the Transcribe! analysis in

Example 7.9c captures one moment during this slide (beginning at 4:16.71). The *hichiriki* fundamental frequency at that moment is ~686 Hz, meaning its octave harmonic will be ~1372 Hz. The *ryūteki* fundamental is ~1410 Hz, a difference of ~38 Hz or ~47 cents—approximately a quarter tone. In this case, the dissonance precedes what has been called modulation to the A-based *oshiki-chō/sui-chō* modes in the following measure.

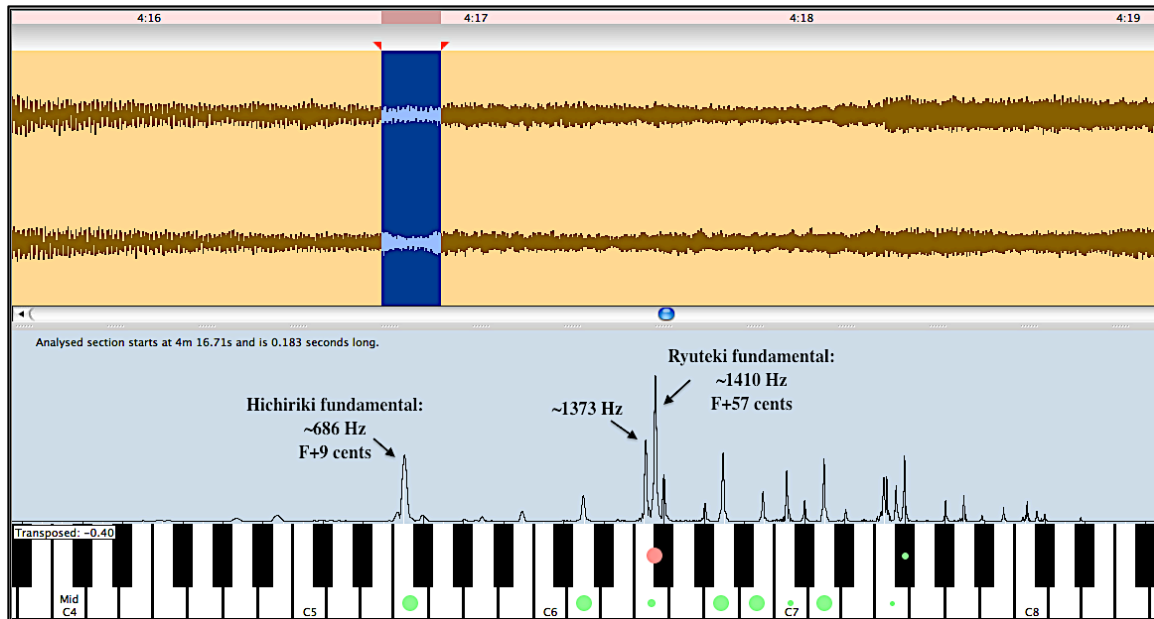
EXAMPLE 7.9 a. Kyoto transcription, mm.35-36



b. Spectral analysis, m.35 (Kyoto recording), SPEAR software



c. Spectral analysis, m.35, first note (Kyoto recording), Transcribe! software



#### 7.1.4 Intonation

I will also point out that in the Kyoto recording, near the end of the piece in the A3 section, the intonation in the winds begins to drift upwards, notably on the tone E. E is the principal tone of the *hyō-jō* mode, and yet it is played high for most of the remainder of the performance. This event is not considered part of standard performance practice for the purposes of this study, but rather a result of live performance conditions.

#### 7.2 Breath pulse (*osu*)

Pitch onset on Japanese winds is not done with the tongue, contrary to Western woodwind performance practice. Therefore, phrases are played slurred together, in a single breath, and begun with the air alone. To emphasize the metre

on a sustained tone, or to articulate a repeated tone, the performer may use breath pulses or quick finger taps (pitched finger percussion), or insert a brief rest.

On the *hichiriki* and *ryūteki*, the performer will precede a breath pulse (or breath accent) with a slight decrease in loudness and then reiterate the tone with an increase in airflow. The *hichiriki* player will also use the properties of the reed to his advantage, changing slightly the amount of reed in the mouth. This breath pulse, performed with changes in air pressure and embouchure, results in a brief rise or fall in pitch. Pulses on a strong beat (1 or 3) are called *osu*; pulses on a weak beat are *ateru*. *Osu* breath pulses are used throughout *Etenraku*.<sup>7</sup>

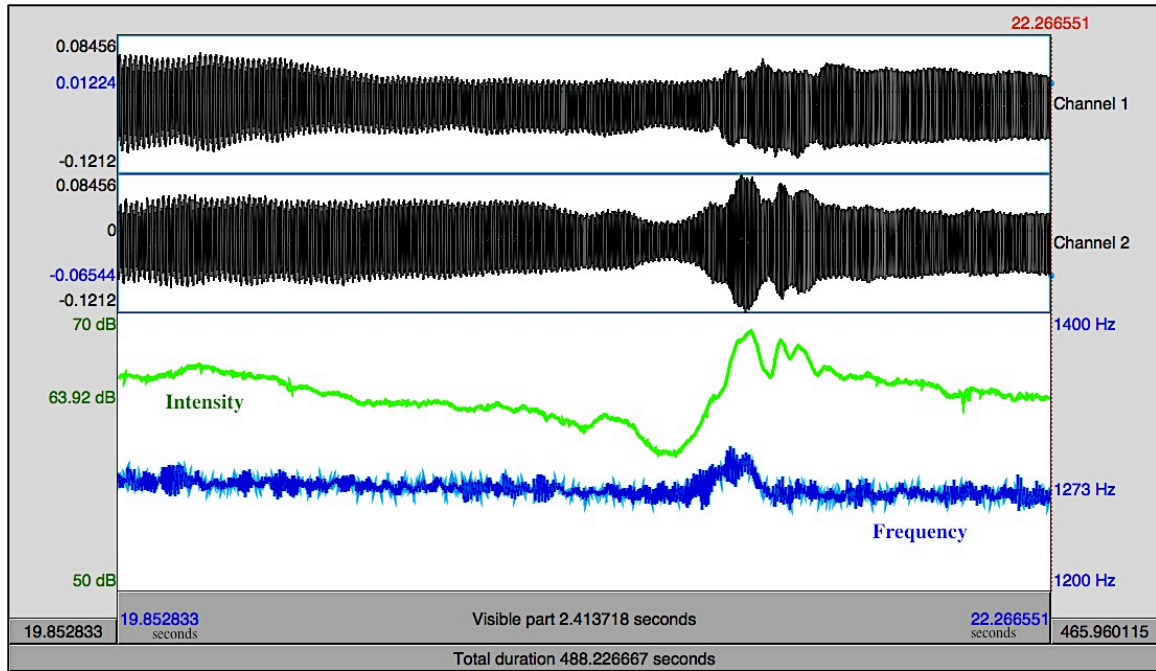
The image in Example 7.10a shows the slight rise in frequency and preparatory lessening of intensity as the *ryūteki* performs *osu* on an E on the third beat of m.3 in the Kyoto recording. This breath pulse results in a rise in pitch of about 23 cents. In contrast, a brief fall in pitch (about 64 cents) is heard in the *hichiriki* on the same beat of m.3 in the ICE recording (see Example 7.10b). In *shōga* singing, the breath pulse is performed much as it is on the wind instruments, with a decrease in loudness on the approach. The sung syllable is not changed; the vowel is simply reiterated with a breath pulse.

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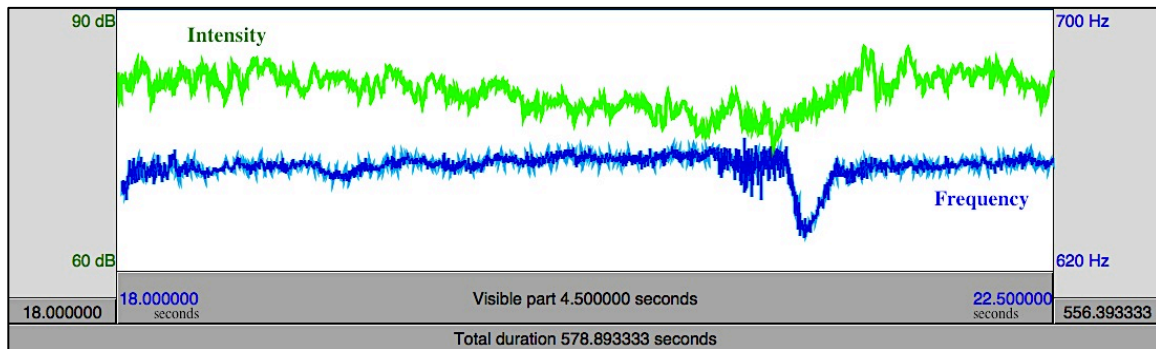
<sup>7</sup> According to Kapuściński and Rose, the third-beat breath accent in *Etenraku* is called *osu*. According to Miki, “the second of two repeated pitches” is called *ateru* (19). Regardless of conflicting terminology, the result is as described above.


**EXAMPLE 7.10**

a. *Ryūteki*, m.3 beat 3 (Kyoto recording), Praat analysis



b. *Hichiriki*, m.3 beat 3 (ICE recording)



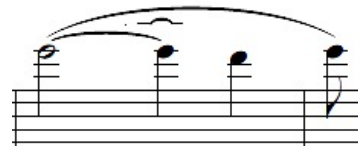
Shiba notates the breath pulse with a *tenuto* symbol. I have drawn a  symbol to avoid the Western connotations of the *tenuto*.



EXAMPLE 7.11 a. Shiba transcription, mm.3-4, tenuto marking for *osu* breath pulse (Shiba 9)



b. Kyoto transcription, mm.3-4, — for *osu* breath pulse



*Osu* breath pulses hold significance with respect to both the mode and the quadratic structure of *Etenraku*. Although the *osu* is heard once per instrument on the tone F in the sung *shōga*, in all of the consulted instrumental ensemble performances, the breath pulse is restricted to the principal tones of the *hyō-jō* mode: E, B, A. In the Kyoto recording, a breath pulse is used to reiterate a sustained tone 29 times by the *ryūteki*, 34 times by the *hichiriki*. In both cases, E (the “tonic”) is the tone most commonly treated with *osu*: 66 per cent of breath pulses on *ryūteki*, 68 per cent on *hichiriki*.

Breath pulses are most frequent in the fourth measure of the four-measure phrase, absent only in the eighth measure of each B section in the Kyoto recording. *Osu* pulses are also common in the first and third measures but occur only twice in the second measure of the phrase, and only in the *hichiriki* part (mm.41, 49). They serve to punctuate the two-beat pulse of the piece by occurring almost exclusively on the third beat of a measure, thus reinforcing the quadratic structure on the two-beat level. Exceptions to the third-beat *osu* in the Kyoto recording include the emphasis of the sustained A on beat 1 in both instruments in the final measure of the C section (mm.40, 48), and an added pulse on beat 2 in the *hichiriki* part in mm.20 and 50. As discussed in Section 5.1.1, when the *shōga* syllable for a repeated

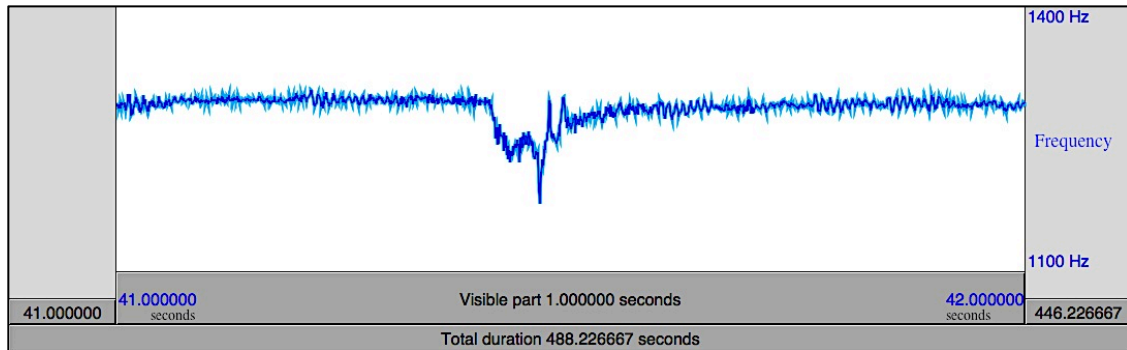
tone, a simple vowel, is placed on beat 3, the *osu* technique is generally used. When the vowel is sung on beat 2, a rest is instead inserted on the second half of beat one, followed by a reiteration of the beat 1 tone. The two second-beat *osu* in measures 20 and 50 of the Kyoto recording show that a degree of variation in repetition techniques is possible.

Another exception to the beat 3 “rule” applies to the seventh measure of each section of the piece. The preparation for this structurally significant measure has been discussed in Section 6.6: the fourth beat of the sixth measure is broadened and treated with bends in the *ryūteki* and *hichiriki* parts in preparation for the *taiko* downbeat in m.7 (the *tsuke-dokoro* in section A1 in the standard and short forms). In repeats of the A section (excluding A1) and in the seventh measure of B and C, this seventh-measure downbeat is followed by a full-beat rest on beat 2, then a reiteration of the downbeat tone (E in sections A and B; A in section C) on beat 3. All other reiterations of tones on beat 3 are done with the *osu* breath pulse technique on a sustained tone; the seventh measure of each section is the exception.

### **7.3 Pitched finger percussion (*tataku*)**

Quick finger taps are also used to articulate repeated tones. When a lower pitch is briefly sounded, the technique is called *tataku*. The pitch of the lower tone is not as important as the articulation effect itself and so the grace note commonly used to depict it in transcriptions can be misleading. It does, however, show clearly that the technique is executed with the fingers.

EXAMPLE 7.12 *Ryūteki*, m.5 beat 4 (Kyoto recording)



Whereas Shiba uses grace notes alone to notate these finger taps, with an accompanying note stating that the grace note must be played very quickly,<sup>8</sup> Miki adds a symbol above the staff to emphasize the difference in performance practice from the Western symbol.

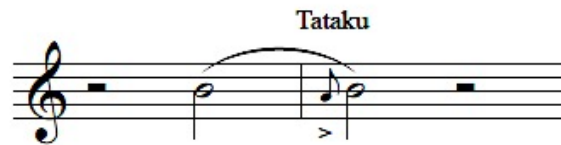
EXAMPLE 7.13 Notation for *ryūteki* finger tap (Miki, *Composing*, 20)



Kapuściński and Rose have instead added an accent to the grace note. This accent addresses concerns raised by Reid that the grace note could cause confusion over its rhythmic placement. I have adopted this notation.

<sup>8</sup> Shiba, *Score of Gagaku*, Vol.1, 33.

EXAMPLE 7.14 Finger articulation transcription example for *ryūteki* (Kapuściński and Rose)



*Shōga* mnemonics handle this form of accentuation on repeated tones as distinct from the breath pulse and rest inserts. The sung syllable is articulated with a consonant (*fa* or *ho*) in place of the simple vowel that signals a breath pulse or reiteration after a rest. Because of this unique treatment, variation in technique is less likely. The solo instrumental recordings on Sasamoto’s instructional *Hajimete no Gagaku* CD follow the *shōga* indications precisely: both the *hichiriki* and *ryūteki* insert *tataku* articulations on beat 4, m.5 of section A, and beat 1, m.2 of both B and C sections; the *ryūteki* adds two more to the C section on beat 4, m.3, and beat 1, m.7. However, although the three *tataku* common to both winds are heard clearly in the Kyoto recording, the additional two on the *ryūteki* are not evident. The articulation may simply be covered up by the timbre of the *hichiriki* in the first case (C: m.3) and the “joining place” of the entire ensemble in the second (C: m.7). Four of the five possible *tataku* accents occur on the principal tones of the mode (E, B, A); the accent in m.3 of the C section (*ryūteki* only) is sung on F in the *shōga* recording, but played on G (an *ei* exchange tone) in the Kyoto and Sasamoto recordings.

#### 7.4 Conclusions

In *Etenraku*, extended *hichiriki* and *ryūteki* techniques function as more than stylistic embellishments. Examples in this chapter show that these techniques serve

the mode and the quadratic structure of *Etenraku*. Articulation techniques articulate not only the tones themselves but also the metre, while highlighting the principal tones of the mode. Bends and slides emphasize departures from the mode while also accentuating the four-measure phrase. Microtonal inflections create timbral dissonance between instrumental parts, contributing to modal ambiguity while contrasting with stable metric landing points.

A comparison of tablature notation, orally-transmitted *shōga*, and ensemble recordings exposes a gap between sources of written notation (whether early or modern) and actual performance practice. Previous studies have focused on removing “ornamental” techniques to clarify the basic structure and modality of *gagaku* pieces, and identify the origins of the melodies. In this study, I show that extended wind techniques in fact highlight the structure and mode and are therefore essential to performance practice.

#### **7.4.1 Metric accentuation**

As presented in Chapter 4 (Section 4.3), *Etenraku* maintains a quadratic structure on multiple levels throughout the piece. Each measure holds four beats, and each phrase four measures. Each two-phrase section (A, B, and C) is repeated, resulting in four-measure sections. The four-measure phrase can be divided into two two-measure sub-phrases (or cells), and a two-beat pulse emphasized throughout the piece turns these two-measure sub-phrases into four-pulse cells, the second of which (mm.3-4) returns later in section A and again in B. The first occurrence of this repeated cell coincides with the structural *tsuke-dokoro* (“joining place”) in the long form of *Etenraku*, while the second occurrence corresponds to

the *tsuke-dokoro* in the standard and short forms; both are also marked by the *taiko* “downbeat,” struck in the third measure of every phrase.

Of the 20 phrases in *Etenraku*, 70 per cent (14) are begun with upward pitch bends by at least one of the two wind instruments in the Kyoto recording, including each of the first 12 phrases. As discussed in Section 6.1, although pitch bends are less frequent in general as the tempo accelerates, a comparison of ensemble and *shōga* performances indicates that 100 per cent of the 20 phrases could be begun with a pitch bend approach to the first tone.

Also consistent throughout *Etenraku* is the two-beat pulse. Every pulse, on beats 1 and 3 of every measure, is accentuated by the winds in one of six ways: 1) a change of note in the melodic line, 2) a reiteration of the tone after an inserted second-beat rest, 3) a breath pulse on a sustained tone, 4) a finger tap to the first open tone hole below the notated fingering to re-articulate a sustained tone, 5) a preceding *embai* embellishment in the *hichiriki* part, or 6) a preparatory broadening of tempo and end-of-measure pitch bend on the beat preceding the seventh measure of each section. The last four of these six methods are considered extended techniques in Western woodwind performance practice. When the two-beat pulse is heard through a change of note in the melodic line or the reiteration of a tone after a rest, the tone that falls on the pulse could also be approached with a pitch bend, especially if it begins the four-measure phrase. Elsewhere, the pulse is heard because the pitch that sounds on beat 1 or 3 is stable in comparison to a slide or bend figure executed between pulses.

In the standard form of *Etenraku*, there are 161 two-beat pulses (20 eight-pulse phrases plus an additional *tomede* ending pulse). In the Kyoto recording, 21 per cent of these pulses (34/161) are accentuated by a breath accent in one or usually both of the winds (*hichiriki* and *ryūteki*). Six pulses (4 per cent) are emphasized with finger percussion, and 11 (7 per cent) are prepared with *hichiriki embai*. Pitch bends lead into phrase-beginning tones or reiterated first- or third-beat tones on 18 per cent of pulses (29/161). Pitch bends are also involved in the preparation for the seventh-measure “joining place” eight times (5 per cent of pulses). The two-beat pulse is emphasized less through pitch bends after section C2 as the piece speeds up, likely due to the greater degree of difficulty, but the pulse has already been established at this point. In the Kyoto recording, beats 1 and 3 are emphasized 34 per cent of the time through extended techniques in the winds. If the tempo did not accelerate, this rate would presumably be slightly higher. In the first 16 measures of the Kyoto recording (sections A1 and A2), the rate is indeed higher at 50 per cent (16 of 32 pulses). Likewise, in the IHA recording, extended techniques emphasize the two-beat pulse in mm.1-16 53 per cent of the time; in the ICE recording, 62.5 per cent of pulses in the first eight measures are treated similarly.

#### **7.4.2 Modal implications**

The *hyō-jō* mode version of *Etenraku* is analyzed in this study. The principal tones of the *hyō-jō* mode<sup>9</sup>—E (the “tonic”), B, and A—are emphasized through the metric articulation techniques discussed above. The F# and C# of the mode are

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<sup>9</sup> E-F#-G-A-B-C#-D-E

frequently lowered in practice as much as a semitone to F and C, or replaced by *ei* (sharpened) exchange tones, G and D. The lowering of the second and sixth degrees creates dissonance when the tones are played against non-lowered pitches in the other instruments, such as the fixed-pitch *shō* mouth organ.

Pitch bends and slides within the F-F $\sharp$  and C-C $\sharp$  pitch areas not only result in dissonance between the parts and their harmonics but also emphasize the departure of the second and sixth degrees from the *hyō-jō* mode. These departures have been analyzed as bimodality between the *hyō-jō* mode and the *in/miyakobushi* scale, an influence from the Edo Period (see Section 4.2). However, the theory of bimodality is based on the interval of the semitone, whereas in practice, the *hichiriki* and *ryūteki* tend to stray from the *hyō-jō* mode in microtonal amounts. The influence of the *in/miyakobushi* scale may indeed be a factor, but the line between the two modalities is not distinct: in the consulted recordings, the — *itsu* fingering is frequently played between F and F $\sharp$  or as a pitch slide from low to high.

The principal tones of the *hyō-jō* mode can be treated with pitch slides as well but are generally more stable than the shared-fingering tones (F-F $\sharp$  and C-C $\sharp$ ). The tones E, B, and A are frequently sustained for two or more beats, and metrically accentuated with breath pulses, finger articulation, pitch bends on the approach, or restatements after a brief rest. Of all the breath pulses used in *Etenraku* to emphasize the two-beat pulse, approximately two thirds are heard on the “tonic” E.



### 7.4.3 Metre and mode in the *tsuke-dokoro*

Metric and pitch techniques merge in the seventh-measure *tsuke-dokoro* (“joining place”), and the seventh measure of every subsequent section in *Etenraku*. Throughout the piece, and coinciding with the *tsuke-dokoro*, the *taiko* drum is struck on the downbeat of the third measure of every phrase (mm.3 and 7 of each section), signaling the end of the rhythmic cycle. This downbeat is preceded by an upbeat strike on beat 3 in the second measure, thereby emphasizing the two-beat pulse. When the *taiko* is struck on beat 1 of m.7 in sections A and B, the *hichiriki* and *ryūteki* play the “tonic” E; in the same measure in section C, they both play an A. These m.7 downbeat tones form the basis for theories supporting modulation to the *ōshiki-chō* or *sui-chō* modes.

Preceding these downbeat tones, in the sixth measure of each section, the fourth beat is broadened by the entire ensemble as the *hichiriki* and *ryūteki* perform preparatory pitch bends and *embai* techniques. The first such instance of broadening, in section A1, also signals the end of the *fue-ondo* flute solo in standard and short forms.

The opening-section *tsuke-dokoro* (and subsequent seventh measures) serves as an example of the more-than-ornamental role extended wind techniques play in *Etenraku*: pitch bends draw attention to the pulse and help keep the ensemble moving together. Elsewhere, pitch bends and slides, breath pulses, finger percussion, and microtonal inflection emphasize the quadratic structure of *Etenraku*, as well as its *hyō-jō* mode and departures from it. In summary, extended

instrumental techniques do much more than merely add idiomatic embellishments to the melodic line.

### Section III: The *Shakuhachi* flute

#### Chapter 8: The *Shakuhachi* and its *honkyoku* repertoire

The *shakuhachi* flute was first imported to Japan with the *gagaku* ensemble by the eighth century. Since that time it has been played by court musicians, mendicant monks, masterless samurai, and secular musicians. Over the centuries, the *shakuhachi* repertoire has included folk and popular music, pieces of the imperial court ensemble, chamber music with *koto* and *shamisen*, and solo classical pieces. In this study, I will focus on the solo classical *honkyoku* repertoire of the Kinko-ryū (the Kinko school), a repertoire canonized in the 18<sup>th</sup> century.

#### 8.1 Brief history of the *shakuhachi*

The term *shakuhachi* (夕八, *chībā* in Mandarin Chinese) means one *shaku* (Japanese foot) plus eight *sun* (1 *sun* = 1/10 *shaku*); that is, 1.8 *shaku*. *Shakuhachi* from different periods differ in length, in part because the value of one *shaku* has changed. Eight extant *gagaku shakuhachi* are preserved at the Imperial Shōsōin in Nara, and one from the Hōryūji temple (Nara) is held at the Tokyo National Museum.<sup>1</sup> Six of these nine flutes are made in *hachiku* bamboo,<sup>2</sup> the others in jade, ivory, and stone. The longest of the bamboo flutes held at the Shōsōin measures 43.78 cm, or 1.8 feet in the Tang dynasty system of length.<sup>3</sup> In contrast, modern

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<sup>1</sup> Tsukitani Tsuneko, "The *Shakuhachi* and its Music," in *The Ashgate Research Companion to Japanese Music*, edited by Alison McQueen Tokita and David W. Hughes (Aldershot, England; Burlington, VT: Ashgate, 2008), 145, 147.

<sup>2</sup> Kitahara Ikuya, Matsumoto Misao and Matsuda Akira, *The Shakuhachi: The Encyclopedia of Musical Instruments* (Tokyo: Tokyo Ongakusha, 1990), 68.

<sup>3</sup> James H. Sanford, "Shakuhachi Zen: The Fukesu and Komuso," *Monumenta Nipponica* 32.4 (1977): 427.

standard-size *shakuhachi* are 54.5 cm long, corresponding to 1.8 modern Japanese feet.<sup>4</sup>

*Shakuhachi* were used in *gagaku* for about 150 years<sup>5</sup> before the court ceremonies were simplified and the size of the ensemble reduced, as discussed in Chapter 3, Section 3.1. The *shakuhachi* flute has evolved since its early form as a *gagaku* instrument, but it has nonetheless remained quite similar, as a keyless bamboo pipe, held vertically, and blown via a notched-edge mouthpiece.

The *gagaku* flute did differ in that it had six finger holes (five on the front, one on the back), whereas later *shakuhachi* have only five (four on the front, one on the back). It was also made of thinner bamboo that was not harvested at the root of the plant, as are modern *shakuhachi*, and included only three, not seven, nodes in the bamboo.<sup>6</sup>

Occasional references to the *shakuhachi* in court documents and other sources confirm that although the instrument was abandoned in the court orchestra in the Heian period, it was not altogether forgotten.<sup>7</sup> It is unclear, however, whether the modern *shakuhachi* is a descendent of the *gagaku shakuhachi* or whether the flute was later re-introduced to Japan in its five-hole form. *Shakuhachi* scholar Tsukitani Tsuneko supported the theory that the five-hole *shakuhachi* evolved from the six-hole model because of the design of the *utaguchi* blowing edge on each of the *gagaku*, *hitoyogiri*, and Fuke *shakuhachi*, a design that differs from related Chinese

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<sup>4</sup> One modern *shaku* = 0.994 US feet or 30.3 cm.

<sup>5</sup> Gunnar Jinmei Linder, "Deconstructing *Tradition* in Japanese Music: A Study of *Shakuhachi*, Historical Authenticity and Transmission of Tradition" (Ph.D. diss., Stockholm University, 2012), 21.

<sup>6</sup> Tsukitani, "The *Shakuhachi*," 145, 147.

<sup>7</sup> According to Tsukitani Tsuneko, the last record of the instrument played at court was in the *Imakagami* of 1170: "[The *Imakagami*] notes that in 1158 'the *shakuhachi*, an instrument not heard for a century, was played in a *bugaku* performance'" ("The *Shakuhachi*," 147).

flutes—*nan chiba*, *xiao* and *dongxiao*. The *shakuhachi* blowing edge is cut obliquely toward the outer surface of the bamboo tube, rather than in a U-shape toward the inside.<sup>8</sup>

The first illustrations of a five-hole flute, an instrument dated to the late 14<sup>th</sup> century, appeared in the *Taigenshō*<sup>9</sup> music compendium in 1512.<sup>10</sup> In the late 16<sup>th</sup> and 17<sup>th</sup> centuries, the short five-hole *shakuhachi* flute called *hitoyogiri* was popular. As its name implies, the *hitoyogiri* was cut from a single segment of bamboo (*hito*=one, *yo*=bamboo segment, *giri*=cut).<sup>11</sup> It was about 33.6 cm long, with a lowest tone corresponding to A1. Because of its small blowing edge, and relatively small tone holes,<sup>12</sup> pitch alteration techniques such as half-holing and bending the pitch at the mouthpiece, common practice in later *shakuhachi* playing, were close to impossible. As the *miyakobushi* hemitonic scale (S-M3-T-S-M3)<sup>13</sup> became popular in Japanese music, the *hitoyogiri* would eventually be replaced by the more flexible Fuke *shakuhachi*.<sup>14</sup> By the early 19<sup>th</sup> century, the *hitoyogiri* was nearly obsolete.<sup>15</sup>

Another end-blown bamboo flute popular in the late 16<sup>th</sup> century was the *tenpuku* (*ten*=heaven, *puku*=blow), played in Satsuma province.<sup>16</sup> It was also a relatively small flute, about 30 cm long and narrow, with five small tone holes. The

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<sup>8</sup> Tsukitani, "The *Shakuhachi*," 145, 147.

<sup>9</sup> The *Taigenshō* chapter on *shakuhachi* flutes is the "oldest historical survey" of the instrument. (Linder, "Deconstructing Tradition," 142.)

<sup>10</sup> Tsukitani, "The *Shakuhachi*," 147.

<sup>11</sup> *Ibid.*, 146.

<sup>12</sup> Riley Kelly Lee, "Yearning for the Bell: A Study of Transmission in the *Shakuhachi Honkyoku* Tradition" (Ph.D. diss., University of Sydney, 1993), 91.

<sup>13</sup> See Section 4.2: Mode

<sup>14</sup> Kamisangō Yūkō in Christopher Yohmei Blasdel, *The Shakuhachi: A Manual for Learning*, 2<sup>nd</sup> ed. Translated and Edited by Blasdel (Tokyo: Printed Matter Press, 2008), 88.

<sup>15</sup> Tsukitani, "The *Shakuhachi*," 148.

<sup>16</sup> Lee, "Yearning," 100.

blowing edge resembled that of the south China *dongxiao*, and thus differed from other Japanese flutes. It had three nodes in the *hoteichiku*-variety bamboo,<sup>17</sup> the lowest one opened only slightly.<sup>18</sup> *Tenpuku* music was an oral tradition, transmitted without scores or *shōga* mnemonics. The last performer of the instrument, Ōta Ryōichi, died in 1959, but recorded and passed on seven short solo pieces to Shirao Kunitoshi,<sup>19</sup> who in turn recorded them himself. Tsukitani gives transcriptions of one of these pieces, *Shirabe*, by both players in the *Ashgate Research Companion to Japanese Music*.<sup>20</sup> Her transcriptions show both pitch slides and microtones.

In the Edo period (1603-1868), the *shakuhachi* became associated with the Rinzai sect of Zen Buddhism as a religious implement (*hōki*) for wandering *komusō* samurai-monks. While much of the history of this association is “invented tradition,” constructed to legitimize the activities of masterless samurai and perpetuated by future generations of *shakuhachi* players,<sup>21</sup> it was in this period that the classical *honkyoku* repertoire of the instrument was first collected and canonized.

Prior to the emergence of the noble samurai class of *komusō* “priests of nothingness,” low-class itinerant beggar monks called *komosō* (“straw-mat monks”) played the *hitoyogiri*.<sup>22</sup> At the beginning of the 17<sup>th</sup> century, after the Tokugawa government had defeated many clans and lords, professional soldiers and well-

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<sup>17</sup> Kamisangō in Blasdel, *The Shakuhachi*, 84.

<sup>18</sup> Linder, “Deconstructing Tradition,” 90.

<sup>19</sup> Tsukitani, “The *Shakuhachi*,” 149.

<sup>20</sup> *Ibid.*, 150.

<sup>21</sup> For a detailed study of tradition in *shakuhachi* playing, refer to Linder’s doctoral dissertation, “Deconstructing Tradition in Japanese Music: A Study of Shakuhachi, Historical Authenticity and Transmission of Tradition,” Ph.D. diss., Stockholm University, 2012.

<sup>22</sup> Elliott Weisgarber, “The Honkyoku of the Kinko-Ryū: Some Principles of Its Organization,” *Ethnomusicology* 12.3 (1968): 313.

educated men were suddenly left without their former purpose.<sup>23</sup> These soldiers would appropriate the activities of the *komosō*<sup>24</sup> to become masterless samurai monks called *komusō*—half-warriors, half-monks.<sup>25</sup> Their appropriated activities included playing the *shakuhachi* to beg for alms.

During the Edo period, the instrument became a religious implement for the wandering *komusō*, and was constructed of longer and thicker bamboo of the *madake* variety. It also came to include the roots of the plant at the lower end as a sort of bell,<sup>26</sup> a change that some sources claim might have been made by the samurai so that they could use the *shakuhachi* as a club-like weapon in place of their banned swords. According to Kamisangō Yūkō, “there was certainly the advantage of having an instrument which doubled as a bludgeon.”<sup>27</sup> An alternative theory is that *shakuhachi* design was influenced by the proportions of the south China *dongxiao*, likely brought to Japan in the 17<sup>th</sup> century with the wave of immigration.<sup>28</sup>

Some *komusō* were attracted by the itinerant lifestyle that included the anonymity of wearing *tengai* basket hats and the eventual freedom of travel granted by the government, while others were genuinely attracted by the Zen associations. Some *komusō* would settle in lodges instead of wandering, leading to the eventual establishment of the Fuke sect of Rinzai Zen Buddhism.<sup>29</sup> The Fuke sect was named

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<sup>23</sup> Sanford, “Shakuhachi Zen,” 413.

<sup>24</sup> Linder, “Deconstructing *Tradition*,” 151.

<sup>25</sup> Tsukitani, “The *Shakuhachi*,” 150.

<sup>26</sup> Lee, “Yearning,” 103.

<sup>27</sup> In Blasdel, *The Shakuhachi*, 92.

<sup>28</sup> Donald P. Berger and David W. Hughes, “Japan, II, 5, Shakuhachi,” *Grove Music Online*, Oxford University Press, accessed April 1, 2014, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/43335pg2>.

<sup>29</sup> Sanford, “Shakuhachi Zen,” 414.

for the 9<sup>th</sup>-century Chinese Zen monk Puhua (Fuke in Japanese),<sup>30</sup> and practised *suizen* (“blowing Zen”) in place of chanting scriptures.<sup>31</sup>

In 1640, after the Christian rebellion, the shogunate established the *Shūmon Aratame* (“Bureau for the Examination of Sects”) to investigate people’s religious beliefs.<sup>32</sup> In order to be recognized in the Buddhist community, thereby ensuring their survival, the *komusō* were faced with having to create a temple organization and ancestry.<sup>33</sup> They therefore produced a lineage to Fuke, connecting him to the monk Kakushin, who they claimed brought the *shakuhachi* to Japan in the late 13<sup>th</sup> century. There is, however, no evidence for these claims,<sup>34</sup> and the legends were not published until 1795 in the *Kyotaku Denki Kokuji Kai* (“Explanations to the *Kyotaku denki* in National Characters [i.e.: Japanese],” henceforth referred to as *Denki*)<sup>35</sup> when the sect was again under threat, having received many admonitions by the shogunate for the behaviour of its members.<sup>36</sup>

The legends in the *Denki*, compiled by Yamamoto Morihide of Kyoto,<sup>37</sup> were already known by 1644, when the *komusō* were creating their lineage.<sup>38</sup> The text claims to be a Japanese copy and annotation of a 13<sup>th</sup>-century Chinese book, *Kyotaku Denki*, describing the origins of the Fuke sect traditions.<sup>39</sup> The document was

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<sup>30</sup> Tsukitani, “The *Shakuhachi*,” 151.

<sup>31</sup> *Ibid.*, 150.

<sup>32</sup> Torsten Olafsson, *Kaidō Honsoko: 1628: The Komosō’s Fuke Shakuhachi Credo: On Early 17<sup>th</sup> Century Ascetic Shakuhachi Ideology* (Willits, CA: Tai Hei Shakuhachi, 2003), 15.

<sup>33</sup> *Ibid.*, 16.

<sup>34</sup> *Ibid.*, 17.

<sup>35</sup> Max Deeg, “Komusō and ‘Shakuhachi-Zen’: From Historical Legitimation to Spiritualisation of a Buddhist denomination in the Edo Period,” *Japanese Religions* 32 (2007): 17.

<sup>36</sup> Lee, “Yearning,” 136.

<sup>37</sup> Yamamoto Morihide, “The History of the *Kyotaku*” (includes text of *Kyotaku Denki Kokuji Kai*), introduction, notes, and translation by Gen’ichi Tsuge, *Asian Music* 8.2 (1977): 47.

<sup>38</sup> Linder, “Deconstructing *Tradition*,” 92.

<sup>39</sup> Lee, “Yearning,” 37.



published to prove the Zen origins of the sect and its activities. The contents were proven fiction, however, by Nakatsuka Chikusen (1887-1944), a Japanese scholar and *shakuhachi* student of Kawase Junsuke I.<sup>40</sup> Nakatsuka died before completing his research, but began the process of demystification of the history of the instrument by publishing his findings as “Kinko-ryū Shakuhachi Shikan” (“A Historical View of the Kinko Shakuhachi”) in the magazine *Sankyoku* from 1936-1939.<sup>41</sup> The legends have been so popular, however, that they are repeated in a number of journal articles, books, and dissertations on the history of the *shakuhachi*. To summarize, Fuke was a Chinese monk who walked the streets ringing a bell. Buddhist layman Chō Haku (Zhang Bai) asked to become Fuke’s disciple but Fuke refused, so Chō Haku instead fashioned a flute for himself out of bamboo and played it in imitation of Fuke’s bell. He called the flute *kyotaku*, “empty bell.”<sup>42</sup>

The *Denki* outlines the transmission of the *kyotaku* (*shakuhachi*) from Chō Haku forward sixteen generations to Kakushin (or Gakushin), a 13<sup>th</sup>-century Japanese monk who had travelled to China. According to the legend, Kakushin brought the *shakuhachi* back to Japan with him in 1254. Kakushin’s disciple Kichiku (later called Kyochiku) learned the instrument and took it on a pilgrimage. While meditating, he heard the sounds of a flute. He awoke and reproduced the sounds on his *kyotaku*, creating two pieces that Kakushin would name *Kokūji* (“Flute in the Empty Sky”) and *Mukaiji* (“Flute over the Foggy Sea”). Along with the *kyotaku* piece (eventually named *Kyorei*, “Spirit, or bell, of enlightenment”), these pieces would

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<sup>40</sup> Ibid., 38.

<sup>41</sup> Ibid., 52; Kamisangō in Blasdel, *The Shakuhachi*, 97.

<sup>42</sup> Linder, “Deconstructing *Tradition*,” 104; Yamamoto, “*Kyotaku*,” 49.

come to be known as the three oldest, original pieces in *shakuhachi honkyoku*.

Further stories in the *Denki* would justify the wearing of the *tendai* basket hat and the use of the term *komusō* for the monks.<sup>43</sup>

The government gave official permission for the *komusō* to continue their activities in 1677.<sup>44</sup> By that time, 16 Fuke branches had self-organized at lodges and temples.<sup>45</sup> (According to legend, the main *suizen* temple, Myōan-ji, “Temple of light and dark”,<sup>46</sup> had been built in Kyoto by Kyochiku’s disciple Tengai Myofu.<sup>47</sup>) The Fuke sect (Fuke-shū) had not actually been named in the decree granting permissions to the *komusō*<sup>48</sup> and the government was not likely deceived by the false documents they were given.<sup>49</sup> Popular theories regarding the privileges granted the samurai monks suppose that the government made a political decision to allow the *komusō* activities in exchange for the authority it would hold over the samurai and the convenient opportunity to use them as spies. The *komusō* were granted the exclusive right to play the *shakuhachi* and the freedom to travel throughout the country when such movement was generally restricted.<sup>50</sup>

Many of the privileges enjoyed by the *komusō* were abused by non-spiritual members<sup>51</sup> and the shogunate issued many admonitions from the late 18<sup>th</sup> century

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<sup>43</sup> Linder, “Deconstructing *Tradition*,” 105; Yamamoto, “Kyotaku,” 50-51.

<sup>44</sup> Olafsson, *Kaidō Honsoko*, 17.

<sup>45</sup> Lee, “Yearning,” 112.

<sup>46</sup> *Ibid.*, 153.

<sup>47</sup> Tsukitani, “The *Shakuhachi*,” 151; Kamisangō in Blasdel, *The Shakuhachi*, 98.

<sup>48</sup> Linder, “Deconstructing *Tradition*,” 58.

<sup>49</sup> Including the *Keichō okite-gaki*, a document in multiple versions listing the privileges of the *komusō*. The *komusō* claimed it to be government-issued in 1614 but could not produce the original (Sanford, “Shakuhachi Zen,” 418f). It was declared a forgery by the shogunate in 1847 (Tsukitani, “The *Shakuhachi*,” 151-2).

<sup>50</sup> Lee, “Yearning,” 135.

<sup>51</sup> Zachary Wallmark, “Sacred Abjection in Zen Shakuhachi,” *Ethnomusicology Review* 17 (2012), 2.

onward.<sup>52</sup> In 1847, the government revoked the privilege of exclusivity, allowing laymen to play the *shakuhachi*.<sup>53</sup> The Fuke sect was abolished altogether in 1871 with the *Daijōkan fukoku* decree.<sup>54</sup> A “mild” persecution of Buddhism and anti-Buddhist sentiment at the beginning of the Meiji period (1868-1912) sought to “throw away the Buddha, abolish the monks”<sup>55</sup> and thus temples were closed, monks became laymen, and playing *shakuhachi* as a spiritual implement was illegal.<sup>56</sup>

In response to this, the *komusō* secularized *shakuhachi* music, and played in *sankyoku* chamber ensembles with *koto* and *shamisen*.<sup>57</sup> After 10 years, the ban on soliciting alms was lifted and the playing of *honkyoku* as a spiritual activity gradually resumed, although alongside secular music.<sup>58</sup> In 1883, the Myōan Kyokai (the “Myōan Society,” named for the Myōan-ji temple) was established to promote playing *honkyoku* as a religious activity again.<sup>59</sup> In contrast, the following decade, in 1896, Nakao Tozan (1876-1956) established his own school of playing, the Tozan-ryū, forbidding the playing of the classical *honkyoku* as canonized in the Kinko-ryū in the 18<sup>th</sup> century.<sup>60</sup> The Tozan-ryū instead promoted new compositions and chamber music. In the 20<sup>th</sup> century, additional schools and styles of *shakuhachi* playing were founded in Japan.

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<sup>52</sup> Lee, “Yearning,” 136.

<sup>53</sup> Ibid., 137. In fact, laymen had already been doing so. They were being taught outside the temples by *komusō* and played in ensembles with *shamisen* and *koto*. (Kamisanō in Blasdel, *The Shakuhachi*, 107-8.)

<sup>54</sup> Steven Casano, “From Fuke Shū to Uduboo: The Transnational Flow of the Shakuhachi to the West,” *The World of Music* 47.3 (2005): 18.

<sup>55</sup> Deeg, “Komusō,” 32-33.

<sup>56</sup> Lee, “Yearning,” 138.

<sup>57</sup> Linder, “Deconstructing *Tradition*,” 23.

<sup>58</sup> Lee, “Yearning,” 151.

<sup>59</sup> Linder, “Deconstructing *Tradition*,” 22-23.

<sup>60</sup> Lee, “Yearning,” 148.

## 8.2 Temples, schools, and styles

Fuke temples played an important role in the history and transmission of *shakuhachi* repertoire. In the Edo period, each temple had its own “secret” piece (often with “Reibo” [“to yearn for the bell”] and the location in the title) and *komusō* could learn different pieces by wandering from temple to temple. In this way, the repertoire of the Kinko-ryū was transmitted and gathered.

### 8.2.1 Kinko-ryū

In the 18<sup>th</sup> century, Ichigetsu-ji (*ji*=temple) commissioned *komusō* Kurosawa Kinko (1710-1771) to collect pieces from temples throughout the country.<sup>61</sup> Kurosawa Kinko collated the pieces he gathered,<sup>62</sup> essentially canonizing a repertoire of 36 *honkyoku* (“original pieces”), including the first *kyotaku* piece, *Kyorei*, and the two pieces Kyochiku heard in meditation, *Kokuji* and *Mukaiji*. According to Gunnar Linder, the first 18 pieces are about the same today as they were when Kurosawa Kinko collected them; the other 18 are closer in content to their early-19<sup>th</sup>-century versions.<sup>63</sup> James Sanford points out that Kurosawa Kinko’s travels to collect pieces confirm that there was an existing repertoire at that time.<sup>64</sup>

Titles of Kurosawa Kinko’s *honkyoku* repertoire often contain the words *Shirabe* (a piece to check the sound), *Sugagaki* (indicating a relationship to Fuke legend), or *Kyorei* (“spirit, or bell of enlightenment”), in addition to the term *Reibo*.<sup>65</sup>

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<sup>61</sup> John Singer, “The Kinko-ryu Honkyoku: A Compilation and Translation,” in *The Annals of the International Shakuhachi Society, vol.2*, edited by Dan E. Mayers (Wadhurst, UK, 2005), 111.

<sup>62</sup> Sanford, “Shakuhachi Zen,” 433.

<sup>63</sup> Linder, “Deconstructing *Tradition*,” 244.

<sup>64</sup> Sanford, “Shakuhachi Zen,” 433.

<sup>65</sup> Singer, “The Kinko-ryu Honkyoku,” 113-4.

Aside from pieces related to individual temples (“one temple: one melody”<sup>66</sup>), the repertoire emphasizes themes of enlightenment, giving thanks for alms, and nature.<sup>67</sup>

Kurosawa Kinko did not form the Kinko-ryū himself, but did return to Ichigetsu-ji and Reihō-ji (headquarter temples for the whole country, located in the Edo area<sup>68</sup>) to teach *honkyoku*. He was formally appointed *shakuhachi* teacher at these temples in 1768,<sup>69</sup> and also taught laymen outside the temples, despite laws that prohibited non-*komusō* from playing the instrument.<sup>70</sup> Kurosawa Kinko also notated his collected repertoire in tablature.<sup>71</sup>

When Miyaji Ikkan, a student of Kurosawa Kinko’s, founded his own school, the Ikkan-ryū, Kinko disciples (possibly led by his son Kinko II or grandson Kinko III<sup>72</sup>) responded by establishing the Kinko-ryū, the oldest extant school of *shakuhachi* playing.<sup>73</sup> The Ikkan-ryū was not strictly separate from the Kinko-ryū and likely merged with it again in the 19<sup>th</sup> century.<sup>74</sup> This temporary split would foreshadow a later trend of skilled players leaving their school to act as head of their own. Many of the smaller schools today thus share a lineage to Kinko.<sup>75</sup>

After the Fuke-*shū* was banned in 1871, the Kinko-ryū distanced itself from the Buddhist religion. Its members still played the classical *honkyoku*, but as concert

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<sup>66</sup> Hilary Tann, “Coming to Terms: (Futaiken) Reibo,” *Perspectives of New Music* 27.2 (1989): 54.

<sup>67</sup> Singer, “The Kinko-ryu Honkyoku,” 113.

<sup>68</sup> Kamisangō in Blasdel, *The Shakuhachi*, 96.

<sup>69</sup> Deeg, “Komusō,” 29.

<sup>70</sup> Berger and Hughes, “Shakuhachi.”

<sup>71</sup> Bob Grous, “An Introductory Manual for Kinko-ryu Honkyoku,” in *The Annals of the International Shakuhachi Society, vol.1*, edited by Dan E. Mayers (Wadhurst, UK, 1985?), 52.

<sup>72</sup> Kinko III (1772-1816) compiled *Kinko techō* (“The Kinko Notebook”) (Linder, “Deconstructing Tradition,” 73.)

<sup>73</sup> Linder, “Deconstructing Tradition,” 233.

<sup>74</sup> *Ibid.*, 244.

<sup>75</sup> Lee, “Yearning,” 49.

pieces rather than spiritual activity. Araki Kodō II and Yoshida Itchō convinced the Meiji government to allow *shakuhachi* playing as a secular musical activity, effectively keeping the tradition from disappearing.<sup>76</sup> The *Kinko-ryū* repertoire expanded to include folk and contemporary pieces, as well as secular *sankyoku* pieces, played with *koto* and *shamisen*. However, the temples were vacated. Ichigetsu-ji was divided and sold,<sup>77</sup> and Reihō-ji was converted to a storage depot and playground, eventually succumbing to fire.<sup>78</sup> Myōan-ji was abandoned but revived about 10 years later with the Myōan Society, formed at the Zenkei-in temple at Tōfuku-ji in Kyoto. The Society received permission to build a new Myōan-ji temple on the grounds in 1950.<sup>79</sup>

Early in the Meiji period, the *Kinko-ryū* split into two factions, headed by Araki Kodō II and Kawase Junsuke I. Their sub-schools, the Kodō-kai and Chikuyu-sha, respectively, continue today, alongside other *Kinko-ryū* schools, each headed by a renowned *shakuhachi* master.<sup>80</sup>

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<sup>76</sup> Ibid., 145-146.

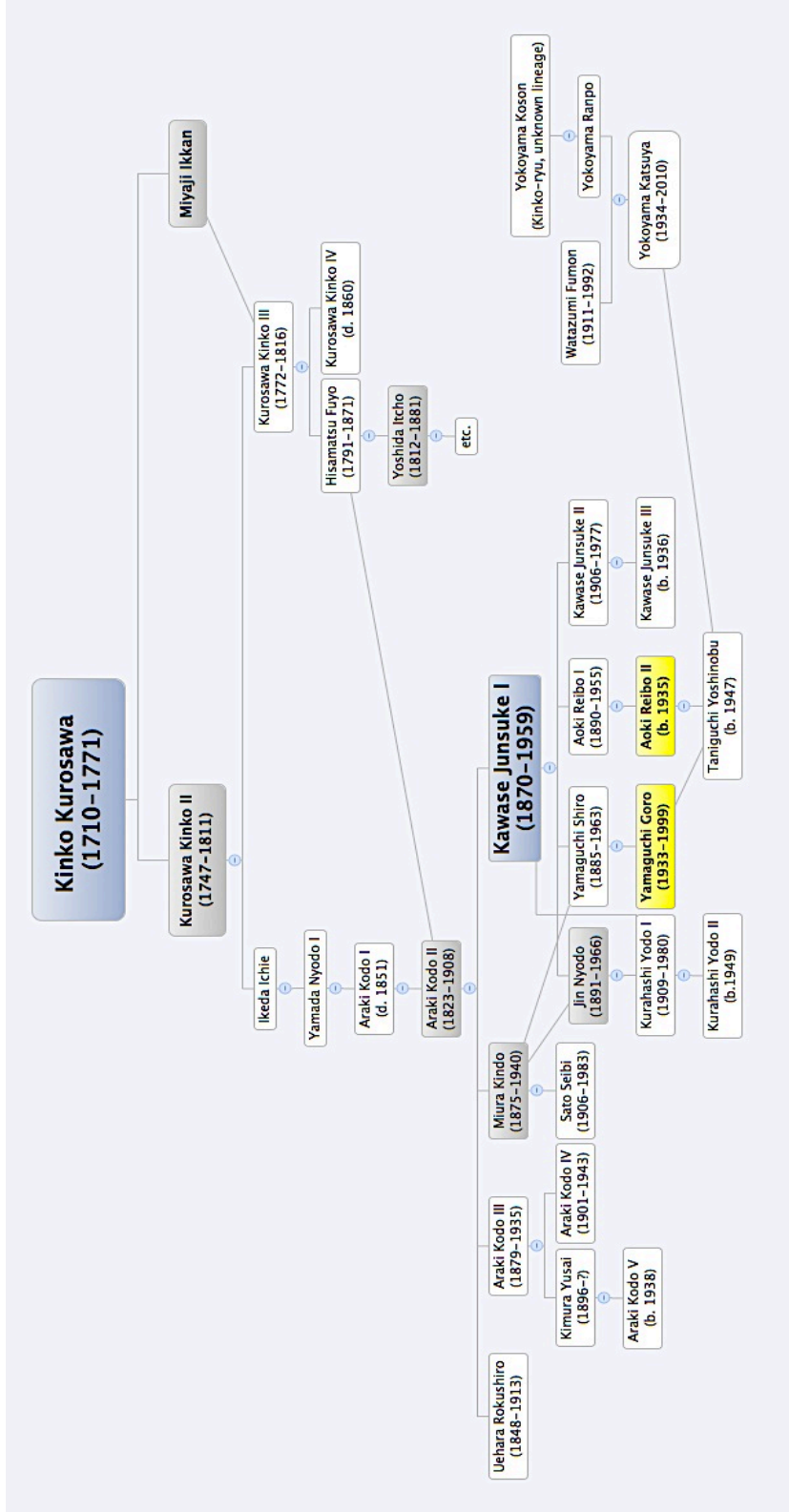
<sup>77</sup> Sanford, "Shakuhachi Zen," 438.

<sup>78</sup> Ibid., 437.

<sup>79</sup> The new temple now "acts as a spiritual 'homeland' for *shakuhachi* players, regardless of sect or style affiliation." (Kamisanō in Blasdel, *The Shakuhachi*, 117.)

<sup>80</sup> Araki Kodō V retired as head of the Kodō-kai in 2010; Kawase Junsuke III is current head of Chikuyu-sha (Lee, "Yearning," 159); "Living National Treasure" Yamaguchi Gorō was head of Chikumei-sha until his death in 1999, the school is now run by a board with two main teachers (Linder, "Deconstructing Tradition," 245); Aoki Reibo II is head of the Reibo Kai (Reibo Society) but is against the *iemoto* system. Yamaguchi's father Yamaguchi Shiro, and Aoki's father, Aoki Reibo I both studied with Kawase Junsuke I. (Lee, "Yearning," 292)

FIGURE 8.1 Lineage of the Kinko-ryū. (Based on information gathered from *The International Shakhachi Society*, accessed April 1, 2014, <http://komuso.com/people/index.pl>.)



### 8.2.2 Tozan-ryū

Nakao Tozan (1876-1956) established a *shakuhachi* school in Osaka in 1896, two years after becoming a *komusō*.<sup>81</sup> This date marks the founding of the Tozan-ryū, the largest *shakuhachi* school in Japan today.<sup>82</sup> Nakao Tozan had studied *shamisen jiuta*<sup>83</sup> in addition to Fuke-shū *honkyoku* and so incorporated *jiuta* music into his *ryū* by transcribing it for *shakuhachi*. He also composed his own music for the instrument.<sup>84</sup>

The repertoire of the Tozan-ryū is referred to as *honkyoku* but it is not the *koten* (or “classical”) *honkyoku* of the Kinko-ryū. In fact, these classical pieces were forbidden.<sup>85</sup> Of the 87 pieces in the Tozan repertoire, 28 were written by Nakao Tozan. In contrast to Kinko-ryū solo repertoire, only three of Nakao Tozan’s compositions are solo pieces and some show influence from Western music (e.g. 3/8 time).<sup>86</sup> This Western element is one reason the Tozan-ryū is the largest in Japan today: whereas Western *shakuhachi* players have gravitated towards the Kinko-ryū and the Myōan style of playing to connect with tradition and spirituality, Japanese instead look to more modern trends since they are surrounded by tradition.<sup>87</sup>

Members of the Tozan-ryū tend to be active in contemporary music. Nakao Tozan participated in the “Shin nihon ongaku” (New Japanese Music) movement in

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<sup>81</sup> Ralph Samuelson, “Toward an Understanding of Shakuhachi Honkyoku,” in *The Annals of the International Shakuhachi Society, vol.1*, edited by Dan E. Mayers (Wadhurst, UK, 1985?), 31.

<sup>82</sup> By 2010, some 6,000 licensed teachers were registered with the Tozan-ryū Gakkai Foundation (Linder, “Deconstructing Tradition,” 34; tozanryu.com)

<sup>83</sup> Songs with *shamisen* accompaniment. Nakao Tozan’s maternal grandfather was a famous master of *jiuta shamisen*. (Kamisangō in Blasdel, *The Shakuhachi*, 121.)

<sup>84</sup> Samuelson, “Toward an Understanding,” 31.

<sup>85</sup> Lee, “Yearning,” 148.

<sup>86</sup> Tsukitani, “The *Shakuhachi*,” 160.

<sup>87</sup> Bruno Deschênes, “Le *shakuhachi* japonais, ou l’Occident qui s’orientalise?” *Horizons philosophiques* 16.1 (2005): 137.



the 1920s alongside other well-known Japanese musicians, composers and musicologists.<sup>88</sup> Today, Yamamoto Hōzan, head of the Hōzan-*kai* guild of the Tozan-*ryū* and “Living National Treasure,” is one of the most famous *shakuhachi* players worldwide. Yamamoto pioneered playing jazz on *shakuhachi* when he performed at the Newport Jazz Festival in 1967.<sup>89</sup> This is not to say, of course, that Kinko-*ryū* players have not performed new music; simply, that it is more prominent within the Tozan-*ryū*.

### 8.2.3 Myōan/Meian style

In contrast to the forward-moving agenda of the Tozan-*ryū*, players of the Myōan (or Meian) Kyokai (“society”) play only the Fuke *honkyoku*.<sup>90</sup> The Myōan Kyokai was established in the late 19<sup>th</sup> century in reaction to the secularization of *shakuhachi* tradition. Myōan players thus seek to preserve the classical pieces and Zen practice, while avoiding the virtuosic embellishments and Western influence heard in the playing of newer schools.

At one time, there were nine lineages of players of the Myōan style,<sup>91</sup> including the Myōan Shinpō-*ryū*. While this *ryū* is now defunct, it did boast “the last *komusō*,” Katsuura Seizan (1856-1942), considered “the authority on the correct transmission of the Myōan-ji’s *honkyoku*.”<sup>92</sup> The only surviving Myōan lineage active today is the Taizan-*ha*, founded by Higuchi Taizan (1856-1914). Taizan revitalized

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<sup>88</sup> For example, composer Miyagi Michio, *koto* player Hisamoto Genchi, and musicologist Tanabe Hisao. (Tsukitani, “The *Shakuhachi*,” 162.)

<sup>89</sup> *Ibid.*, 164.

<sup>90</sup> Samuelson, “Toward an Understanding,” 31.

<sup>91</sup> Lee, “Yearning,” 157.

<sup>92</sup> Kamisangō in Blasdel, *The Shakuhachi*, 114.

*suizen* (“blowing Zen,” in place of sutra chanting)<sup>93</sup> and canonized 32 *honkyoku* in Myōan style.<sup>94</sup> *Suizen* practice requires “very disciplined, almost yogic, concentration and control of breathing”<sup>95</sup> and performance is rare since the pieces are not considered music, but rather a means to enlightenment.

#### 8.2.4 Other schools

As mentioned in section 2.2.1 on the *Kinko-ryū*, a number of additional schools or guilds were formed in the 20<sup>th</sup> century by players who broke away from their respective schools. Two of the most famous players in *shakuhachi* history are Jin Nyodō (1892-1966) and Watazumi Fumon (1911-1992). Jin did not found a *ryū* but had a strong lineage, connected directly to the Fuke-*shū*. He learned and collected 153 *honkyoku* from multiple schools, researching stylistic and regional differences, and taught for a time in place of Kawase Junsuke I when Kawase was working on notation. He also studied and collaborated with Miura Kindo, whose notation is considered authoritative, and composed new pieces in classical style.<sup>96</sup>

Watazumi was a Rinzai Zen master and at one time the head of the Fuke sect. He treated the *shakuhachi* as a religious implement for cultivating the breath, calling the instrument *hochiku* (“dharma bamboo”) and the pieces *dokyoku* (“pieces of the Way”).<sup>97</sup> His practice involved intense physical training of the body and control of the breath. He cultivated virtuosic skill and used very large bamboo flutes that challenged the breath power of the player. Since Watazumi approached the

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<sup>93</sup> Lee, “Yearning,” 154.

<sup>94</sup> Linder, “Deconstructing *Tradition*,” 244.

<sup>95</sup> Sanford, “Shakuhachi Zen,” 434.

<sup>96</sup> David Sawyer, “The Life and Work of Jin Nyodo: A Short History of a Great Shakuhachi Player,” *Japanshakuhachi*. <http://japanshakuhachi.com/jinnyodo.html>, accessed April 1, 2014.

<sup>97</sup> Lee, “Yearning,” 160.

instrument as a tool for spiritual cultivation (*hōki*) rather than as a musical instrument (*gakki*), he did not consider his playing to be performance. He purportedly said, “If it sounds like music, you’re doing it wrong.”<sup>98</sup> Watazumi’s spiritual approach to *honkyoku* was attractive to *shakuhachi* students outside Japan.

### 8.3 *Shakuhachi* outside Japan

The *shakuhachi* has been popular in the West since the 1960s.<sup>99</sup> It is estimated that between 5,000 and 10,000 Westerners are learning the instrument, with 500 having received their *shihan* (masters) teaching license.<sup>100</sup> These numbers include some female players, who previously would not have been accepted as students in Japan.<sup>101</sup>

Many non-Japanese have travelled to Japan to learn the instrument, but Japanese masters have also gone abroad to tour and teach, sometimes as visiting professors at universities. For example, Yamaguchi Gorō held a guest lectureship at Wesleyan in 1964, Kodō Araki V has held residencies at Columbia, Michigan, Stanford and UCLA, and Aoki Reibo II and Junsuke Kawase III have each toured North America, Europe and China.<sup>102</sup> According to Riley Lee,<sup>103</sup> most Japanese teachers have taught non-Japanese students, and Kurahashi Yodo II, director of the Muju-An school, had more foreign students than not for a long period. Perhaps the earliest *shakuhachi* teacher to immigrate to the U.S. was Tamada Kitarō in the

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<sup>98</sup> Wallmark, “Sacred Abjection,” 5.

<sup>99</sup> Casano, “Fuke Shuu,” 17.

<sup>100</sup> Deschênes, “Le *shakuhachi*,” 136.

<sup>101</sup> Tsukitani, “The *Shakuhachi*,” 168.

<sup>102</sup> “World Shakuhachi Festival 1998: Boulder and Denver, July 5-11,” program book, 11.

<sup>103</sup> “Yearning,” 10.

1920s. Among his students was composer Henry Cowell, who wrote a piece for *shakuhachi* called “The Universal Flute” in 1946.<sup>104</sup>

International gatherings of *shakuhachi* players have become regular since the first festival in Okoyama, Japan in 1994, sponsored by Yokoyama Katsuya. In 1998, the World Shakuhachi Festival was held outside Japan for the first time, in Colorado, U.S.A. The top six masters were invited to perform and teach: Aoki Reibo II, Araki Kodō V, Yamamoto Hōzan, Kawase Junsuke III, Yamaguchi Gorō, and Yokoyama Katsuya.<sup>105</sup> Kawase was unable to attend,<sup>106</sup> but the other five performed together for the final concert of the festival, “The World’s Greatest Shakuhachi Recital,” an unprecedented event.<sup>107</sup>

The exchange of music and culture has not been one-directional. Since the Meiji period, aspects of Western culture have been adapted by Japanese culture in various arenas and *shakuhachi* music has not escaped influence. The instrument has moved from the temple to the concert hall; newer notation has incorporated elements of Western staff notation; Japanese composers such as Tōru Takemitsu have composed for the instrument in Western classical style;<sup>108</sup> and equal temperament has influenced the tuning and construction of the *shakuhachi*. Work

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<sup>104</sup> Blasdel, *The Shakuhachi*, 130.

<sup>105</sup> Casano, “Fuke Shuu,” 23.

<sup>106</sup> Christopher Yohmei Blasdel, *The Single Tone: A Personal Journey into Shakuhachi Music* (Tokyo: Printed Matter Press, 2005), 149.

<sup>107</sup> “World Shakuhachi Festival 1998,” 5.

<sup>108</sup> Takemitsu’s *November Steps* is written for *shakuhachi* and *biwa* with Western orchestra. Yokoyama Katsuya played at the premiere in 1967; the piece has since been performed internationally. (Casano, “Fuke Shuu,” 21-2.)

has even been done to add tone holes to the instrument (7- and 9-hole *shakuhachi* were developed), and to give it Boehm-system keywork.<sup>109</sup>

#### 8.4 Modern *shakuhachi*

The *shakuhachi* that is played today is similar in construction to the Edo-period Fuke *shakuhachi*. Made of *madake* bamboo (*phyllostachys reticulata*<sup>110</sup>), it has five tone holes (one on the back) and seven nodes, including three at the root end of the instrument and one at the notched blowing-edge *utaguchi* (mouthpiece).<sup>111</sup> Since the Edo period, the instrument has included part of the root of the bamboo at the lower end.<sup>112</sup> Also added to the instrument no earlier than the 17<sup>th</sup> century was an inlay of water-buffalo horn or ivory in the *utaguchi*.<sup>113</sup> This inlay varies in shape from school to school but prevents wear to the blowing edge.<sup>114</sup> Other characteristics of the instrument are a naturally reverse conical bore (the bore narrows towards the root as the walls thicken)<sup>115</sup> and a rounded top edge opposite the mouthpiece, for a comfortable chin rest.<sup>116</sup>

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<sup>109</sup> Ōkura Kishichirō debuted his “ōkuraulo” hybrid *shakuhachi*-flute in 1937. It had 12 holes and Boehm-system keys, allowing a chromatic scale. It disappeared from advertisements after one year. (Seyama Toru, “The Re-contextualisation of the Shakuhachi [Syakuhati] and its Music from Traditional/Classical into Modern/Popular,” *The World of Music* 40.2 [1998]: 75.)

<sup>110</sup> Berger and Hughes, “Shakuhachi.”

<sup>111</sup> Tsukitani, “The *Shakuhachi*,” 146.

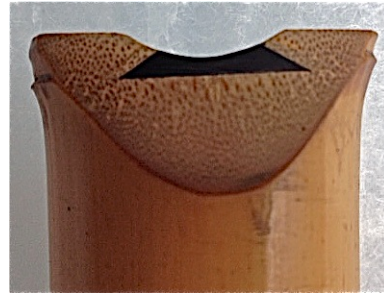
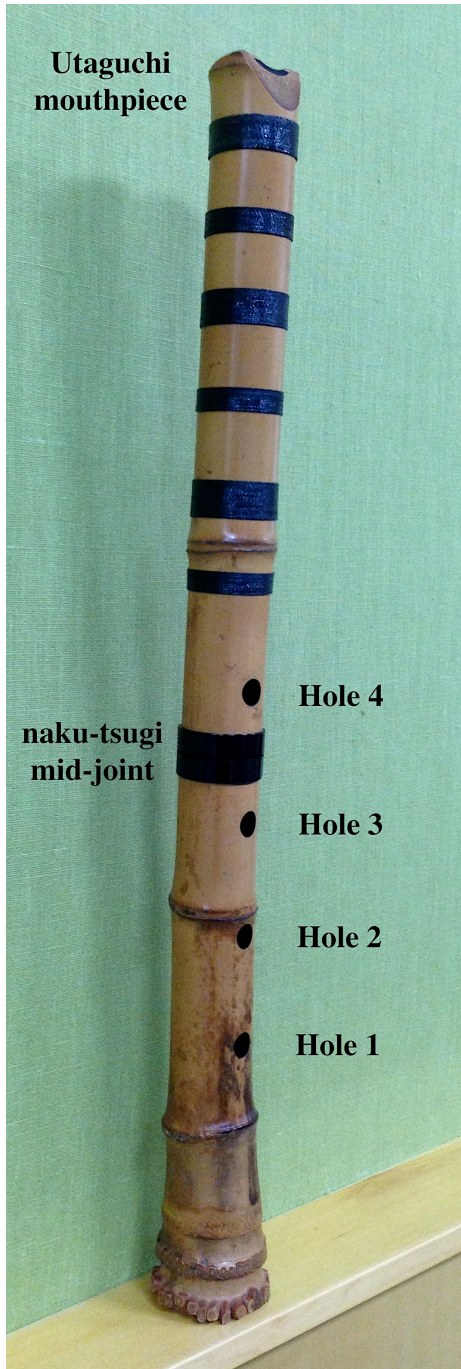
<sup>112</sup> Linder, “Deconstructing *Tradition*,” 93.

<sup>113</sup> Berger and Hughes, “Shakuhachi.”

<sup>114</sup> Terada Torahiko, “Acoustical Investigation of the Japanese Bamboo Pipe, Syakuhati,” *Journal of the College of Science, Imperial University, Tokyo* 21, Article 10 (1907): 4.

<sup>115</sup> Donald Berger, “The Shakuhachi and the Kinko Ryū Notation,” *Asian Music* 1.2 (1969): 35.

<sup>116</sup> Terada, “Acoustical Investigation,” 4.



b. Detail of 1.8 *shakuhachi*, Kinko-style *utaguchi* mouthpiece and inlay.

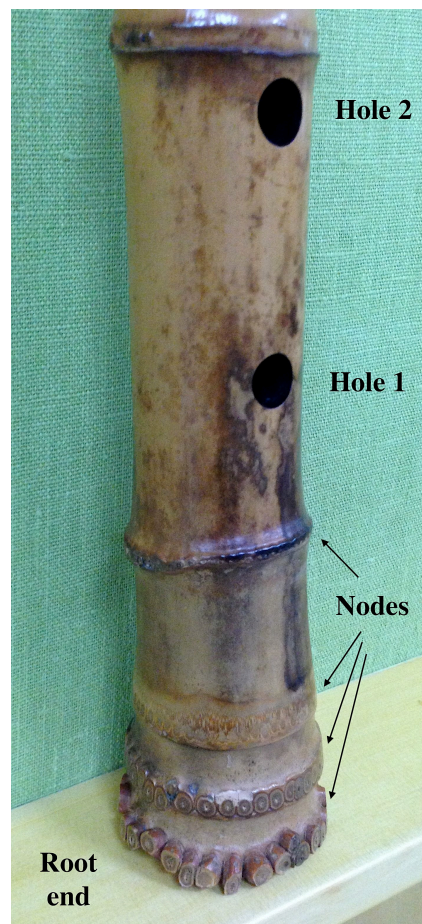


FIGURE 8.2 a. Modern 1.8 *shakuhachi* with Tozan-style inlay in *utaguchi* mouthpiece.

c. Detail of 1.8 *shakuhachi*, showing 4 of 7 nodes at root end and lowest 2 holes.

Before the 20<sup>th</sup> century, the *shakuhachi* was made in a single piece (*nobe-kan*), whereas modern *shakuhachi* are built with a mid-joint (*naku-tsugi*).<sup>117</sup> This mid-joint facilitates the ideal positioning of the nodes,<sup>118</sup> as well as the application of the *ji* lacquer to the bore, a process that has become the norm for the instrument today. By making the surface of the bore smoother, the lacquer helps to stabilize pitch and timbre, as well as increase the projection of the instrument, qualities valued in ensemble music and non-*honkyoku*.<sup>119</sup> Lacquered flutes are called *jiari*, while unlacquered ones are *jinashi*. *Jinashi* flutes are still valued in some schools for their timbral qualities in playing *honkyoku*; Watazumi's large *hochiku* flutes were *jinashi*.<sup>120</sup> According to Tsukitani,

Almost all modern professional performers use instruments coated with *ji* even when playing *honkyoku*, although in terms of timbre that repertoire seems more suited to the uncoated instrument.<sup>121</sup>

Because of increased demands on pitch and consistent voicing throughout the range of the instrument, flutes are now built by dedicated *shakuhachi* makers, whereas in the Edo period, most *komusō* would make their own flutes.<sup>122</sup> As modern Japanese intonation has been influenced by Western tuning, the placement and size of the finger holes has also evolved. Previously-equidistant tone holes are now placed and sized for European-derived tuning, adapting an otherwise flat F1 and

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<sup>117</sup> Linder, "Deconstructing Tradition," 84.

<sup>118</sup> Terada, "Acoustical Investigation," 3.

<sup>119</sup> Tsukitani, "The *Shakuhachi*," 153.

<sup>120</sup> Matsunobu Koji, "Artful Encounters with Nature: Ecological and Spiritual Dimensions of Music Learning" (Ph.D. diss., University of Illinois at Urbana-Champaign, 2009), 52.

<sup>121</sup> "The *Shakuhachi*," 153.

<sup>122</sup> Riley Kelly Lee, "Fu Ho U vs. Do Re Mi: The Technology of Notation Systems and Implications of Change in the *Shakuhachi* Tradition of Japan" *Asian Music* 19.2 (1988): 76.

sharp A1. Modern tone holes are approximately 1 cm in diameter, a relatively large size that allows for pitch-bending and microtonal techniques.<sup>123</sup>

As seen with Watazumi's *hochiku*, *shakuhachi* flutes are not necessarily 1.8 *shaku* in length. Although 1.8 is the standard length for the instrument, the term *shakuhachi* encompasses all sizes. Before the Meiji period, the specific length of a flute played in solo *honkyoku* was not important, as timbre has always been valued over absolute pitch. There has been an unwritten tradition, however, that certain pieces are best performed on certain lengths of flute.<sup>124</sup>

Beginners learn on the 1.8 *shakuhachi*, whose lowest tone is D1. Adding one *sun* (0.1 *shaku*) to the length lowers the instrument's pitch by approximately a semitone. Therefore, the 1.9 instrument (*ishakku-kyusun*), used in *Kinko-ryū honkyoku*, produces C#1 with all of the tone holes closed. Likewise, the lowest tone of the shorter 1.6 instrument (*shakuroku*), used in *min'yō* folk music and new music, is E1.<sup>125</sup> Flutes are made as small as 1.4, and as large as 3.3 *shaku*.<sup>126</sup> Quality flutes by celebrated makers with aesthetically-prized upturned bells and unique markings on the bamboo can cost as much as \$10,000 (US). However, today beginners can learn on relatively inexpensive ABS plastic resin *shakuhachi* replicas sold by the Yuu company.<sup>127</sup>

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<sup>123</sup> Berger and Hughes, "Shakuhachi."

<sup>124</sup> Andreas B Gutzwiller, *Die Shakuhachi der Kinko-Schule* (Basel: Barenreiter Kassel, 1983), 243.

<sup>125</sup> Weisgarber, "The Honkyoku," 316.

<sup>126</sup> Karl Signell, "The Mystique of the Shakuhachi" *Journal of the American Musical Instrument Society* 7 (1981): 92.

<sup>127</sup> *The Shakuhachi Yuu*, [www.shakuhachiyuu.com](http://www.shakuhachiyuu.com), accessed May 24, 2014.



## Chapter 9: Transmission and notation of *honkyoku*

Notation of *shakuhachi* music has been widespread only since the late 19<sup>th</sup> century.<sup>1</sup> Prior to then, the tradition was primarily oral. Even today, despite the availability of published *honkyoku* scores from different schools, the transmission of the repertoire continues to rely on the teacher-student relationship.

### 9.1 Transmission

According to Riley Lee, who claims to be the first non-Japanese to be granted the rank of *dai shihan* (grand master),<sup>2</sup> what is transmitted between master and student in *shakuhachi* lessons is not the piece of music as an object but rather the “essence” of the piece.<sup>3</sup>

Ideally, during the course of transmitting *honkyoku* from one person to another, an intuitive form of communication or transmission develops that is non-verbal, non-visual, non-auditory, non-analytical, and non-logical. Without this form of transmission, which may be described as a sense of intuitive mutual perception on the part of both teacher and student, many believe that there is a chance that only the outer shell of the *honkyoku* might be transmitted and/or received, with no transmission of the ‘real essence’ or ‘inner core’ taking place.<sup>4</sup>

For this reason, “shakuhachi honkyoku cannot be learned without a teacher.”<sup>5</sup>

In lessons, teacher and student sit across from each other and play in unison, with the student trying to imitate and match the teacher’s style and nuance, the two sounds blending into one.<sup>6</sup> In the *Kinko-ryū*, students first learn *gaikyoku* (“outside pieces”), such as *min’yo* (folk music) and *sankyoku* (ensemble music with *shamisen*

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<sup>1</sup> Lee, “Yearning,” 210.

<sup>2</sup> Riley Kelly Lee, “Riley’s Journey,” *Riley Lee: Sound of Bamboo*, accessed April 1, 2014, <http://www.rileylee.net/biography.html>.

<sup>3</sup> Lee, “Yearning,” 200-201.

<sup>4</sup> *Ibid.*, 201.

<sup>5</sup> Samuelson, “Toward an Understanding,” 34.

<sup>6</sup> *Ibid.*

and *koto*), before moving on to the repertoire of 36 *honkyoku*. Once a piece is learned by ear to the teacher's satisfaction, the student is "given" the piece in notated form. The student is then said to "own the piece" and can perform it and work on truly learning it well.<sup>7</sup>

*Shakuhachi* players at different levels of ability are held to different standards. Novice players are expected to imitate their teachers with little or no deviation, whereas *dai shihan* are allowed creative license in performance. The creative choices of the heads of schools are especially respected—they can make subtle changes, or even add or omit whole sections of a piece at their discretion, re-creating the piece at each performance.<sup>8</sup> *Honkyoku* are not understood as "fixed" objects; instead they are always "in progress."<sup>9</sup> Modifying the standard pieces is thus a traditional part of performance and "owning the piece," while also a form of composition.<sup>10</sup> This creative license is one factor that has led to multiple variants of pieces in the *honkyoku* repertoire.<sup>11</sup> Variants can retain the same name, while the composition differs in content or structure. However, two very similar compositions could also appear under different names.<sup>12</sup> Renaming a piece is one means of taking ownership of it.<sup>13</sup> *Shakuhachi dai shihan* Yokoyama Katsuya writes,

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<sup>7</sup> Lee, "Yearning," 30.

<sup>8</sup> *Ibid.*, 228.

<sup>9</sup> Ingrid Fritsch, "A Comparison of Tozanryu and Kinkoryu Shakuhachi Arrangements for Sankyoku Gasso Made from Identical Originals," *Yearbook for Traditional Music* 15 (1983): 17.

<sup>10</sup> Matsunobu, "Artful Encounters," 62.

<sup>11</sup> Along with the limited use of notation before the late 19<sup>th</sup> century, and the practice of monks wandering from temple to temple, sharing pieces.

<sup>12</sup> Lee, "Yearning," 173.

<sup>13</sup> Matsunobu, "Artful Encounters," 62.

The very nature of this body of music—with its purpose of “expressing one’s true intention” or playing “one’s own tune”—means that the pieces will inevitably change gradually over time along with the spirit of each age.<sup>14</sup>

According to Tsukitani Tsuneko, among all schools of Edo-period lineage, approximately 150 *koten* (“classical”) *honkyoku* are extant.<sup>15</sup> In the following chapters, I analyze the programmatic Kinko-ryū piece *Sokaku Reibo* (“The Nesting of Cranes”). *Sokaku Reibo* is related to *Tsuru no Sugomori* and *Koden Sokaku (Suzuru)* of different lineages, and together there may be as many as 20 or 30 variants.<sup>16</sup> These popular pieces have been recorded numerous times by master players, often more than once in variant forms. For example, a recording of the Kinko-ryū *Sokaku Reibo* by Yamaguchi Gorō appears on the album *A Bell Ringing in the Empty Sky* (13:13 minutes long, published 1969), and in longer versions on *Japan: Music of the Shakuhachi* (20:54, 1991) and *Great Masters of the Shakuhachi Flute* (21:34, 1988). Sakai Syōdō of the Chikuho-ryū recorded five variants of the piece from four lines of transmission on a single album, *Five Metamorphoses of “Nesting of Cranes.”* Masters may also teach the same piece differently to different students or during different periods of their lives.<sup>17</sup>

Regardless of changes made by different players and in transmission through different lineages, variants tend to retain identifying elements. *Sokaku Reibo* and its variants can be considered one piece in the repertoire because despite the

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<sup>14</sup> Yokoyama Katsuya, *Shakuhachi Koten Honkyoku: Practice, Techniques & Notation*, translated by Zachary Braverman and Marco Lienhard (Willits, California: Tai Hei Shakuhachi, 2003), 4.

<sup>15</sup> Tsukitani, “The *Shakuhachi*,” 155.

<sup>16</sup> Akira Tamba, “Japan: The Art of Shakuhachi Teruhisa Fukuda: Kinko School,” *Teruhisa Fukuda: Shakuhachi—Kinko School*, compact disc liner notes, translated by Jeffrey Grice (Ocora Radio France: 2003); Tsukitani Tsuneko, “Sakai Syōdō and ‘Turu no sugomori’ (Nesting of Cranes),” translated by Yamaguchi Osamu, in Sakai Syōdō, *Five Metamorphoses of “Nesting of Cranes,”* (Ebisu-12, 2006, compact disc), 20.

<sup>17</sup> Matsunobu, “Artful Encounters,” 58.

differences heard in the variants, they are related by programmatic storyline and technical elements. Each depicts the life cycle of cranes, and for example, each includes a distinctive onomatopoeic performance technique called *koro-koro*. *Koro-koro* combines tremolo and multiphonic effects to represent the flapping of the crane's wings, an element essential to the character and story of the piece.

All the same, practitioners of different schools of playing might consider their own variants to be distinct pieces, especially when the differences are substantial and the lines of transmission quite separate. For example, variations in melodic content and structure, and differences in playing style and title between the Kinko-ryū *honkyoku Sokaku Reibo* and Watazumi Fumon's *dokyoku* crane piece titled *Tsuru no Sugomori* are such that the two could be viewed as separate pieces, despite the shared program of nesting cranes and characteristic onomatopoeic musical elements. Indeed, in the liner notes for Sakai Syōdō's *Five Metamorphoses of "Nesting of Cranes,"* Tsukitani Tsuneko writes: "The present CD... includes five pieces taken from among the many variants that have the same (or, similar) title but are, in fact, different pieces."<sup>18</sup>

According to Lee, variation in *honkyoku* is a natural result of oral tradition.

However:

any modification or reinterpretation of Kinko *honkyoku*... would tend to be minor if compared with the variation and change that can be seen in *honkyoku* that have been transmitted outside the Kinko tradition.<sup>19</sup>

In addition:

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<sup>18</sup> Tsukitani, "Sakai Syōdō," 19.

<sup>19</sup> Lee, "Yearning," 295.

Kinko *honkyoku* in Kinko notation are generally far more detailed and precise in performance prescription than are non-Kinko *honkyoku* scores used by *shakuhachi* players who are not associated with Kinko *ryū*. Furthermore, notation appears to have been used in the transmission of Kinko *honkyoku* since at least the early 1800s.<sup>20</sup>

For the above reasons, in this study of traditional Japanese performance techniques, I analyze *Sokaku Reibo* recordings by *shakuhachi* masters of the Kinko-*ryū*. A comparison to variants of different schools, e.g. *Tsuru no Sugomori* and *Koden Sugomori*, is beyond the scope of this study; therefore, in the following chapters I focus solely on performance techniques heard in recordings of *Sokaku Reibo*, a programmatic crane piece from what Tsukitani terms the “Edo line” of *Tsuru no Sugomori* transmission.<sup>21</sup>

## 9.2 *Honkyoku* notation

In learning the repertoire, *shakuhachi* notation is meant to be merely supplemental, i.e., a memory aid. Notation varies from school to school, and is for the most part skeletal, usually omitting dynamics, ornamentation, accentuation, and pitch and timbral techniques.<sup>22</sup> *Shakuhachi* notation resembles *gagaku* notation for the winds in that it is a tablature fingering system; however, whereas *gagaku* tradition and notation was unified in the Meiji period, *shakuhachi* tradition has divided into many schools with varying approaches to tablature.

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<sup>20</sup> Ibid., 294.

<sup>21</sup> Tsukitani, “Sakai Syōdō,” 20.

<sup>22</sup> Linder, “Deconstructing *Tradition*,” 255.

### 9.2.1 Early *shakuhachi* notation

Notation for the *gagaku shakuhachi* is not extant; the earliest known notation for a flute of the *shakuhachi* family is for *hitoyogiri*. In 1608, Omori Sokun published a collection of about 70 short pieces for the *hitoyogiri* in *Tanteki Hidengu* (*tanteki* = short flute).<sup>23</sup> The notation system used in this collection is called *Fu-Ho-U*, named for the lowest three fingerings of the flute.<sup>24</sup> While a form of this tablature system is still used today by the Chikuho-ryū, founded in 1916 by Sakai Chikuho I,<sup>25</sup> most schools use the *Ro-Tsu-Re* system instead (again named for the lowest three fingerings of the flute). *Hitoyogiri* notation appears again in 1664 in the *Shichiku Shoshinshu* (“Beginning Pieces for Strings and Bamboo”)<sup>26</sup> by Nakamura Sosan with the tablature resources increased from 8 characters to 13.<sup>27</sup> No rhythmic indications are given, but circles indicate pauses.<sup>28</sup> The *Ro-Tsu-Re* system that would become the foundation of modern notation for the Kinko- and Tozan-ryū was first used by *hitoyogiri* players in the Bunka-Bunsei period (1804-1830).<sup>29</sup>

### 9.2.2 Kinko-ryū notation

The modern Kinko-ryū continues to use *Ro-Tsu-Re* notation. Although it is claimed that Kinko Kurosawa (1710-71) probably wrote notation for his collected

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<sup>23</sup> Kamisangō in Blasdel, *The Shakuhachi*, 86-87.

<sup>24</sup> Lee, “Fu Ho U,” 71.

<sup>25</sup> Riley Kelly Lee, “Blowing Zen: Aspects of Performance Practices of the Chikuho-ryu Honkyoku,” in *The Annals of the International Shakuhachi Society, vol.1*, edited by Dan E. Mayers (Wadhurst, UK, 1985?), 117.

<sup>26</sup> Kamisangō in Blasdel, *The Shakuhachi*, 86.

<sup>27</sup> Berger and Hughes, “Japan, II, 5, Shakuhachi.”

<sup>28</sup> Lee, “Blowing Zen,” 117.

<sup>29</sup> *Hōgaku Hyakka Jiten* 1066, cited in Lee, “Fu Ho U,” 71.

*honkyoku*,<sup>30</sup> concrete information about his scores is lacking. Today the various guilds within the Kinko-ryū use their own versions of *Ro-Tsu-Re* notation.

*Ro-Tsu-Re* notation was developed by Araki Kodō II (1823-1908) and revised by his disciples, Uehara Rokushirō (1848-1913) and Kawase Junsuke I (1870-1959).<sup>31</sup> Kawase had his guild (Chikuyūsha) publish the new notation with rhythm indications.<sup>32</sup> Prior to that time, notation was not standardized and teachers would write the pieces for their students or have their advanced students do so in their place.<sup>33</sup> Miura Kindo (1875-1940), another student of Kodō II, also worked to standardize the Kinko-ryū notation in 1928-1929. Although many variations on *Ro-Tsu-Re* notation have been introduced by the heads of Kinko-ryū sects or guilds since the early twentieth century, notation by both Miura and Kawase is still considered authoritative. Yamaguchi Gorō used Miura's notation in his guild, Chikumeisha.<sup>34</sup>

Figure 9.1 shows an excerpt from the last *dan* (section) of *Tsuru no Sugomori*, in Kawase's notation, read from top to bottom.

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<sup>30</sup> Linder, *Notes*, 23.

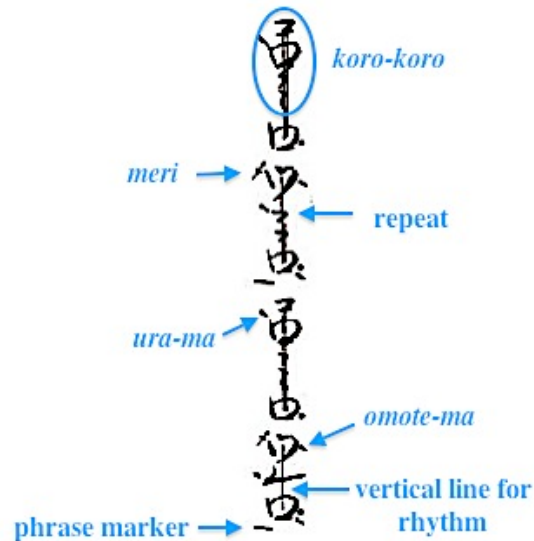
<sup>31</sup> Lee, "Fu Ho U," 71.

<sup>32</sup> Linder, *Notes*, 25.

<sup>33</sup> David Wheeler, "A Century of Shakuhachi Feted," in *The Annals of the International Shakuhachi Society*, vol.2, edited by Dan E. Mayers (Wadhurst, UK, 2005), 175.

<sup>34</sup> Linder, "Deconstructing *Tradition*," 256-257.

FIGURE 9.1 Excerpt from the last *dan* of Kawase's notation of *Tsuru no Sugomori*



In addition to tablature fingerings in the *katakana* syllabary, Kawase's notation includes *tenpu-shiki*<sup>35</sup> rhythm indications devised in the middle of the Meiji period for ensemble music: marks to the right of the column for notes on the beat (*omote-ma*), to the left for notes off the beat (*ura-ma*), although the right and left beats in tablature are not thought of as strong and weak in the Western sense. Instead, "the unit conceptually has two sides, front (*omote*) and back (*ura*), just as a coin has two faces."<sup>36</sup> Lines drawn vertically through the *katakana* tablature are an influence of Western staff notation and give an outline of the rhythm. A single line indicates that the notes correspond to eighth notes; a double line to sixteenth notes.<sup>37</sup> Because of the "free-rhythm" nature of *honkyoku*, these indications are merely a guide. They are

<sup>35</sup> This rhythm notation is also called *futenhō*, or "dotted notation." It was invented by Uehara Rokushirō. (Linder, *Notes*, 45)

<sup>36</sup> Komoda Haruko and Nogawa Mihoko, "Theory and Notation in Japan," in *The Garland Encyclopedia of World Music, Vol. 7, East Asia: China, Japan and Korea*, edited by Robert C. Provine, Yosihiko Tokumaru and J. Lawrence Witzleben (New York: Garland Pub., 1998), 572.

<sup>37</sup> Tsukitani, "The *Shakuhachi*," 166.



followed more closely in ensemble music, where the instruments play in rhythmic unison.

Kawase's notation also indicates *meri-kari* techniques (lowering and raising the pitch via embouchure and head position; timbre is also altered). The small ✂ symbols to the left of the tablature in the above example are *meri*, which lower the pitch of the tone. Special fingerings are also given. The first set of fingerings in Figure 9.1, combined with a particular blowing technique, creates the special *koro-koro* wing-flapping effect of the cranes, an important element in *Sokaku-Reibo* and *Tsuru no Sugomori*.

Today, all major schools and guilds of *shakuhachi* playing use printed notation.<sup>38</sup> The notation has not only a practical function for learning the repertoire, but also a political one. When a *shakuhachi* master leaves his *ryū* to form his own school or guild, he must find ways to legitimize his new school. Creating and publishing his own notation asserts his authority and hastens the dissemination of the repertoire—important factors if the school is to survive.<sup>39</sup> Older schools publish notation to prevent deviation from their accepted performance practice.

Figures 9.2a-e show variations in notation style for the *Sokaku Reibo/Tsuru no Sugomori* family of nesting crane pieces.

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<sup>38</sup> Lee, "Yearning," 29.

<sup>39</sup> *Ibid.*, 34.

FIGURE 9.2

a. *Sokaku Reibo*, opening. Notation by Aoki Reibo II, Reibo-kai guild of Kinko-ryū.



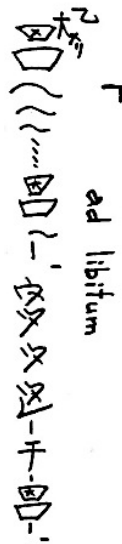
b. *Sokaku Reibo*, opening. From *Jin Nyodō Honkyoku: Notation by Kurahashi Yodo*.<sup>40</sup>



c. *Sokaku Reibo*, opening. Notation by Sato Seibi, student of Miura Kindo. From *Honkyoku Zenshu Book 6*.



d. *Koden Sugomori*, opening. Notation by Taniguchi Yoshinobu. From *Koden & Koten Honkyoku: Chikuzen Shakuhachi Series Sheet Music*.



e. *Tsuru no Sugomori*, opening. Notation by Yokoyama Katsuya, student of Kinko-ryū and Watazumi's dokyoku. From *Shakuhachi Koten Honkyoku, No. 16: Tsuru no Sugomori* (Willits California: Tai Hei Shakuhachi, n.d.).



<sup>40</sup> Jin Nyodō did not publish his scores; instead, he usually gave hand-written scores to his students. Kurahashi was a student of Jin's. (David Sawyer, "The Life and Work of Jin Nyodo.")

According to Riley Lee, *shakuhachi* notation is “neither prescriptive nor descriptive,” and “‘authentic’ realizations of historical scores... are impossible.”<sup>41</sup> Scores offer the player an outline of the piece, but not everything is notated. Some symbols can even have multiple meanings in a single score, depending on context.<sup>42</sup> Despite these limitations, an outline of pitch content based on fingerings can be extracted from scores. Likewise, rhythmic and phrasing clues are usually given in graphic or metric form.

In the above three examples of *Sokaku Reibo* notation (Figure 9.2a-c), the fingerings for the opening melodic line are: *Tsu meri-Re-Ro* (repeated) in *kan* (甲), the upper octave, corresponding to E<sup>b</sup>5-G5-D5:

ツメ  
レ  
ロ

Relative note lengths are shown graphically in the Aoki Reibo notation by vertical lines, whereas Kurahashi and Sato use forms of *tenpu-shiki* dots. Sato’s notation combines hollow and filled dots to show rhythm, while Kurahashi uses only solid dots along with vertical spacing of the notes to show time relationships. Where no dots are written to the left of the *katakana*, they are implied. In later phrases, Sato adds vertical lines through the *katakana* symbols to indicate shorter durations, as seen in Kawase’s notation in Figure 9.1. Kurahashi does likewise. Aoki instead adds occasional vertical lines next to the characters.

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<sup>41</sup> “Yearning,” 28.

<sup>42</sup> *Ibid.*, 239.

Additional indications include short horizontal lines as breath phrase markers (in the Sato and Kurahashi scores), bracket-like vertical markings to show repeated figures (in the Sato score, and later in others), instructions on how to move from the first to the second note using head position and finger articulation (in all examples), and instructions on how to end the phrase (in the Aoki and Kurahashi scores). Some of these notes on performance practice have no corresponding symbols in standard Western staff notation. Timbre and special fingerings cannot be accurately depicted on the staff either; nor are they necessarily indicated in *shakuhachi* tablature notation. Nonetheless, transnotation can offer insight into variations in basic melodic content from *ryū* to *ryū*.

### 9.3 *Sokaku Reibo* in transcription

Although attempts to notate elements of *honkyoku* performance practice that are intertwined with aesthetic concepts cannot replace live or recorded performance, transcription does give a more informed picture of performance practice than does a traditional tablature score or transnotation of that score. Andreas Gutzwiller is critical of both staff and traditional notation of *honkyoku*. Regarding transcription, he argues, “Either the notation means precisely what it says or the deviations have to be stated equally precisely.”<sup>43</sup> With respect to indigenous tablature notation, he is also dissatisfied:

The problem with *honkyoku* notation in its present form is that it is too vague and too precise at the same time. Read “descriptively” it is too vague

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<sup>43</sup> Andreas B. Gutzwiller, “Shakuhachi: Aspects of History, Practice and Teaching” (Ph.D. diss., Wesleyan University, 1974), 139.

since it insufficiently describes what is going on when the music is played. Read “prescriptively” it is too precise, especially in the sector of rhythm.<sup>44</sup>

In transcribing two recordings of *Sokaku Reibo* by renowned master players, both designated Living National Treasures, I do not intend to produce a prescriptive score in Western notation, but rather a tool for locating “extended” performance techniques, to be supplemented by excerpts of spectral analysis. In this regard, Lee states: “When one is clear about what they are, transcriptions, like maps and words, can be useful in understanding certain aspects of *honkyoku*.”<sup>45</sup> Although recorded performances capture only isolated interpretations of *honkyoku*, which are pieces “in progress,” consultation of multiple recordings in concert with traditional scores offers considerable evidence of extended performance techniques for the purposes of this study.

In this study I refer to recordings of *Sokaku Reibo* by Aoki Reibo II on *Living National Treasures: Shakuhachi (Kinko Ryu)* and Yamaguchi Gorō on *A Bell Ringing in the Empty Sky*. Yamaguchi has also released recordings of the piece on *Great Masters of the Shakuhachi Flute* and *Japan: Music of the Shakuhachi* and had a short version (4:51) of *Tsuru no Sugomori* sent to space on the Golden Record on Voyager II.<sup>46</sup>

The legend in Figure 9.3 gives explanations of symbols used in the transcriptions. These symbols indicate extended techniques, including flutter tonguing, multiphonic tremolo effects, pitch slides and bends, and finger articulation. Particulars of each performer’s fingering choices cannot be ascertained from

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<sup>44</sup> Ibid.

<sup>45</sup> Lee, “Yearning,” 314.


<sup>46</sup> NASA, “Music from Earth,” *Voyager: The Interstellar Mission*, accessed April 1, 2014, <http://voyager.jpl.nasa.gov/spacecraft/music.html>.

recordings so finger articulation will be addressed in general terms. Microtonal (+/-) pitch indications represent a general pitch level over the length of a note. However, sustained tones can be altered substantially. Spectral images thus give more accurate information about pitch. I have nonetheless notated cents values for tones altered microtonally; these are to be understood as approximations. Nuances of timbral alteration as well as depth and type of vibrato also cannot be precisely portrayed in staff notation. I therefore rely on spectral analysis to discuss these elements.

In the chapters on *gagaku* and *Etenraku*, I was able to refer to transcriptions by other scholars and performers. However, I have not located a transcription of *Sokaku Reibo* for comparison. *Tsuru no Sugomori* versions of the piece are more frequently recorded, and thus better-known and subject to transcription.<sup>47</sup> The transcriptions of *Sokaku Reibo* appear in Appendix E.

FIGURE 9.3 Symbols used in transcription of *Sokaku Reibo* recordings

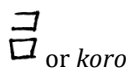
***Sokaku Reibo* transcription legend**

barline	End of breath phrase.
^	<i>Atari</i> (finger articulation), regardless of fingering.
	Pitch bends and slides are shown graphically.

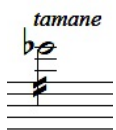
<sup>47</sup> A transcription of *Tsuru no sugomori* as played by Kawase Junsuke III is available in Jeff Todd Titon, *Worlds of Music: An Introduction to the Music of the World's Peoples*, 2<sup>nd</sup> ed., (Belmont, CA, Shirmer: 2005), 329-330.



*Nayashi* pitch slides from approximately a semitone below main tone.



*Koro-koro* multiphonic tremolo effect.  $D\flat$  represents approximate average pitch of tremolo.  $D\flat$  is notated rather than  $C\sharp$  because the “*ro*” of *koro-koro* refers to D.



Flutter tonguing.



Accidentals are effective until the end of a breath phrase.



Note values are approximate and loosely relative. Rhythmic groupings show emphasis (e.g., a dynamic or agogic accent on the first of three beamed eighth notes).



Microtones in cents (+/-10 not indicated). *Simile* indication refers to microtonal alteration.



*Yuri* (vibrato); type, depth, etc. not shown.



Noteheads without stems used for passing tones or some finger percussion or release notes (not usually notated). Pitch is approximate.

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Timbral changes not notated.

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## Chapter 10: *Sokaku Reibo*, part 1

### 10.1 *Sokaku Reibo*: Genealogy and programme

As with all *Kinko-ryū honkyoku*, the composer and date of composition for *Sokaku Reibo* 巢鶴鈴幕 (or *Tsuru no Sugomori* 鶴の巢籠) are unknown. However, the piece has been traced to the mid-18<sup>th</sup> century, when “prototype” melodies were heard in the Kyōto and Osaka areas and Kinko Kurosawa (1710-1771) was collecting *shakuhachi* repertoire. Kinko received *Sokaku Reibo* from Zansui of Ichigetsu-ji, the Kantō-region temple that had commissioned Kinko to collect *honkyoku*. Zansui, in turn, had learned the piece from Ryōan, a *komusō* of Kyūkōan temple in Uji, south of Kyōto. *Sokaku Reibo*, *Tsuru no Sugomori*, and their variants differ with regard to structure in that they have different numbers of *dan* (sections). *Sokaku Reibo* of the *Kinko-ryū* had developed its 12-*dan* form by the middle of the 19<sup>th</sup> century. Tsukitani Tsuneko calls its line of transmission the “Edo line.”<sup>1</sup>

Other versions of the piece can be traced to the *kokyū*, a traditionally three-stringed bowed instrument similar to the *shamisen*. *Tsuru no Sugomori* melodies had been transcribed for the *kokyū* and then re-introduced to the *shakuhachi* after a century. This resulted in a number of variants of *Tsuru no Sugomori*, including the 7-*dan* version played by practitioners of the Myōan Taizan-*ha*.<sup>2</sup>

Variants are connected by a loose programme concerning the life cycle of a family of cranes. However, just as the structure and melodic content of the piece differ, so does the accompanying story. Christopher Yohmei Blasdel gives the following account:

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<sup>1</sup> Tsukitani, “Sakai Syōdō,” 20-21.

<sup>2</sup> *Ibid.*, 21.



The famous shakuhachi *honkyoku*, *Sokaku Reibo* (“Song of the Cranes”), is a story of parent cranes raising their offspring. After a period of warm, nurturing childhood, the time comes when the parents must kick the fledgling birds from the nest. This cruel gesture of love is necessary for the attainment of freedom and maturity.<sup>3</sup>

Some transmitted versions of the story recorded in CD liner notes include a few details to depict the emotions of the cranes (e.g., “When the eggs hatch the cranes again experience joy.”<sup>4</sup>), while others embellish the story to such an extent that the additions likely represent an individual teacher’s or performer’s interpretation (e.g., “One cold winter, a mother crane is unable to find any food to give to her chicks. Ready to sacrifice herself for her offspring, she feeds them on the meat from her own stomach. The chicks regain their strength and fly off, but the mother quietly expires.”<sup>5</sup>).

Regardless of creative variation in storytelling, of relevance to this study is the use of virtuosic performance techniques developed to tell the story and imitate the cranes. In addition to the microtonal intervals and pitch sliding techniques heard in many *shakuhachi* pieces, *Sokaku Reibo* makes use of *tamane* flutter tonguing and *koro-koro* multiphonic tremolo effects to depict the voices and flapping wings, respectively, of the cranes. In this chapter and Chapter 11, I present formal elements of the *Kinko-ryū* piece *Sokaku Reibo*, to be followed in further chapters by an analysis of specific extended performance techniques.

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<sup>3</sup> Blasdel, *The Single Tone*, 162.

<sup>4</sup> Gerald Groemer, annotations, *Kifū Mitsuhashi: The Art of Shakuhachi, Volume 1*, Celestial Harmonies 13224-2, 2001, compact disc.

<sup>5</sup> *Japan: Music of the Shakuhachi*, Victor VICG 5357, 1994, compact disc.

## 10.2 Sokaku Reibo tablature

*Shakuhachi* notation is a tablature system, similar to notation for the *ryūteki* and *hichiriki* wind instruments of the *gagaku* ensemble. However, unlike *gagaku* notation, *shakuhachi* notation includes tablature fingering indications, but no *shōga*. If a *shakuhachi* student is to sing a piece using mnemonics, he or she will sing the tablature syllables. Notably, *shakuhachi* tablature syllables (in *katakana*) are very similar to *gagaku shōga* (in *katakana*), rather than *gagaku* tablature (in *kanji*), and are thus sing-able. Unlike the *shōga* syllables however, *shakuhachi* tablature corresponds to specific fingerings. (Tones will differ depending on the length of *shakuhachi* played and additional markings in the notation.)

FIGURE 10.1 *Katakana* syllables used in *shakuhachi* tablature and *gagaku shōga* mnemonics

Basic <i>shakuhachi</i> scale in tablature	ロ ro	ツ tsu	レ re	チ chi	リ ri	
Also used in <i>gagaku shōga</i>	ロ ro		レ re	チ chi	リ ri	
Additional <i>shakuhachi</i> tablature	ア a	ハ ha	イ i	ヒ hi	ウ u	ル ru
Also used in <i>gagaku shōga</i>	ア a	ハ fa	イ i			ル ru

On a 1.8-foot standard-length five-hole *shakuhachi*, the basic tones produced when the tone holes are fully opened one by one from the bottom of the instrument to the top with a neutral embouchure position are: D (ロ *ro*), F (ツ *tsu*), G (レ *re*), A (チ *chi*), C (リ *ri*). However, the instrument is not limited to this anhemitonic pentatonic scale. Semitones and microtones are possible when tone holes are

partially closed, forked fingerings are used,<sup>6</sup> and/or the angle of the breath stream against the mouthpiece is altered. The most common indication for changing the pitch is ㄨ *meri*. The resulting pitch and the method used to achieve it differ from school to school, but the general meaning is to lower the pitch one to two semitones (in contrast, ㄨ *kari* means to raise the pitch). In the *Kinko-ryū*, while ㄨ *tsu* is played F on a 1.8-foot *shakuhachi*, ㄨ ㄨ *tsu-meri* is lowered to approximately E $\flat$ . The fingering system allows not only for all tones of the Western chromatic scale, but also multiple fingerings for some tones to alter the timbre, intonation, and loudness of the given tone.<sup>7</sup>

In this study, I have consulted tablature notation of *Sokaku Reibo* by Kurahashi Yodo I (1909-1980), as taught by Jin Nyodo (1892-1966),<sup>8</sup> and Aoki Reibo II (b.1935),<sup>9</sup> both of *Kinko-ryū* lineage via Kawase Junsuke I (1870-1959). I also refer to recordings by Aoki Reibo II<sup>10</sup> and Yamaguchi Gorō (1933-1999),<sup>11</sup> both designated “Living National Treasures.” Figure 10.2 shows notation for the first *dan* of *Sokaku Reibo* by Aoki and Kurahashi. The tablature is read vertically, from right to left. Approximate tones for the tablature used in *Sokaku Reibo* are given in Figure

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<sup>6</sup> This term is not typically applied to *shakuhachi* fingerings. However, by “forked fingering,” I mean that below an open tone hole there is a closed or partially-closed hole. For example, *san no u* (B $\flat$ 2): only the third hole from the root end is open.

<sup>7</sup> A detailed *Kinko-ryū* fingering chart in English is downloadable at <http://nyokai.com/students/fingerchart.pdf>. The Nyokai-an school was founded by Phil Nyokai James as a branch of Kurahashi Yodo II’s Mujuan school.

<sup>8</sup> *Jin Nyodō Honkyoku: Notation by Kurahashi Yodo*, n.d.

<sup>9</sup> Unpublished hand-written score. Postscript: “Sheet music for use at Boulder, Colorado, USA World Shakuhachi Festival ’98 (7/5-7/11) (written) 4/8/’98, (signed) Aoki Reibo.” (Postscript translation by David Wheeler in email communication.)

<sup>10</sup> Aoki Reibo, “Sokaku Reibo,” *Living National Treasures: Shakuhachi (Kinko Ryu)*, Columbia COCJ-33975, 2006, compact disc.

<sup>11</sup> Yamaguchi Gorō, “The Cranes in Their Nests,” *A Bell Ringing in the Empty Sky*, Nonesuch H-720025, originally released 1969, re-released 2007, compact disc.

10.3. The reference instrument is a 1.8-foot *shakuhachi*, played on both of the recordings I consulted. Additional markings indicate register (lower: 乙 *otsu* or 呂 *ryo*; upper: 甲 *kan*), breath phrases (horizontal lines), dynamics (crescendo and decrescendo), metre (*ura-ma* and *omote-ma* left and right dots), repeated figures and notes, finger articulation (e.g., 二, i.e., 2, refers to 2<sup>nd</sup> hole from bottom), and special tremolo (コロ *koro-koro*), flutter tonguing (玉音 *tamane*), and sliding and bending techniques (e.g., ス *suri*, へ *nayashi*, and メリコミ *meri-komi*).

FIGURE 10.2 First dan of *Sokaku Reibo*, notation by Aoki Reibo II, Reibo-kai guild of Kinko-ryū (L), and Kurahashi Yodo I (R), from *Jin Nyodō Honkyoku: Notation by Kurahashi Yodo*.

The figure displays two columns of handwritten musical notation for the piece *Sokaku Reibo*. The left column, attributed to Aoki Reibo II, features a notation system with green boxes around notes, blue circles indicating bends or slides, and red circles for tamane flutter tonguing. Annotations include 'finger art.', 'repeat', 'omote-ma', and 'breath phrase'. The right column, by Kurahashi Yodo I, uses a different notation style with blue circles for bends/slides, red circles for tamane, and green boxes for koro-koro tremolos. Annotations include 'kan', 'breath phrase', 'otsu', 'repeat note -- finger articulation', 'repeat breath', 'nayashi', 'omote-ma', and 'meri'. A legend at the bottom defines the symbols: a blue circle for 'type of bend or slide', a red circle for 'tamane flutter tonguing', and a green box for 'koro-koro tremolo'.

**FIGURE 10.3** Approximate tones in tablature used for *Sokaku Reibo*, played on 1.8-foot *shakuhachi*. (Tablature not used in *Sokaku Reibo* is omitted. Some tones have more than one possible fingering and therefore tablature symbol, e.g., D2. Some tones change tablature symbols for the third octave, e.g. *ri* C2 becomes *hi* C3.)

1st octave				2nd octave				3rd octave			
<b>BASIC TONES</b>											
ロ	レ			ロ		レ		チ		ヒ	ヒ五 /イ
<i>ro</i>	<i>re</i>			<i>ro</i>		<i>re</i>		<i>chi</i>		<i>hi</i>	<i>go no hi/i</i>
D1	G1			D2		G2		A2		C3	D3
<b>BASIC TONES, MERI</b>											
		リメ			ツメ			チメ	ヒメ		
		<i>ri meri</i>			<i>tsu meri</i>			<i>chi meri</i>	<i>hi meri</i>		
		B♭1			E♭2			A♭2	B♭2		
<b>OTHER MERI TONES</b>											
			ハ				ウー三/ ウ大メ				ハ五
			<i>ha (ni shi go no ha)</i>				<i>ichi san no u/u dai meri</i>				<i>go no ha</i>
			C2				G/A♭2				D3
<b>OTHER NON-MERI TONES</b>											
			ア/ ハ四五					ウ三	ア	ハ二四 五	
			<i>a/shi go no ha</i>					<i>san no u</i>	<i>a</i>	<i>ni shi go no ha</i>	
			D2					B♭2	D3	E♭3	

Figure 10.4 shows the first of 12 *dan* of *Sokaku Reibo* in Western staff notation, transnotated from the two scores by Aoki and Kurahashi in Figure 10.2. A legend of symbols follows in Figure 10.5. My transnotation of both *Sokaku Reibo* scores appears in full in Appendix D.

The transnotation in Figure 10.4 shows that *dan* 1 is approximately the same length with respect to musical material in the Kurahashi and Aoki scores, with very similar melodic and rhythmic content. Fewer breath phrases are marked in the Aoki score, especially in the 5<sup>th</sup> and 6<sup>th</sup> systems, possibly indicating a faster tempo

(although it could be that horizontal breath lines were simply not notated). Left (*ura-ma*) and right (*omote-ma*) rhythmic dots are absent at the beginning of the Aoki score; however, the rhythm can be estimated by spatial relationships and vertical lines in the notation, in addition to a comparison with the Kurahashi score.

*Ura-ma* and *omote-ma* begin in the Aoki score at the end of the 2<sup>nd</sup> system, and match the Kurahashi score in the 3<sup>rd</sup> and half of the 4<sup>th</sup> systems. However, the latter half of the 4<sup>th</sup> through the 6<sup>th</sup> systems show a contrasting approach to the left/right (or front/back) sense of beat: where Kurahashi marks a left-side beat, Aoki marks one to the right for the same musical material. Their approaches are synchronized again at the beginning of *dan 2*; however, the mismatching of left/right beats at the end of *dan 1* has implications for two figures: a) the *koro-koro* tremolo “resolves” on *ura-ma* in the Aoki score and *omote-ma* in the Kurahashi score (in *dan 2* and 12, *koro-koro* “resolves” on *omote-ma* in both scores); b) a terminal rhythmic pattern (discussed in Section 11.3) is notated with its sixteenth notes on *omote-ma* in the Aoki score, and *ura-ma* in the Kurahashi score.

With respect to extended performance techniques, both scores indicate the *koro-koro* multiphonic tremolo effect, finger articulation, and various types of slides and bends (e.g., *nayashi*, *meri-komi*, *suri*). However, while Aoki calls for *tamane* flutter-tonguing in the 6<sup>th</sup> system, Kurahashi does not, calling instead for a non-basic fingering for D2 (*go no ha*). Aoki calls for this fingering for D2 on some resolutions of *koro-koro*, whereas Kurahashi indicates ㄥ *a* instead.

FIGURE 10.4 Transnotation of *dan 1* of *Sokaku Reibo* scores by Kurahashi Yodo I and Aoki Reibo II.

**Dan 1** *(simile slides not notated)*

Kurahashi Yodo I

Aoki Reibo II

(no L/R given)

KY

AR

L (no value given)

KY

AR

KY

AR

*fukikomi*

R


R

Detailed description of the musical score: The score is organized into four systems. The first system shows the beginning of the piece with a key signature of one flat and a common time signature. It features two staves: Kurahashi Yodo I (top) and Aoki Reibo II (bottom). Kurahashi's part includes slurs and accents, with 'R' markings below the notes. Aoki's part is a continuous eighth-note line. The second system introduces 'KY' and 'AR' parts. The KY part has slurs and accents, with 'R' and 'L' markings. The AR part continues the eighth-note line. The third system shows a change in rhythm with dotted notes and slurs, with 'R' markings. The fourth system features a 'fukikomi' section with complex rhythmic patterns, slurs, and accents, with 'R' markings. The score concludes with a final note and a comma.



FIGURE 10.5 Symbols used in transnotation of *Sokaku Reibo*

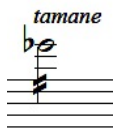
### *Sokaku Reibo* transnotation legend

L/R	<i>Ura-ma/omote-ma</i> metric dots; given only for 1 <sup>st</sup> note of breath phrase.
,	End of breath phrase.
^	<i>Atari</i> (finger articulation), using standard fingering.
1,2,3,4,5	<i>Atari</i> (hit/push) indicated hole (hole 1 is at the lower end, hole 5 is on the back); <i>ru</i> is a special articulation fingering.
tablature	Given above the note for tones with more than one fingering (e.g., ア <i>a</i> for D2). If not indicated, the basic fingering is assumed (e.g., ロ <i>ro</i> for D2). <i>Simile</i> refers to tablature.
	Pitch bends and slides are shown graphically. <i>Nayashi</i> and <i>hiku</i> types are specifically indicated above the note. (All D3 <i>a</i> ア fingerings in the Kurahashi score are accompanied by a <i>hiku</i> symbol; these cases are not indicated in the transnotation.)



*Koro-koro* multiphonic tremolo effect.  $D\flat$  represents the approximate average pitch of the tremolo.  $D\flat$  is notated rather than  $C\sharp$  because the “*ro*” of *koro-koro* refers to D.

---



Flutter tonguing; notated as *tamane* or *tam.*, depending on space.

---

*fukikomi*

“Strong breath,” i.e. no diminuendo.

---



Accidentals are effective until the end of a breath phrase.

---



Note values are approximate and loosely relative. Rhythmic groupings show emphasis (e.g., a dynamic or agogic accent on the first of three beamed eighth notes).

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### 10.3 Twelve-*dan* form

Although a performance of *Sokaku Reibo* can include 12 possible *dan*, the player may omit several sections. Figure 10.6 shows which *dan* are performed or notated in each of the recordings or scores consulted in this study. Each *dan* appears in at least one of the two recordings, but each recording omits two or three *dan*. With regard to scores, *dan* 8 and 11 are absent from both, and Kurahashi includes only 50 per cent of the possible *dan*. The five *dan* present in all of the selected recordings and scores are 1, 2, 6, 10, and 12. I consulted an additional recording by Yamaguchi<sup>12</sup> on which he performs all 12 *dan*. Likewise, a score by Sato Seibi<sup>13</sup> in

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<sup>12</sup> On *Great Masters of the Shakuhachi Flute*, Auvidis A-6139, 1988, compact disc.

<sup>13</sup> Sato (1906-1983) was a student of Miura Kindo and Yoshida Seifu. He ran the Kinkosha publishing company and sought to “consolidate and unify” the various *Kinko-ryū* notation systems. (“Sato Seibi,” *The International Shakuhachi Society*, accessed May 24, 2014, <http://komuso.com/people/people.pl?person=854>.)

Book 6 of his *honkyoku* compilation, *Shakuhachi Honkyoku Zenshu*, includes all 12 *dan*.<sup>14</sup> I used this score as a reference to confirm the locations of the *dan* in the recordings and other scores when they were not clearly marked.

The nature of transmission is such that even when the *dan* are clearly marked in the scores, the content may differ from score to score. A comparison of my transnotation of the Aoki and Kurahashi scores shows variations in melodic material in the second half of *dan* 5, a short section near the beginning of *dan* 6, and most of *dan* 10. The beginning of *dan* 12 in the Kurahashi score is not clearly indicated, nor does musical material clearly match the other scores. In fact, the first phrases of *dan* 12, heard or notated in every other source I consulted, are absent from Kurahashi's score. Kurahashi joins *dan* 12 midway, after presenting terminal rhythmic material.<sup>15</sup> I conclude that Kurahashi's version of *Sokaku Reibo* extends *dan* 10 and then proceeds directly to the middle of *dan* 12, during which it repeats material from the first *dan*.

---

<sup>14</sup> Sato Seibi, *Shakuhachi Honkyoku Zenshu*, book 6, 4<sup>th</sup> edition, Kinkosha, 1954, 1989.

<sup>15</sup> Terminal patterns are discussed in the following chapter, Section 11.3.

FIGURE 10.6 *Dan* included in selected scores and recordings

Kurahashi Yodo I score <sup>16</sup>	Aoki Reibo II score <sup>17</sup> & recording <sup>18</sup>	Yamaguchi Gorō recording <sup>19</sup>
<b>1</b>	<b>1</b>	<b>1</b>
<b>2</b>	<b>2</b>	<b>2</b>
	3	3
	4	4
5	5	
<b>6</b>	<b>6</b>	<b>6</b>
	7	
	9	8
<b>10</b>	<b>10</b>	<b>10</b>
		11
<b>12</b>	<b>12</b>	<b>12</b>

FIGURE 10.7 First and last tones of each *dan* (In some cases, a different fingering is used for the same tone, e.g., the first tones of *dan* 3 and 4. Where tones differ between versions, the note names are highlighted in bold.)

<i>Dan</i>	1	2	3	4	5	6	7	8	9	10	11	12
<b>Sato 1st tone</b>	ツメ Eb2	ツメ Eb2	ヒメ Bb2	ヒメ Bb2	ハ C2	ヒ C3	チ A2	ヒ C3	ヒ C3	ヒメ Bb2	ハニ Eb3	ヒ C3
<b>Aoki 1st tone</b>	ツメ Eb2	ツメ Eb2	ウニ Bb2	ウニ Bb2	ハ C2	ヒ C3	チ A2	-	ヒ C3	ヒ C3	-	ヒ C3
<b>Sato last tone</b>	ロ D2	チ A2	チ A2	レ G2	レ G2	チ A2	チ A2	チ A2	チ A2	チ A2	ヒ C3	ロ D1
<b>Aoki last tone</b>	ロ D2	チ A2	チ A2	レ G2	レ G2	チ A2	チ A2	-	ヒメ ウニ Bb2	ヒメ Bb2	-	ロ D1

<sup>16</sup> *Jin Nyodō Honkyoku: Notation by Kurahashi Yodo*, n.d.

<sup>17</sup> Unpublished, dated April 8, 1998.

<sup>18</sup> Aoki Reibo, "Sokaku Reibo," *Living National Treasures: Shakuhachi (Kinko Ryu)*, Columbia COCJ-33975, 2006, compact disc.

<sup>19</sup> Yamaguchi Gorō, "The Cranes in Their Nests," *A Bell Ringing in the Empty Sky*, Nonesuch H-720025, originally released 1969, re-released 2007, compact disc.

Two of the scores I consulted—by Aoki and Sato—indicate where each new *dan* begins. The Kurahashi score does not. I have estimated the location of *dan* in my Kurahashi transnotation by comparing the three scores. Figure 10.7 shows the first and last tones and tablature symbols for each *dan* in the Aoki and Sato scores. Most of the tablature in Figure 10.7 is the same in the two scores. Based on Sato’s score, which includes all 12 *dan*, the tones heard at the end of each of the 12 *dan* are D2-A2-A2-G2-G2-A2-A2-A2-A2-A2-C3-D1, a pattern that outlines the modality of the piece, as discussed in Section 10.4 below.

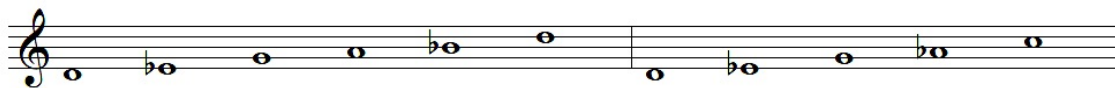
#### 10.4 Mode

In previous studies,<sup>20</sup> scholars have argued that *shakuhachi honkyoku* can be analyzed based on full-octave *in* or *miyakobushi* scales (see Figure 10.8). However, in this study, I favour an analysis based on transposition of frequently recurring intervals and the *miyakobushi* “tetrachord” (m2+M3=P4), as identified in Edo-period Japanese music by Koizumi Fumio.

FIGURE 10.8 a. *In* scale on D



b. *Miyakobushi* scale on D, disjunct (L) and conjunct (R) forms



<sup>20</sup> For example: Weisgarber, “The Honkyoku of the Kinko-Ryū,” 317; Tsukitani, “The *Shakuhachi*,” 156; Alison McQueen Tokita, “Mode and Scale, Modulation and Tuning in Japanese Shamisen Music: The Case of Kiyomoto Narrative,” *Ethnomusicology* 40.1 [1996]: 5.

Koizumi identified four three-tone patterns of intervals in Japanese music. He termed these three-tone patterns “tetrachords” after tetrachords in Greek music theory since the patterns all span a perfect fourth.<sup>21</sup> However, since the patterns do not contain four tones, a second criterion for use of the term “tetrachord,” I will instead use the term “trichord” in this study. Koizumi’s four trichords are shown in Figure 10.9.

FIGURE 10.9 Four trichords identified by Koizumi Fumio



According to Koizumi, the *miyakobushi* scale made up of two disjunct *miyakobushi* trichords (D-E $\flat$ -G-A-B $\flat$ -D) “is the representative scale of the music of the *koto*, *shamisen*, *biwa*, and *shakuhachi*, all typical instruments of the Edo period (1603~1867) when Japan’s traditional culture divergently flourished.”<sup>22</sup> In Chapter 11, I show how the melodic content of *Sokaku Reibo* can be accounted for by three transpositions of the *miyakobushi* trichord (full octave scalar passages do not occur in the piece), with few exceptions. These three m2+M3 trichords on D, G, and A (outlined below in Figure 10.10), also account for the final tones of each of the 12 *dan*, as discussed in Section 10.3: D2-A2-A2-G2-G2-A2-A2-A2-A2-A2-C3-D1.

<sup>21</sup> Koizumi, “Musical Scales in Japanese Music,” 74.

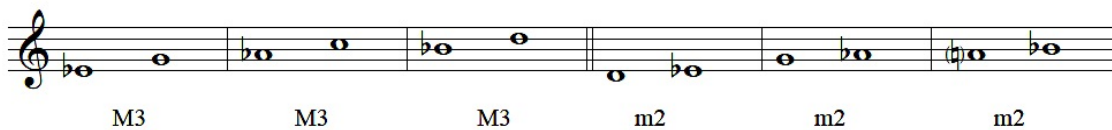
<sup>22</sup> *Ibid.*, 77.

FIGURE 10.10 *Miyakobushi* trichord on D, G, and A



In addition to trichord transpositions, transpositions of frequently occurring intervals in *Sokaku Reibo* warrant independent investigation. The m2, M3, and P4 intervals are consistent with the *miyakobushi* trichord ( $m2+M3=P4$ ); however, the m2 and M3 are often immediately reiterated multiple times without the framework of the P4. Frequent m2 and M3 transpositions found in *Sokaku Reibo* are given in Figure 10.11. Note that both trichords and recurring intervals are transposed up a P4 and P5, and the specific tones of the recurring intervals can be extracted directly from the trichord transpositions.

FIGURE 10.11 Frequent M3 and m2 transpositions found in *Sokaku Reibo*



In Chapter 11 and accompanying appendices (F-I), I label and discuss pitch cells—defined by repetition within breath phrases—in terms of transpositions of the *miyakobushi* trichord and recurring intervals. In further chapters, I relate these cells to extended performance techniques on the *shakuhachi*.

## Chapter 11: *Sokaku Reibo*, part 2

In Chapter 10 (*Sokaku Reibo*, part 1), I discussed tablature for *Sokaku Reibo*, the piece's 12-*dan* form, as well as trichords and recurring intervals. In this chapter, I focus on identifying pitch and rhythm cells in *Sokaku Reibo*. Full transcriptions of recordings by Aoki Reibo II and Yamaguchi Gorō appear in Appendix E; Appendix D includes transnotation of scores by Aoki and Kurahashi Yodo I. Additional appendices referred to in this chapter are:

Appendix F: *Sokaku Reibo*: Identification of cells and their variants [includes numerical labeling of all cells]

Appendix G: *Sokaku Reibo*: Summary of cells by *dan*

Appendix H: *Sokaku Reibo*: Pitch cell analysis

Appendix I: *Sokaku Reibo*: Prevalent pitch cell variants and rhythm cells

It is important to note that not all *dan* nor cells appear in all of the sources I consulted. However, I have consolidated information from all sources to facilitate an analysis of all 12 *dan* and their cells.

### 11.1 Pitch and rhythm cells

Elliott Weisgarber refers to “cells” in his 1968 analysis of three *Kinko-ryū honkyoku* (*Hi-fu-mi Hashi Kaeshi*, *Banshiki-no-Shirabe*, and *San-ya Sugaki*). He states, “over three hundred different patterns or ‘cells’ may be found” in *honkyoku*.<sup>1</sup>

According to Andreas Gutzwiller and Gerald Bennett, “highly structured smaller units—what we have called tone cells—clearly have great musical significance.”<sup>2</sup>

Tone cells:

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<sup>1</sup> Weisgarber, “The Honkyoku of the Kinko-Ryū,” 318-319.

<sup>2</sup> Andreas Gutzwiller and Gerald Bennett, “The World of a Single Sound: Basic Structure of the Music of the Japanese Flute Shakuhachi,” *Musica Asiatica* 6 (1991): 58.



generally last the length of a breath and are separated from one another by clear rests... Most of the tone cells have three parts. They consist of a first phase, the preparatory note, a second phase, the main note, and a third phase, the ending.<sup>3</sup>

Gutzwiller and Bennett do not quantify the “generally” and “most” of the above citation but they do qualify their comments as being characteristic of tone cells in the 18 meditation- and ritual-related *honkyoku* of the 36 *Kinko-ryū* pieces, as opposed to the pieces “less strictly associated with the monks’ religious practices,”<sup>4</sup> such as *Sokaku Reibo*. I have found that tone cells are also fundamental to understanding *Sokaku Reibo*; however, cells in this piece do not necessarily “last the length of a breath.” In fact, a short cell may be repeated several times within a single breath. Therefore, I distinguish between cells of recurring pitch material and breath phrases separated by rests.

In this chapter I show how cells in *Sokaku Reibo* are subject to expansion and contraction of melodic material and display common intervallic and rhythmic patterns. I refer to cells of intervallic patterns as “pitch cells” and cells of rhythmic patterns as “rhythm cells.” In the following chapters, I relate particular pitch and rhythm cells to performance practice of “extended” techniques.

## **11.2 Pitch cells and principal intervals in *Sokaku Reibo***

Trichordal theory can account for much but not all of what is heard in *Sokaku Reibo*; therefore, in this section I discuss pitch cells in terms of both trichord modulations and intervallic relationships. I begin with an analysis of pitch cells in the first two *dan* since together these *dan* present much of the intervallic and

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<sup>3</sup> Ibid., 38.

<sup>4</sup> Ibid.

trichordal material of the piece. They also offer examples of expanded and contracted pitch cells.

### 11.2.1 *Dan 1 and 2: Expansion and contraction of pitch cells*

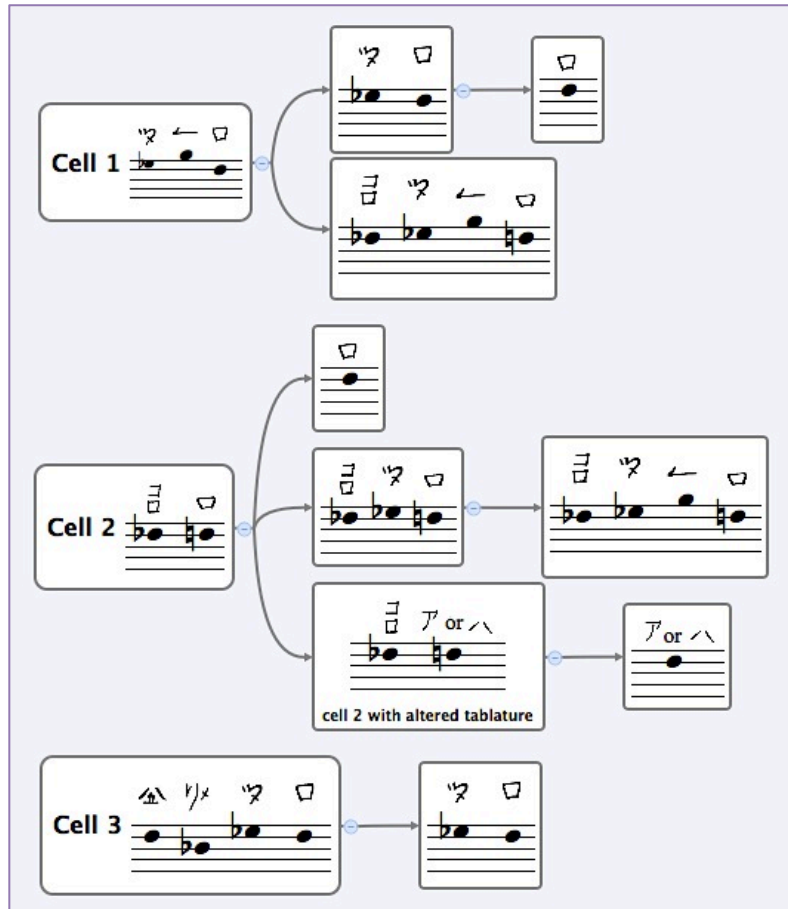
The opening E $\flat$ -G-D cell (#1<sup>5</sup>) of *Sokaku Reibo* is repeatedly contracted to E $\flat$ -D and D throughout the first *dan*. Cell #1 is also expanded in *dan 1* to D $\flat$ -E $\flat$ -G-D (where D $\flat$  corresponds to the *koro-koro* tremolo effect), similarly an expansion of cell #2: D $\flat$ -D. Cell #2 is also expanded to D $\flat$ -E $\flat$ -D and contracted to D. In the second *dan*, cell #1 is further expanded to E $\flat$ -D-E $\flat$ -G-A-E $\flat$ -D (cell #4) (and a *koro-koro* variation: cell #4sb), which is in turn reduced to G-A-E $\flat$  (cell #4.2), then to G-E $\flat$ , a retrograde of the E $\flat$ -G interval that had appeared prominently as the first two tones of the piece, and finally to G, just as E $\flat$ -G-D had been contracted to E $\flat$ -D and D in *dan 1*. In *dan 2*, contraction also occurs after the introduction of cell #5: C-A $\flat$  reduces to A $\flat$ ; and cell #6: B $\flat$ -A-G $^{+}$  reduces to A-G $^{+}$ ,<sup>6</sup> then further to A. Figures 11.1 and 11.2 show the contraction and expansion of pitch cells in the first two *dan*.

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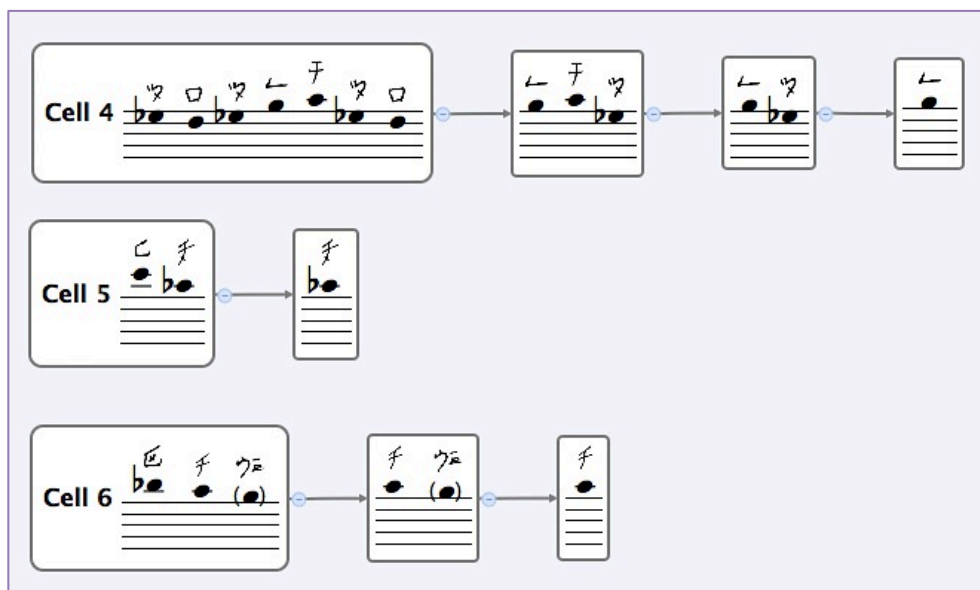
<sup>5</sup> See Appendices F and G for detailed numbering of cells.

<sup>6</sup> See Section 11.2.3 below for explanation of G $^{+}$  labeling.

**FIGURE 11.1** Contraction and expansion of *dan 1* pitch cells in *Sokaku Reibo*. Tablature is given above notes; arrows indicate contraction and expansion of cells.



**FIGURE 11.2** Contraction of *dan 2* pitch cells, *Sokaku Reibo*



### 11.2.2 Dan 1 and 2: Principal intervals and trichords

Three frequently recurring intervals in *Sokaku Reibo* are a minor second (m2), major third (M3), and perfect fourth (P4). The opening pitch cell of the piece sets up two of these intervals (M3, P4), and the first *dan* relies on all three. Together they form Koizumi's *miyakobushi* trichord (m2+M3=P4). Including the *koro-koro* multiphonic tremolo effect (shown on D $\flat$ ), one of two exceptional cases to be addressed later in Section 11.2.3, the pitch cells of the first *dan* are:

**FIGURE 11.3** Pitch cells in first *dan*, aligned vertically to match intervallic/pitch patterns. The left column labels main cells by number; the far right column shows corresponding m2-M3 (*miyakobushi*) trichord transpositions. (For numerical labeling of all cells, see Appendix F; for analysis of all 12 *dan* and explanation of symbols, see Appendix H.)

Dan 1 pitch cells				Versions	m2-M3 trichord
1		E $\flat$	G D	all	D-E $\flat$ -G
2		D $\flat$ *	D	all	D-[E $\flat$ -G] (NT: D $\flat$ *)
			D	all	D-[E $\flat$ -G]
		D $\flat$ *	E $\flat$ D	all	D-E $\flat$ -[G] (NT: D $\flat$ *)
		D $\flat$ *	E $\flat$ G D	all	D-E $\flat$ -G (NT: D $\flat$ *)
3	D B $\flat$	E $\flat$	D	all	[A]-B $\flat$ -D/ D-E $\flat$ -[G]
		E $\flat$	D	KY, AR, SS	D-E $\flat$ -[G]

Not taking into account the *koro-koro* effect, playable only on D $\flat$ ,<sup>7</sup> the *dan* 1 intervals shown in Figures 11.1 and 11.3 are: M3 (rising and falling), P4 (rising and falling), and m2 (falling). Again leaving aside the D $\flat$  for a moment, all of the remaining tones of the first *dan* are accounted for by the *miyakobushi* trichord on D (D-E $\flat$ -G), with the exception of B $\flat$ . The D-B $\flat$  of cell #3 could be explained as a brief

<sup>7</sup> The *koro-koro* right-hand fingering pattern is also used later in trills on B $\flat$  2 and D3; however, these are not true *koro-koro*.

transposition down a P4 to the trichord on A (A-B $\flat$ -D), as shown in Figure 11.3; however, A, the lowest tone, is not heard. The B $\flat$  is played directly after D, a M3 interval reiterated repeatedly in later *dan* as D-B $\flat$  as well as G-E $\flat$  and C-A $\flat$ . The occurrence of the B $\flat$  in *dan* 1 without the lowest tone of the A trichord thus immediately raises the question of whether it is appropriate to attempt to fit all of the pitch cells into trichords, or whether an intervallic approach would be more suitable. Adding to the problem is the D $\flat$  of the *koro-koro* tremolo—this tone fits into none of the *miyakobushi* trichord transpositions on D, G or A. As stated above, I deal with this exceptional case in Section 11.2.3.

Also prominent throughout *Sokaku Reibo* is the major second (M2), an interval not part of the *miyakobushi* trichord. It is first heard in *dan* 1 in the pitch cell D $\flat$ -E $\flat$ -D, and then again within a longer cell (#4) in *dan* 2 as G-A. Together these four melodic intervals (m2, M2, M3, P4), recurring on specific tones in their original and retrograde forms, make up most of the melodic material of the piece. An occasional octave or falling perfect fifth (P5) is heard but these occur between sub-phrases, separated by quick breaths or brief breaks in the sound (see Example 11.1a). The falling augmented fourth (A-E $\flat$ , descending) heard in the second *dan* is treated with a rising pitch bend at the end of the A, bringing the interval closer to a P5 (Example 11.1b).

**EXAMPLE 11.1 a.** Example of octave interval in *dan* 7, transnotation of Aoki score. On his recording, Aoki separates octave jumps with short breaths.

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b. Transnotation of cell #4 containing A4 (A-E $\flat$ ) and M2 (G-A) intervals in *dan 2*, found in both Aoki and Kurahashi scores. A rising pitch bend (indicated in square brackets) is added to the end of the A in performances by Aoki and Yamaguchi.



However, if performance practice of moveable pitch is not taken into account, how can the augmented fourth (A4) be accounted for? Similarly, how can the M2 G-A within a pitch cell be explained in theoretical terms? If the *miyakobushi* trichord on D (D-E $\flat$ -G) is transposed up a P5 to A (A-B $\flat$ -D), the A of cell #4 (E $\flat$ -D-E $\flat$ -G-A-E $\flat$ -D) can be understood as the lowest tone of the upper of two disjunct m2-M3 trichords: D-E $\flat$ -G-A-B $\flat$ -D. The M2 (G-A) is then simply the interval between the upper note of the first trichord and the lower note of the second trichord, and the A4 (A-E $\flat$ ) results from movement from the trichord on A back to the trichord on D.

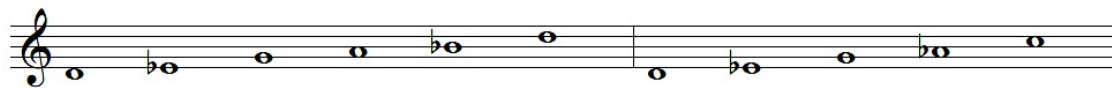
FIGURE 11.4 Pitch cell analysis, *dan 2* (notes repeated immediately are not included)

Dan 2 pitch cells		Versions	m2-M3 trichord
4	E $\flat$ D E $\flat$ G A E $\flat$ D	all	D-E $\flat$ -G/ A-[B $\flat$ ]-D
	Db* D E $\flat$ G A E $\flat$ D	KY, AR, SS	D-E $\flat$ -G/ A-[B $\flat$ ]-D (NT: Db*)
4.2	G A E $\flat$	all	[D]-E $\flat$ -G/ A-[B $\flat$ -D]
	G E $\flat$	all	[D]-E $\flat$ -G
	G	all	[D-E $\flat$ ]-G
5	C Ab	all	[G]-Ab-C
	Ab	all	[G]-Ab- [C]
6	B $\flat$ A G+*	AR, YG, SS	A-B $\flat$ -[D] (NT: G+*)
	A G+*	AR, YG, SS	A-[B $\flat$ -D] (NT: G+*)
	A	AR, YG, SS	A-[B $\flat$ -D]

Cell #4 ( $E^b$ -D- $E^b$ -G-A- $E^b$ -D) is contracted in *dan 2* to G-A- $E^b$  then to G- $E^b$  and finally to G (see Figure 11.4, above). The A could therefore also be treated as an intermediate non-trichord tone, embellishing the G- $E^b$  M3, an interval soon after transposed up a P4 to C- $A^b$  (cell #5) within the same *dan*. The C- $A^b$  interval forms part of the *miyakobushi* trichord on G (G - $A^b$ -C), the tone to which the G- $E^b$  M3 is contracted immediately preceding the C- $A^b$  cell. C- $A^b$  is finally reduced to  $A^b$  before the introduction of cell #6. The trichord on A (A-B $^b$ -D) recurs at the end of *dan 2* in cell #6: B $^b$ -A-G+, a cell containing the second exceptional case, G+. Along with D $^b$ , I discuss this tone below in Section 11.2.3.

At this point, all three trichord transpositions (on D, G, and A) have been introduced in *Sokaku Reibo*. The tones of some cells can be accounted for by a single trichord (e.g., cells #1 [D- $E^b$ -G] and #5 [G - $A^b$ -C]), whereas the tones of other cells come from two transpositions of the trichord (e.g., cells #3 and 4). Cells #3 and 4 both use trichords on D and A; stacked disjunctly, they form an octave scale: D- $E^b$ -G-A-B $^b$ -D. In the first two *dan*, the trichord on G appears only on its own, within cell #5; however, it directly follows the trichord on D. These two trichords can be stacked conjunctly: D- $E^b$ -G- $A^b$ -C. Thus, from the original *miyakobushi* trichord on D, transpositions up a P4 and P5 result in trichords on G and A, which when added to the trichord on D create disjunct and conjunct *miyakobushi* scales on D (see Figure 11.5). Full-octave scalar passages do not occur in *Sokaku Reibo*; however, these scales made up of trichords can account for the pitch content of all cells within the piece, with the exceptions of D $^b$  and G+.

FIGURE 11.5 *Miyakobushi* scale on D, disjunct (L) and conjunct (R) forms



### 11.2.3 Exceptional tones: $D^b$ and $G^+$

$D^b$  first appears in cell #2 of *dan* 1:  $D^b$ -D. The  $D^b$  notation is an approximation of the fundamental that results from the special *koro-koro* multiphonic tremolo effect. I have chosen to name it  $D^b$  instead of  $C^\sharp$ , since the “ro” of *koro-koro* corresponds to D on a 1.8-foot *shakuhachi*. *Koro-koro* imitates the flapping of the cranes’ wings in the programme of *Sokaku Reibo* and is played using a set fingering pattern: tone holes 1 and 2 of the lower joint are alternately opened and closed, hole 3 is closed, holes 4 and 5 are vented, and the instrument is played with a *meri* (lowered) head position. The same effect is not achieved with other tremolo fingerings.

$D^b$  does not fit into any of the three trichord transpositions on D, G, or A. Since *koro-koro* is playable only on  $D^b$ , this non-trichord tone could be disregarded with respect to trichords and intervals; however, this tremolo effect is integral to certain pitch cells—it is frequently sustained and is consistently followed by  $D^\natural$ , either directly ( $D^b$ -D) or indirectly (e.g.,  $D^b$ - $E^b$ -D and  $D^b$ - $E^b$ -G-D). It thus serves as a lower neighbour to  $D^\natural$ , an augmented prime relationship that mirrors the m2 interval  $E^b$ -D and its transpositions.

Also unaccounted for by m2-M3 trichord transpositions is the tone I have labeled  $G^+$  (i.e.,  $G/A^b$ ) in my analyses; it is notated *ichi san no u* in the Aoki score



and *u dai meri* by Kurahashi. According to the Nyokai-an fingering chart, *ichi san no u* sounds a G2 on the 1.8-foot *shakuhachi*,<sup>8</sup> whereas according to Linder<sup>9</sup> it sounds an A $\flat$ 2. Tokuyama Takashi's chart<sup>10</sup> includes a fingering for *u meri*, presumably *u dai meri*, sounding G2. This tablature is not included in other fingering charts I consulted. I have transnotated this tone as G, based on the Nyokai-an and Tokuyama charts, but in parentheses to distinguish it from the *chi-meri* (チメ) A $\flat$  and the basic G fingering (*re* レ); however, in the Aoki and Yamaguchi recordings, *ichi san no u/u dai meri* is played closer to A $\flat$  than G, frequently between 25 and 50 cents low, especially in later *dan*. I have thus notated these as A $\flat$  instead in my recording transcriptions, since fingerings can be assumed but not verified.

In *Sokaku Reibo*, G+ first appears in the second *dan* in cell #6 (B $\flat$ -A-G+, or B $\flat$ -A-A-G+-G+ including repeated tones) and recurs in later *dan*, always after A, and with only one exception in *dan* 12, followed by A.<sup>11</sup> If the tone is treated as a G, then the resulting B $\flat$ -A-G (m2-M2) cell will not fit into a single *miyakobushi* trichord; likewise if G+ is treated as A $\flat$  (B $\flat$ -A-A $\flat$ : m2-m2). A M2 (A-G) could be explained here as the interval that connects two disjunct trichords (D-E $\flat$ -G-A-B $\flat$ -D), but A-G+ is not a true M2. This G+ (G/A $\flat$ ) *ichi san no u/u dai meri* fingering, frequently performed as A $\flat$ 2 -25-50 cents, is sandwiched between two A2 (チ *chi*), thus creating an interval between a M2 and m2. Aoki and Yamaguchi both tend to play the チ *chi* (A) on either side of the *ichi san no u* about 25-35 cents high (especially in

<sup>8</sup> <http://nyokai.com/students/fingerchart.pdf>

<sup>9</sup> Linder, *Notes*, 217.

<sup>10</sup> Tokuyama Takashi, *A Guide to Playing Classical Shakuhachi Honkyoku* (n.d.), 7.

<sup>11</sup> In *dan* 12, E $\flat$  substitutes for the A following G+. The A-G+-G+-E $\flat$  cell leads into a repeated rhythm cell on E $\flat$ , which in turn leads to the recurrence of the G-E $\flat$  M3 interval. The substitution of E $\flat$  is therefore not an error.

the second half of the piece), or with a rising pitch slide at the end of the first A, resulting in a melodic interval approaching, but not quite, a M2 (approximately 150-185 cents). Since G+ is not the G of the G-A $\flat$ -C trichord, it can thus be considered a lower neighbour to A, the lowest note of the A-B $\flat$ -D trichord.

#### 11.2.4 *Dan 3 to 11: Recurring pitch cells and trichords*

As stated above, much of the melodic material of *Sokaku Reibo* has been presented by the end of the second *dan*. Intervallic relationships and trichords recur throughout the remainder of the piece.

The third *dan* is relatively simple with regard to pitch cells, with the same pitch content as the end of *dan 2* making up the entire *dan*: B $\flat$ 2, A2, and G+2. The single tone cell (#7) of *dan 3* differs slightly from that in *dan 2* (cell #6) with regard to repeated tones, but the G+ again acts as a lower neighbour to A. (*Dan 3* is omitted in the Kurahashi score, but is played by Yamaguchi, whose performance corresponds to the Aoki score in this instance.)

**EXAMPLE 11.2** Cell #7, beginning of *dan 3*, Aoki score transnotation. On the Aoki and Yamaguchi recordings, A2 is played approximately 10-35 cents high and G2 is played closer to A $\flat$ .



FIGURE 11.6 Pitch cell analysis, *dan 3* (notes repeated immediately are not included)

Dan 3 pitch cells					Versions	m2-M3 trichord	
7	Bb	A	G+*	A	Bb	AR, YG, SS	A-Bb-[D] (NT: G+*)
7.1.1	Bb	A	G+*	A		AR, YG, SS	
	Bb	A	G+*			AR, YG, SS	
		A	G+*			AR, YG, SS	A-[Bb-D] (NT: G+*)
		A				AR, YG, SS	A-[Bb-D]

The third *dan* comprises only minor and microtonal second intervals, but in the fourth *dan*, M3 and P4 return. The M3 in particular is emphasized with the initial E $\flat$ -G pattern and its retrograde. The M3 is also heard in *dan 4* in a C-A $\flat$ -G pattern, a transposition up a P4 of the descending trichord hinted at in *dan 2*. The cell continues with the G-A-E $\flat$  pattern (cell #4.2) from *dan 2*: C-A $\flat$ -G-A $\natural$ -E $\flat$ -G (cell #8.1), thus presenting the first cell that uses tones from all three transpositions of the trichord (if the A is understood as the lowest note of its trichord, and not as an embellishment of the E $\flat$ -G M3). Example 11.3a shows how the M3 is emphasized in the following breath through repetition of the G-E $\flat$  contracted cell. This melodic cell (#8.1: C-A $\flat$ -G-A $\natural$ -E $\flat$ -G) is reiterated near the beginning of the fifth *dan*, then again gradually reduced to G-E $\flat$ . (The Kurahashi score differs, emphasizing instead E $\flat$ -D [m2] in the second half of *dan 5*, anticipating the arrival of *dan 6*.)

EXAMPLE 11.3 a. C-A $\flat$ -G descending trichord in *dan 4*, followed by emphasis on G-E $\flat$  interval, then G alone, transnotation of Aoki score.

b. Cell #8.1, second breath phrase of *dan 5*, transnotation of Kurahashi score.



FIGURE 11.7 Pitch cell analysis, *dan 4* (notes repeated immediately are not included)

<i>Dan 4</i> pitch cells		Versions	m2-M3 trichord
8	Bb A G+* A D G A Eb G	AR, YG, SS	A-Bb-D/ D-Eb-G (NT: G+*)
	C Ab G A Eb G	AR, SS	G-Ab-C/ [D]-Eb-G/ A-[Bb-D]
	C Ab G A Eb	AR, YG, SS	[D]-Eb-G/ A-[Bb-D]
4.2	G A Eb	AR, YG, SS	[D]-Eb-G/ A-[Bb-D]
	G Eb	AR, YG, SS	[D]-Eb-G
	G	AR, YG, SS	[D-Eb]-G

Two tones that do not fit the trichord on D are heard or notated at the beginning of *dan 5*: C and F. The C (*ha* ハ) of cell #9 is played quickly before the main tone of the cell, D. Because of the manner in which it is notated and played in the sources I consulted, I consider this tone preparatory to the D, rather than a hint at the trichord on G. The C is treated similarly in later *dan*. The F (*tsu* ツ) occurs only once in the piece, in cell #10 (F-G), and only in the Aoki score and recording, and the Sato score. Kurahashi instead notates Eb (*tsu-meri* ツメ) and Yamaguchi does not perform *dan 5*. Notably, Kurahashi notates cells #9 and 10 in one breath; the resulting C-D-Eb-G thus outlines the trichord on D, with a preparatory C. In contrast, Aoki sustains the F in performance then lowers it approximately a semitone before sliding back up to F. Sato also notates a lowering then raising of the F before the G.

Because of the lowering of the pitch, it is conceivable that the performer considers this moveable tone (F, *tsu* ツ) to be in the same pitch area as E $\flat$  (*tsu-meri* ツメ). According to Gutzwiller, “moving notes,” as opposed to “main notes,” “serve to introduce the main note of a phrase,” in this case, the G, and “[do] not have a fixed pitch.”<sup>12</sup> The G in the Aoki recording is comparatively stable.

FIGURE 11.8 Pitch cell analysis, *dan* 5 (notes repeated immediately are not included)

<i>Dan</i> 5 pitch cells		Versions	m2-M3 trichord
9	C D	KY, AR, SS	D-[Eb-G] (NT:C)
10	E $\flat$ /F G	KY, AR, SS	[D]-Eb-G (NT:F)
	C Ab G A Eb G	KY, AR, SS	G-Ab-C/ [D]-Eb-G/ A-[B $\flat$ -D]
	C Ab G A Eb	AR, SS	
	C Ab	KY	[G]-Ab-C
4.2	G A Eb	AR, SS	[D]-Eb-G/ A-[B $\flat$ -D]
	G Eb	AR, SS	[D]-Eb-G
	G	AR, SS	[D-Eb]-G
	C D Eb	KY	D-Eb-[G] (NT:C)
	E $\flat$ D	KY	D-Eb-[G]
	D	KY	D-[Eb-G]

In *dan* 6, the highest register is exploited in octave transpositions of the E $\flat$ -D (m2) and D-B $\flat$  (M3) intervals from the first *dan*. The *dan* begins with a relatively long cell with regard to successive tones (#11): [C3]-D3-E $\flat$ 3-D3-B $\flat$ 2-D3-[C]-A2-(G+2-A2), which is gradually reduced to a terminal rhythmic pattern on A2 (see discussion of rhythm cells below, Section 11.3). Before this rhythm cell, however, a descending M3 is emphasized: D3-B $\flat$ 2. This is an octave transposition of the first

<sup>12</sup> Gutzwiller, “Shakuhachi,” 103.

half of the D2-B $\flat$ 1-E $\flat$ 2-D2 cell (#3) from *dan 1*, but also a reminder of the C-A $\flat$  and G-E $\flat$  descending M3 of *dan 4* and 5. The opening pitch cell (#11) with added ending (G+-A) fits into the disjunct *miyakobushi* scale (D-E $\flat$ -G-A-B $\flat$ -D), with a couple of non-trichord tones. The first C3 (*hi* 匕) of the cell is a preparatory tone to D3, performed by Aoki and Yamaguchi as a C-D trill before the D, and the second C3 is a brief passing tone; G+ is a lower neighbour to A.

FIGURE 11.9 Pitch cell analysis, *dan 6* (notes repeated immediately are not included)

Dan 6 pitch cells									Versions	m2-M3 trichord		
11	C	D	E $\flat$	D	B $\flat$	D	C	A	all	D-E $\flat$ -[G]/ A-B $\flat$ -D (NT:C)		
	C	D	E $\flat$	D	B $\flat$	D	C	A	G+*	A	all	D-E $\flat$ -[G]/ A-B $\flat$ -D (NT:C, G+*)
				D	B $\flat$			A	G+*	A	AR, YG, SS	A-B $\flat$ -D (NT:G+*)
3.2				D	B $\flat$						all	[A]-B $\flat$ -D
					B $\flat$						all	[A]-B $\flat$ -[D]
								A	G+*	A	all	A-B $\flat$ -[D]
								A	G+*		all	(NT:G+*)
								A			all	A-[B $\flat$ -D]

Other than a rare minor third interval (A-C, cell #12) at the outset, *dan 7* presents no new material. Since *dan 6* ends on A and the A-C cell is followed by a reiteration of cell #5 (C-A $\flat$ ), the A-C cell could be understood as transitional: from the A-B $\flat$ -D trichord to the G-A $\flat$ -C trichord.

FIGURE 11.10 Pitch cell analysis, *dan 7* (notes repeated immediately are not included)

Dan 7 pitch cells				Versions	m2-M3 trichord
12		A	C	AR, SS	[G-Ab]-C/ A-[B $\flat$ -D]
5		C	Ab	AR, SS	[G]-Ab-C

	C D Eb D Bb D C A G+* A Bb	AR, SS	D-Eb-[G]/ A-Bb-D (NT:C, G+*)
	Bb	AR, SS	[A]-Bb-[D] (NT:G+)
	A G+* A	AR, SS	A-[Bb-D] (NT:G+*)
	A G+*	AR, SS	
	A	AR, SS	A-[Bb-D]
3.2	D Bb	AR	[A]-Bb-D

Although the M3 continues to be prominent in *dan 8*, especially in the Sato score (*dan 8* is omitted in the Aoki and Kurahashi scores and the Aoki recording), the m2 Eb-D is also emphasized. All three trichord transpositions continue to be heard.

FIGURE 11.11 Pitch cell analysis, *dan 8*

Dan 8 pitch cells		Versions	m2-M3 trichord
	C D Eb	YG, SS	D-Eb-[G] (NT:C)
	Eb	YG, SS	[D]-Eb-[G]
	Eb D	YG, SS	D-Eb-[G]
	D	YG, SS	D-[Eb-G]
	C D Eb D Bb D C A G+* A Bb	YG, SS	D-Eb-[G]/ A-Bb-D (NT:G+*, C)
9	C D	YG	D-[Eb-G] (NT:C)
	Bb C Ab	YG	[G]-Ab-C/ [A]-Bb-[D]
	Ab	YG	[G]-Ab-[C]
	Bb	SS	[A]-Bb-[D]
3.2	D Bb	SS	[A]-Bb-D
	A G+* A	SS	A-[Bb-D] (NT:G+*)
	A G+*	SS	
	A	SS	A-[Bb-D]

*Dan 9* continues along the same lines, with much of the same pitch cell material; however, it does introduce a new M2 cell (#13): C-C-Bb. Unlike in previous cases (C-D), the C here is not treated as a preparatory tone—it is sustained and

repeated in the Aoki score and recording, and in the Sato score (*dan* 9 is omitted in other sources), and in fact, in the Aoki recording, it is preceded by finger articulation on D3 (see Example 11.4b). The descending M2 C-B $\flat$  cell is followed by an ascending M2 C-D, where the C is preparatory, and then by a M3 [B $\flat$ ]-C-A $\flat$  (Example 11.4a). If these cells are combined to create a conglomerate cell, C-B $\flat$ -[C]-D-[B $\flat$ ]-C-A $\flat$ , the initial C could be heard as belonging to the trichord on G, along with the end of the expanded cell; the B $\flat$ -[C]-D, with the C disregarded, would form part of the trichord on A. However, since these two trichords cannot be combined to create a rational scale (as either of them could in concert with the trichord on D), and breaths do interrupt this conglomerate cell, a simpler approach is to consider the initial repeated C a foreshadowing of the C-A $\flat$  M3, or simply an oddity with regard to trichords (the C is likewise not related to the end of the preceding *dan* 8).

EXAMPLE 11.4 a. Beginning of *dan* 9, transnotation of Aoki score

b. First cell of *dan* 9, played three times, Aoki recording



FIGURE 11.12 Pitch cell analysis, *dan 9* (notes repeated immediately are not included)

<b>Dan 9 pitch cells</b>		<b>Versions</b>	<b>m2-M3 trichord</b>
13	C Bb	AR, SS	[G-Ab]-C/ [A]-Bb-[D]
	Bb	SS	[A]-Bb-[D]
9	C D	AR, SS	[A-Bb]-D (NT:C)
5	C Ab	AR, SS	[G]-Ab-C
	Ab	AR, SS	[G]-Ab-[C]
	C D Eb D Bb D C A G+* A Bb	AR, SS	D-Eb-[G]/ A-Bb-D (NT:C, G+*)
	Bb	SS	[A]-Bb-[D]
3.2	D Bb	SS	[A]-Bb-D
7.1	Bb A G+* A	SS	A-Bb-[D] (NT:G+*)
	A G+* A	SS	A-[Bb-D] (NT:G+*)
	A G+*	SS	(NT:G+*)
	A	SS	A-[Bb-D]

*Dan 10* is one of the five *dan* performed or notated in all of the sources I consulted (*dan 1, 2, 6, 10, and 12*). However, in contrast to the three common *dan* (1, 2, 6) that precede it, *dan 10* does not present any new pitch cells. Instead it reiterates m2 and M3 intervals and lower neighbour tones, and introduces trill figures to cells #3.2 (D-B $\flat$ ), 7.1.1 (B $\flat$ -A-G+-G+-A), and 9db (D), on D3 and B $\flat$ 2. These trills are played using a partial *koro-koro* technique in the lower hand. In the Kurahashi, Aoki, and Sato scores, the *katakana* characters for *koro-koro* (コロコロ) are indicated next to the tablature fingering column when the trill is called for. In contrast, for a full *koro-koro* tremolo effect, the characters are included as part of the main column of tablature.

FIGURE 11.13

a. *Koro-koro* technique, followed by *ro* in tablature (Kurahashi score)



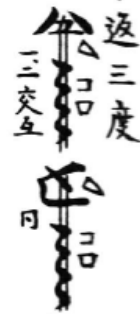
b. *Koro-koro* trill fingering indication to the right of tablature (Kurahashi score)



c. *Koro-koro* technique, followed by *tsu-meri*, *re*, *ro* in tablature (Sato score)



d. *Koro-koro* trill fingering indication to the right of tablature (Sato score)



e. *Koro-koro* technique, followed by *ro* in tablature (Aoki score)



f. *Koro-koro* trill fingering indication to the right of tablature (Aoki score)



In the Kurahashi score, *dan* 10 is extended relative to the Sato notation and Yamaguchi performance (*dan* 10 in the Aoki score and recording is contracted). In addition to emphasizing the M3 interval on D-B $\flat$  and the lower neighbour in the B $\flat$ -A-G+-G+-A cell (#7.1.1), Kurahashi's "extension" reiterates the M3 transposition on E $\flat$ -G and its retrograde, closing the *dan* on G instead of A before moving to the middle of *dan* 12. This extension could be understood as transitional material since in the Yamaguchi and Sato sources the G-E $\flat$  cell is reiterated at the beginning of *dan* 12, directly before the Kurahashi score joins the *dan*. The only missing element in the Kurahashi score is a movement from E $\flat$  to D.

FIGURE 11.14 Pitch cell analysis, *dan 10* (notes repeated immediately are not included)

<i>Dan 10</i> pitch cells		Versions	m2-M3 trichord
7.1.1	Bb A G+* A	KY, YG, SS	A-Bb-[D] (NT:G+*)
	Bb A G+* A Bb	SS	
3.2	D Bb	all	[A]-Bb-D
	Bb D	YG	
	D A G+* A	KY	A-[Bb]-D (NT:G+*)
	C	AR, YG, SS	[G-Ab]-C
	D	AR, YG, SS	[A-Bb]-D
	Bb A G+* A G+*	SS	A-Bb-[D] (NT:G+*)
	A G+*	SS	A-[Bb-D] (NT:G+*)
	A	SS	A-[Bb-D]
	Bb A G+* A D G A	KY	A-Bb-D/ D-[Eb]-G (NT:G+*)
	Eb G	KY	[D]-Eb-G
	C Ab G A Eb G	KY	G-Ab-C/ [D]-Eb-G/ A-[Bb-D]
	G A Eb	KY	[D]-Eb-G (NT:A)
	G Eb	KY	[D]-Eb-G
	G	KY	[D-Eb]-G

*Dan 11* is omitted in the Aoki and Kurahashi sources and relatively brief in Yamaguchi's performance, whereas Sato notates a *dan* closer in length to preceding *dan*. Two new cells are presented in this *dan* but they are composites of earlier cells. Cell #14 (only in Sato) begins with the C-A $\flat$  M3 of cell #5 (*dan 2*) and continues with C-D-E $\flat$  of cell #9ae (first cell of *dan 8*): C-A $\flat$ -C-D-E $\flat$ , together making use of all but the middle tone of the conjunct *miyakobushi* scale (D-E $\flat$ -G-A $\flat$ -C). This cell is not played again. Cell #15 also includes the C-D of cell #9, added to the beginning of recurring cell #7.1.1: B $\flat$ -A-G+-G+-A. With an added ending as well, together they

form: C-D-B $\flat$ -A-G $+$ -G $+$ -A-B $\flat$ -A. Yamaguchi performs the initial C as a trill to D, as in cell #11, *dan* 6, so if the C is labeled as preparatory and the G $+$  as a lower neighbour to A, the remaining notes all fit into the trichord on A. Analysis of these two cells (#14 and 15) shows that the introduction of new melodic material this late in the piece can in fact be traced to earlier *dan*.

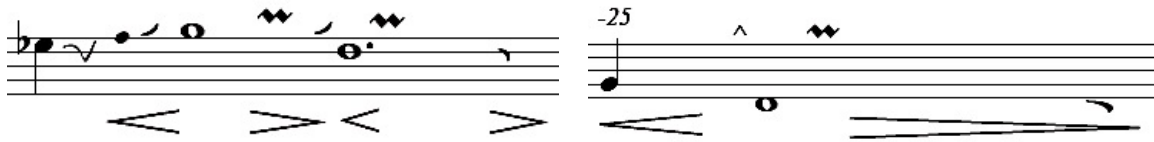
FIGURE 11.15 Pitch cell analysis, *dan* 11 (notes repeated immediately are not included)

Dan 11 pitch cells					Versions	m2-M3 trichord					
				E $\flat$	SS	[D]-E $\flat$ -[G]					
			D		SS	D-[E $\flat$ -G]					
14	C	A $\flat$	C	D	E $\flat$	[G]-A $\flat$ -C/ D-E $\flat$ -[G]					
15		C	D	B $\flat$	A	G $+$ *	A	B $\flat$	A	YG, SS	A-B $\flat$ -D (NT:C, G $+$ *
				B $\flat$	A	G $+$ *	A	B $\flat$	A	YG, SS	A-B $\flat$ -[D] (NT:G $+$ *
			D		A	G $+$ *	A	B $\flat$	A	YG, SS	A-B $\flat$ -D (NT:G $+$ *
				B $\flat$	A	G $+$ *	A	B $\flat$		YG, SS	A-B $\flat$ -[D] (NT:G $+$ *
7.1.1				B $\flat$	A	G $+$ *	A			YG, SS	(NT:G $+$ *
3.2			D	B $\flat$						SS	[A]-B $\flat$ -D
			C							SS	[G-A $\flat$ ]-C

### 11.2.5 Dan 12: Return of *dan* 1 cells

In *dan* 12, cells #1, 2, and 3 from *dan* 1 return beginning with cell #2 (D $\flat$ -D) and the programmatic *koro-koro* tremolo effect. This cell is expanded as it was in *dan* 1, to D $\flat$ -E $\flat$ -D and D $\flat$ -E $\flat$ -G-D, and is followed by cell #3 (D-B $\flat$ -E $\flat$ -D). After a brief return to cell #2, a single iteration of cell #1 (E $\flat$ -G-D) ends the piece, although an octave lower and without its initial E $\flat$ : G1-D1 (P4).

EXAMPLE 11.5 First (L) and last breath phrases of *Sokaku Reibo*, transcription of Yamaguchi recording.



Despite the abbreviated and non-repeated first cell, *dan 12* could be understood as including a “recapitulation” of the expository material of *dan 1*, since the treatment of cells #2 and 3 is basically the same. Notably though, *dan 12* does not only repeat material from *dan 1*. Before the recurrence of cell #2, the *dan* moves through variants of cells #4, 9, 11, and 15, again emphasizing M3 transpositions (D-B $\flat$ , G-E $\flat$ ), and upper and lower neighbour tones (E $\flat$ -D; A-G+-G+-A). The C-D M2 interval is also heard and notated, but the C is a preparatory tone in these instances; the M2 is thus not emphasized here. In addition to the principal intervals of the piece (m2, M3, P4), *dan 12* also reiterates a rhythm cell heard throughout, discussed below in Section 11.3. The final *dan* thus restates many of the pitch and rhythm cells of the piece, as well as the *miyakobushi* trichord on D and its transposition up a P5 to A, which together form the disjunct *miyakobushi* scale.

FIGURE 11.16 Pitch cell analysis, *dan 12* (notes repeated immediately are not included)


Dan 12 pitch cells		Versions	m2-M3 trichord
C	D Eb	AR, SS	D-Eb-[G] (NT:C)
	Eb	AR, YG, SS	[D]-Eb-[G]
	D	all	D-[Eb-G]
C	D B $\flat$ A G+* A	AR, YG, SS	A-B $\flat$ -D (NT:C, G+*)
	D B $\flat$ D C A G+* A	AR, YG, SS	

	D Bb D C A G+* Eb	AR, YG, SS	A-Bb-D/ D-Eb-[G] (NT:G+*, C)
	A G+* Eb	AR, YG, SS	A-[Bb-D]/ [D]-Eb-[G] (NT:G+*)
	G Eb	YG, SS	[D]-Eb-G
	G	YG, SS	[D-Eb]-G
	C D Eb D	KY, YG, SS	D-Eb-[G] (NT:C)
	C D Eb G Eb D	all	D-Eb-G (NT:C)
2	Db* D	all	D-[Eb-G] (NT:Db*)
	Db* Eb D	all	D-Eb-[G] (NT:Db*)
	Db* Eb G D	all	D-Eb-G (NT:Db*)
3	D Bb Eb D	all	[A]-Bb-D/ D-Eb-[G]
	D Bb	all	[A]-Bb-D
(1)	G D	all	D-[Eb]-G

### 11.3 Rhythm and metre

The *omote-ma* and *ura-ma* right- and left-side beats in *honkyoku* notation create the appearance of fixed rhythm in the pieces. Notation and performance practice differ, however. As Tsukitani points out:

Generally speaking, most classical *honkyoku* of *syakuhati* are composed in free rhythm. In the case of *Turu no sugomori*, however, only the pieces from the Tōhoku district are played exclusively in free rhythm; others insert melodies here and there in more or less fixed rhythm.<sup>13</sup>

Rhythmic patterns, or rhythm cells, are repeated throughout the *Kinko-ryū Sokaku Reibo*. The most prominent cell is  and its retrograde (labeled 3RC, i.e., sse or ess, in Appendix F). Because right- and left-side beats do not correspond to “strong” and “weak” beats in the Western sense, the 3RC cell is essentially the same in its ess and

<sup>13</sup> Tsukitani, “Sakai Syōdō,” 20.

se forms. Beaming of notes in the transnotations corresponds to groupings in the Aoki and Kurahashi scores, but not necessarily to how the tones are grouped in performance. Other repeated figures include  $\text{♩} \text{♩}$  (2RC),  $\text{♩} \text{♩} \text{♩}$ , and  $\text{♩} \text{♩} \text{♩} \text{♩}$ . These figures can be considered part of the “fixed rhythm” sections of the piece. The  $\text{♩} \text{♩} \text{♩}$  3RC cell (sse or ess) in particular appears at the end of multiple *dan*, but is also used at the end of longer pitch cells, in turn leading to its repetition on a single tone or interval.

EXAMPLE 11.6 3RC example from *dan 5*, transnotation of Aoki score.

The image shows two staves of musical notation. The top staff contains a sequence of notes with three blue boxes highlighting groups of three notes. Above the first box is the label 'ru'. Below the second and third boxes are accents (^). Below the third box is a fermata symbol and the letter 'R'. The bottom staff starts with the label 'nayashi' above a note, followed by a comma. A blue box highlights a group of ten notes, with 'ru' labels above every second note and accents (^) above every note. Below the first note of this group is the letter 'L'.

### 11.3.1 Terminal three-note rhythm cell

Following a 3RC emphasis on the M3 interval (G-E $\flat$ -E $\flat$ ) in *dan 2* is another 3RC on G2 (G-G-G). This rhythm cell is established near the end of the first *dan* (E $\flat$ -E $\flat$ -D) and heard throughout the second.

EXAMPLE 11.7 a. 3RC on G2 as notated in Aoki score, *dan 2*.

A musical notation showing three eighth notes on a single pitch (G2) beamed together on a five-line staff.

b. 3RC on G2 as notated in Kurahashi score, *dan 2*.

A musical notation showing three eighth notes on a single pitch (G2) beamed together on a five-line staff, with a fermata symbol above the final note.

The 3RC rhythm is heard throughout the piece on m2, M2 and M3 intervals, as well as on a single tone separated by finger articulation (Examples 11.8a-f).

**EXAMPLE 11.8**

a. 3RC rhythm cell in *dan 1*, Kurahashi transnotation; first appearance in piece



b. 3RC rhythm cell in *dan 2*, Kurahashi & Aoki transnotations



c. Repetition of 3RC rhythm cell in *dan 2*, Kurahashi & Aoki transnotations



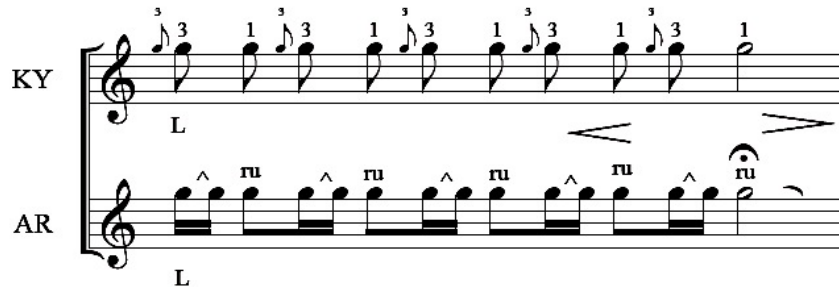
d. Repetition of 3RC rhythm cell in *dan 2*, Aoki transnotation (interval is approximately M2)



e. 3RC rhythm cell at end of pitch cell #8.1 in *dan 10*, Kurahashi transnotation



f. Repetition of 3RC rhythm cell on G2 in *dan 2*; transnotation of Kurahashi and Aoki scores



In the second *dan*, it is played repeatedly on G2 (レ *re*), then transposed up a m2 to A $\flat$ 2 (チ  $\times$  *chi-meri*) following a C-A $\flat$  M3 interval. At the end of *dan 2* (but omitted in the Kurahashi score), the rhythm is transposed up a semitone again, to A2 (チ *chi*), leading into the third *dan*, which begins on B $\flat$ 2 (*san no u*). In this case, the A $\flat$  (*chi-meri*) could thus be understood as a chromatic transposition of a rhythm cell: G-A $\flat$ -A-B $\flat$  from cell #4 through #7 (see Figure 11.17). Alternatively, in terms of trichords,



these repeated tones could result from a transposition in *dan 2* from D-E<sup>b</sup>-G, through G-A<sup>b</sup>-C, to A-B<sup>b</sup>-D (see Figure 11.17).

**FIGURE 11.17** Pitch cell analysis, *dan 2* and 3 (notes repeated immediately are not included). Highlighted notes show chromatic progression of rhythm cell and correspondence to trichord transpositions.

Dan 2 pitch cells		m2-M3 trichord
4	E <sup>b</sup> D E <sup>b</sup> G A E <sup>b</sup> D	D-E <sup>b</sup> -G/ A-[B <sup>b</sup> ]-D
	Db* D E <sup>b</sup> G A E <sup>b</sup> D	D-E <sup>b</sup> -G/ A-[B <sup>b</sup> ]-D (NT: Db*)
4.2	G A E <sup>b</sup>	[D]-E <sup>b</sup> -G/ A-[B <sup>b</sup> -D]
	G E <sup>b</sup>	[D]-E <sup>b</sup> -G
	G	[D-E <sup>b</sup> ]-G
5	C Ab	[G]-Ab-C
	Ab	[G]-Ab-[C]
6	B <sup>b</sup> A G <sup>+</sup> *	A-B <sup>b</sup> -[D] (NT: G <sup>+</sup> *)
	A G <sup>+</sup> *	A-[B <sup>b</sup> -D] (NT: G <sup>+</sup> *)
	A	A-[B <sup>b</sup> -D]
<b>Dan 3 pitch cells (beginning only)</b>		
7	B <sup>b</sup> A G <sup>+</sup> * A B <sup>b</sup>	A-B <sup>b</sup> -[D] (NT: G <sup>+</sup> *)



The next five *dan* (3-7) conclude with the same rhythm cell (3RC) on a single tone. At the end of the third, sixth and seventh *dan* (as well as *dan* 8, 9 and 10 in the Sato score only), the cell is repeated on A2 (𠄎 *chi*), whereas in the fourth and fifth it is repeated on G2 (𠄎 *re*) (or D3 [ア *a*] in the Kurahashi score, *dan* 5 only), tones that correspond to the lowest note of the trichord transpositions. In addition to this rhythm cell, performed with finger articulation, ends of *dan* or large segments within *dan* are signaled by *nayashi*,<sup>14</sup> a pitch slide technique used to repeat a sustained tone by beginning it approximately a semitone below pitch and sliding

<sup>14</sup> Weisgarber refers to *nayashi* as cadential in “The Honkyoku of the Kinko-Ryū,” 317.

upwards.<sup>15</sup> In addition to marking the end of large segments within *dan*, *nayashi* directly precede 3RC cells at the end of *dan* 2, 3, 4, 5, 6, and 7 (and 8, 9 and 10 in Sato). A *nayashi* also precedes the final breath of the piece in the Kurahashi score. *Nayashi* and other extended techniques are dealt with in greater detail in the following chapters.

**EXAMPLE 11.9** 3RC cell preceding and following *nayashi* slide. *Nayashi* is used in the 2<sup>nd</sup> phrase to repeat G2 of the 1<sup>st</sup> phrase. Upper staff is Kurahashi score transnotation, lower staff is Aoki score.

### 11.3.2 Two-note rhythm cell

The three-note rhythm cell (3RC)  is frequently reduced to a two-note cell (2RC)  in *Sokaku Reibo*. For example, in *dan* 6, after the D-B $\flat$  M3 is reiterated, B $\flat$  becomes the focal point of the middle of the *dan*. It is repeated in octaves in a 2RC cell, notated or heard in most sources seven times in *kan* (upper octave), seven times in *otsu* (lower octave), then another seven times in *kan* (Example 11.10).<sup>16</sup> This cell is reiterated on B $\flat$  in *dan* 7, 8, and 9. For additional examples of 2RC, see Appendix F, where cells are labeled accordingly, and Appendix I: Prevalent pitch cell variants and rhythm cells.

<sup>15</sup> Since *nayashi* figures in *Sokaku Reibo* consist of: 1) a sustained tone, 2) breath, 3) *nayashi* slide to the same tone, and 4) a third iteration of the tone, sustained, this figure could be understood as an augmentation of 3RC. It is treated as such in Appendix F.

<sup>16</sup> Yamaguchi plays it only six times in *kan*, and not in *otsu*.

EXAMPLE 11.10 2RC rhythm cell in *dan 6*.

The image shows musical notation for two parts: KY (Koto Yumi) and AR (Awa Reiko). The KY staff has a treble clef and contains a sequence of eighth notes with accents and slurs, followed by a series of eighth notes with slurs. The AR staff has a treble clef and contains a sequence of eighth notes with accents, followed by a series of eighth notes with slurs. The notation is labeled with 'R' and 'L' to indicate right and left hand parts.

### 11.3.3 Breath rhythm

In contrast to the “fixed” rhythm of repeated patterns, the “free” rhythm of *Sokaku Reibo* is felt on sustained tones and breaks between phrases. A comparison of the first measures of the Aoki and Kurahashi transnotations to the first breath phrases of the Aoki and Yamaguchi recordings and transcriptions reveals the discrepancy between notation and practice in “free” passages. Gutzwiller observes: “In the notation of [the Kinko School] we find a duple-time pattern clearly depicted, although such a pattern can hardly be perceived when listening to the music itself.”<sup>17</sup> Regarding “imprecision” of durational values, Lee explains:

in the performer’s mind, a note with a ‘long duration’ is held a ‘long time,’ not ‘four seconds’ or ‘eight seconds.’ How long the note ends up being held depends upon the circumstances of the individual performer and performance.<sup>18</sup>

Absent from the notations are indications of the durations of the rests that connect the phrases. Phrasing in *honkyoku* is based on the breath of the performer: each phrase is performed in one breath. Breath phrases are indicated in the Aoki

<sup>17</sup> Andreas Gutzwiller, “Rhythm in *Shakuhachi Honkyoku*,” *European Studies in Ethnomusicology: Historical Developments and Recent Trends* 4 (1992), 269.

<sup>18</sup> Lee, “Yearning,” 355.

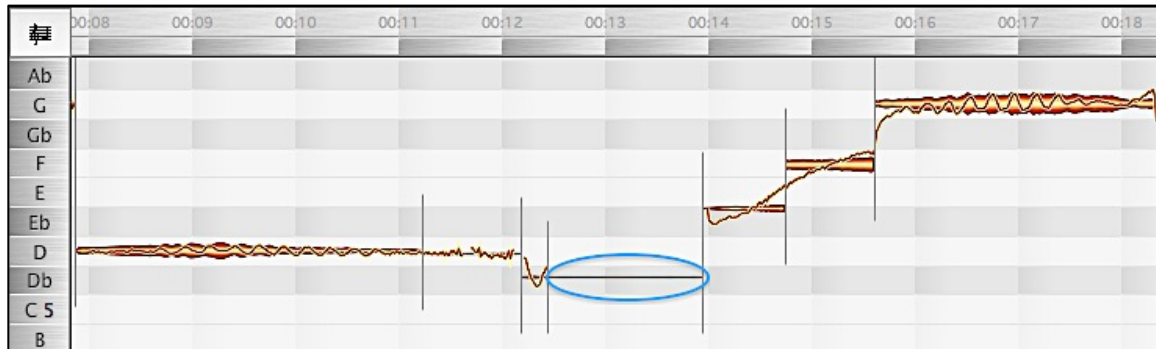
and Kurahashi scores by short horizontal lines separating the tablature. The quality and length of the inhalation between breath phrases must be learned from a teacher and can be understood in terms of the Japanese aesthetic concept of *ma*. “The word *ma* basically means an ‘interval’ between two (or more) spatial or temporal things and events.”<sup>19</sup> Phrases in *honkyoku* are thus temporal events separated (or connected) by intervals. These intervals do not necessarily belong to the events preceding or following them; however, the quality of a phrase ending has an impact on the quality of the ensuing breath intake, which in turn affects how the next phrase is begun, with respect to factors such as loudness, timbre, and duration. The durations of the rests between phrases are not indicated in original scores, nor in the transcriptions, since each performer will differ in his or her approach from performance to performance. In a comparison of six recordings of *Hifumi Shirabe*, Gutzwiller concludes: “We cannot make any clear statement about the proportional lengths of tones that holds true for a majority of players.”<sup>20</sup> The same would follow for the lengths of rests between phrases. However, to give a general idea of duration in performance practice in two samples, in the Aoki recording I consulted, rests last up to approximately 2 seconds, whereas in the Yamaguchi recording the longest rest is about 2.4 seconds long, with the longest rests appearing towards the end of the recording (see Example 11.11 for one instance). These rests are an integral part of *honkyoku*, and form the interval of silence from and into which many of the techniques analyzed in this study emerge.

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<sup>19</sup> Richard B. Pilgrim, “Intervals (‘Ma’) in Space and Time: Foundations for a Religio-Aesthetic Paradigm in Japan,” *History of Religions* 25.3 (1986): 255.

<sup>20</sup> Gutzwiller, “Rhythm,” 277.

EXAMPLE 11.11 Rest between 1<sup>st</sup> and 2<sup>nd</sup> breath phrases of *Sokaku Reibo*, Yamaguchi recording.



## 11.4 Summary

I have identified 15 main pitch cells in *Sokaku Reibo* (see Figure 11.18 and Appendix F). The melodic content of these pitch cells can be understood in terms of prominent intervals (m2, M3, P4) and their transpositions up a P4 and P5, as well as *miyakobushi* trichords (m2+M3=P4) on D, G, and A, with few exceptions. Some pitch cells bear close resemblance to one other; for example, the pitch content of cell #6 (B $\flat$ -A-G+-) recurs in cells #7, 8, and 15. Some pitch cells occur only once, or rarely; whereas others recur frequently in their original or contracted/expanded forms, i.e., as variants.

FIGURE 11.18 Main pitch cells in *Sokaku Reibo*

- 1: E $\flat$ -G-D
- 2: D $\flat$ -D
- 3: D-B $\flat$ -E $\flat$ -E $\flat$ -D
- 4: E $\flat$ -E $\flat$ -D-E $\flat$ -E $\flat$ -G-A-E $\flat$ -E $\flat$ -E $\flat$ -D
- 5: C-A $\flat$ -A $\flat$ -A $\flat$
- 6: B $\flat$ -A-A-G+-G+
- 7: B $\flat$ -B $\flat$ -A-G+-G+-A-B $\flat$
- 8: B $\flat$ -B $\flat$ -A-G+-G+-A-D-G-A-E $\flat$ -E $\flat$ -E $\flat$ -G
- 9: C-D
- 10: F-G
- 11: C-D-E $\flat$ -D-B $\flat$ -D-C-A
- 12: A-C
- 13: C-C-B $\flat$

- 14: C-A $\flat$ -C-D-E $\flat$   
 15: C-D-B $\flat$ -A-G+-G+-A-B $\flat$ -A

Some variants recur more frequently than the main pitch cells from which they are contracted or expanded. For example, cell #4.2 (G-A-E $\flat$ -E $\flat$ -E $\flat$ ), a contraction of cell #4, is found in *dan* 2, 4, 5, 10 and 12, whereas the original cell is heard only in *dan* 2. Contractions that correspond to the prominent M3 and m2 intervals of the piece also recur frequently. For example, cell #3.2 (D-B $\flat$ ), a descending M3 and part of the trichord transposition on A, comprises the first two notes of cell #3 (D-B $\flat$ -E $\flat$ -E $\flat$ -D). This D-B $\flat$  contraction is heard in *dan* 6 through 11. Additional examples of recurring contracted cell variants appear in Appendix I; these examples also include single-note rhythm cells (2RC, 3RC)—variants which are also the result of contraction.

The five *dan* common to all of the notated and recorded sources I consulted are 1, 2, 6, 10, and 12. As discussed in Section 11.2.2, with respect to *miyakobushi* trichords and prevalent intervals, transpositions on D, G, and A heard throughout the piece have been introduced by the end of the second *dan*. These first two *dan* also present the first six of the 15 main pitch cells, as well as the 3RC rhythm cell. The main pitch cells or their variants found in the five *dan* common to all sources are #1-9, 11, and 15 (see Figure 11.19).

**FIGURE 11.19** Pitch cells or their variants found in each of the five *dan* common to all consulted sources

- 1: 1-3  
 2: 4-6  
 6: 3, 7, 11  
 10: 3, 4, 7-9  
 12: 1-4, 9, 11, 15

Missing from this group are cells #10, and 12-14. However, these four cells do not recur in the piece. Cell #10 (F-G) appears only at the beginning of *dan* 5 and is notated instead as E $\flat$ -G in the Kurahashi score. Cell #12 (A-C) is only heard at the beginning of *dan* 7, and cell #13 (C-C-B $\flat$ ) at the beginning of *dan* 9. Cell #14 (C-A $\flat$ -C-D-E $\flat$ ), a combination of cells #5 and 9, occurs only in the Sato score in *dan* 11. In contrast, cells #1-9 and 11 are heard frequently in their original and variant forms throughout the piece, as well as in *dan* 1, 2, 6, and 10. (Cell #15, found only in *dan* 11 and 12, is a combination of cells #9 and 7.) In *dan* 12, cells from *dan* 1 recur in a sort of “recapitulation” of the opening of the piece, after the recurrence of a few other prominent cell variants (#4.2, 9ae and 11.1).

In summary, the five *dan* heard in all of the sources I consulted could be understood as containing the main musical material of the piece, i.e., pitch cells (#1-9, 11), rhythm cells (2RC, 3RC), recurring intervals (m2, M3, P4), and m2-M3 trichord transpositions (on D, G, and A). In the following chapters, I relate these elements to *shakuhachi* performance techniques.

## Chapter 12: Wind techniques in *Sokaku Reibo*—Timbral techniques, part 1

The *shakuhachi* has traditionally made use of many performance techniques which would today be considered “extended” in the context of Western avant-garde music. Flutter tonguing, pitch slides and bends, multiphonic tremolo effects, and timbral alteration through breath sounds and fingerings are examples of extended techniques that appear in *Sokaku Reibo*. In this chapter and the next, I present examples of techniques that manipulate the timbre of the instrument. In the following chapters I explore pitch bends and slides, finger articulation, vibrato through head movement, and microtonality. Timbral techniques examined in the present chapter and Chapter 13 include *meri-kari* blowing techniques, alternate fingerings, *tamane* flutter tonguing, a special *koro-koro* tremolo fingering with multiphonic effects, and breathiness added to the tone.

### 12.1 Timbral alteration via breath angle and fingering

Common practice in *shakuhachi honkyoku* involves changing the angle of the breath against the mouthpiece through head position, thereby altering pitch and timbre, as well as selecting fingerings for their timbral characteristics. These two practices are frequently used in concert to achieve the performer’s desired pitch and timbre. Lowering the head position lowers pitch and is thus called a *meri* position, from the verb *meru*, “to decline, to diminish, to become weak, etc.”<sup>1</sup> The opposite of *meri* is *kari*, which can indicate either a return to a neutral head position after a *meri* tone is played, or a raised head position.<sup>2</sup>

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<sup>1</sup> Linder, *Notes*, 70n.

<sup>2</sup> *Ibid.*, 220.



The *shakuhachi* has only five tone holes, but *meri-kari* head positions are used to expand the available pitch resources. Without lowered or raised pitches, the scale of a 1.8-foot instrument sounds: D-F-G-A-C. However, with *meri-kari* techniques and part-holing,<sup>3</sup> semitones and microtones are playable. In addition to greater pitch resources, *meri-kari* positions offer the performer greater timbral resources. Lee describes *meri* tones as softer, “more muted and nasal-sounding,” and potentially “more breathy” than the louder *kari* tones.<sup>4</sup> According to Lee:

The *shakuhachi* performer does not attempt to minimize differences in timbre between *meri* and *kari* notes. Instead these differences are not only considered desirable but even essential for the correct performance of the music. The contrasting timbres of the *meri* and *kari* notes is a fundamental aesthetic quality of *honkyoku*.<sup>5</sup>

In *Sokaku Reibo*, *meri* is used not only to produce tones outside the basic D-F-G-A-C scale (e.g., E<sup>b</sup>, A<sup>b</sup>, B<sup>b</sup>), but also in combination with non-basic fingerings to vary the timbre of a tone (see Figure 10.3 in Chapter 10). Non-basic non-*meri*<sup>6</sup> fingerings can also result in timbral variation. For example, D2 is notated in the Kurahashi and Aoki scores as the basic □ *ro* fingering, but also as ˆ\ *ha*, and ㄞ *a*.

### 12.1.1 Closed and open fingerings for D2

The holes of the *shakuhachi* are numbered from 1 to 5. The four on the front are referred to as holes 1 through 4, with hole 1 being the closest to the lower root end of the instrument. Hole 5 is for the thumb on the back. The basic fingering for D2 is closed, i.e., all five tone holes are closed and the fundamental is overblown to

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<sup>3</sup> Partially covering a tone hole with the finger.

<sup>4</sup> Lee, “Yearning,” 265.

<sup>5</sup> *Ibid.*, 266.

<sup>6</sup> I use the term non-*meri* instead of *kari* here because *kari* can also indicate a head position raised above the neutral position.

produce the pitch in the upper *kan* register (without overblowing the tone is D1). This fingering is called □ ro. Both Aoki and Kurahashi notate this basic fingering in their scores; however, they also call for partially-open fingerings for D2 as early as the first *dan* of *Sokaku Reibo*.

**FIGURE 12.1** Closed and partially-open fingerings for D2 used in Aoki and Kurahashi *Sokaku Reibo* scores. (The legend for all such fingering charts in Chapter 12 is on the right.)

D1, D2	D2	D2	Hole
□ ro	ノ <sup>四五</sup> <i>shi go</i> <i>no ha</i>	ア a	
●	○	○	5 (back)
●	○	○	4
●	●	●	3
●	●	●	2
●	●	●	1
AR, KY	AR	KY	score

●	closed
○	open
⊙	partially-open tone hole

In *dan 1*, Aoki notates □ ro for each D2 from the first breath phrase through to the D2 played after the third *koro-koro* tremolo (7<sup>th</sup> breath phrase). He then changes the tablature to ノ ha for the next 11 D2s, each of which is preceded by *koro-koro* (cell #2: D<sub>b</sub>-D). For the cells that follow (2am', 2am'', 3, 3db), he returns to □ ro. Multiple variations of ノ ha fingerings are possible on the *shakuhachi*, resulting in different tones. Aoki indicates: “ノ open 4 & 5” in his score next to the first appearance of ノ ha (see example 12.1b); therefore, in this case the fingering is

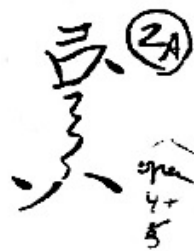
more specifically termed *shi go no ha* (*shi*=四, i.e., 4; *go*=五, i.e., 5).<sup>7</sup> Kurahashi contrasts the D2 口 *ro* tablature with 𠄎 *a*. According to the Nyokai-an fingering chart, 𠄎 *a* is played with holes 4 and 5 open, the same fingering as *shi go no ha*.<sup>8</sup> This is confirmed by Kurahashi’s notation of *kanji* characters for 4 and 5 next to the 𠄎 *a* tablature. The Nyokai-an chart does not include a fingering for *shi go no ha*; Linder does not give one for *a* but does include *shi go no ha*.<sup>9</sup> We can assume then that different teachers and sub-schools of the Kinko-ryū have transmitted the same fingering for D2 (open holes 4 and 5) but with different tablature (*a* and *shi go no ha*). Regardless, of importance to this study is that both Aoki and Kurahashi notate two different fingerings for D2 within the first *dan*, one closed and one partially-open.

**EXAMPLE 12.1**

a. *Dan 1*, first breath phrase, cell #1, Aoki score (*tsu meri-re-ro*)



b. *Dan 1*, first notation for *ha* (“open 4 & 5”) following *koro-koro*, cell #2, Aoki score



c. *Dan 1*, D2 played as *ro* in cell #2am', Aoki score



<sup>7</sup> Linder, *Notes*, 217.

<sup>8</sup> Phil James, *Nyokai-an Shakuhachi Dojo*, accessed October 17, 2013, <http://nyokai.com>.

<sup>9</sup> Linder, *Notes*, 217.

d. *Dan 1*, second breath phrase, cell #1, Kurahashi score (*tsu meri-re-ro*)



e. *Dan 1*, first notated *a* (open “4, 5” indicated to the right) following *koro-koro*, cell #2, Kurahashi score



f. *Dan 1*, D2 played as *ro* in cell #2am', Kurahashi score



According to the *Nyokai-an* fingering chart, the *a* (or *shi go no ha*) “substitute for second octave *ro* [D2] has a much airier sound.”<sup>10</sup> Because Aoki has both notated and recorded *Sokaku Reibo* and because these two sources are very similar with respect to versions, it is assumed for the purposes of this study that Aoki performed the piece using the fingerings he notated. It is therefore possible to compare spectral analyses of his performance of *ro* and *shi go no ha* in the first *dan* using the software program SPEAR.

Examples 12.2a-b show transnotation of Aoki’s tablature for *koro-koro – ro* and *koro-koro – ha* (cell #2: D<sup>b</sup> [*koro*]-D). Corresponding spectral images follow in examples 12.2c-d. In comparing the spectral images of *ro* and *shi go no ha*, it becomes immediately apparent that timbral differences between the two fingerings are significant. In example 12.2c, D2 (*ro*) contains prominent octave overtones through the third octave above the fundamental, with weaker ones discernible to the eighth. Overtones are especially strong at the beginning of the tone, before a reduction in loudness (notated as a diminuendo in the corresponding transcription)

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<sup>10</sup> James, *Nyokai-an*, 6.

results in softer overtones. In example 12.2d, the D2 (*ha*) overtones are comparatively weak. The resultant tone is thus “airier” for the *ha* fingering than for the harmonically-rich *ro* fingering.

**EXAMPLE 12.2**

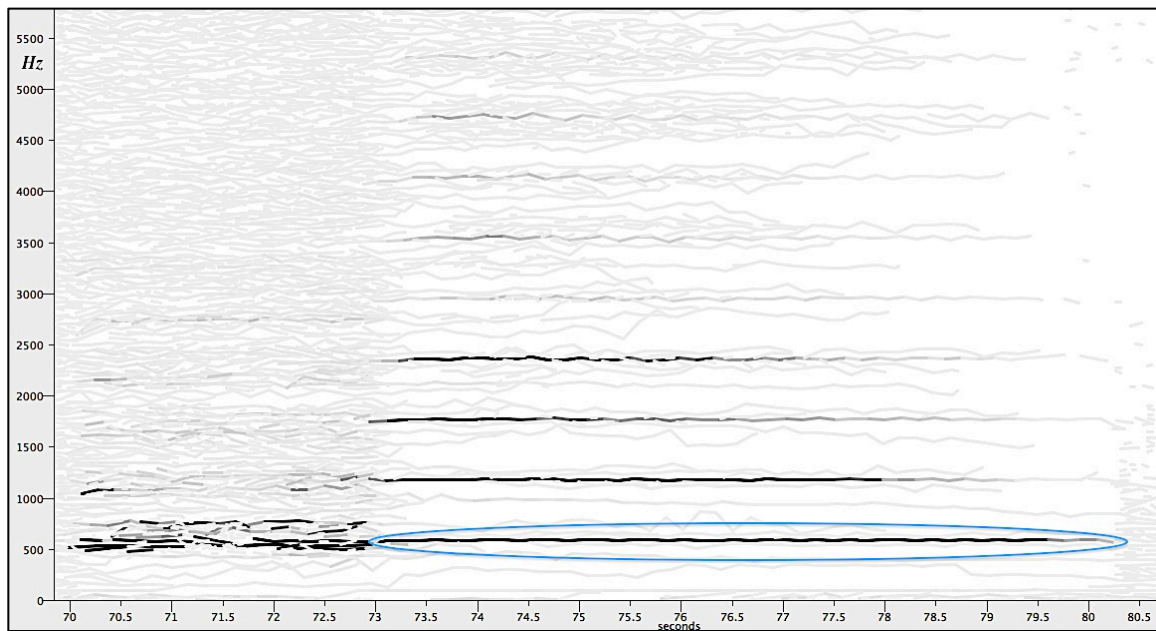
a. Cell #2, *dan 1*, last breath of 3<sup>rd</sup> system, Aoki transnotation (D2=*ro*)



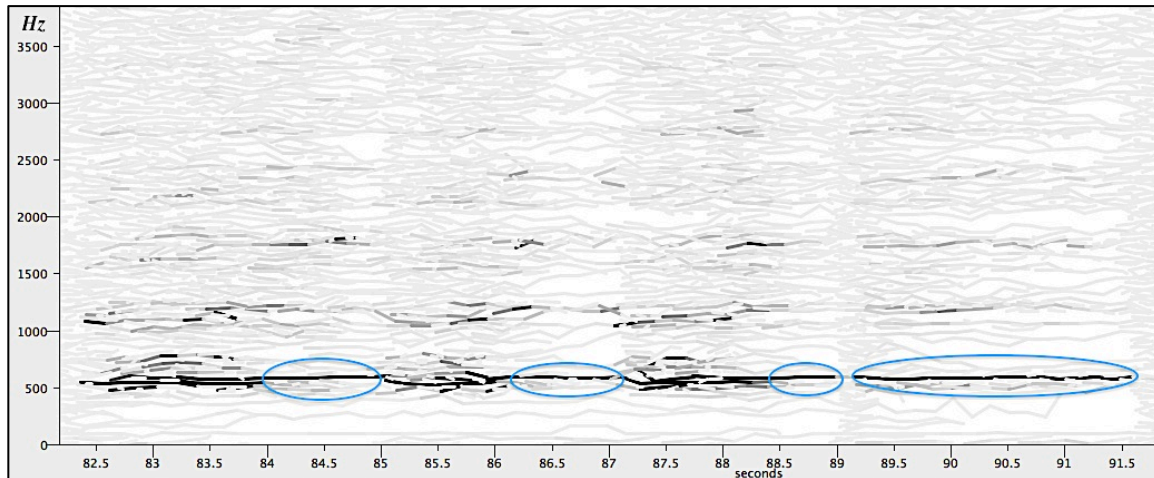
b. Cell #2, *dan 1*, last breath of 4<sup>th</sup> system, Aoki transnotation (D2=*ha*)



c. Cell #2, *dan 1*, Aoki recording, corresponding to Example 12.2a (D2=*ro*, fundamental circled)



d. Cell #2, *dan* 1, Aoki recording, corresponding to Example 12.2b (D2=*ha*, fundamental circled)



### 12.1.2 *Meri* and non-*meri* fingerings for D3

In the first breath phrase of *dan* 6 (cell #11: C-D-E<sup>b</sup>-D-B<sup>b</sup>-D-C-A), both Aoki and Kurahashi notate two different fingerings for D3.

EXAMPLE 12.3 First breath of *dan* 6, cell #11

**Dan 6**

KY 
  
AR

Kurahashi notates the first D3 as *イ* *i* whereas Aoki notates it as *ヒ*<sub>五</sub> *go no hi*. These two tablature symbols use the same fingering and are non-*meri* tones. They can be played with only hole 1 closed, or holes 1 and 2 closed, depending on the acoustics of the particular instrument.<sup>11</sup> For the second sounding of D3, however, Aoki and Kurahashi prescribe different fingerings—different from both the first D3 of the *dan*

<sup>11</sup> James, *Nyokai-an*, 9; Linder, *Notes*, 213.

as well as from each other. Kurahashi calls for ア *a* (holes 4 and 5 open) while Aoki notates ハ *ha* (or more specifically, *go no ha*, i.e., hole 5 partially open, others closed). The *go no ha* fingering requires a *meri* head position to produce D3, in contrast to the fingering used for the first D of the cell, whereas the *a* fingering does not.

FIGURE 12.2 D3 fingerings used in Aoki and Kurahashi scores.

D3		D3		D3		D3		Hole
イ <i>i</i>		ヒ 五 <i>go no hi</i>		ア <i>a</i>		ハ 五 <i>go no ha</i>		
○	○	○	○	○	◎			5 (back)
○	○	○	○	○	●			4
○	○	○	○	●	●			3
○	●	○	●	●	●			2
●	●	●	●	●	●			1
					<i>meri</i>			
KY		AR		KY		AR		score

Another name for the ア *a* fingering is *shi go no ha*, meaning holes 4 (*shi*) and 5 (*go*) are open.<sup>12</sup> According to Linder, “*go no ha* [used in Aoki] has a more concentrated sound image, due to the fact that all holes are closed (more or less). The *shi-go no ha* is more dynamic, and more often used in honkyoku.”<sup>13</sup> Because a recording by Kurahashi is not available, a spectral comparison of *go no ha* (Aoki) and *shi go no ha* (Kurahashi) in the context of cell #11 of *Sokaku Reibo* is not

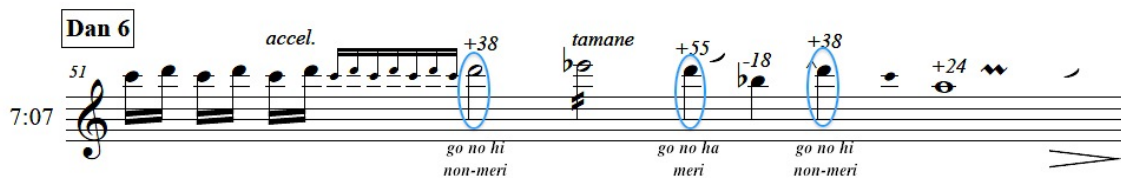
<sup>12</sup> Linder, *Notes*, 216.

<sup>13</sup> *Ibid.*

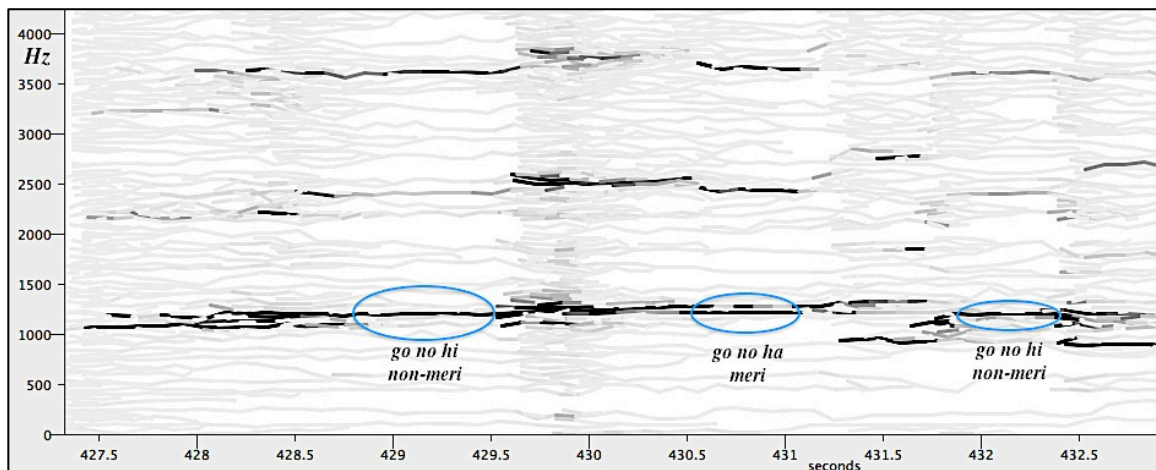
possible. However, *go no ha (meri)* and *go no hi (non-meri)* can be compared within the Aoki recording.

Following a preparatory trill-type gesture, Aoki notates the first D3 of cell #11 in *dan 6* as *go no hi* (see Example 12.4a). He notates the next D3 as *ha (go no ha)* instead, returning to *go no hi* for the final D3. Thus, D3 proceeds from non-*meri* to *meri* then back to non-*meri*. The spectral image of cell #11 in Example 12.4b shows that in this case, the more consistently prominent overtones (especially at the first octave) occur on the *meri* tone, *go no ha*, likely, as Linder states, “due to the fact that all holes are closed (more or less).”<sup>14</sup> Hole 5 is only partially open for *go no ha*, functioning as a sort of octave vent to facilitate overblowing.

EXAMPLE 12.4 a. First breath of *dan 6*, cell #11, transcription of Aoki score



b. First breath of *dan 6*, cell #11, spectral analysis of Aoki recording corresponding to Example 12.4a (D3 fundamentals are circled)

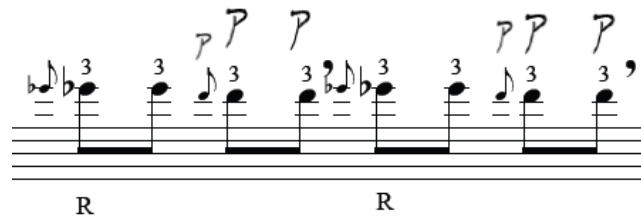


<sup>14</sup> Ibid.



In both the Aoki and Kurahashi scores, the use of a non-basic fingering (*go no ha* in the Aoki score; *a* in the Kurahashi score) for the second of the three D3s seems to be related to the tone that precedes it. Throughout the piece, whenever D3 directly follows E $\flat$ 3, its upper m2 neighbour, the non-basic fingering is notated (see Example 12.5a). Aoki also prescribes the non-basic *go no ha* fingering in cell #11.1db. Cell #11.1db begins with the second D3 of cell #11, thus omitting the E $\flat$  that would otherwise precede D (Example 12.5b). The D is played on *go no ha* as if the E $\flat$  preceded it. In cells involving melodic intervals other than m2, both Kurahashi and Aoki instead notate D3 as *i/go no hi*.

EXAMPLE 12.5 a. Non-basic  $\text{ア}$  *a* fingering for D3, directly preceded by E $\flat$ , *dan* 5, Kurahashi transnotation



b. Non-basic *ha/go no ha* (*meri*) fingering for D3, cell #11.1db (D-E $\flat$  beginning deleted), *dan* 12, Aoki transnotation



### 12.1.3 B $\flat$ 2 fingerings for *tamane* and M3 intervals

Two fingerings are used for B $\flat$  2 in *Sokaku Reibo* in both the Aoki and Kurahashi scores:  $\text{ウ}$   $\equiv$  *san no u* and  $\text{ヒ}$   $\times$  *hi meri*. *San no u* is played with hole 3 open, non-*meri*; *hi meri* is similar, but in addition to the open hole 3, hole 4 is partially

open (hole 2 can also be open, depending on the acoustics of the instrument). To compensate for the additional open hole, *hi meri* is played *meri*, as the name indicates, to lower the pitch to B $\flat$ .

FIGURE 12.3 B $\flat$  2 fingerings used in Aoki and Kurahashi scores.

B $\flat$ 2		B $\flat$ 2	Hole
ヒメ <i>hi meri</i>		ウ三 <i>san no u</i>	
●	●	●	5 (back)
⊙	⊙	●	4
○	○	○	3
○	●	●	2
●	●	●	1
<i>meri</i>	<i>meri</i>		
AR, KY		AR, KY	score

B $\flat$  2 appears in *Sokaku Reibo* primarily within the context of two of the principal intervallic relationships of the piece (m2, M3) and *tamane* flutter tonguing. In both scores, *san no u* is associated with *tamane*, and *hi meri* with the M3 interval D3-B $\flat$  2; both fingerings are prescribed for the m2 interval B $\flat$  2-A2, depending on context. *Tamane* flutter tonguing is addressed in depth in Chapter 13; with regard to fingerings, however, when *tamane* is called for on B $\flat$  2, the *san no u* fingering is consistently notated in the Kurahashi and Aoki scores. Transnotation excerpts from *dan 3* and 10 appear in Example 12.6. Aoki notates the *tamane* technique on the *san no u* fingering for the first B $\flat$  2 of cell #7 (B $\flat$ -B $\flat$ -A-A-G+-G+-A-B $\flat$ ) at the beginning of *dan 3*. The final B $\flat$  2 of the cell uses the same fingering, but without the *tamane*

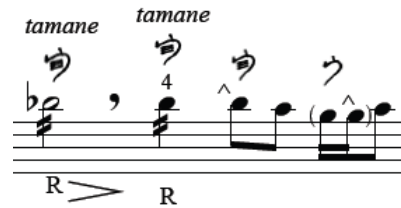
indication. However, Aoki does perform *tamane* here as well on the recording.

Example 12.6b shows the same tablature indication for the *tamane* technique in *dan* 10 of the Kurahashi score. This excerpt is a variant of cell #7 (7de). Indeed, *san no u* is indicated for B $\flat$  2 in all instances of cell #7 or its variants, except when D3 is added to the beginning of the cell or when *tamane* is replaced by a trill using the *koro-koro* fingering in the lower hand (as in *dan* 10 of the Kurahashi score).

EXAMPLE 12.6 a. Cell #7, first breath phrase of *dan* 3, Aoki transnotation



b. *Tamane* in variant of cell #7 (7de), *dan* 10, Kurahashi transnotation



In the Aoki and Kurahashi scores, when D3 precedes B $\flat$  2, a M3 relationship, the notation for B $\flat$  is *hi meri*, without exception, regardless of the cell or the fingering used for D3. Excerpts from *dan* 6, 7, and 12 in Example 12.7 show that *hi meri* follows all four tablature indications for D3 from Figure 12.2, representing three different fingering options, in the two scores: *i, go no hi, a*, and *go no ha* (*i* and *go no hi* tablature indications use the same fingering).

EXAMPLE 12.7 a. Cell #11, *dan 6*, Kurahashi (upper) and Aoki (lower) transnotation. *Hi meri* follows *a* (KY) and *go no ha* (AR).



b. Cell #15de, *dan 12*, Aoki transnotation. *Hi meri* follows *go no hi*.



c. *Dan 6*, cell #3.2, Kurahashi transnotation. *Hi meri* follows *i*.

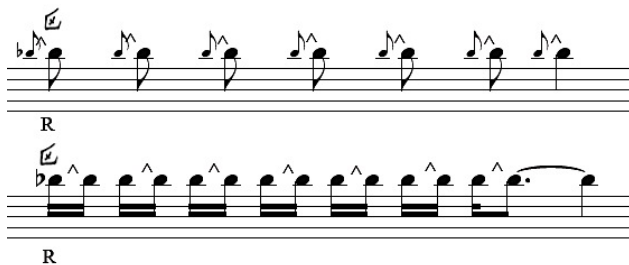


d. *Dan 7*, cell #3.2, Aoki transnotation. *Hi meri* follows *go no hi*.



Of the fingerings for  $B\flat$ , *hi meri* is also notated in cell #13 in *dan 9*, for the M2 interval C- $B\flat$ . When 2RC is repeated seven times on  $B\flat$ , *hi meri* is again notated, with the exception of one instance in *dan 6* in the Kurahashi score, where the 2RC is preceded by *tamane* on the same note (Example 12.8). With respect to the m2 interval  $B\flat$ -A, *san no u* is called for when the  $B\flat$  closely follows *tamane*, as in variants of cell #7, *dan 3* (both Aoki and Kurahashi scores).

EXAMPLE 12.8 a. 2RC on *hi meri*, *dan 6*, Kurahashi (upper) and Aoki (lower) transnotation.



b. 2RC on *san no u*, *dan 6*, Kurahashi transnotation.

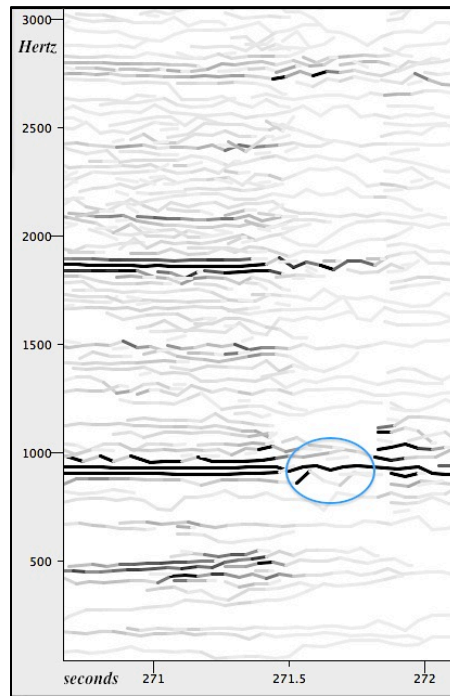


In the Aoki recording, most occurrences of B $\flat$ 2 using *san no u* are either quite brief or involve *tamane* flutter tonguing. A spectral comparison to *hi meri* within the same recording is therefore challenging. Nonetheless, at the end of the *tamane* effect, Aoki sometimes sustains the tone briefly without the “interference” of flutter tonguing. Example 12.9b-c offers two such cases, both from the first breath phrase of *dan 3*. In Example 12.9b, after the first *tamane* of the breath, two octave overtones are distinguishable. At the end of the breath (Example 12.9c), harmonics are relatively weak likely due to an accompanying reduction in loudness. In contrast, Example 12.9e shows that although *hi meri* also has distinguishable octave overtones, the harmonic two octaves above the fundamental B $\flat$ 2 is more prominent than at the first octave.

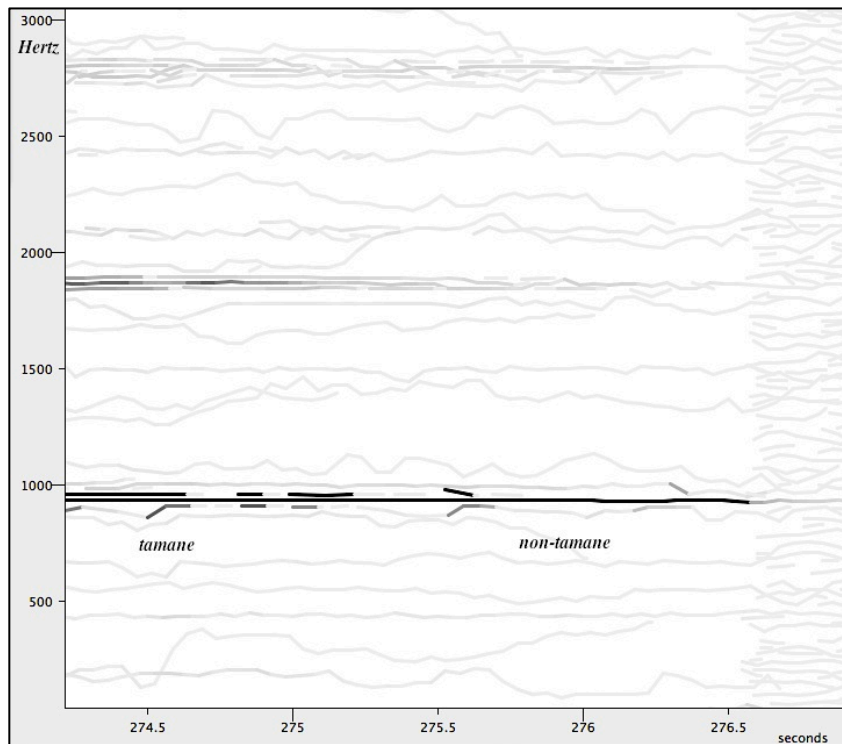
EXAMPLE 12.9 a. First breath phrase of *dan 3*, Aoki transcription. *San no u* fingering is used for B $\flat$ .

The musical notation shows a single staff in treble clef with a key signature of one flat (B-flat). The time signature is 4:27. The notation includes a box labeled "Dan 3" above the first note. Above the staff, there are labels "tamane" with a dashed line and a "1" below it, and another "tamane" at the end. Fingerings are indicated as +36, -35, and +19. There are also two large angle brackets (< and >) below the staff.

b. Emergence of B $\flat$  (*san no u*) after first *tamane* of above transcription, Aoki recording. The post-*tamane* B $\flat$  fundamental is circled.



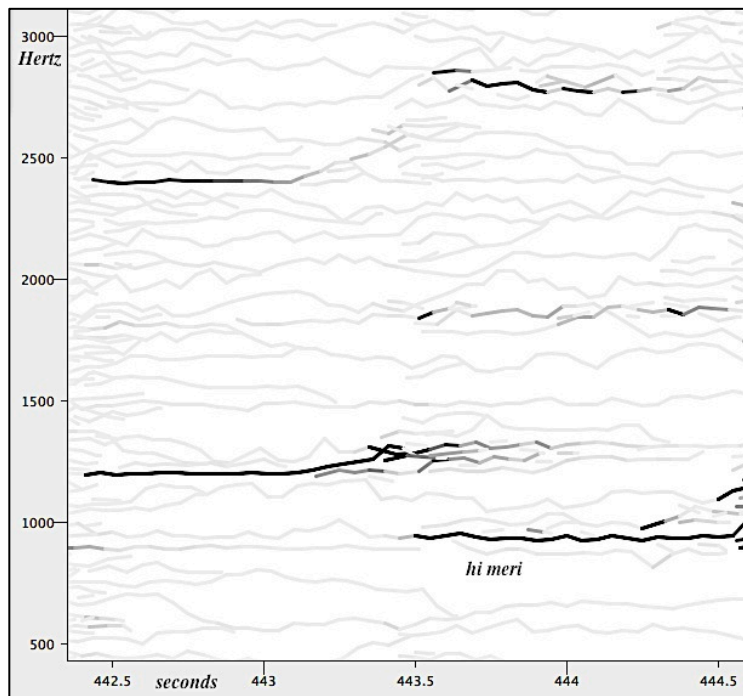
c. Emergence of B $\flat$  (*san no u*) after second *tamane* of above transcription, Aoki recording



d. Third breath phrase of *dan 6*, Aoki transcription. *Hi meri* fingering is used for B $\flat$ .



e. B $\flat$  2 (*hi meri*) following D3 of above transcription, Aoki recording



### 12.1.4 Basic and non-basic fingerings for G and A $\flat$

In *Sokaku Reibo*, G $_2$  is notated by Kurahashi and Aoki as  $\searrow$  *re*, one of the basic fingerings of the *shakuhachi*. A $\flat$  2 is also produced by a basic fingering,  $\text{フ}$  *chi*, but with a *meri* head position (i.e.,  $\text{フ}$   $\times$  *chi meri*). For the note that falls consistently between G $_2$  and A $\flat$  2, as discussed in Section 11.2.3 and labeled G+ in my analyses, Kurahashi notates *u dai meri* whereas Aoki notates *ichi san no u*. The published fingering charts I have consulted<sup>15</sup> list *ichi san no u* or *u meri* (without “*dai*”) as

<sup>15</sup> See Section 11.2.3

variants of the *u* fingering, producing either A2 or G2. It could be assumed that the *u dai meri* tablature indicates an *u* fingering with a very low head position (*dai meri* = very low); however, in his *shakuhachi* playing guide, Tokuyama gives a fingering for *u meri* (G2) that corresponds to *ichi san no u* instead of the lower register *u*.<sup>16</sup> Also, although Linder lists a single fingering for *u* of the lowest register (hole 3 open),<sup>17</sup> the Nyokai-an chart offers two additional options.<sup>18</sup> It cannot be assumed then that *ichi san no u* (holes 1 and 3 open) and *u dai meri* are exactly the same fingering, but it is conceivable. Since no corresponding recording of the Kurahashi score is available, their timbral characteristics cannot be compared for the purposes of this study. *Ichi san no u* (G+) can nonetheless be compared to *chi meri* (A $\flat$ ) and *re* (G) within the Aoki recording.

FIGURE 12.4 A $\flat$ 2 and G2 fingerings used in Aoki and Kurahashi scores.

G2	A $\flat$ 2	G+2 (G/A $\flat$ )	Hole
$\surd$ <i>re</i>	チメ <i>chi meri</i>	ウー三 <i>ichi san no u</i>	
●	●	●	5 (back)
●	●	●	4
●	⊙	○	3
○	○	●	2
○	○ <i>meri</i>	○ <i>meri</i>	1
AR, KY	AR, KY	AR	score

<sup>16</sup> Tokuyama, *A Guide to Playing*, 7.

<sup>17</sup> Linder, *Notes*, 217.

<sup>18</sup> James, *Nyokai-an*, 4.

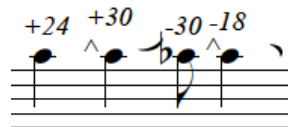


In the Aoki score, all three tablature symbols (レ *re*, チメ *chi meri*, ウー *ichi san no u*) appear in *dan 2*. *Ichi san no u* (G+) always follows *chi* (A), as in cell #7: B $\flat$ -B $\flat$ -A-G+-G+-A-B $\flat$ .<sup>19</sup> Excerpts in transcription and spectral analysis of *chi meri*, *ichi san no u* and *re* appear in Example 12.10. As shown above in Figure 12.4, the fingerings for *re* and *chi meri* are similar, the difference being the partial opening of hole 3 and the *meri* head position for *chi meri*. The strength of octave overtones in their respective sound spectrums is likewise similar (Examples 12.10d and f, below), especially when contrasted with the spectrum of *ichi san no u* (Example 12.10e), as played by Aoki Reibo. *Chi meri* appears to have a strong harmonic two octaves above the fundamental, with overtones distinguishable at the first, third and fourth octaves as well. *Re* also displays clear overtones for four octaves above the fundamental, the first two particularly strong. In contrast, the harmonics of the *ichi san no u* fingering are relatively weak. The harmonics of *re* and *chi meri* also weaken in relation to a decrease in loudness towards the end of each tone.

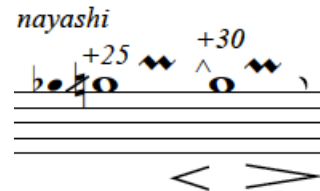
**EXAMPLE 12.10** a. *Chi meri* (A $\flat$ ) in eighth breath phrase of *dan 2*, Aoki transcription



b. *Ichi san no u* (A $\flat$ -/G+) follows *chi* (A) in tenth breath phrase of *dan 2*, Aoki transcription

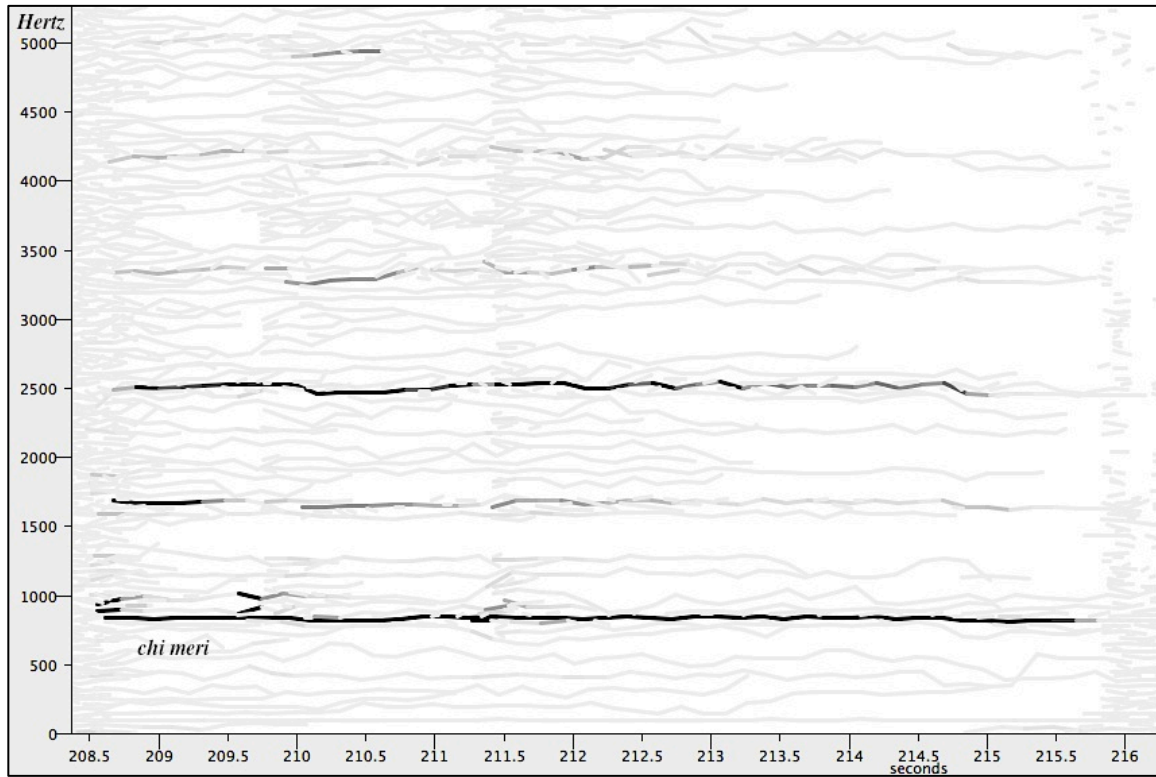


c. *Re* (G) in fifth breath phrase of *dan 2*, Aoki transcription

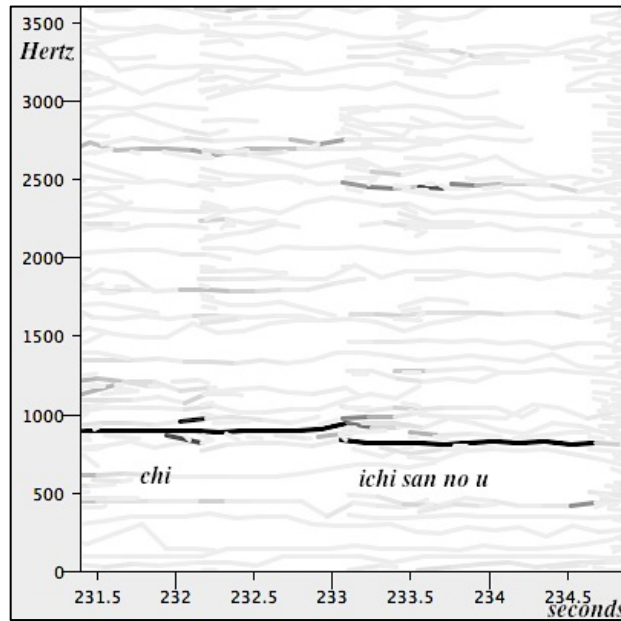


<sup>19</sup> See Section 11.2.3

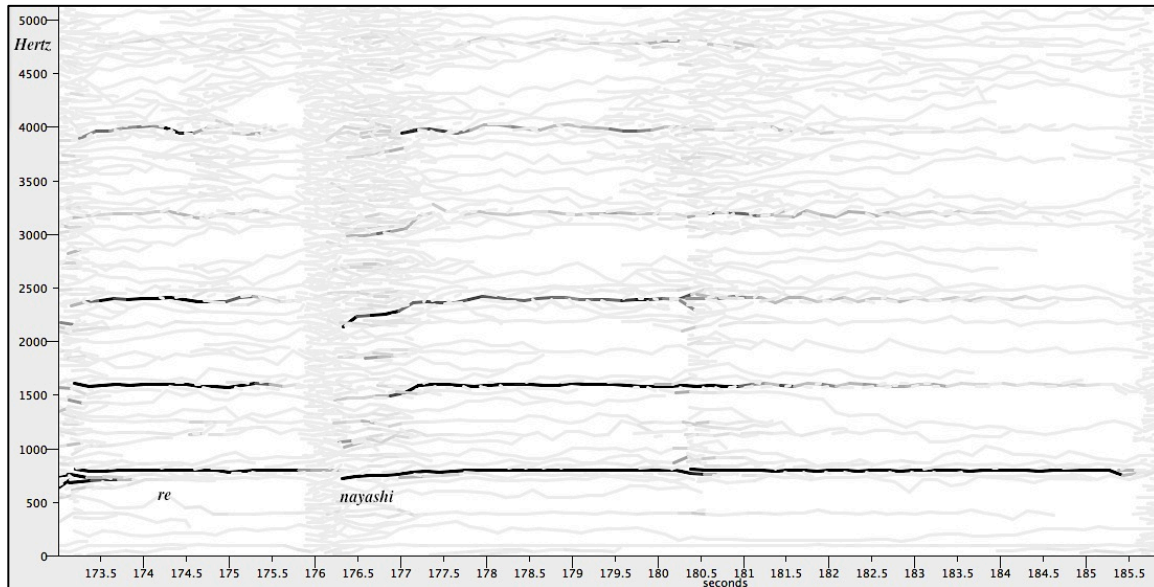
d. *Chi meri*, Aoki recording, corresponding to Example 12.10a



e. *Chi-ichi san no u*, Aoki recording, corresponding to Example 12.10b



f. *Re*, Aoki recording, corresponding to Example 12.10c



### 12.1.5 Timbral fingerings in *Sokaku Reibo*

The fingering system of the *shakuhachi* is deceptively simple. Although the instrument has only five tone holes, several fingering options are available for many of the tones, with corresponding timbral characteristics. According to Simura Satoshi, fingering “substitutions” are made “depending upon musical context.”<sup>20</sup> In the case of certain timbral fingerings in *Sokaku Reibo*, their use is consistent with particular pitch cells or intervallic relationships. For example, *ichi san no u/u dai meri* always appears after *chi*, and most frequently within cell #7 and its variants. Regarding fingerings for B $\flat$ 2, *san no u* is used with *tamane* flutter tonguing and *hi meri* follows D3, in a M3 relationship. *Tamane* appears only on certain tones throughout *Sokaku Reibo*, as discussed in the following chapter.

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<sup>20</sup> Simura, “Selections,” 159.

## Chapter 13: Wind techniques in *Sokaku Reibo*—Timbral techniques, part 2

### 13.1 *Tamane* flutter tonguing

As discussed in Chapter 2, flutter tonguing produces a rolling tone. Because it is done with the tongue, it can be classified as a type of articulation; however, it is considered here alongside other timbral techniques since the effect is sustained. In *shakuhachi* performance practice, flutter tonguing is called 玉音 *tamane*, i.e., it “sounds like beads or balls rolling”<sup>1</sup> and “is used to express the voice of the crane in *Tsuru no Sugomori*,”<sup>2</sup> and *Sokaku Reibo*. *Tamane* appears in all of the notated and recorded sources that I have consulted. It is performed on the tones D, B $\flat$ , and E $\flat$ , at or near the beginning of cells, on the first tone of a descending m2 or M3 interval. Figure 13.1 shows all occurrences of *tamane* in the recordings and scores by Aoki, Yamaguchi, and Kurahashi.

**FIGURE 13.1** Occurrences of *tamane* in *Sokaku Reibo* in versions by Aoki (AR), Yamaguchi (YG), and Kurahashi (KY). AR indicates both score and recording unless otherwise stated.

Cell	<b>Bold: <i>tamane</i> note</b>	Interval	<i>Dan</i>	Versions	Notes
3	<b>D-B<math>\flat</math>-E<math>\flat</math>-E<math>\flat</math>-D</b>	M3	1, 12	AR	AR audio: <i>tamane</i> on rising pitch slide through D
3.2	<b>D-B<math>\flat</math></b>	M3	12	AR	
7	<b>B<math>\flat</math>-B<math>\flat</math>-A-G+-G+-A-B<math>\flat</math></b>	m2*	3	AR, YG	final <b>B<math>\flat</math></b> in AR audio only
7.1	<b>B<math>\flat</math>-B<math>\flat</math>-A-G+-G+-A</b>	m2*	3	AR, YG	
7.1	<b>B<math>\flat</math>-B<math>\flat</math>-A-G+-G+-A</b>	m2*	10	KY	
7.1.1	<b>B<math>\flat</math>-B<math>\flat</math>-A-G+-G+</b>	m2*	3	AR, YG	
7.1ae	<b>B<math>\flat</math>-B<math>\flat</math>-A-G+-G+-A-D-G-A</b>	m2*	10	KY	sounds twice
7de''	<b>B<math>\flat</math></b>	n/a	10	KY	
--	<b>B<math>\flat</math></b>	n/a	6	KY	followed by 2RC on B $\flat$ ,

<sup>1</sup> Simura Satoshi et al, “Simplicity as Complexity: Technicalities and Aesthetics of Japanese musical instruments and music,” in *Proceedings of the International Computer Music Conference* (International Computer Music Association, 1993), 13.

<sup>2</sup> Yokoyama, *Shakuhachi Koten Honkyoku*, 21.

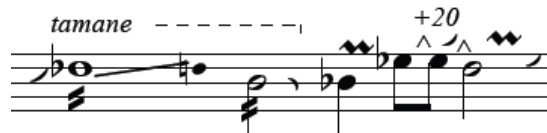
					several possibilities for cell #
8	<b>Bb</b> -Bb-A-G+-G+-A-D-G-A-Eb-G	m2*	4	AR	beginning of cell #8 is same as #7.1
9ae	[C]- <b>D</b> - <b>Eb</b>	m2	12	AR	<b>D</b> in audio only
11	C-D- <b>Eb</b> -D-Bb-D-C-A	m2	6	AR audio	sounds twice
11ae'	C-D- <b>Eb</b> -D-Bb-D-C-A-G+-G+-A-Bb	m2	7	AR audio	
11ae'	C-D- <b>Eb</b> -D-Bb-D-C-A-G+-G+-A- <b>Bb</b>	m2	9	AR	<b>Eb</b> in audio only; final <b>Bb</b> in score only

\*after unison

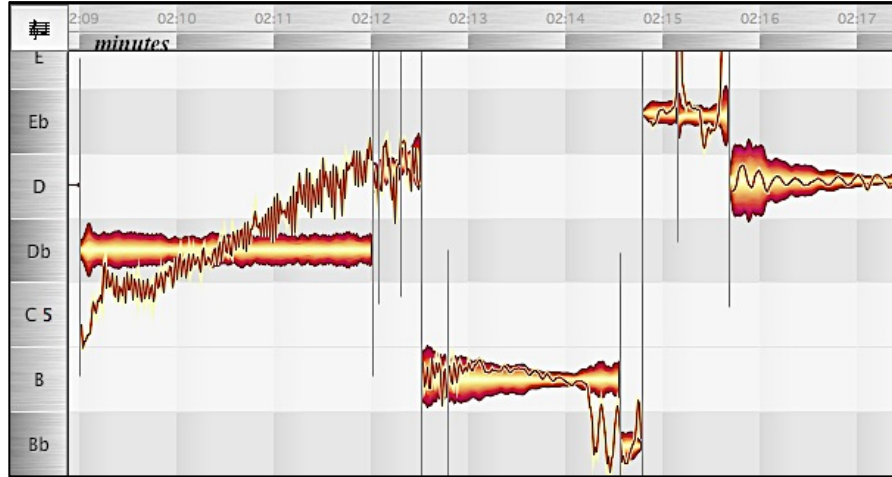
### 13.1.1 *Tamane* on D (M3) at the beginning of a cell

*Tamane* first occurs in the Aoki score and recording in the first *dan*, in cell #3, on the first tone of the M3 interval D-B $\flat$ . Although Aoki notates the cell as D2-B $\flat$  1-E $\flat$  2-E $\flat$  2-D2, with *tamane* on the first D, he begins the *tamane* approximately two semitones lower and slides up through the D, all the while continuing the flutter effect. He then drops to B1, still using *tamane* at the outset of the tone, before lowering the pitch to B $\flat$ . He treats this cell in a similar manner when it recurs in *dan* 12. In contrast, Yamaguchi does not use flutter tonguing in cell #3, and thus not at all on the descending M3 D-B $\flat$ ; nor does Kurahashi notate it.

EXAMPLE 13.1 a. Cell #3, *dan* 1, transcription of Aoki recording

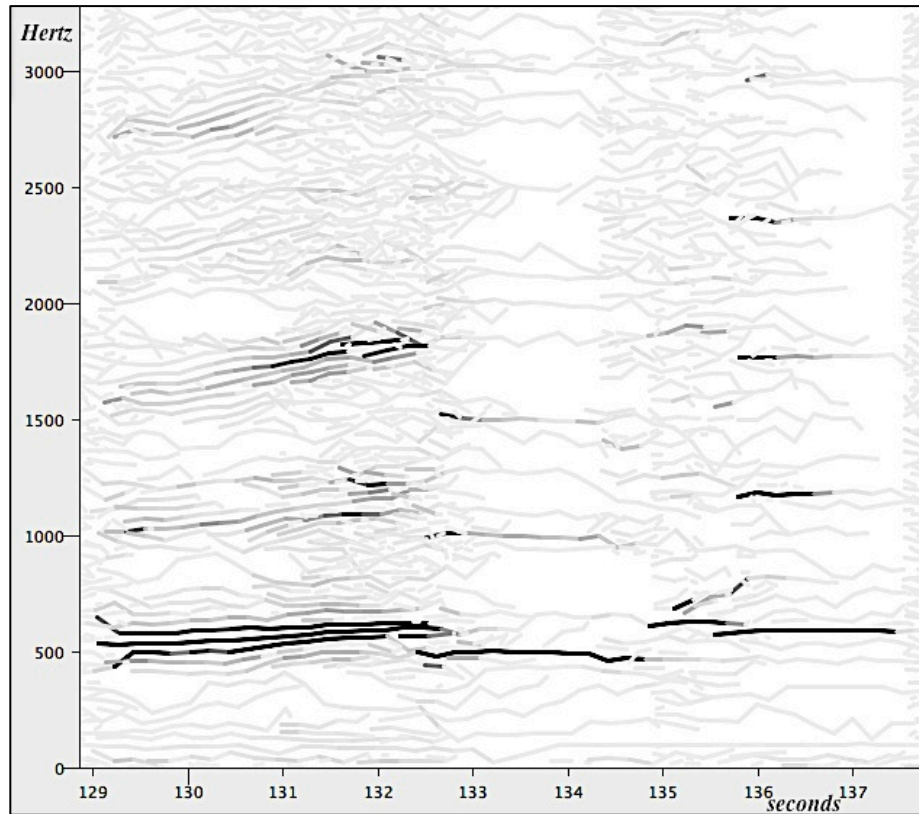


b. Cell #3, *dan* 1, Aoki recording, Melodyne analysis corresponding to Example 13.1a

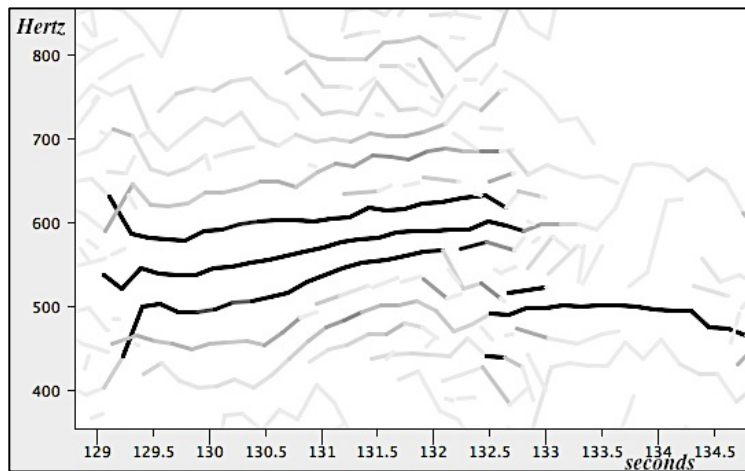


Spectral analyses in Examples 13.1b and 13.2a-b show the interference caused by *tamane* on the first tone of cell #3 in the Aoki recording. The excerpts from the SPEAR analysis in Example 13.2 in particular show three distinct ascending lines (the pitch slide through D2) at the level of the fundamental frequency, in place of the single line that would appear without flutter tonguing and that does appear for subsequent tones. Overtones are also distinguishable through the fourth octave above the fundamental, most prominently two octaves above, in the latter half of the slide. Spectral analysis of cell #3 in its entirety appears in Example 13.2a; Example 13.2b is a close-up of the pitch slide/*tamane* at the beginning of the cell, without overtones.

EXAMPLE 13.2 a. Cell #3, *dan 1*, Aoki recording, SPEAR analysis corresponding to Example 13.1a



b. Close-up of Example 13.2a: Beginning of cell #3, *dan 1*, Aoki recording, SPEAR analysis



### 13.1.2 *Tamane* on $B_b$ ( $m_2$ ) at the beginning of a cell

*Tamane* is also performed or notated on  $B_b 2$  at the beginning of a cell, in particular cell #7 ( $B_b-B_b-A-G+-G+-A-B_b$ ) and its variants. In such cases, it is found

in each of the sources I consulted by Aoki, Yamaguchi, and Kurahashi. Aoki also uses *tamane* at the beginning of cell #8, but this cell begins with the same pitch material as cell #7. After a brief repetition of B $\flat$  after the flutter effect or a cessation of the flutter while the tone is sustained, the melodic line of cell #7/8 moves downward a m2 to A.

In addition to interference to the fundamental, as seen with *tamane* on D2 in the Aoki recording, spectral analysis of *tamane* on B $\flat$  shows the presence of undertones in both the Yamaguchi and Aoki recordings. Cell #7 (and variants) first appears in *dan 3* and is treated with *tamane*.

**EXAMPLE 13.3**

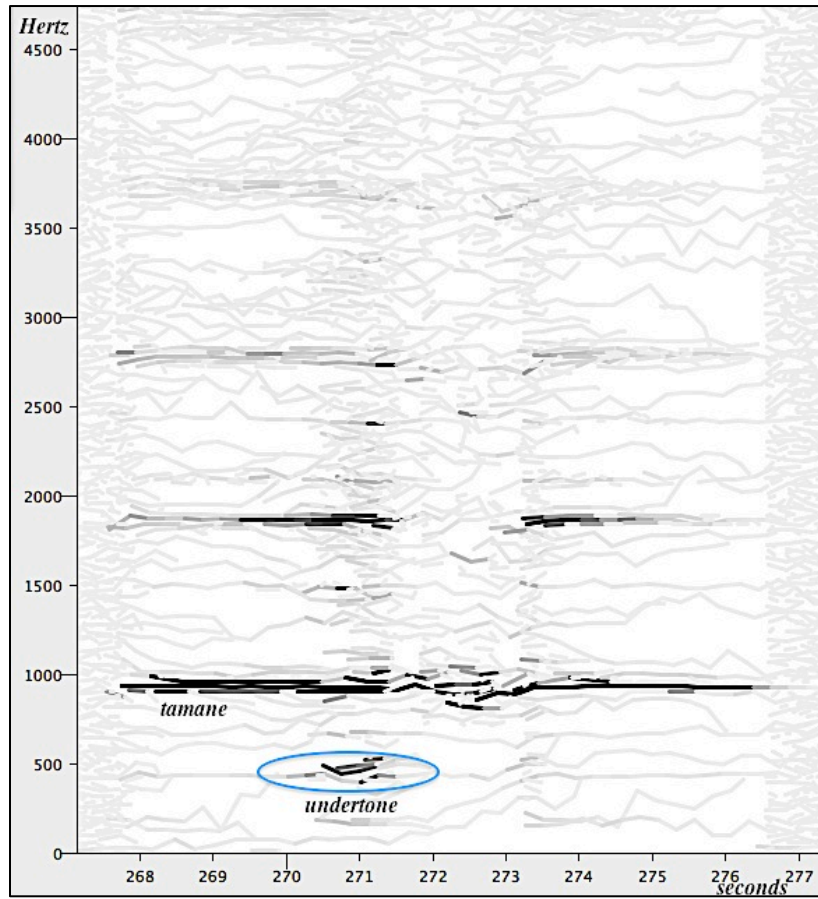
a. Cell #7, *dan 3*, transcription of Aoki recording

b. Cell #7.1, *dan 3*, transcription of Yamaguchi recording

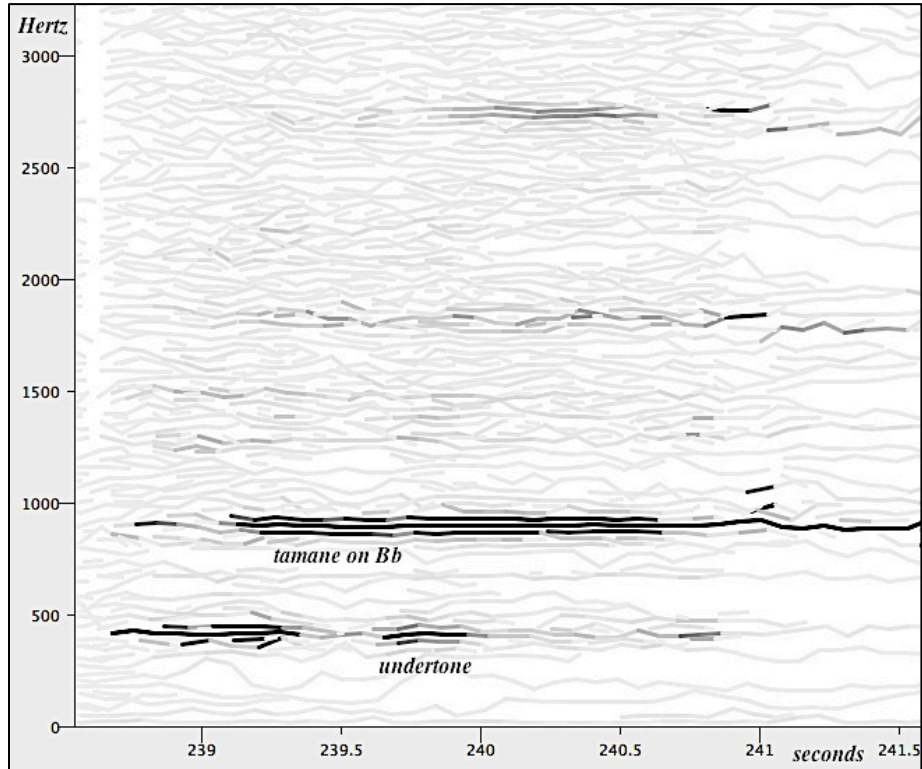
In the Aoki recording, an undertone to the B $\flat$  is perceptible towards the end of the first tone, as loudness is increased (Example 13.4a). In Yamaguchi's performance, however, an A $\flat$  1 sounds before the first B $\flat$  2 of the cell and is perceptible at differing degrees of loudness throughout the sustained *tamane* effect (Example 13.4b). *Tamane* can therefore also be considered a multiphonic effect.



EXAMPLE 13.4 a. Cell #7, dan 3, Aoki recording, SPEAR analysis corresponding to Example 13.3a



b. Cell #7.1, *dan* 3, Yamaguchi recording, SPEAR analysis corresponding to Example 13.3b



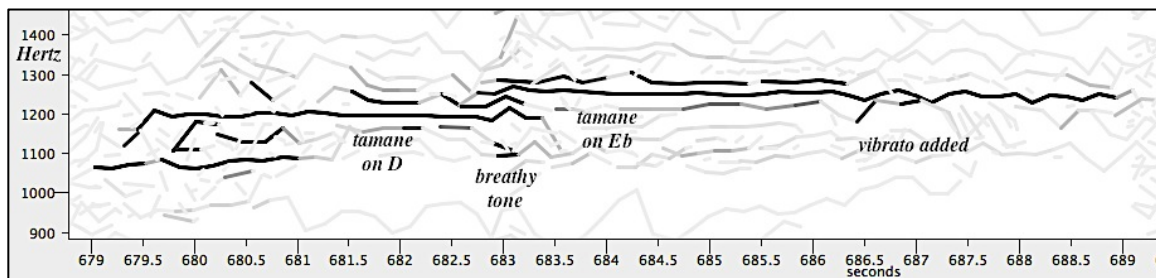
### 13.1.3 *Tamane* on $E_b$ 3 (m2) near the beginning of a cell

A m2 interval is also emphasized in the upper register of the *shakuhachi* when *tamane* is performed on  $E_b$  3 in cell #11 (C-D- $E_b$ -D- $B_b$ -D-C-A) and its variant #11ae'. This case is heard only in the Aoki recording. Aoki also uses *tamane* in *dan* 12 in cell #9ae, but this cell could be considered a truncation of cell #11: C-D- $E_b$ . Although Aoki only notates *tamane* on the  $E_b$  of cell #9ae, in performance he begins the effect on the preceding D, adding vibrato (*yuri*) towards the end of the sustained *tamane*.

EXAMPLE 13.5 a. Cell #11, *dan 6*, transcription of Aoki recording

b. Cell #9ae, *dan 12*, transcription of Aoki recording

c. Cell #9ae, *dan 3*, Aoki recording, SPEAR analysis corresponding to Example 13.5b



### 13.1.4 *Tamane* in *Sokaku Reibo*

All instances of *tamane* in the *Sokaku Reibo* scores and recordings I consulted occur on D, B $\flat$ , and E $\flat$ , and involve only m2 and M3 intervals—the two principal intervals of the piece—in cells #3, 7 and 11 and their variants. Aoki uses *tamane* throughout the piece to depict the voice of the cranes, whereas Yamaguchi restricts the effect to *dan 3*.

### 13.2 *Koro-koro* multiphonic tremolo

*Koro-koro* (コロコロ) is a tremolo fingering technique that produces a multiphonic effect when played quickly. Tsukitani describes it as “a complicated

whirlpool of sound.”<sup>3</sup> Unlike techniques such as pitch slides and flutter tonguing, *koro-koro* is played with a single standard fingering, and thus sounds in a single pitch area, manipulable only slightly through changes in embouchure or air stream. Because *koro-koro* sounds approximately D $\flat$  in the recordings I consulted by Aoki and Yamaguchi, I have notated it as such in transcriptions and other appendices. It involves a *meri* head position and partially opening holes 4 and 5, while alternately opening holes 1 and 2, with both holes closed briefly between alternations. The rapid tremolo-type fingering alternation in the lower hand (holes 1 and 2) causes the “whirlpool of sound.”

*Koro-koro* as described above could be considered a “full” *koro-koro*. A “partial” *koro-koro* is heard in *Sokaku Reibo* when the fingering alternation of the lower hand is applied to D3 and B $\flat$  2; this creates a trill-like effect. Aoki, Kurahashi, and Sato notate this partial *koro-koro* to the side of the main column of tablature in their notation, as opposed to within the main line of tablature, and discussed in Section 11.2.4 and shown in Figure 11.13, Chapter 11.

**FIGURE 13.2** Occurrences of full and partial *koro-koro* in *Sokaku Reibo* in versions by Aoki (AR), Yamaguchi (YG), and Kurahashi (KY). AR indicates both score and recording.

Cell	<b>Bold: <i>koro-koro</i> note</b>	Interval	<i>Dan</i>	Versions	Notes
2	<b>Db-D</b>	A1	1, 12	AR, KY, YG	full
2am	<b>Db-Eb-D</b>	M2	1	AR, YG	full
2am'	<b>Db-Eb-Eb-Eb-D</b>	M2	1, 12	AR, KY, YG	full
2am''	<b>Db-Eb-G-D</b>	M2	1, 12	AR, KY, YG	full
4sb	<b>Db-D-Eb-G-A-Eb-D</b>	A1	2	AR, KY	full
3.2	<b>D-Bb</b>	M3	10	YG	trill
7.1.1	<b>Bb-A-G+-G+-A</b>	m2	10	KY, YG	trill
7.1.1	<b>Bb-A-G+-G+-A</b>	m2	11	YG	trill
7.1.1sb	<b>D-A-G+-G+-A</b>	P4	10	KY	trill

<sup>3</sup> Tsukitani, “The *Shakuhachi*,” 166.

7.1.1ae'/15sb	<b>Bb-A-G+-G+-A-Bb-A</b>	m2	11	YG	trill
15sb'	<b>D-A-G+-G+-A-Bb-A</b>	P4	11	YG	trill
9db	<b>D</b>	n/a	10	AR, YG	trill

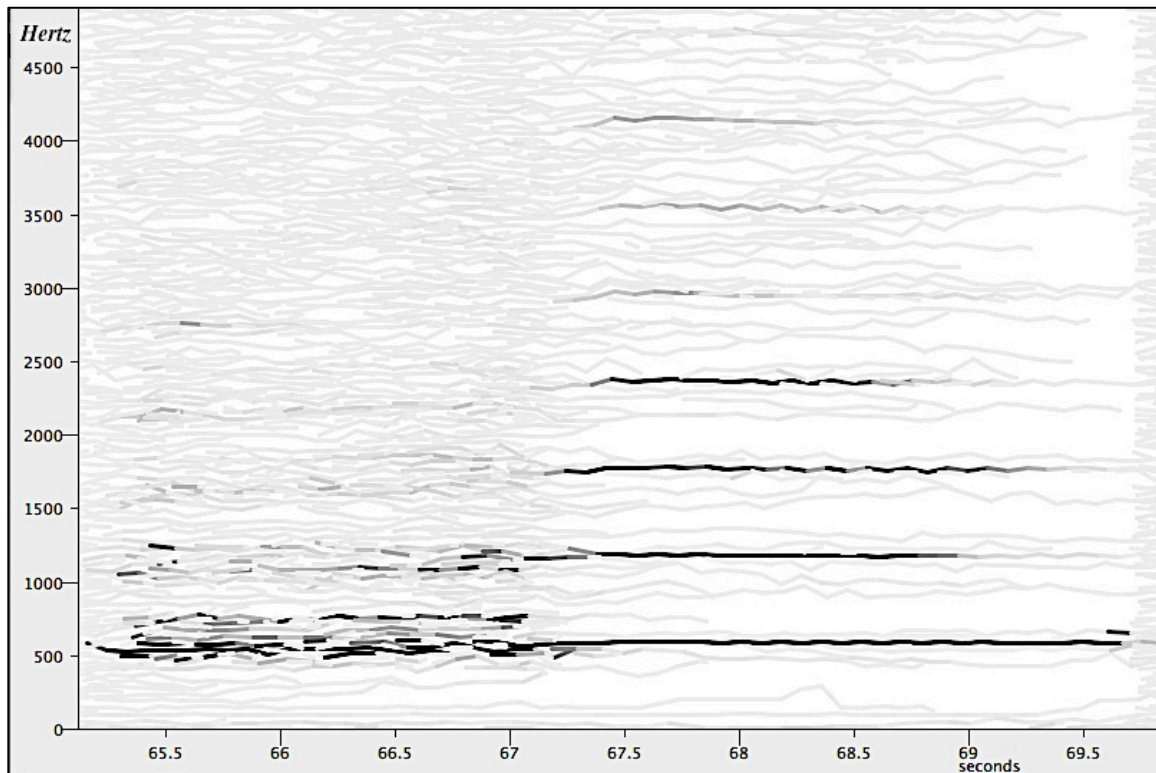
### 13.2.1 Full *koro-koro* on D $\flat$

A full *koro-koro* is played on approximately D $\flat$ . In *Sokaku Reibo*, it is performed at the beginning of pitch cells, without exception. In addition, each of the cells begun with *koro-koro* end on D, an augmented prime relationship to D $\flat$  that mirrors the prominent m2 intervals heard throughout the piece on E $\flat$ -D, A $\flat$ -G, and B $\flat$ -A. *Koro-koro* is directly followed by either D or E $\flat$  and is found in cell #2 and its variants in *dan* 1 and 12, as well as #4sb in *dan* 2. It is thus heard only at the beginning and end of the piece. I have notated *koro-koro* as D $\flat$ , and not C $\sharp$ , because the “ro” of *koro-koro* corresponds to D.

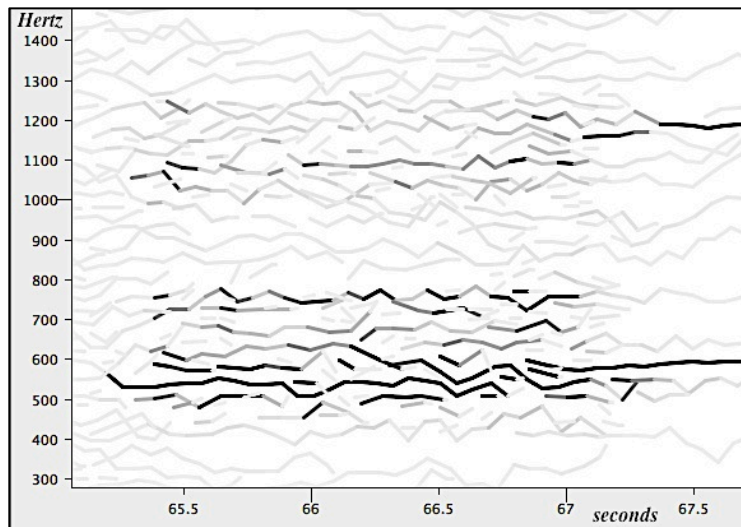
The “complicated whirlpool of sound” created by *koro-koro* is most apparent in the SPEAR analysis of the Aoki recording (less so in the Yamaguchi analysis). Example 13.6a shows spectral analysis of *koro-koro* in cell #2, followed by D2, in the eighth breath phrase (or measure) of the Aoki recording. A close-up of the *koro-koro* at the level of the fundamental frequency appears in Example 13.6b. The first *koro-koro* excerpt from the Yamaguchi recording (cell #2am) follows in Example 13.6c. In the Aoki recording, the pitch content at the fundamental level of the *koro-koro* effect is dense, even considering latency in the SPEAR software. This special timbral tremolo effect can thus also be considered multiphonic. The pitch content in the Yamaguchi excerpt is comparatively transparent—evidence of variation from performer to performer with respect to technique and aesthetic—but nonetheless

also displays more than a single pitch simultaneously at the fundamental level during *koro-koro*. At its densest (beginning at approximately 47.5 seconds), Yamaguchi increases the loudness of the effect and adds a breathiness to the tone that results in an undertone. Breathiness is discussed further in Section 13.3.

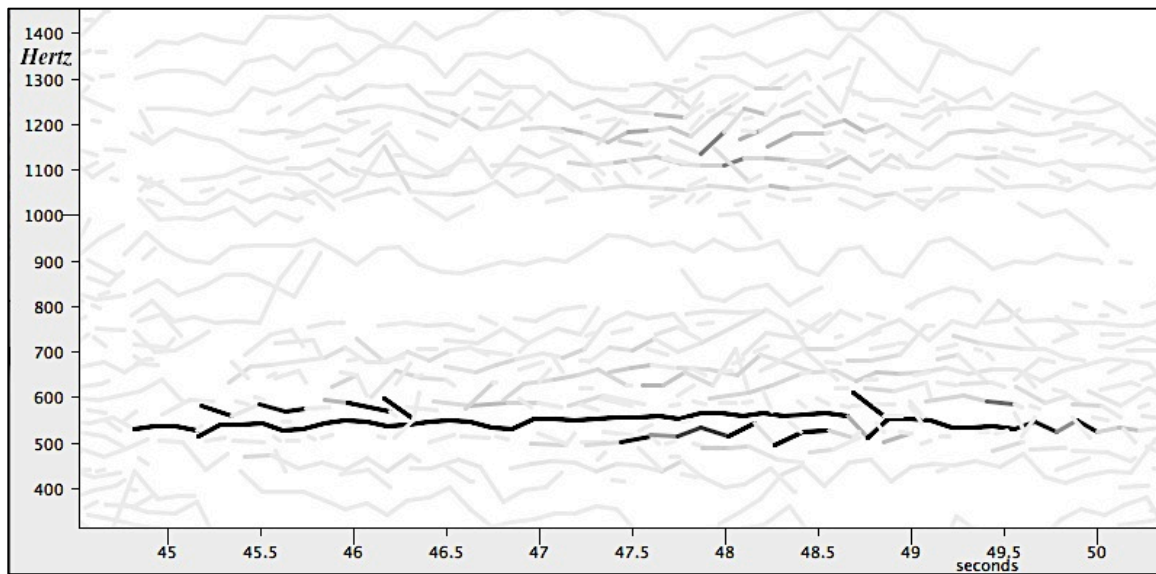
EXAMPLE 13.6 a. Cell #2, *dan* 1, Aoki recording, SPEAR analysis



b. Close-up of Example 13.6a: *Koro-koro* at beginning of cell #2, *dan 1*, Aoki recording, SPEAR analysis



c. *Koro-koro* at beginning of cell #2am, *dan 1*, Yamaguchi recording, SPEAR analysis



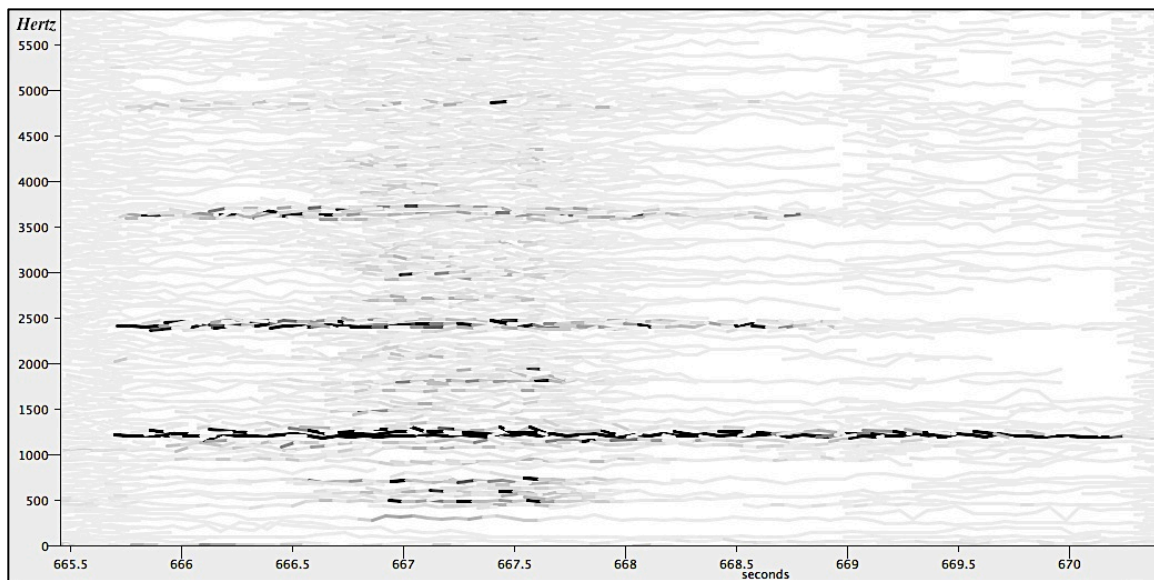
### 13.2.2 Partial *koro-koro* on D and B $\flat$

Trill effects performed with the lower-hand fingering pattern of *koro-koro* sound on D3 and B $\flat$ 2 in *Sokaku Reibo*. As is the case with full *koro-koro*, these trill *koro-koro* are restricted to the beginning of cells. The first tone of the cell, whether D

or B $\flat$ , is followed by either B $\flat$  (then also trilled, cell #3.2) or the pattern A-G+-G+-A (in cells #7.1.1, 15sb, and variants). Since the *koro-koro* trill is called for only in *dan* 10 and 11, it is heard more in the Yamaguchi recording than in the Aoki version; Aoki performs a brief *dan* 10 and no *dan* 11.

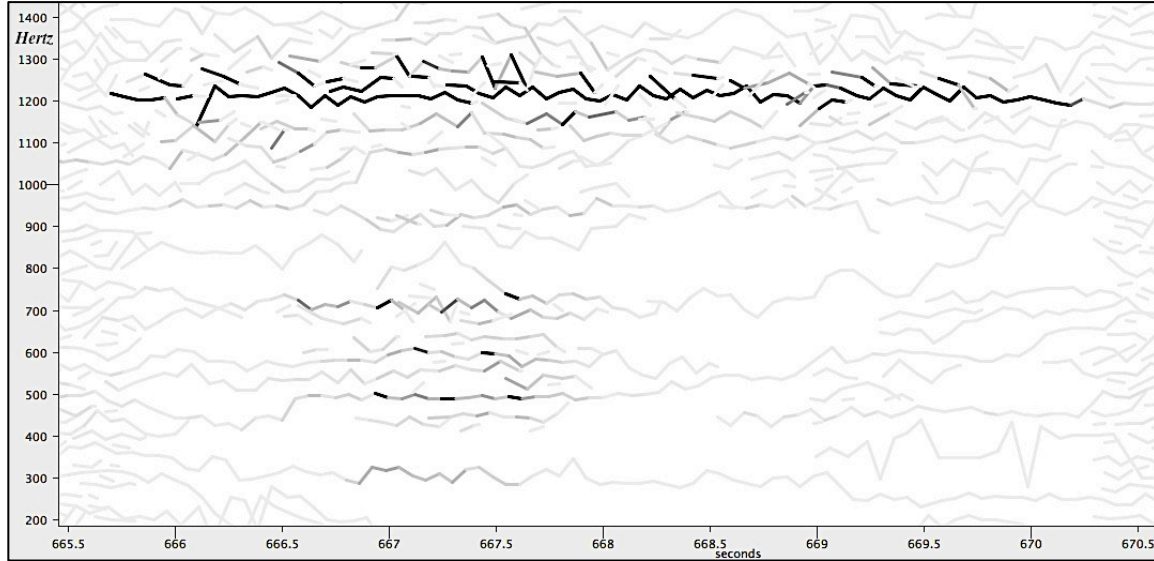
The one occurrence of a trill *koro-koro* in Aoki's recording and score sounds on a D3 that stands alone (cell #9db, m.87 in transcription). Aoki adds a breathiness to the tone partway through the trill, resulting in an undertone seen at approximately 667 seconds in the SPEAR analysis (Example 13.7). The octave overtones of the fundamental frequency of the trill also each display undertones, creating a multiphonic timbral effect.

**EXAMPLE 13.7** a. Trill on D3 with undertone, cell #9db, Aoki recording, SPEAR analysis





b. Close-up of Example 13.7a: Trill on D3 with undertone, Aoki recording, SPEAR analysis



### 13.2.3 *Koro-koro* in *Sokaku Reibo*

In *Sokaku Reibo*, full and trill *koro-koro* highlight intervallic relationships that are heard throughout the piece. The full *koro-koro* on D $\flat$  is followed either directly or indirectly (at the end of cells) by D, a semitone relationship that corresponds to the prominent m2 interval. The partial, or trill, *koro-koro* sounds on the first tone of m2 (B $\flat$ -A), M3 (D-B $\flat$ ), or P4 (D-A) intervals, the three intervals that make up many of the pitch cells of the piece as well as the *miyakobushi* trichord (see Figure 13.2). These intervals are highlighted through distinct timbral alterations and multiphonic effects.

### 13.3 Timbral alteration through “breathiness”

In discussing “aspects of timbre,” Lee states,

The two most common variations of timbre performed on the *shakuhachi* are related to breath and embouchure. Frequently the *shakuhachi* performer purposely adds a breathiness to the flute sound by overblowing and by changing the position of his mouth, tongue and lips to create a rough air stream.

A very light touch of breathiness added to a soft tone is sometimes referred to as *sasabuki* (笹吹き, literally, 'bamboo grass blowing'). This technique is supposed to bring to mind the sound of a gentle breeze blowing through small bamboo grass.<sup>4</sup>

Jeffrey Lependorf also explains elements of breathiness:

A sustained tone... will generally be performed as a *sasa-buki*, or bamboo-leaf shape, which refers both to the envelope shape of the dynamics and to the relative width of the vibrato.<sup>5</sup>

In *Sokaku Reibo*, in addition to the middle of a sustained tone (i.e., at the greatest width of the *sasabuki* leaf shape), breathiness is added at the beginning and end of phrases, and in combination with pitch-sliding, finger percussion, and *koro-koro* techniques, thus altering the timbre.

### 13.3.1 Change of timbre mid-tone on D2

In their investigation of *shakuhachi* timbre, based on Gutzwiller's own playing of *ro* (D), Gutzwiller and Bennett conclude:

the most important result for the timbral development within the second phase [i.e., the principal tone of a cell, or a stable pitch] is that the individual partials do not evolve in synchronous fashion... the upper partials seem to increase in intensity as the lower partials become softer.<sup>6</sup>

In both the Aoki and Yamaguchi recordings, a sustained D2 is frequently subject to timbral alteration. Spectral analysis of sustained D2 shows that these two master players change the timbre of the tone by altering intensity and manipulating the emergence of partials—though in a variety of ways and not necessarily in the manner described by Gutzwiller and Bennett.

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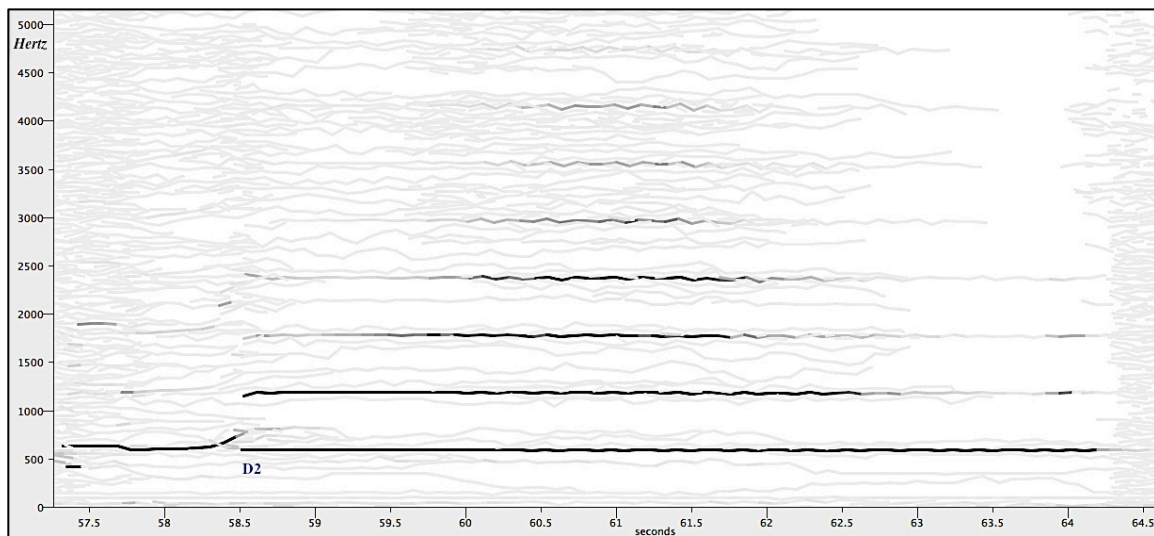
<sup>4</sup> Lee, "Yearning," 263-4.

<sup>5</sup> Lependorf, "Contemporary Notation," 238.

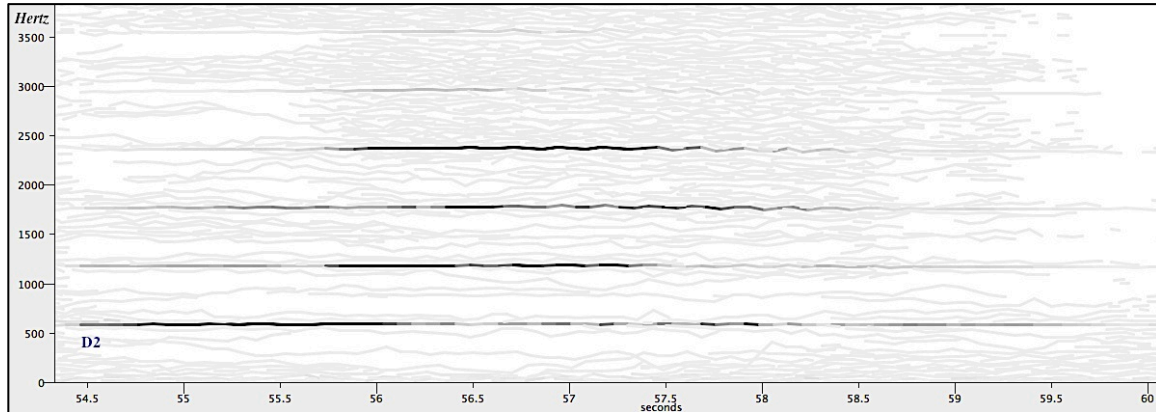
<sup>6</sup> Gutzwiller and Bennett, "The World of a Single Sound," 48.

Both Aoki and Yamaguchi alter the timbre of the D2 in cell #2am ( $D\flat 2-E\flat 2$ -D2), *dan 1*, after the onset of the tone. The D2 overtones indeed form a sort of leaf shape in the Aoki example (Examples 13.8a and c), with an increase in intensity in the middle of the tone that tapers off to a simple fundamental at the end. Although the Yamaguchi image also shows an increase in overtones towards the middle of the tone, the overtone three octaves above the fundamental appears to be stronger than all of the lower partials, including the fundamental (Examples 13.8b and d). The second partial in the Aoki example is relatively strong as well (see the Praat analysis) but subsequent overtones are correspondingly weaker the higher they are. With respect to intensity, however, spectral analysis using Praat software shows that both recorded examples display a similar curve, with an increase in the middle of the tone followed by a long decline to the end of the tone. Aoki adds a final burst of intensity at the very end of the tone.

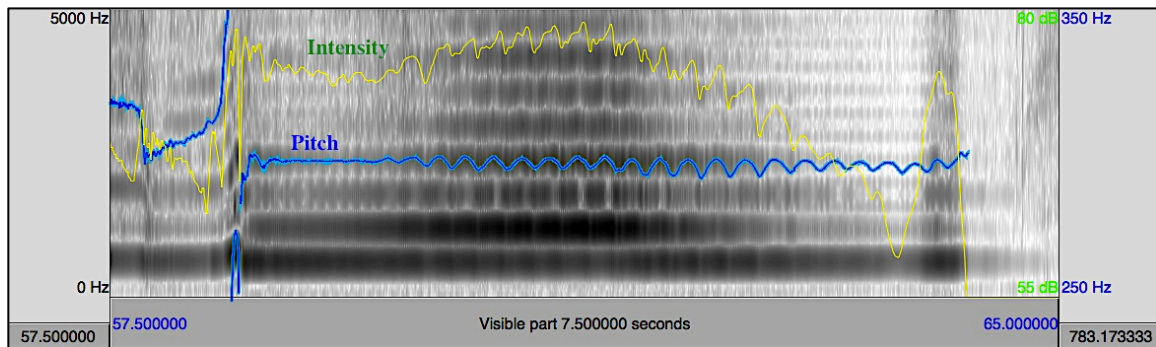
**EXAMPLE 13.8 a.** D2 of cell #2am, *dan 1*, Aoki recording, SPEAR analysis



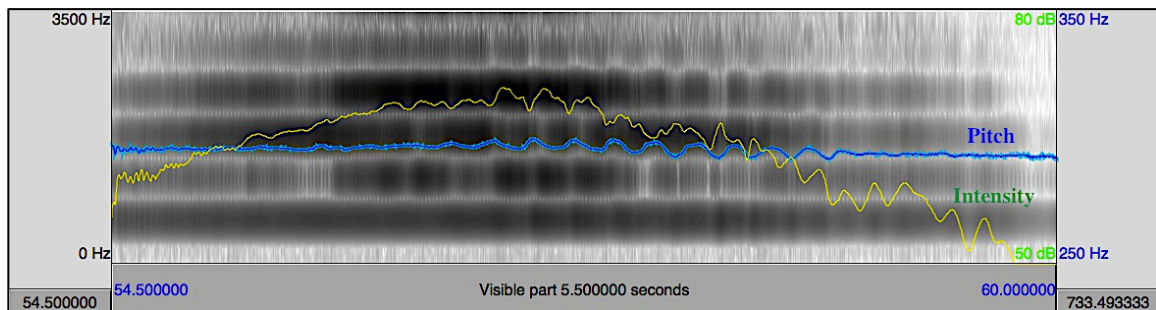
b. D2 of cell #2am, *dan 1*, Yamaguchi recording, SPEAR analysis



c. D2 of cell #2am, *dan 1*, Aoki recording, Praat analysis corresponding to Example 13.8a



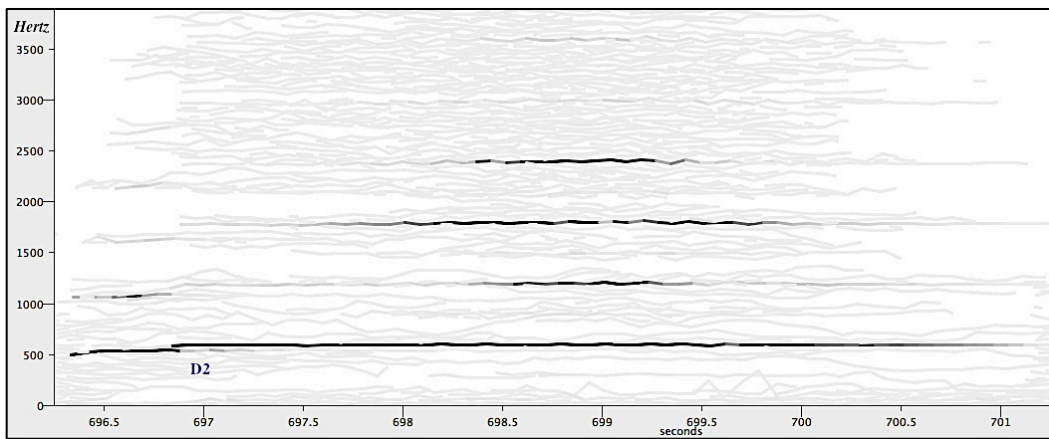
d. D2 of cell #2am, *dan 1*, Yamaguchi recording, Praat analysis corresponding to Example 13.8b



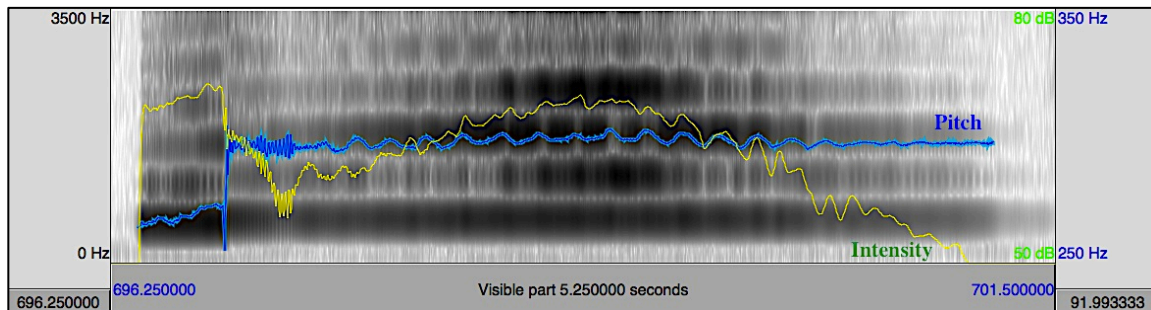
Many additional examples of increased intensity through breathiness in the middle of a tone (in particular, D2) can be found in the Aoki and Yamaguchi recordings. Example 13.9 shows two such cases. In the Yamaguchi example below from *dan 12* (Example 13.9a-b), the 2<sup>nd</sup> octave overtone above D2 emerges before

the 1<sup>st</sup> and 3<sup>rd</sup>; overtones above the 3<sup>rd</sup> are relatively weak or unperceivable. In the Aoki example from the first cell of *dan 5* (Example 13.9c-d), several overtones appear briefly midway through the tone, but they are staggered and not sustained. These examples show that despite the fact that D2 is frequently subject to timbral alteration mid-tone, the manner in which it is altered is variable.

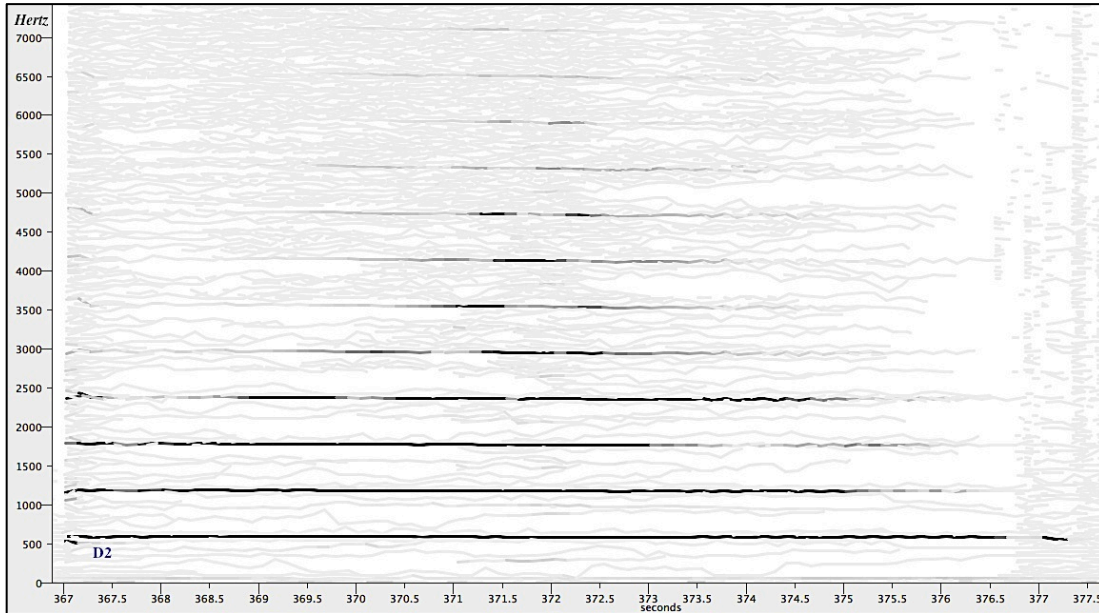
**EXAMPLE 13.9 a.** First D2 of cell #9ae”, *dan 12*, Yamaguchi recording, SPEAR analysis (m.80 in transcription)



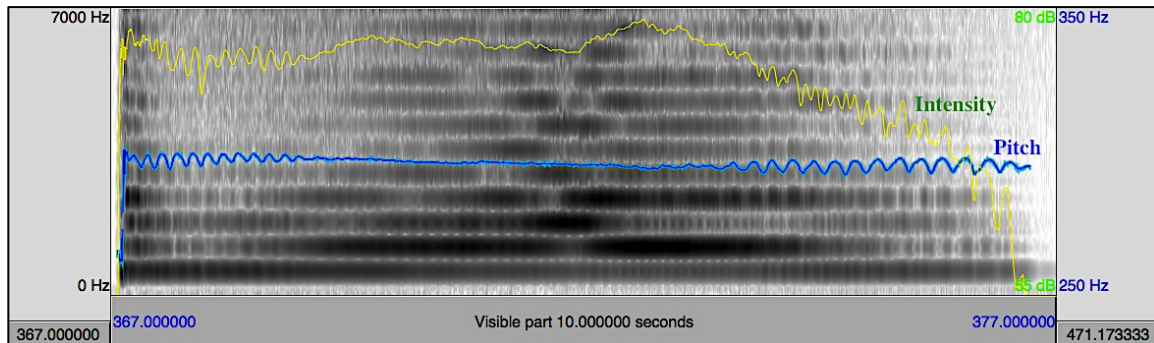
b. First D2 of cell #9ae”, *dan 12*, Yamaguchi recording, Praat analysis corresponding to Example 13.9a



c. D2 of cell #9, *dan 5*, Aoki recording, SPEAR analysis (m.46 in transcription)



d. D2 of cell #9, *dan 5*, Aoki recording, Praat analysis corresponding to Example 13.9c



### 13.3.2 Added breathiness to introduce a cell or change of note

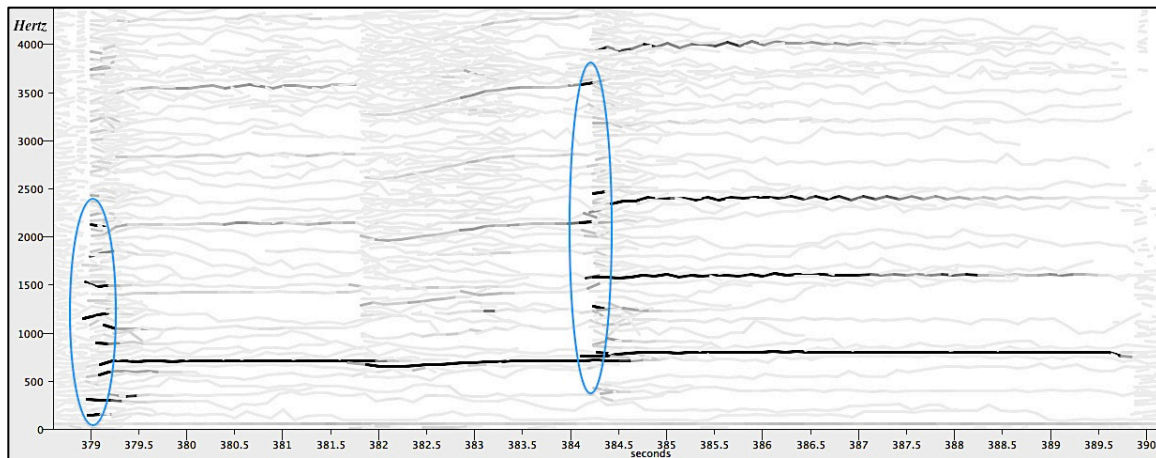
Alterations in breathiness, or air pressure, do not occur only in the middle of a sustained tone in *Sokaku Reibo*. Phrases are also frequently begun with a burst of air, and although phrases tend to end with a gradual decrease in intensity, exceptions do occur, as seen in Example 13.8c, where a final push of air results in a sudden spike in intensity. Likewise, a change of note can be accentuated. Example 13.10 shows cell #10 from *dan 5* in the Aoki recording. Breathiness is added to the

tone at the beginning of the cell, as well as on the movement from F to G, a progression also highlighted by finger articulation. At these two points, the harmonic content is denser.

EXAMPLE 13.10 a. Cell #10 (F-G), *dan* 5, transcription of Aoki recording (m.47)



b. Cell #10, *dan* 5, Aoki recording, SPEAR analysis corresponding to Example 13.10a. Breathiness is heard at circled points. The first occurs at the beginning of the cell, the second accompanies a change of note and finger articulation.

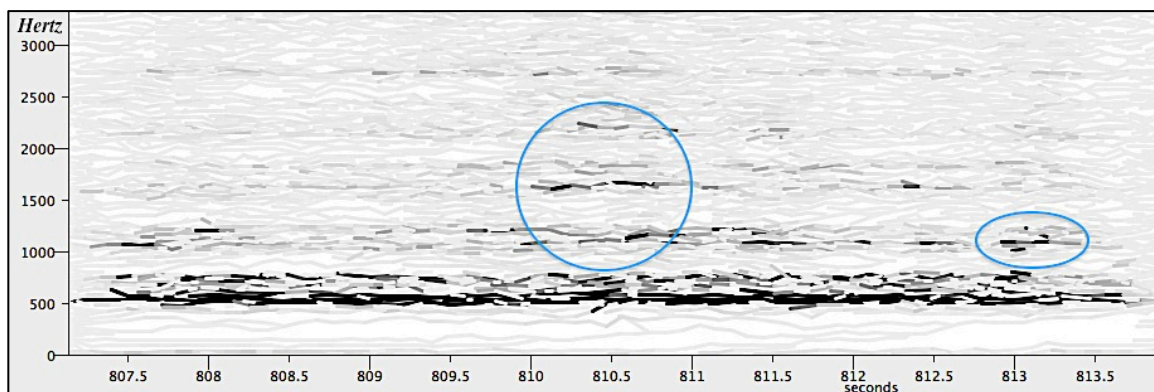


### 13.3.3 Breathiness alongside other techniques

Example 13.10 showed an extra burst of air accompanying finger articulation. Breath sounds (breathiness) are also added to *nayashi* pitch slides (a technique discussed in Chapter 14) and full and partial *koro-koro* techniques (see Section 13.2). These techniques are especially perceivable in spectral analysis of the Aoki recording. Yamaguchi's breath technique is subtler but alteration to the timbre through breathiness is nonetheless audible in his recording of *Sokaku Reibo*.

When played consistently throughout, the special *koro-koro* tremolo technique produces significant timbral effects, as compared to a simple sustained tone. However, Aoki demonstrates that further manipulation is possible. For example, on the final full *koro-koro* of the piece, he adds breathiness to the middle and end of the effect, as shown in Example 13.11. The result is more prominent harmonics above the already dense fundamental, particularly in the middle of the breath.

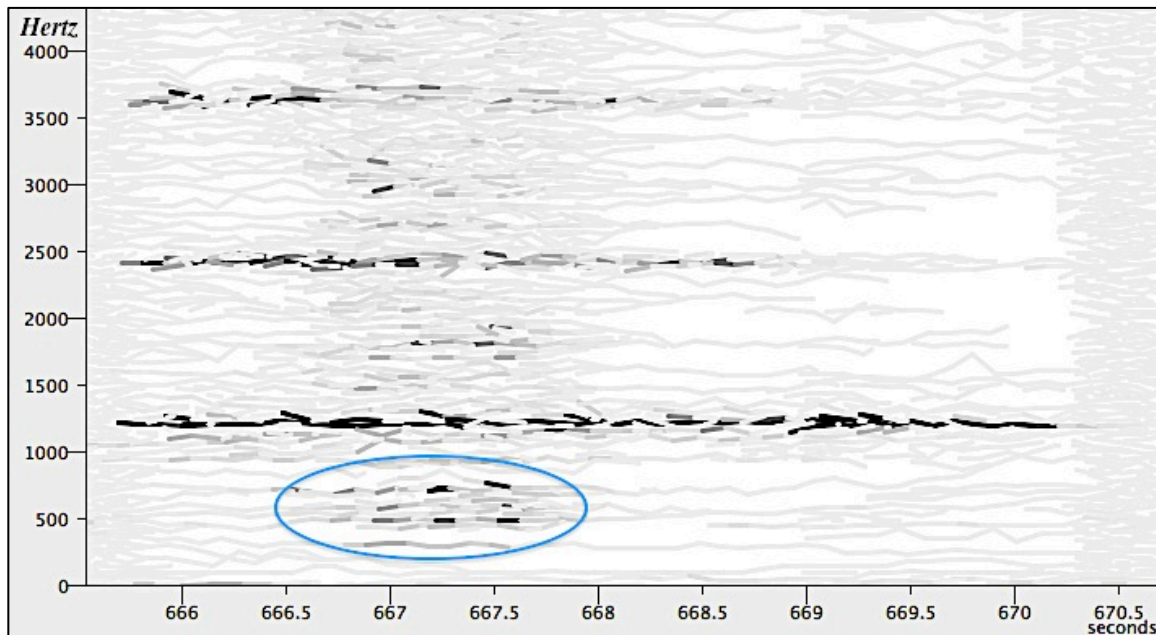
**EXAMPLE 13.11** Cell #2am, *dan 12*, Aoki recording, SPEAR analysis. Breathiness is added to *koro-koro* technique at circled points.



As discussed above in Section 13.2.2, a partial *koro-koro* trill technique with added breathiness results not in more prominent overtones, but rather undertones, shown again below in Example 13.12.

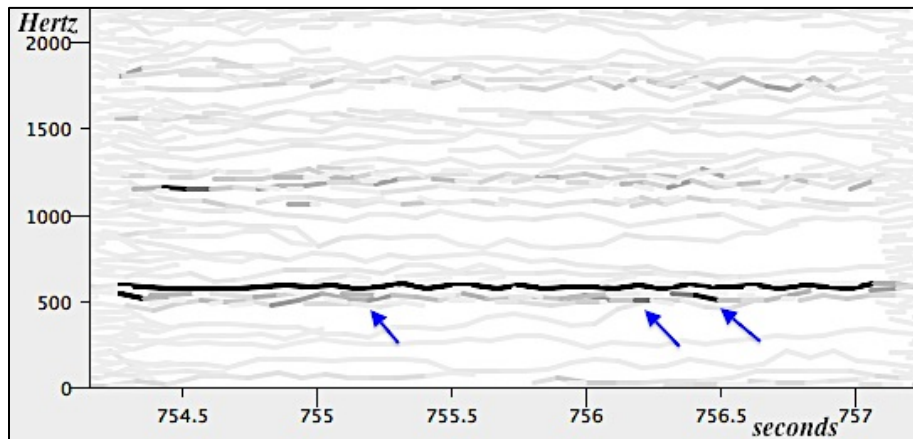


EXAMPLE 13.12 *Koro-koro* trill on D3 with undertone (circled) resulting from added breathiness, cell #9db, Aoki recording, SPEAR analysis



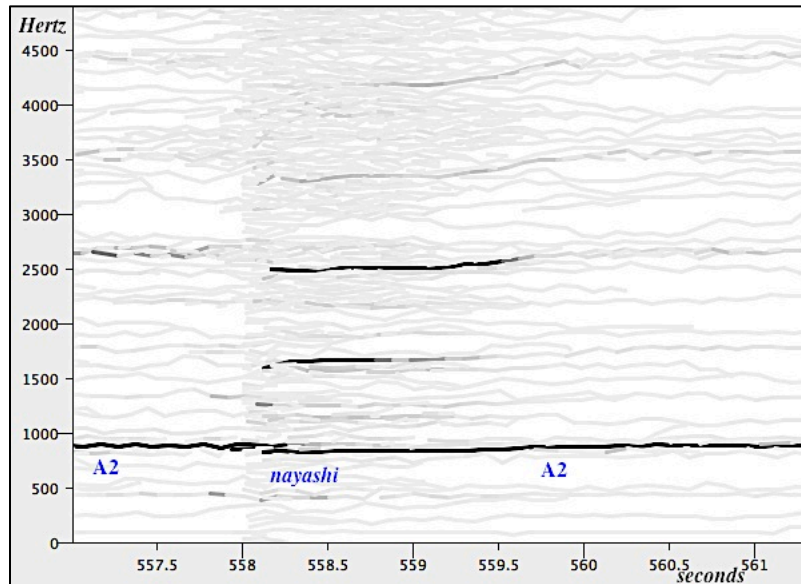
Aoki also adds breathiness to the  $\text{ノハ}$  *ha* fingering for D2 when it follows the full *koro-koro* technique. The open *ha* is already timbrally different from the closed  $\square$  *ro* fingering for D2, with fewer overtones (see Section 12.1.1), but in the spectral image of a sustained *ha* in *dan* 12, undertones also appear that correspond to audible breathiness in the sound.

**EXAMPLE 13.13** *Ha* fingering for D2 following *koro-koro*, cell #2db, *dan* 12, Aoki recording, SPEAR analysis. Undertones resulting from added breathiness.



Pitch slides, and in particular, *nayashi* slides (discussed in detail in Chapter 14), are also highlighted in the Aoki recording via bursts of air. In his recorded performance, Aoki consistently adds breathiness to *nayashi* slides, as shown in Example 13.14. In *Sokaku Reibo*, *nayashi* slides introduce a repeated tone with a slide back up to the targeted pitch from below. In the example below from *dan* 7, the *nayashi* serves to reiterate A2. The fingering does not change, as the slide is produced with changes to embouchure and breath angle. However, harmonics become more pronounced with added breathiness.

**EXAMPLE 13.14** *Nayashi* pitch slide to A2, 3RC cell, *dan 7*, Aoki recording, SPEAR analysis corresponding to m.76 in transcription

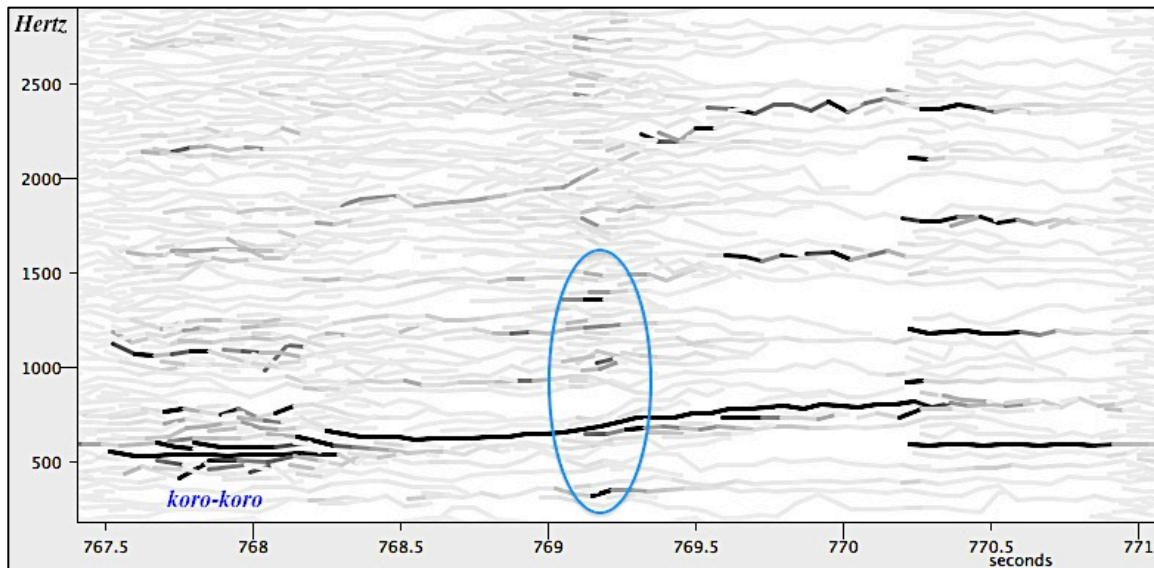


A final example of added breathiness in the Aoki recording occurs at the upper end of another rising pitch slide. In cell #2am" (D<sup>b</sup>-E<sup>b</sup>-G-D), *dan 12*, Aoki adds air sounds at the top of a slide from E<sup>b</sup>2 to G2, just before the change of note, resulting in a briefly richer harmonic image, shown in Example 13.15b. Breathiness is thus used as a timbral technique in combination with other idiomatic techniques: timbral fingerings, pitch slides, and *koro-koro* multiphonic tremolo effects.

**EXAMPLE 13.15 a.** Cell #2am", *dan 12*, transcription of Aoki recording (m.102)



b. Cell #2am”, dan 12, Aoki recording, SPEAR analysis corresponding to Example 13.15a. Breathiness (circled) added at top of pitch slide.



### 13.4 Summary of timbral techniques in *Sokaku Reibo*

Japanese composer Minoru Miki wrote:

Historically, the Japanese have cherished timbre. Even today, traditional Japanese musicians are extremely conservative. When improving Japanese instruments, there has never been an attempt to increase functionality or acquire a greater volume of sound at the expense of destroying the instrument’s traditional timbre... Imitating the sounds of Japan’s natural environment is a fundamental precept in composition and performance. The non-musical sounds produced by the instruments are also considered an integral part of the music.<sup>7</sup>

*Shakuhachi* players have traditionally cultivated such “non-musical” sounds in imitation of their environment. In *Sokaku Reibo* in particular, timbral techniques are used to depict the life cycle of a family of cranes. In terms of formal organization, the timbral techniques discussed in this and the preceding chapter appear most frequently at the beginning of pitch cells or breath phrases, and highlight the

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<sup>7</sup> Miki, *Composing*, 3.

fingering □ *ro*, i.e., D—the lowest note of the first and last *miyakobushi* trichord heard in the piece (D-E<sup>b</sup>-G). Other tones treated with timbral alteration include B<sup>b</sup> and E<sup>b</sup>, notes in a M3 and m2 relationship with D, respectively—the two most prevalent intervals of the piece.

## Chapter 14: Wind techniques in *Sokaku Reibo*—Pitch bends and slides, part 1

Performance practice of *shakuhachi honkyoku* involves a rich vocabulary of embellishing gestures. A significant portion are pitch bends and slides; these embellishments to the melodic line do not necessarily appear in the scores. Although some are indeed notated in some scores, the execution of bends and slides can be much more complex than what is written down, and as Linder writes, even “in the shakuhachi literature, there are few explanations about how to play the ornaments.”<sup>1</sup> Despite what does or does not appear in the scores (and *shakuhachi* literature), *honkyoku* only truly exists as it is performed and what is on the page is more simply an outline used for memory, instruction, and transmission. As is shown through the spectral images in this chapter, pitch bends and slides are employed so frequently in *Sokaku Reibo* that they are integral to the performance of the piece. Perhaps they are so fundamental that notating them is deemed unnecessary. With respect to traditional Korean music, which shares its roots with Japanese music in Chinese traditions, Hahn Man-young explains, “what might sound as two tones connected by vibrato or glissando to the Western ear, is to the Korean ear one musical entity,”<sup>2</sup> i.e., a single thing rather than two things plus a third. Likewise, each pitch cell or breath phrase in *Sokaku Reibo* could thus be understood as a complete gesture wherein slides, bends, and other performance techniques are essential to the “musical entity.” Example 15.8, which appears at the end of the following

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<sup>1</sup> Linder, *Notes*, 31.

<sup>2</sup> Hahn Man-young, “Theory,” in *Survey of Korean Arts: Traditional Music* (Seoul, Korea: National Academy of Arts, 1973), 92.

chapter, shows how several types of bends and slides can embellish a single breath phrase.

In *Sokaku Reibo*, pitch bends and slides appear in three primary locations—before or after immediately-reiterated tones, at the ends of breath phrases, and within cells to connect principal intervals or *miyakobushi* trichords. Bends and slides occur as both rising and falling gestures, as well as a combination of the two, i.e., a downward bend followed without a break in the sound by a rising slide. They also occur within both ascending and descending melodic movement, most frequently in contrary motion to the main tones within a cell or breath phrase.<sup>3</sup>

Figure 14.1 lists the types of bends and slides that are notated in the *Sokaku Reibo* scores by Aoki and Kurahashi. Additional types can be found in other pieces in the *honkyoku* repertoire; however, a comprehensive examination of all performance techniques in the *Kinko-ryū* repertoire is beyond the scope of this study. In this and the next chapter, I analyze the bends and slides heard on the recordings by Aoki and Yamaguchi, and notated in the scores by Aoki and Kurahashi.

**FIGURE 14.1** Types of pitch bends and slides notated in *Sokaku Reibo* scores by Aoki and Kurahashi

Notation*	Technique	Direction	Method of Production and Audible Effect	General Use
~	<i>nayashi</i>	↑	<ul style="list-style-type: none"> <li>• a repeated tone is begun approximately one semitone below pitch, then slid back up</li> <li>• involves finger shading and beginning with a lowered head position<sup>4</sup></li> </ul>	<ul style="list-style-type: none"> <li>• to introduce the reiteration of a sustained tone</li> <li>• usually follows <i>ura</i> (left-side) beat and is preceded by breath<sup>5</sup></li> </ul>

<sup>3</sup> The term “contrary motion” is not to be confused with contrary motion in European counterpoint theory.

<sup>4</sup> Linder, *Notes*, 83.

<sup>5</sup> *Ibid.*

~	<i>furi</i>	∩	<ul style="list-style-type: none"> <li>• head is briefly lowered to lower pitch</li> <li>• head movement can be vertical or diagonal<sup>6</sup></li> </ul>	<ul style="list-style-type: none"> <li>• at end of tone or phrase</li> <li>• for “slight changes in pitch, loudness and/or timbre”<sup>7</sup></li> </ul>
引	<i>hiku (hiki-ne)</i>	↓	<ul style="list-style-type: none"> <li>• pitch is quickly lowered by lowering the head (changing the breath angle against the mouthpiece)</li> <li>• sound fades away<sup>8</sup></li> </ul>	<ul style="list-style-type: none"> <li>• end of phrase<sup>9</sup></li> <li>• opposite direction: <i>dasu</i></li> </ul>
ㇿ	<i>ori-keshi</i> (also: <i>otoshi, shiori</i> )	↓	<ul style="list-style-type: none"> <li>• pitch is lowered, sound is stopped</li> <li>• head is dropped, finger shades hole to drop pitch<sup>10</sup></li> </ul>	<ul style="list-style-type: none"> <li>• end of phrase (except final phrase of piece [see <i>tome</i>])<sup>11</sup></li> </ul>
トメ	<i>tome</i>	↓	<ul style="list-style-type: none"> <li>• pitch is lowered and sound is stopped</li> <li>• head is dropped, finger shades hole to drop pitch</li> <li>• “no lingering sound”<sup>12</sup></li> </ul>	<ul style="list-style-type: none"> <li>• to end the final tone of a piece<sup>13</sup></li> </ul>
ㇿ	<i>meri-komi</i>	∩	<ul style="list-style-type: none"> <li>• pitch is suddenly lowered then gradually slid back up</li> <li>• primarily done by lowering and raising head but can involve finger shading and embouchure changes<sup>14</sup></li> </ul>	<ul style="list-style-type: none"> <li>• usually within descending melodic movement<sup>15</sup></li> </ul>
ス or ㇿ	<i>suri(-age)</i>	↑	<ul style="list-style-type: none"> <li>• rising pitch slide between two tones</li> <li>• finger slides off closed tone hole “as if rubbing the bamboo softly”<sup>16</sup></li> </ul>	<ul style="list-style-type: none"> <li>• transition from tone to tone<sup>17</sup></li> <li>• embellishment, not structural<sup>18</sup></li> <li>• most common slide<sup>19</sup></li> <li>• opposite direction possible (<i>suri-sage</i>)<sup>20</sup></li> </ul>

<sup>6</sup> Simura, “Selections,” 163.

<sup>7</sup> Ibid.

<sup>8</sup> Linder, *Notes*, 79.

<sup>9</sup> Ibid.

<sup>10</sup> Ibid., 78.

<sup>11</sup> Ibid.

<sup>12</sup> Ibid.

<sup>13</sup> Ibid.

<sup>14</sup> Ibid., 71-72.

<sup>15</sup> Ibid., 72.

<sup>16</sup> Simura, “Selections,” 158.



<sup>17</sup> Ibid.

<sup>18</sup> Linder, *Notes*, 74.

<sup>19</sup> Taniguchi Yoshinobu, *How to Play the Shakuhachi, Part I*, edited by Roderic Knight (Oberlin, Ohio: Oberlin College Conservatory of Music, 1983), 29.

<sup>20</sup> Linder, *Notes*, 73; Taniguchi, *How to Play*, 29.



	<i>meri-komi</i> <i>suri-age</i>		<ul style="list-style-type: none"> <li>• <i>meri-komi</i> followed directly by <i>suri-age</i><sup>21</sup></li> <li>• pitch is first lowered as in <i>meri-komi</i> then slid back up above original pitch level</li> </ul>	<ul style="list-style-type: none"> <li>• transition from note to note<sup>22</sup></li> </ul>
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## 14.1 Pitch slides and bends on reiterated tones

Pitch bends and slides occur on immediately-reiterated tones in *Sokaku Reibo* either as a rising slide from below to the second tone, or as a downward returning bend after the tone is re-articulated with one of the fingers. The first type, *nayashi*, is notated in both the Aoki and Kurahashi scores, whereas the second is not. Both types serve to embellish the reiterated tone but the first type also usually occurs as part of a terminal pattern at the end of *dan* or mid-*dan* sub-sections.

### 14.1.1 *Nayashi* rising pitch slides on reiterated tones

Rising pitch slides called *nayashi* are used to embellish reiterated sustained tones. Before the repeated tone is played, a breath is typically taken. The tone is then restarted approximately a semitone below pitch and then slid back up. This technique involves both head position and fingering. To lower the pitch, the head is lowered—changing the angle of the breath against the mouthpiece—and the finger shades (i.e., slightly covers) the lowest open tone hole. To realize the upward slide, the head gradually returns to its original position and the finger is raised as well. According to Linder, a *nayashi* usually follows an *ura-ma* (left-side) beat and the stable pitch is reached at the *omote-ma* (right-side) beat.<sup>23</sup> Indeed, all instances of

<sup>21</sup> Linder, *Notes*, 77.

<sup>22</sup> *Ibid.*

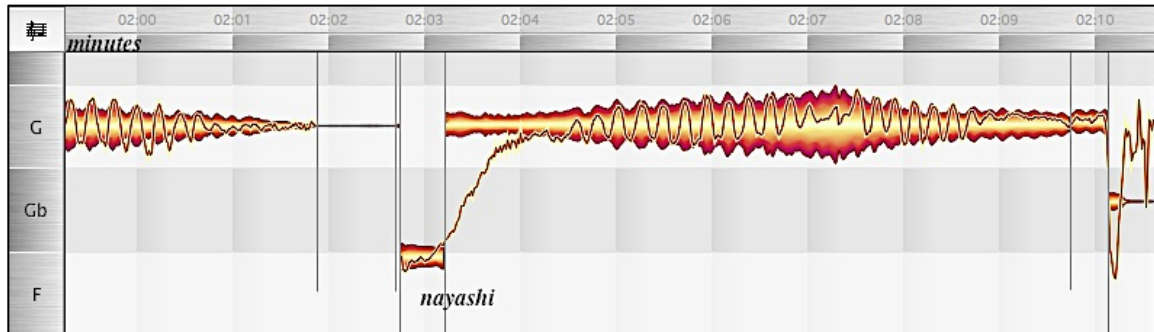
<sup>23</sup> *Ibid.*, 83.

*nayashi* pitch slides in the Aoki and Kurahashi scores I consulted follow this metric pattern. A list of all the *nayashi* slides notated or performed in *Sokaku Reibo* scores and recordings by Aoki, Yamaguchi, and Kurahashi appears in Figure 14.2. Images of *nayashi* pitch slides from the Aoki and Yamaguchi recordings follow in Example 14.1.

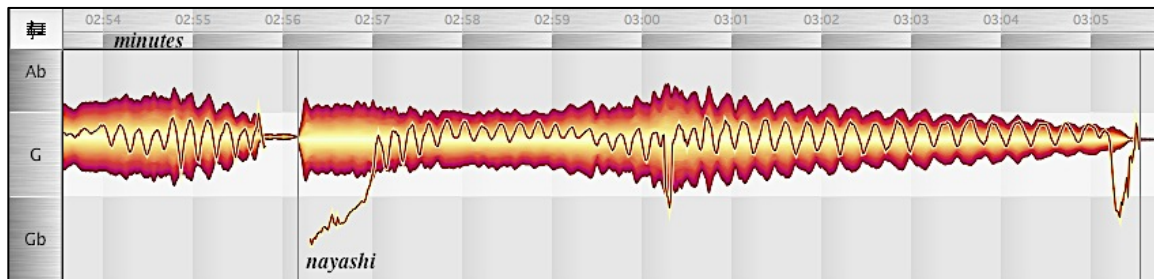
**FIGURE 14.2** All occurrences of *nayashi* pitch slides in *Sokaku Reibo* sources by Kurahashi (score: KY), Aoki (score and recording: AR), and Yamaguchi (recording: YG)

<b>Dan</b>	<b>Bold: <i>nayashi</i> note</b>	<b>Location</b>	<b>Followed by</b>	<b>Versions</b>
1	<b>D-D</b>	mid- <i>dan</i>	<i>koro-koro</i> in next section	KY
2	<b>G-G-G</b>	mid- <i>dan</i>	3RC on G (terminal pattern)	KY, AR, YG
2	<b>A-A-A</b>	end of <i>dan</i>	3RC on A (terminal pattern)	AR, YG
3	<b>A-A-A</b>	end of <i>dan</i>	3RC on A (terminal pattern)	AR, YG
4	<b>G-G-G</b>	end of <i>dan</i>	3RC on G (terminal pattern)	AR, YG
5	<b>G-G-G</b>	end of <i>dan</i>	3RC on G (terminal pattern)	AR
6	<b>A-A-A</b>	end of <i>dan</i>	3RC on A (terminal pattern) except YG	KY, AR, YG
7	<b>A-A-A</b>	end of <i>dan</i>	D-B $\flat$ x8, then 3RC on A (terminal pattern)	AR
10	<b>G-G-G</b>	end of <i>dan</i>	<i>dan</i> 12 <i>nayashi</i> pattern on D (D- <b>D</b> -E $\flat$ -E $\flat$ -D)	KY
12	<b>G-G</b>	mid- <i>dan</i>	2RC on E $\flat$ ( <i>nayashi</i> preceded by G-E $\flat$ -E $\flat$ x3)	YG
12	<b>D-D-E<math>\flat</math>-E<math>\flat</math>-D</b>	mid- <i>dan</i>	another <i>nayashi</i> pattern (see line below)	KY, YG
12	<b>D-D-E<math>\flat</math>-G-E<math>\flat</math>-E<math>\flat</math>-D</b>	mid- <i>dan</i>	<i>koro-koro</i> in next section	KY, AR, YG
12	<b>D-D-D</b>	end of <i>dan</i>	final notes: G1-D1	KY

EXAMPLE 14.1 a. *Nayashi* pitch slide on G2, *dan 2*, Yamaguchi recording, Melodyne analysis



b. *Nayashi* pitch slide on G2, *dan 2*, Aoki recording, Melodyne analysis



*Nayashi* slides are found in the *Sokaku Reibo* sources I consulted only on D2, G2, and A2—the lowest notes of each of the three *miyakobushi* trichords used in the piece and discussed in Chapters 10 and 11. This type of slide always introduces the repetition of a tone—often the second note of a three-note pattern that could be considered an augmentation of the 3RC rhythm cell.<sup>24</sup> However, instead of the three quick notes typically repeated in a long-short-short (or retrograde) rhythm seven times, in a *nayashi* pattern the three tones are sustained and usually separated by a breath after the first tone (see Example 14.2) and finger articulation before the third. The third tone is also typically ended with a downward pitch bend, as seen in Examples 14.1a-b. The three-note *nayashi* pattern is then frequently followed by a

<sup>24</sup> See Section 11.3 on rhythm cells

more typical 3RC on the same tone. Together, the *nayashi* three-note pattern and a reiterated 3RC form a terminal pattern that closes *dan 2* through 7 (Example 14.3).

**EXAMPLE 14.2** *Nayashi* pitch slide on G from *dan 2*, transnotation of Kurahashi (top) and Aoki (bottom) scores. The sustained rhythm of the three-note *nayashi* pattern (G-G-G) could be considered an augmentation of the 3RC rhythm that precedes it.

**EXAMPLE 14.3** Closing phrases of *dan 4*: *Nayashi* on G2, followed by 3RC, Aoki transnotation

*Nayashi* patterns also occur in *Sokaku Reibo* at the ends of sub-sections in the middle of *dan*. For example, Kurahashi notates a *nayashi* slide in *dan 1* directly before cell #2 (and the *koro-koro* effect) is introduced. Midway through *dan 2*, all sources notate or perform a *nayashi* slide on G—a tone that acts as a transitional tone since at this point the melodic line moves from the trichord on D (D-E $\flat$ -G) to the trichord on G (G-A $\flat$ -C) for the first time in the piece (see Figure 14.3 or Appendix H, *dan 2*).

**FIGURE 14.3** A *nayashi* slide on G in the middle of *dan 2* closes one sub-section and introduces the trichord of the next.

Cell	Melodic line	Trichord
4.2	G-E $\flat$ -E $\flat$ x3	[D]-E $\flat$ -G
4.2de/3RC	G-( <i>nayashi</i> -)G-G	[D-E $\flat$ ]-G
3RC	G-G-G x5	[D-E $\flat$ ]-G
5	C-A $\flat$ -A $\flat$ -A $\flat$	[G]-A $\flat$ -C
5db/3RC	A $\flat$ -A $\flat$ -A $\flat$ x3-9	[G]-A $\flat$ -[C]

In *dan 12*, *nayashi* slides are treated differently. For example, in the Kurahashi score and Yamaguchi recording, two phrases containing *nayashi* slides on D are notated or performed back-to-back. Rather than being followed by a third iteration of the D (i.e., D-[*nayashi*-]D-D), the *nayashi* D is followed by E $\flat$ . In the first of the two phrases, the basic melodic line is D-(*nayashi*-)D-E $\flat$ -E $\flat$ -D, wherein the E $\flat$  (x2) is added to the middle of the D-D-D cell. In the next phrase, the addition is extended further: D-(*nayashi*-)D-E $\flat$ -G-E $\flat$ -E $\flat$ -D. These two phrases are then followed by a reiteration of cell #2 and the *koro-koro* effect introduced in *dan 1*. The Aoki version includes the second of these two phrases but not the first.

**EXAMPLE 14.4 a.** *Nayashi* slides in *dan 12*, Kurahashi (top) and Aoki (bottom) transnotation

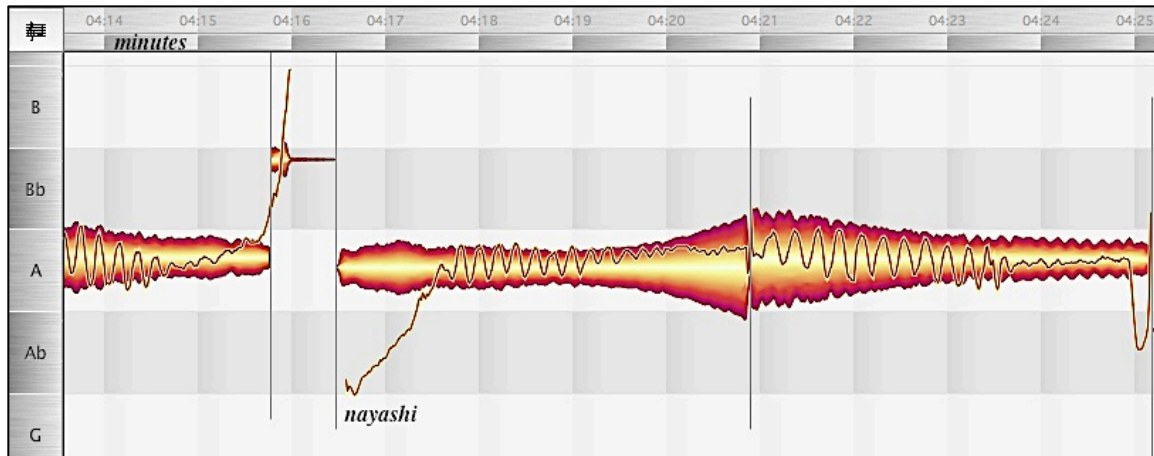
b. Transcription of *nayashi* slide in Yamaguchi recording, corresponding to Kurahashi transnotation above, first phrase

c. Transcription of *nayashi* slide in Yamaguchi recording, corresponding to Kurahashi transnotation above, second phrase

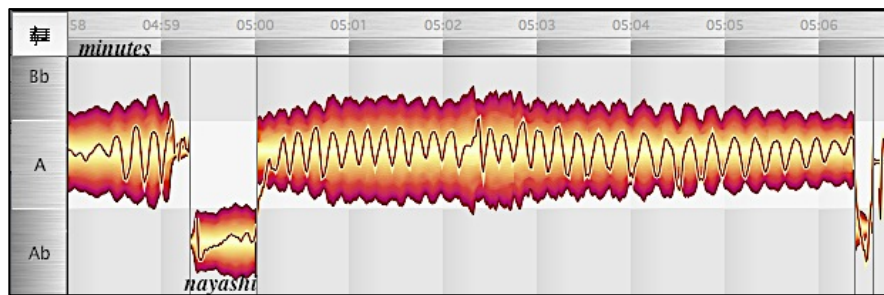
Regarding issues of performance practice in the recorded versions, Aoki adds breathiness to the tone on *nayashi* slides, as discussed in Section 13.3.3.

Yamaguchi's breath technique is subtler; however, he does add a rising bend to the end of the initial tone whenever it is an A, whereas Aoki does not. In *dan* 2, 3, and 6, the *nayashi* at the end of the *dan* is performed on A2. At the end of the A directly before the breath and the *nayashi* slide, Yamaguchi raises the pitch, creating a larger interval between the end of the first tone and the lowered beginning of the second tone. Throughout the piece, Yamaguchi also starts *nayashi* slides lower than Aoki does, i.e., more than a semitone below the target pitch (see Example 14.5, below, as well as Example 14.1).

**EXAMPLE 14.5 a.** *Nayashi* slide on A2, *dan 3*, Yamaguchi recording, Melodyne analysis. Tone preceding *nayashi* ends with rising pitch bend



**b.** *Nayashi* slide on A2, *dan 3*, Aoki recording, Melodyne analysis

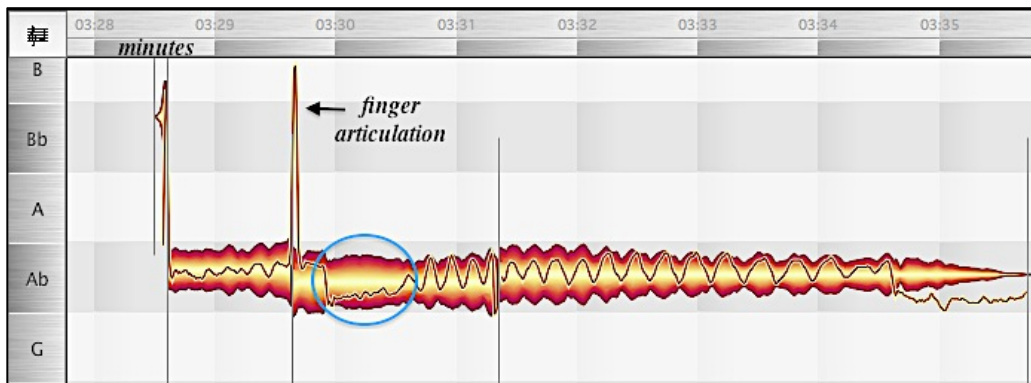


### 14.1.2 Downward pitch bends on reiterated tones

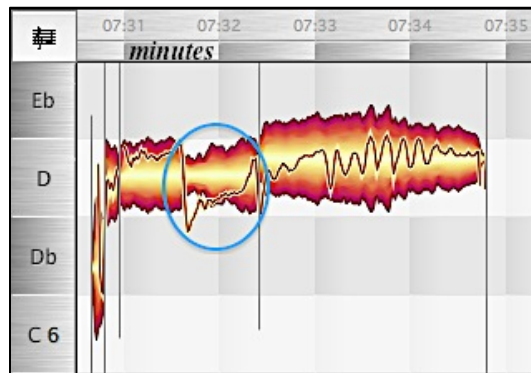
Reiterated tones can also be embellished with downward bends. Unlike *nayashi* pitch slides, however, these bends are not notated in *Sokaku Reibo* by Kurahashi or Aoki. Nor are they consistently or predictably performed by Yamaguchi or Aoki. These bends tend to involve a sudden lowering of the pitch followed by a more gradual return (characteristics of the *meri-komi* technique), as shown in the Melodyne analyses in Example 14.6. Within both the Aoki and Yamaguchi recordings are a few clear examples of these downward bends. In the Aoki recording, the most audible pitch bends occur on A $\flat$  2 and D3, while in the

Yamaguchi recording they are heard on  $E\flat 2$  and  $E\flat 3$ . Additionally, though less perceivable, pitch bends are also likely performed in the *Sokaku Reibo* recordings as part of the aesthetic of *honkyoku*. In most cases of tone reiteration in the piece, separation is achieved through finger articulation (discussed in Chapter 16); a downward bend and return to pitch further embellishes the articulation.

**EXAMPLE 14.6 a.** Downward bend (circled) on reiteration of  $A\flat 2$ , Melodyne analysis of Aoki recording, corresponding to m.28 of *dan 2* in transcription

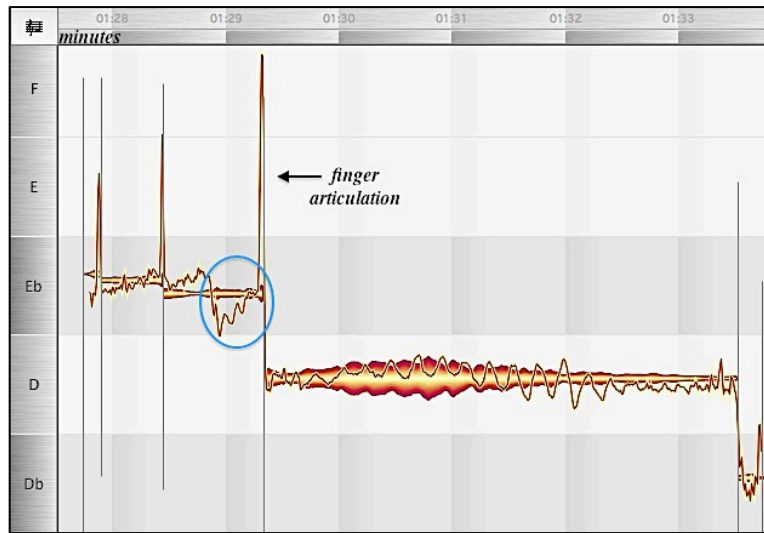


**b.** Downward bend (circled) on reiteration of D3, Melodyne analysis of Aoki recording, corresponding to m.56 of *dan 6* in transcription





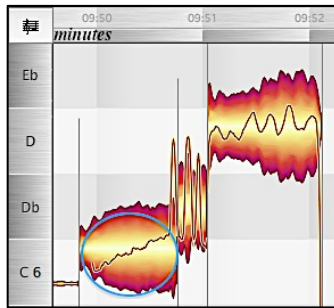
c. Downward bend (circled) on reiteration of E $\flat$ 2, Melodyne analysis of Yamaguchi recording, corresponding to m.11 of *dan* 1 in transcription



## 14.2 Initial upward pitch bends and slides

In *Sokaku Reibo*, pitch cells and breath phrases are not typically begun with bends or slides. These techniques are generally reserved for the ends of phrases or for movement from tone to tone. Cells or phrases are instead begun with finger articulation. In a couple of cases, a tone is lowered directly after the initial finger articulation and then brought back up to pitch, but this is rare. In the Yamaguchi recording, a trill figure from C3 to D3 in cell #11 (*dan* 6) and #15 (*dan* 11) is treated with an upward pitch slide from C3 immediately before the trill is begun; however, the C3 is notated as an independent note and sounds before the slide; the embellishment is therefore more rightly considered a connector rather than an initial slide.

**EXAMPLE 14.7** Upward slide (circled) from C3 to D3, followed by trill figure, Melodyne analysis of Yamaguchi recording, corresponding to m.67 of *dan 11* in transcription



The only true initial pitch slide or bend heard in either recording is discussed in Section 13.1.1: *Tamane* on D (M3) at the beginning of a cell. Aoki uses *tamane* flutter tonguing to embellish the first D2 of cell #3 in *dan 1*: D-B $\flat$ -E $\flat$ -E $\flat$ -D, played three times in a row. However, he begins the initial D2 well below pitch and slides upward, using *tamane* throughout the tone. He does likewise in *dan 12*. This slide is not notated in his score; nor is it performed by Yamaguchi.

**EXAMPLE 14.8** Upward slides (circled) on first tone of cell #3 (D2), played three times, Melodyne analysis of Aoki recording, corresponding to mm.18-20 of *dan 1* in transcription



### 14.3 Pitch bends at ends of breath phrases

In contrast to the rarity of initial pitch slides and bends, bends that appear at the ends of phrases are in abundance in *Sokaku Reibo*. They are frequently, though not consistently or necessarily, notated and occur both in upward and downward directions. Aoki notates primarily *ori-keshi* downward bends (also called *otoshi*); Kurahashi notates far fewer bends but does include some *hiku* and *meri-komi* indications. Upward bends at the ends of breath phrases are not notated in either the Aoki or Kurahashi score but do occur in the Aoki and Yamaguchi recordings; downward bends are more frequently notated and performed.

#### 14.3.1 Downward bends at ends of breath phrases

Figure 14.1 lists the types of slides and bends notated in the *Sokaku Reibo* scores by Kurahashi and Aoki. Among these techniques are the *ori-keshi* (*otoshi*), *tome*, *hiku*, *meri-komi*, and *meri-komi suri-age*. For an *ori-keshi*, the pitch is lowered and then the sound stopped; a *tome* resembles an *ori-keshi* but is played only at the end of the final phrase of the piece; for a *hiku*, the pitch is lowered then fades away; for *meri-komi*, the pitch is lowered suddenly then gradually raised back up; a *meri-komi suri-age* begins similarly but is followed by a *suri* pitch slide that rises above the original pitch level. *Sokaku Reibo* notation excerpts of each of these downward pitch bends follow in Example 14.9.

EXAMPLE 14.9 a. *Ori-keshi* at end of first phrase, Aoki score



b. *Meri-komi* at end of first phrase, Kurahashi score



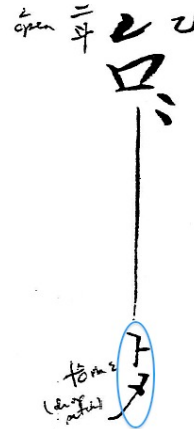
c. *Hiku* at phrase end in *dan 5*, Kurahashi score



d. *Meri-komi suri-age* at phrase end in *dan 9*, Aoki score



e. *Tome* at end of final phrase, Aoki score



Examples 14.9a and b show notation of the same phrase by Aoki and Kurahashi, respectively. Aoki calls for an *ori-keshi* at the end of the first phrase of the piece (E<sup>b</sup>-G-D) whereas Kurahashi notates a *meri-komi*. According to published descriptions of these techniques (outlined in Figure 14.1), and in particular the definitions given by Linder in *Notes on Kinko-ryū Shakuhachi Honkyoku: Performance Techniques: Analysis, Classification, Explanation*, the pitch is lowered for an *ori-keshi*,<sup>25</sup> but lowered then gradually raised again for a *meri-komi*.<sup>26</sup> In spectral

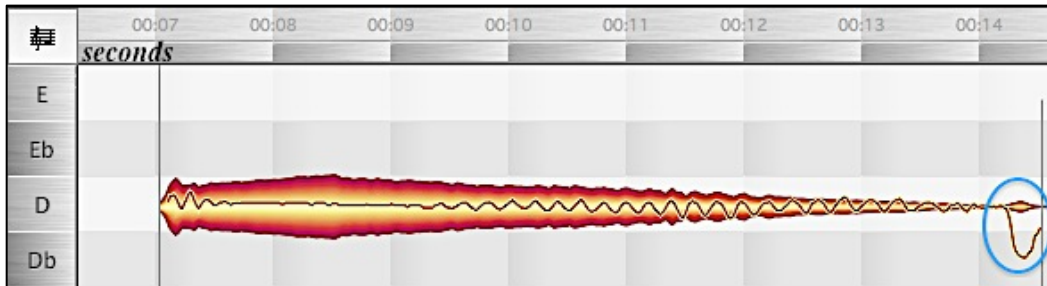
<sup>25</sup> “drop the pitch at the end of the phrase and cut the sound out.” (Linder, *Notes*, 78)

imaging of the last tone of the first phrase in recordings by Aoki (he notates an *ori-keshi*) and Yamaguchi, the pitch is raised partway back to D after the downward bend (Example 14.10). The return is not executed “gradually” so it is not a *meri-komi*, but nor is it lowered and then stopped at that level, as expected of an *ori-keshi* by Linder’s definition. These spectral examples (Aoki and Yamaguchi) as well as variation in notation (Aoki and Kurahashi) show that definitions and prescription of techniques are not to be understood as steadfast or absolute. For this reason, and because many techniques are not even notated, I do not refer to pitch-bending and -sliding techniques by their technical names unless there is only one clear possibility, as in the case of *nayashi* slides, discussed in Section 14.1. Instead, I refer to bends and slides by their direction (upward or downward) and location (e.g., phrase endings). Each performer may interpret and add embellishments in his or her own manner, and based on the conventions of his or her respective school of playing. The difficulty is most acute in analysis of the Yamaguchi recording, since no corresponding score is available; I thus treat both recordings in the same way. In this section, I discuss downward pitch bends that occur at the ends of breath phrases.

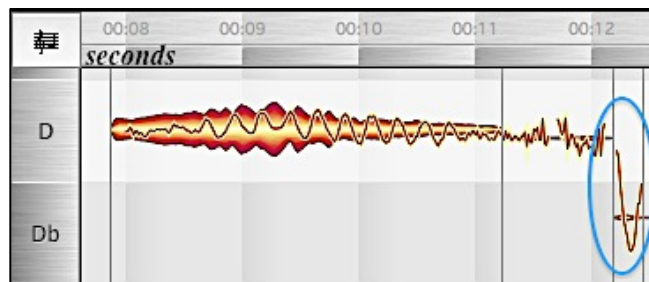
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<sup>26</sup> “the important factor... is the sudden drop and the gradual return.” (Ibid., 72)

EXAMPLE 14.10 a. Pitch bend at end of first phrase, on D2, Melodyne analysis of Aoki recording



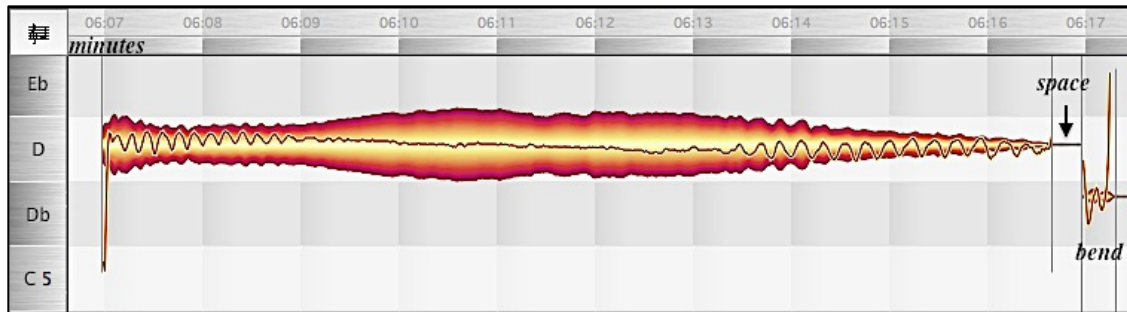
b. Pitch bend at end of first phrase, on D2, Melodyne analysis of Yamaguchi recording



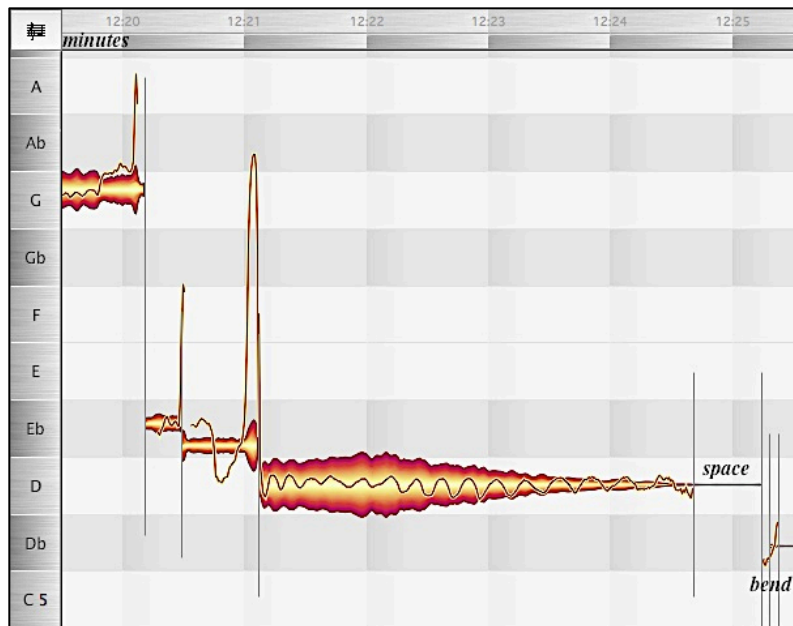
### 14.3.1.1 Downward bends on phrase-ending D2

Aoki notates *ori-keshi* downward bends at the ends of phrases throughout *Sokaku Reibo*, frequently on D2. Kurahashi also notates downward bends for the first three phrase-ending D2s of the piece, but then omits the indication. Although both Yamaguchi and Aoki perform these downward bends on D2, Aoki adds another element: space. In some instances, before lowering the pitch at the end of the breath, Aoki fades the tone away completely, waits a brief moment (without inhalation), then gives a final small push of air to end the phrase with a soft downward bend. Images of two such cases appear in Example 14.11.

**EXAMPLE 14.11** a. Pitch bend on D2 after space at end of first breath phrase of *dan* 5, cell #9, Melodyne analysis of Aoki recording, corresponding to m.46 of transcription



b. Pitch bend on D2 after space at end of breath phrase in *dan* 12, cell #9ae''', Melodyne analysis of Aoki recording, corresponding to m.97 of transcription



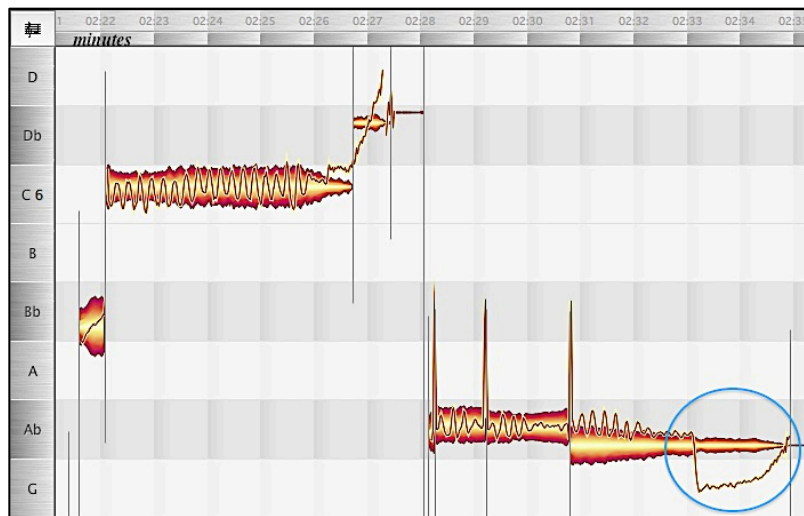
### 14.3.1.2 Downward bends on phrase-ending M3 and m2

Downward bends also appear in both the Aoki and Yamaguchi recordings when a breath phrase or pitch cell ends in a M3 (C-Ab; D-Bb) or m2 (Eb-D; A-Bb) interval. Example 14.12a-b shows a downward pitch bend at the end of cell #5 (C-

$A^b$ - $A^b$ - $A^b$ ) in *dan 2* in each recording—an embellishment of the M3 interval.<sup>27</sup>

Yamaguchi lowers the pitch to approximately G2 after a decrease in loudness and vibrato width on the  $A^b$ . He then brings the pitch back up to  $A^b$ . In contrast, Aoki lowers the pitch less than a semitone then stops the sound; he notates an *ori-keshi* here. Example 14.12c corresponds to Aoki's score excerpt in Example 14.9d; Aoki notates a *meri-komi suri-age* at the end of the C- $A^b$  cell (#5de). In his recording, Aoki brings the pitch back up over a period of more than 4 seconds after a sudden drop from the  $A^b$ . He does not raise the pitch above its initial level, however, as might be expected of an interpretation of the *suri-age* portion of the *meri-komi suri-age* indication.

**EXAMPLE 14.12 a.** Pitch bend at the end of C- $A^b$  interval, *dan 2*, cell #5, Melodyne analysis of Yamaguchi recording, corresponding to mm.17-18



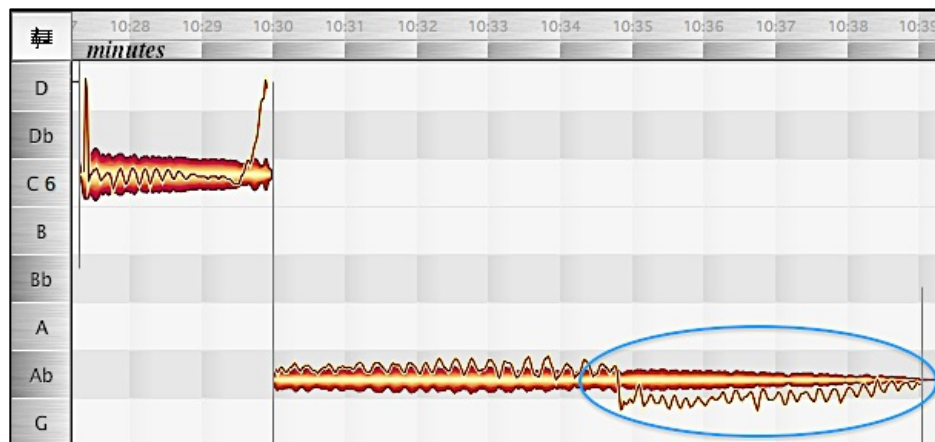
<sup>27</sup> Although the bend occurs after a unison interval ( $A^b$ - $A^b$ ), I regard the immediate repetition of notes in cells, together with the initial note, as embellished or re-emphasized sustained notes. I thus reduce cell #5 to C- $A^b$  in my analysis of intervallic relationships.



b. Pitch bend at the end of C-A $\flat$  interval, *dan 2*, cell #5, Melodyne analysis of Aoki recording, corresponding to mm.27-28

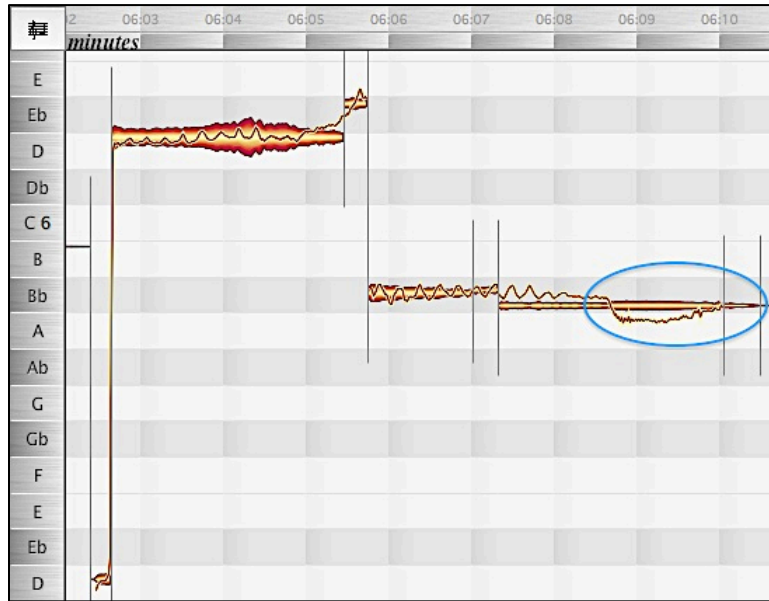


c. Pitch bend at the end of C-A $\flat$  interval, *dan 9*, cell #5de, Melodyne analysis of Aoki recording, corresponding to m.83 and Example 14.9d

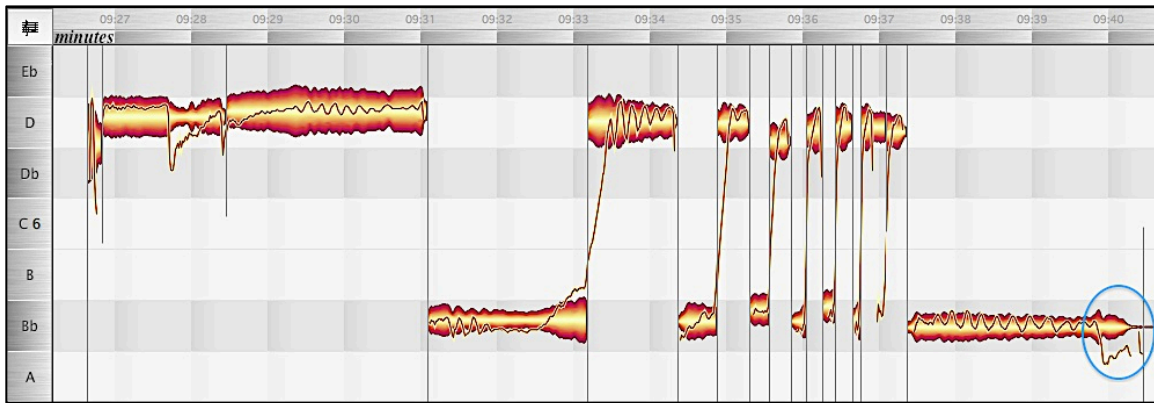


The D-B $\flat$  M3 interval (cell #3.2) is likewise treated with pitch bends when it appears at the ends of breath phrases or cells. However, whereas the C-A $\flat$  M3 consistently closes in a downward bend, both upward and downward bends are performed at the end of the D-B $\flat$  M3 transposition. Images of downward bends from the Aoki and Yamaguchi recordings appear in Example 14.13. Upward bends are discussed in the following section.

EXAMPLE 14.13 a. Pitch bend at the end of D-B $\flat$  interval, *dan* 6, cell #3.2, Melodyne analysis of Yamaguchi recording, corresponding to m.42



b. Pitch bend at the end of D-B $\flat$  interval, *dan* 7, cell #3.2, Melodyne analysis of Aoki recording, corresponding to m.77

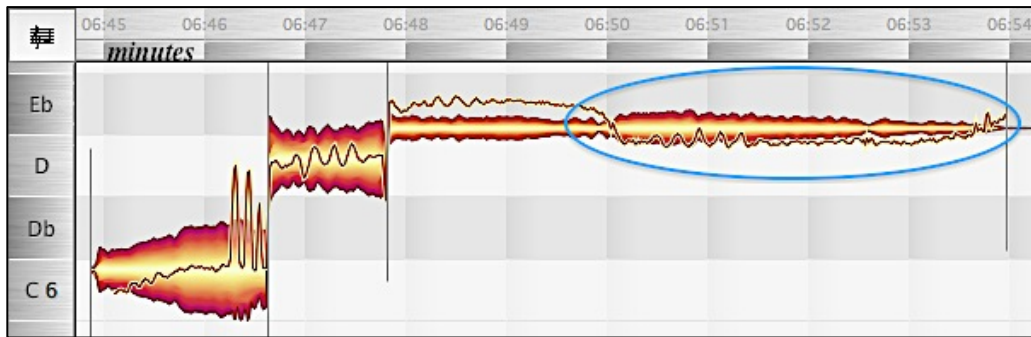


The third M3 interval of the piece, G-E $\flat$ , is not embellished with pitch bends when it appears at the end of a cell or breath phrase. However, the E $\flat$  is nonetheless treated with a downward bend when it forms part of the D-E $\flat$  m2 interval, as well as when it follows G+2 in cell #11.1db'/se (or 7.1db/se: A-G+-G+-E $\flat$ ) as a substitute for A. An example of the D3-E $\flat$  3 m2 interval from *dan* 8 of the Yamaguchi recording follows in Example 14.14, as does an example from the Aoki recording of the m2

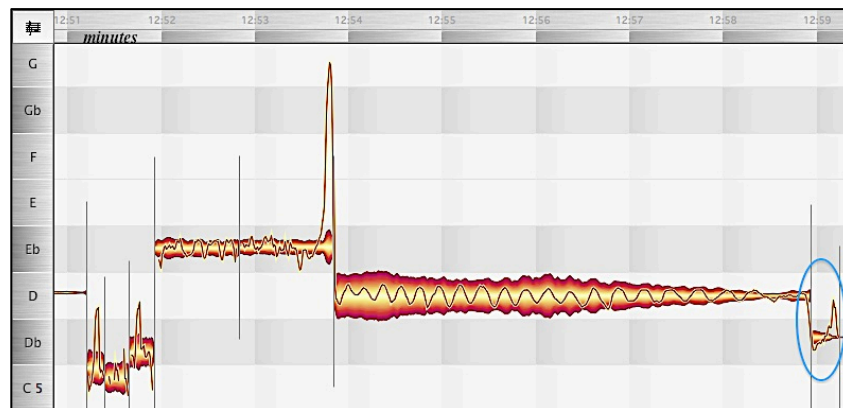
interval in retrograde:  $E\flat 2-D2$ , where the D is embellished at the end of the cell.

Aoki notates an *ori-keshi* here.

**EXAMPLE 14.14** a. Pitch bend at the end of  $D-E\flat$  interval, *dan 8*, cell #9ae, Melodyne analysis of Yamaguchi recording, corresponding to m.47



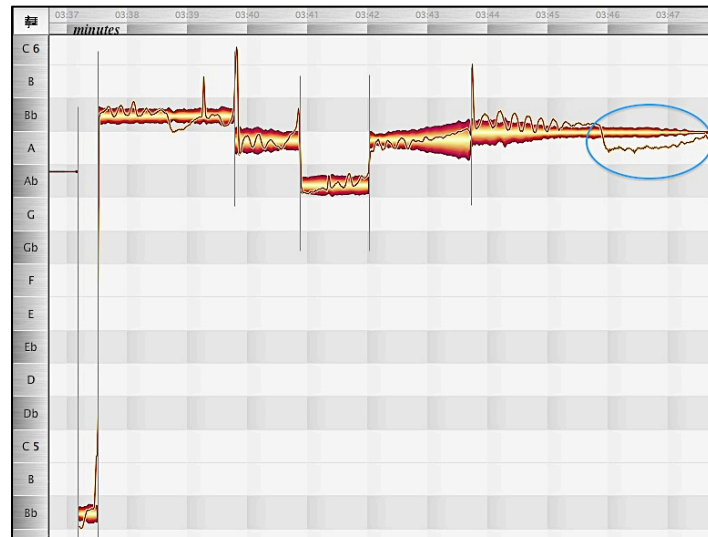
b. Pitch bend at the end of  $E\flat-D$  interval, *dan 12*, cell #2am', Melodyne analysis of Aoki recording, corresponding to m.103



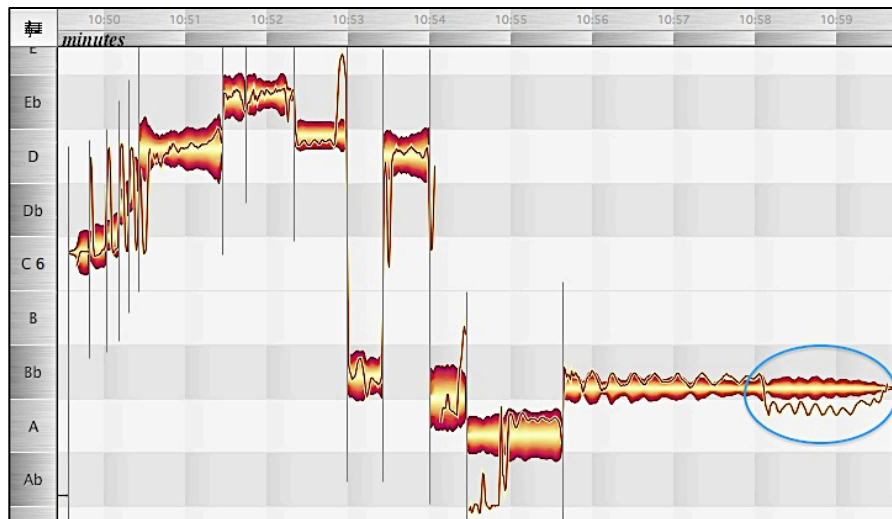
The second tone of the m2 interval is also embellished when the  $A-B\flat$  transposition sounds at the end of a cell or breath phrase. The last cell of *dan 9* in the Aoki recording (cell #11ae':  $C-D-E\flat-D-B\flat-D-C-A-G+-G+-A-B\flat$ ) ends in the 5-note pattern that also ends the first cell of *dan 3*, cell #7 ( $B\flat-B\flat-A-G+-G+-A-B\flat$ ):  $A-G+-G+-A-B\flat$ . The final interval of this pattern ( $A-B\flat$ ) is treated with a sudden downward bend and gradual return to pitch in *dan 3* in the Yamaguchi recording

(Aoki performs *tamane* here) and in *dan 9* in the Aoki recording (Yamaguchi omits *dan 9*). Aoki does not notate a bend here.

**EXAMPLE 14.15 a.** Pitch bend at the end of A-B $\flat$  interval, *dan 3*, cell #7, Melodyne analysis of Yamaguchi recording, corresponding to m.26



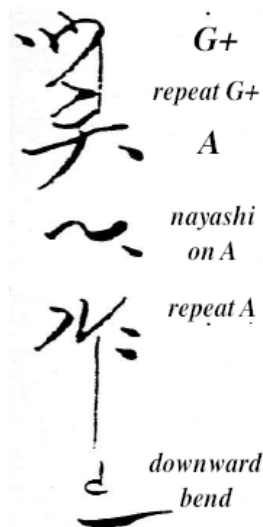
b. Pitch bend at the end of A-B $\flat$  interval, *dan 9*, cell #11ae', Melodyne analysis of Aoki recording, corresponding to m.85



### 14.3.1.3 Downward bends after *nayashi* on G2 and A2

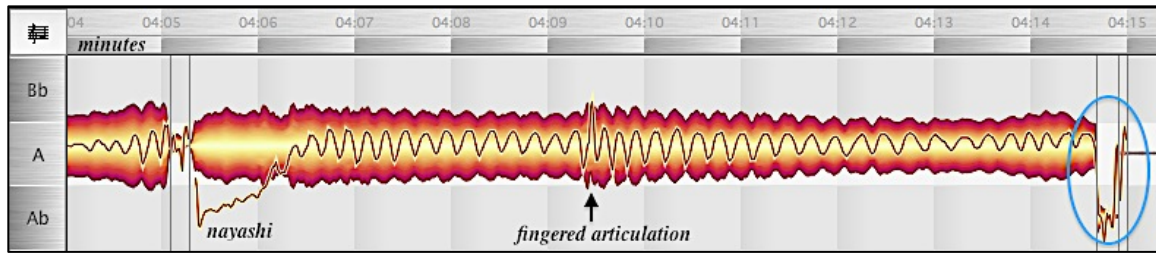
As discussed in Section 14.1.1, *nayashi* figures involve a rising pitch slide to an immediately-reiterated tone – the second tone of a typically three-note pattern (or augmented 3RC) on D2, G2, or A2. In *Sokaku Reibo*, Aoki and Yamaguchi also perform a downward bend at the end of the third tone of *nayashi* figures on G and A. Aoki notates an *ori-keshi* bend at the end of the breath, as shown below in Example 14.16; Kurahashi does not notate this embellishment.

**EXAMPLE 14.16** Pitch bend notated at the end of *nayashi* pattern on A2, *dan 2*, Aoki score

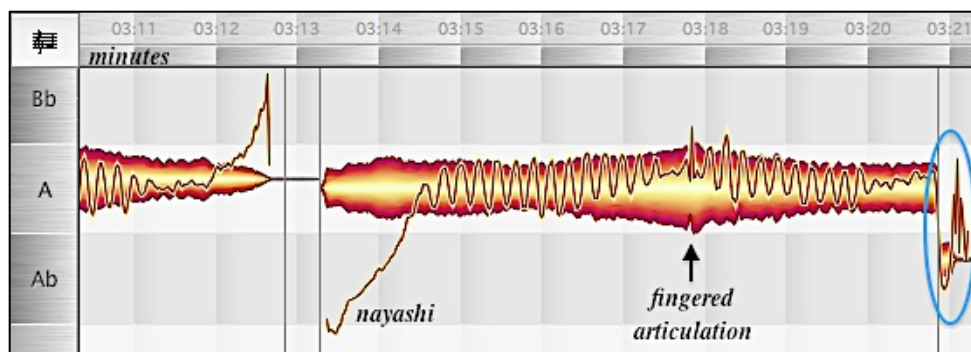


Corresponding spectral images from *dan 2* appear in Example 14.17. The second tone of the three-note pattern is begun with a pitch slide (*nayashi*) from below; the third tone is separated via finger articulation. Both Yamaguchi and Aoki consistently perform a downward pitch bend at the end of the third tone. They bend the pitch down and then immediately return it to its original level. See Examples 14.1 and 14.5 in the section on *nayashi* slides for additional images from *dan 2* (on G2) and *dan 3* (on A2).

**EXAMPLE 14.17 a.** Pitch bend at the end of *nayashi* pattern on A2, *dan 2*, Melodyne analysis of Aoki recording, corresponding to m.33 in transcription and notation in Example 14.16



b. Pitch bend at the end of *nayashi* pattern on A2, *dan 2*, Melodyne analysis of Yamaguchi recording, corresponding to m.23 in transcription



#### 14.3.1.4 Downward bends after 3RC and 2RC

Terminal three-note rhythm cells (3RC), discussed in Section 11.3.1, occur frequently throughout *Sokaku Reibo*, reiterated immediately several times (typically seven times) on a single tone. In the Aoki score excerpt from *dan 2* in Example 14.18a, a 3RC on G2 (G-G-G) is notated five times. After the final iteration of G at the end of the breath, Aoki notates an *ori-keshi* downward pitch bend. The corresponding image in Example 14.18c shows that Aoki sustains the final G and decreases the loudness before ending the breath with the downward bend. Yamaguchi does likewise (Example 14.18d), lowering the pitch further than Aoki does—more than a semitone. This unison 3RC embellishment is notated in Aoki and performed in Aoki and Yamaguchi throughout the piece on G2, Ab2, and A2.

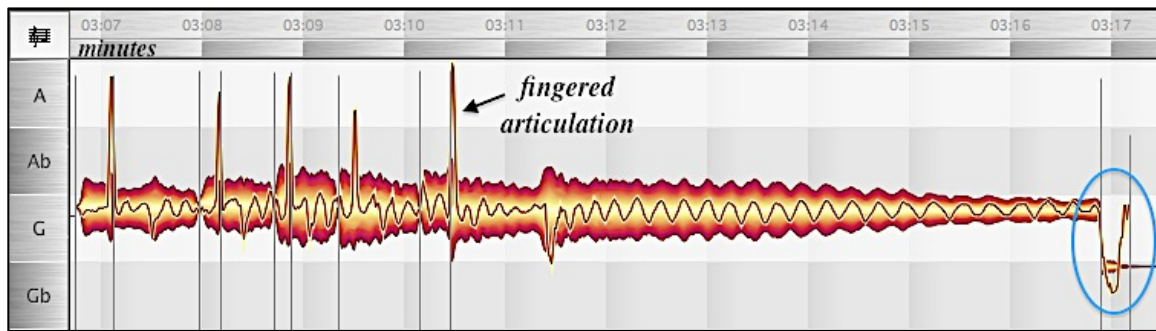
EXAMPLE 14.18 a. Pitch bend at the end of 3RC on G2, *dan 2*, Aoki score

Handwritten musical notation for 'dan 2'. It features a vertical staff with notes and a large bracket on the right side. Annotations include 'G' written vertically on the left, 'repeat' written vertically, and 'downward bend' with a blue circle around a note at the bottom.

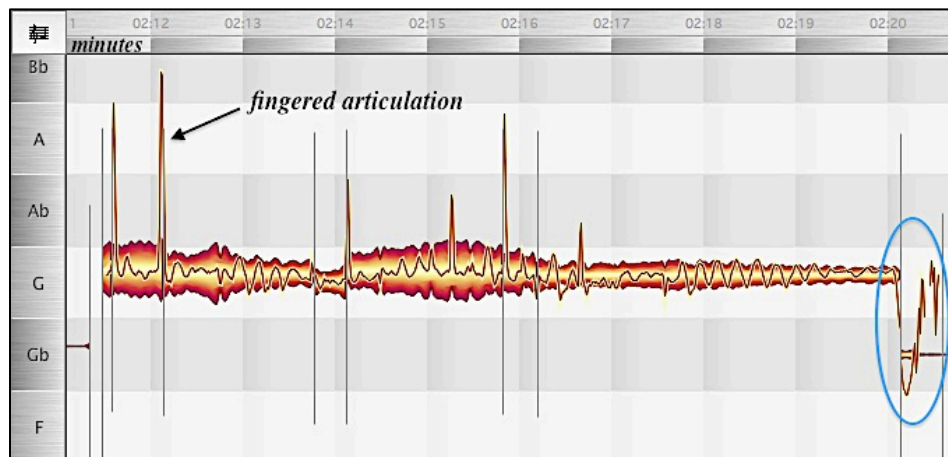
b. Transnotation of 3RC on G2, *dan 2*, Aoki score

Musical transcription of the 3RC on G2. It shows a series of notes on a staff with accents (^) and 'ru' markings above them. A blue circle highlights the final note, and the letter 'L' is written below the staff.

c. Pitch bend at the end of 3RC on G2, *dan 2*, Melodyne analysis of Aoki recording, corresponding to m.26 in transcription

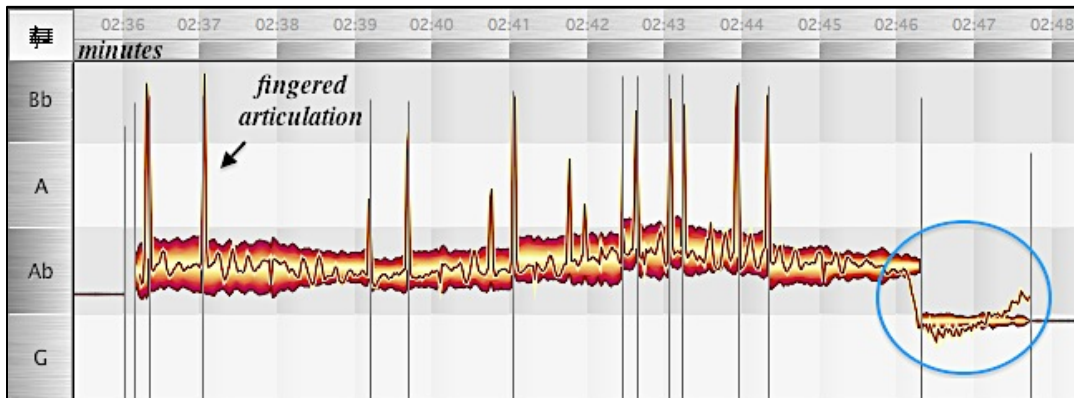


d. Pitch bend at the end of 3RC on G2, *dan 2*, Melodyne analysis of Yamaguchi recording, corresponding to m.16 in transcription

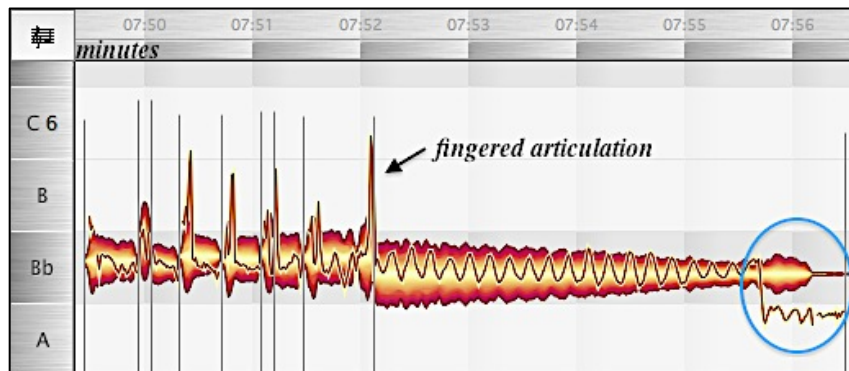


Although Aoki and Yamaguchi quickly return the pitch to its original level after the downward bend in the above two spectral examples, bends at the ends of terminal rhythm cells are not all performed in this way. Example 14.19a shows a more gradual return (though not fully back to pitch) at the end of a 3RC on  $A\flat$  in *dan 2* of the Yamaguchi recording. A 2RC on  $B\flat$ , following cell #3.2 (D- $B\flat$ ) also ends in a downward bend in *dan 6* of the Aoki and Yamaguchi recordings. In the Aoki version the pitch remains low, whereas in the Yamaguchi it gradually returns (see Example 14.19b-c) in a sort of reiteration of the bend that occurred at the end of the preceding D- $B\flat$  cell.

**EXAMPLE 14.19** a. Pitch bend at the end of 3RC on  $A\flat$  2, *dan 2*, Melodyne analysis of Yamaguchi recording, corresponding to m.19 in transcription

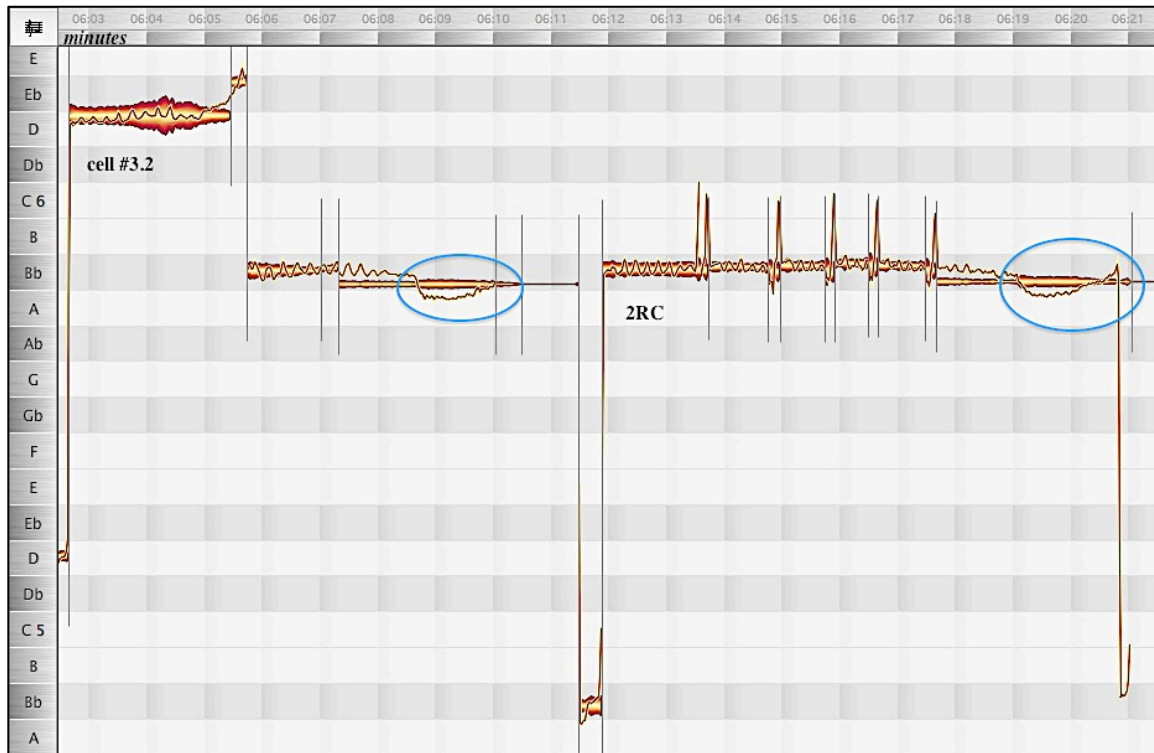


b. Pitch bend at the end of 2RC on  $B\flat$  2, *dan 6*, Melodyne analysis of Aoki recording, corresponding to m.59 in transcription





c. Pitch bend at the end of 2RC on B $\flat$  2, *dan* 6, Melodyne analysis of Yamaguchi recording, corresponding to m.43 in transcription



#### 14.3.1.5 *Tome* downward bend

*Sokaku Reibo* ends on pitch cell #1db': G1-D1. The final tone of the piece is sustained through decreasing loudness until the sound fades away. Then, after a brief silence and without an intake of breath on the part of the player, a shadow of the final tone is uttered – a soft lowered D. This technique is similar to the *ori-keshi* downward bends heard throughout the piece, whether with<sup>28</sup> or without space before the bend, but by definition it occurs only at the end of the piece. It is called *tome* and is notated in Aoki's score, as shown above in Example 14.9e; Sato also notates it, but Kurahashi does not.

<sup>28</sup> See Section 14.3.1.1 and Example 14.11

EXAMPLE 14.20 a. *Tome* at the end *dan* 12, Melodyne analysis of Yamaguchi recording



b. *Tome* at the end *dan* 12, Melodyne analysis of Aoki recording

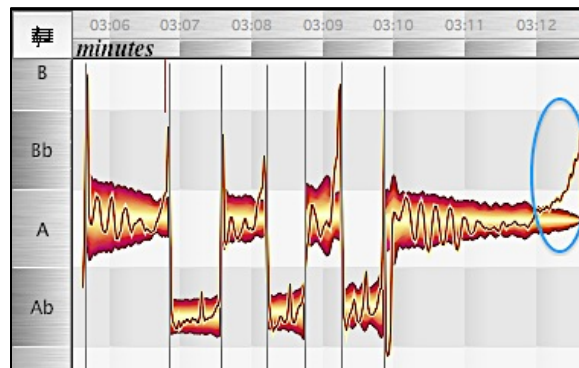


### 14.3.2 Upward bends at ends of breath phrases

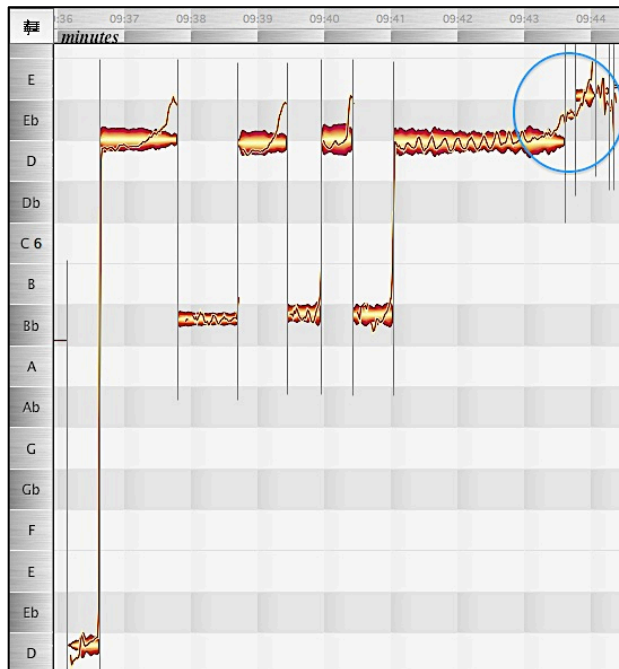
In contrast to downward bends, upward bends at the ends of breath phrases are not notated in the Aoki or Kurahashi scores. They are, however, heard in the recordings by Yamaguchi and Aoki. Pitch bends or slides that involve raising the pitch, without first lowering it, are frequently used in transition from tone to tone, but also occasionally at the ends of phrases. In *Sokaku Reibo*, more phrases end with downward bends than upward ones, but rising bends are nonetheless sometimes played. Yamaguchi and Aoki perform rising bends at the ends of different phrases; therefore, generalizations about the piece cannot be made. Nonetheless, patterns are distinguishable within each individual recording: Yamaguchi primarily adds a

rising pitch bend to the end of A2 (for example, when it directly precedes a *nayashi* slide and/or follows G+2), but also at the end of a D3 following three iterations of the M3 D-B $\flat$  cell (#3.2), wherein each D is also bent upwards before the line drops to B $\flat$ ; Aoki adds an upward bend to G+2 and C3.

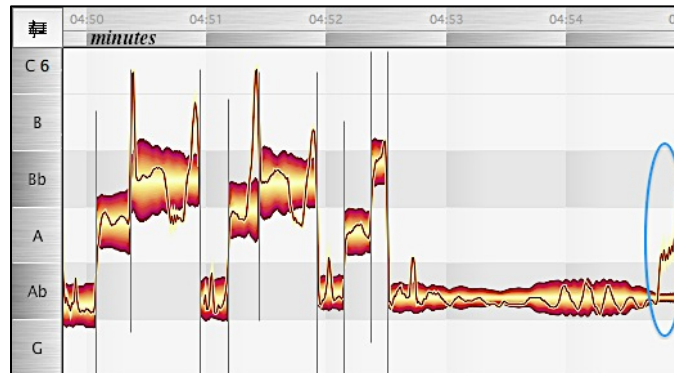
**EXAMPLE 14.21** a. Upward bend at the end of A2 in *dan 2*, directly following G+2 and preceding *nayashi* slide on A2. Melodyne analysis of Yamaguchi recording, corresponding to m.22 in transcription



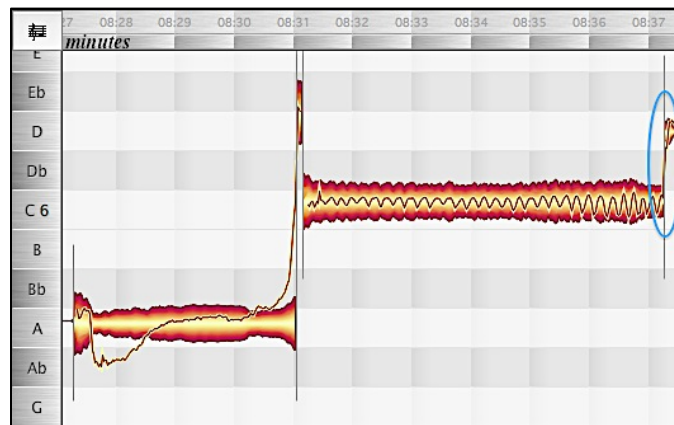
b. Upward bend at the end of 3 in *dan 10*, Melodyne analysis of Yamaguchi recording, corresponding to m.65 in transcription



c. Upward bend at the end of G+2 in *dan 3*, Melodyne analysis of Aoki recording, corresponding to m.37 in transcription



d. Upward bend at the end of C3 in *dan 7*, Melodyne analysis of Aoki recording, corresponding to m.66 in transcription



Although phrase-ending downward bends frequently return to their original pitch levels, the examples above show that upward bends do not. Additionally, upward bends tend to span a range greater than the semitone of the downward bend.

### 14.3.3 Phrase-ending bends in *Sokaku Reibo*

Although some phrases do end in upward bends in *Sokaku Reibo*, more phrases end in downward bends. With respect to the larger formal structure of the piece, most *dan* also end in downward bends. Aoki lowers the pitch at the end of every *dan* in his recording, even though he notates no bends at the end of three of

the ten *dan* he performs. Yamaguchi performs 9 *dan*, closing *dan* 10 with an upward gesture, the rest with downward bends. Kurahashi notates few embellishments in his score, and none at the ends of *dan* (see Figure 14.4).

FIGURE 14.4 Direction of phrase-ending bends at end of *dan* in each source

<i>Dan</i>	Aoki score	Aoki audio	Yamaguchi audio	Kurahashi score
1	down	down	down	neutral
2	down	down	down	neutral
3	down	down	down	-
4	down	down	down	-
5	down	down	-	neutral
6	down	down	down	neutral
7	neutral	down	-	-
8	-	-	down	-
9	neutral	down	-	-
10	neutral	down	up	neutral
11	-	-	down	-
12	down	down	down	neutral

When downward bends occur at the ends of breath phrases, they tend to embellish pitch and rhythm cells prominent throughout the piece: M3 and m2 intervals, *nayashi* figures, and 3RC and 2RC repeated patterns. The final phrase of the piece is also treated with a terminal downward bend.

Phrase-ending bends are prominent throughout *Sokaku Reibo*; however, so are mid-phrase embellishments. In the following chapter I discuss the bending and sliding techniques that occur between the tones of a cell. Rising bends and slides are more frequently heard in the motion from tone to tone than at ends of phrases.

## Chapter 15: Wind techniques in *Sokaku Reibo*—Pitch bends and slides, part 2

### 15.1 Pitch bends and slides within cells

Much of *shakuhachi* performance practice is not notated in tablature scores. Although some bending or sliding techniques are indicated, their execution is learned aurally. In the Aoki and Kurahashi scores I consulted, they are notated with *katakana* (e.g., ス, *suri*) or *kanji* (e.g., 引, *hiku*) characters for the techniques' Japanese names, or represented graphically between tablature symbols. When the graphic shows a bend to the left, the pitch is lowered; for a bend to the right, the pitch is raised. However, in many cases when a bend or slide is played, no notation appears in the score.

With respect to terminology, I use the term “slide” when the pitch moves gradually from one tone to the next without a subsequent step or leap upward or downward; otherwise, I use the term “bend.”<sup>1</sup> In *shakuhachi* practice, some terms encompass both of these situations. For example, *suri* refers to rising motion, executed with the fingers, but the technique could occur as a slide from one note to the next (e.g., E $\flat$ 2 to G2), or as a rising bend before a leap down (e.g., C3 to A $\flat$ 2). I therefore qualify the term as a *suri* bend or a *suri* slide. Annotated examples of graphic and calligraphic notation of bends and slides from the Aoki and Kurahashi scores follow in Example 15.1.

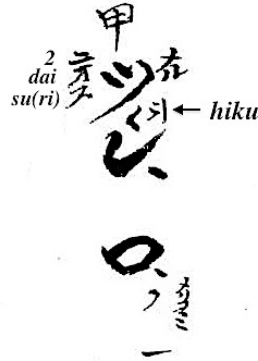
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<sup>1</sup> See Chapter 2, Section 2.2.1.

EXAMPLE 15.1 a. ス *Suri* rising slide notated between *tsu-meri* (E $\flat$ 2) and *re* (G2), first breath phrase, Aoki score



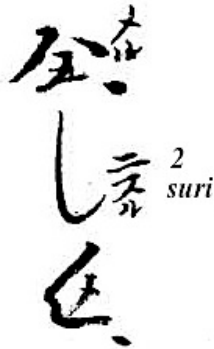
b. 引 *Hiku* downward bend notated to the right; ニ大ス 2 *dai suri* rising slide (off of hole 2) notated to the left, between *tsu-meri* (E $\flat$ 2) and *re* (G), first breath phrase, Kurahashi score



c. 五大ス 5 *dai suri* rising bend (off of hole 5) notated to the left, between *hi* (C3) and *chi meri* (A $\flat$ 2), dan 5, Kurahashi score



d. ニ大ス 2 *dai suri* rising bend (off of hole 2) notated to the right of graphic slide symbol, between *go no ha* (D3) and *hi meri* (B $\flat$ 2), dan 10, Kurahashi score



e. Rising bend notated graphically between *hi* (C3) and *chi meri* (A $\flat$ 2), dan 9, Aoki score



f. Downward bend notated graphically between *tsu-meri* (E $\flat$ 2) and *re* (G2), dan 4, Aoki score



g. Downward-then-upward bend notated graphically between *hi-meri* (B $\flat$ 2) and *chi* (A2), dan 2, Aoki score



In the above excerpts, Kurahashi offers the student more details with regard to execution than Aoki does: he indicates which finger is used to create particular *suri* bends or slides (e.g., *5 dai suri* indicates a “big” [*dai*] rising bend off of hole 5); however, Aoki notates bends and slides much more frequently than Kurahashi does.

The execution of movement from note to note within a breath phrase can be complex, much more so than what appears written in the score, and a variety of terminology is found in different scores and sources due to what Linder calls “a lack of unification of terms between different lineages and schools.”<sup>2</sup> What is notated in the Aoki and Kurahashi scores, however, are characters or graphic representations for three primary techniques for connecting notes: *suri-(age)*, *meri-komi*, and *meri-komi suri-age*.

*Suri-age*, or *suri*, is notated in *katakana* as スリ (*suri*), or simply as ス (*su*), or with a graphic symbol (see Examples 15.1d and e). In the Aoki and Kurahashi scores, *suri* indicates a rising pitch slide or bend. However, the term *suri* and *katakana* character ス can also be used for *suri-sage*, a downward bend. Linder addresses this notation complication in Chapter 1, Part 1, of *Notes on Kinko-ryū Shakuhachi Honkyoku*. Since Kurahashi and Aoki are consistent in their use of ス for rising bends and slides, I follow their use for my analysis of *Sokaku Reibo* and refer the reader to Linder for further details on terminology for *suri* ornaments in *Kinko-ryū honkyoku* as a whole.

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<sup>2</sup> Linder, *Notes*, 31.



A *suri* ornament is a fingering technique, in that a finger slides off a tone hole, thereby creating a rising pitch slide or bend. According to Taniguchi,<sup>3</sup> it is the “most common glissando” technique in *shakuhachi* performance practice and “occurs in an upward melodic direction.” In *Sokaku Reibo*, however, rising *suri* frequently occur in downward movement of the melodic line, i.e., in contrary motion. With respect to its purpose, Tokuyama describes *suri* as “a technique used to make a bridge between two notes.”<sup>4</sup> Other techniques used to “bridge” two notes within a phrase are *meri-komi*, a sudden lowering of the note and then gradual slide back to pitch, as discussed in the previous chapter in Section 14.3, and *meri-komi suri-age*, a *meri-komi* followed without break by a rising slide. *Meri-komi* is primarily executed by a change in head position: lowering the head changes the angle of the airstream against the mouthpiece, resulting in lowered pitch. In this section I discuss pitch slides and bends within breath phrases in terms of their direction (rising or falling) and their placement (i.e., within ascending or descending melodic motion).

### **15.1.1 Rising pitch bends followed by a downward step or leap**

In *Sokaku Reibo*, rising pitch bends frequently connect two notes in descending melodic motion, whether these two notes form a step, i.e., a m2 or M2 interval, or a leap, i.e., a M3, P4 or A4. In the case of the M2 and A4 intervals, the rising slide “bridges” two *miyakobushi* trichords; with respect to the principal m2, M3 and P4 intervals, the slide is an embellishment within the trichord. A rising bend is also consistently performed directly preceding a step down from A to the non-

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<sup>3</sup> Taniguchi, *How to Play*, 29.

<sup>4</sup> Tokuyama, *A Guide to Playing*, 5.

trichord tone G+. A single breath phrase may contain more than one embellished interval. The intervals and pitch cells in which these rising bends are heard in the Aoki and Yamaguchi recordings are listed in Figure 15.1.

FIGURE 15.1 Rising pitch bends followed by a descending step or leap, arranged by interval

Interval	Notes	Cell	Audio		
m2	Eb2-D2	2, 2am	AR, YG		
		2am'	AR		
		3, 3db	AR, YG		
		4	AR		
		9ae'''	AR		
		Bb2-A2	6	AR, YG	AR, YG
				7, 7.1, 7.1.1, 7db	YG
8	YG				
15, 15sb	YG				
15de	AR				
M3	G2-Eb2			4.2dm/de	AR, YG
		9ae'''	AR, YG		
		D2-Bb1	3, 3de	AR	
			D3-Bb2	3.2	YG
		7.1ab	AR, YG		
		11, 11ae, 11ae'	AR		
		11.1db, 11.1db/se	AR, YG		
		C3-Ab2	5, 5de	AR, YG	AR, YG
				8.1	AR
				8sb/de	AR, YG
P4	G2-D2	1	AR, YG		
		2am''	AR, YG		

Interval	Notes	Cell	Audio
M2	C3-Bb2	13	AR
A4	A2-Eb2	4, 4sb, 4de, 4.2, 4.2dm/de	AR, YG
		4.2de'	AR
		8, 8sb/de	AR, YG
		8.1	AR
P5	D3-G2	8	YG
other	A2-G+2	6, 6db, 6db'	AR, YG
		7, 7.1, 7db/de', 7db'/de', 7.1ab, 7.1db, 7.1db/se	AR, YG
		7.1.1	AR
		8	AR, YG
		11ae	YG
		11ae', 11.1db, 11.1db/se	AR, YG
		15, 15sb'	YG

The bends listed above are not necessarily performed each time a particular cell is played in *Sokaku Reibo*, and when a bend is not performed by both Aoki and Yamaguchi, it is either because that particular *dan* or cell is omitted from one of the recordings, or the players display a stylistic difference in performance practice.

Of the 15 pitch cells that I have identified in *Sokaku Reibo*, 12 are embellished with rising pitch bends within a downward interval. Eleven of these 12 are treated

with bends in their basic forms, and most also in variant forms (exceptions: cells #1, 13); bends are heard in cell #9 only in its variant #9ae'': cell #9 without the added ending is simply the rising M2 interval C-D. The three cells not embellished in this way are cell #10 (F-G), which contains no downward steps or leaps; cell #12 (A-C), which is heard only in the AR recording, ornamented with a downward *meri-komi* bend; and cell #14 (C-A<sup>b</sup>-C-D-E<sup>b</sup>), which is notated in Sato but not performed by either Aoki or Yamaguchi.

The intervals listed on the left-hand side of Figure 15.1 make up the *miyakobushi* trichord: m2+M3=P4; the trichord appears throughout the piece on D, G, and A. Rising bends on descending m2 intervals occur on E<sup>b</sup>2-D2 and B<sup>b</sup>2-A2, but not A<sup>b</sup>2-G2. However, all three possible descending M3 intervals are treated with rising bends: G2-E<sup>b</sup>2, C3-A<sup>b</sup>2, and D3-B<sup>b</sup>2/D2-B<sup>b</sup>1. A descending P4 is only played within the D-E<sup>b</sup>-G trichord and is thus only heard from G-D. Thus, m2, M3, and P4 intervals are embellished with upward slides within the D trichord, M3 intervals within the G trichord, and m2 and M3 intervals within the A trichord.

Intervals that are not contained within a single trichord are listed on the right-hand side of Figure 15.1: M2 and A4. Also listed is the special A-G+ interval that appears within several cells, and a P5. Yamaguchi adds a rising bend to the end of D3 in the middle of cell #8: B<sup>b</sup>-B<sup>b</sup>-A-G+-G+-A-D-G-A-E<sup>b</sup>-E<sup>b</sup>-E<sup>b</sup>-G. However, whereas Aoki performs this cell in a single breath (without a bend on the D), Yamaguchi takes a breath after the D. He then begins the G2 below pitch, on F. As such, this singular case is not a true example of a rising bend in the middle of a cell; Yamaguchi performs it instead as a phrase-ending rising bend. The embellished M2

interval is also a rare case, appearing only as C-B $\flat$  in cell #13, bridging trichords on G and A. The A4 interval is more frequently heard, connecting the A and D trichords, and appearing in cells #4 and 8, and their variants.

Figure 15.2 gives an overview of which intervals are embellished with rising bends before descending intervals in each cell of *Sokaku Reibo*. Examples follow.

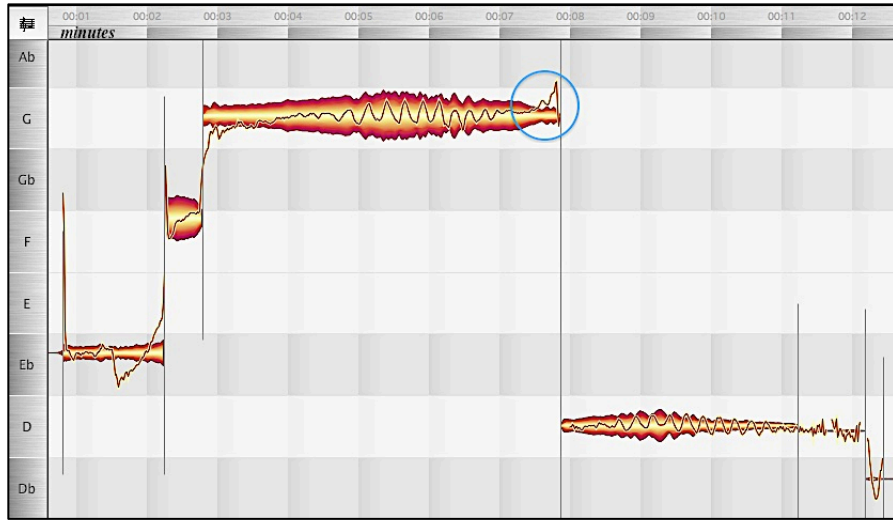
**FIGURE 15.2** Descending intervals embellished with rising bends after the first note, listed by cell. Cell numbers refer to basic cell and possible variants; 9v refers to variants only

1: P4	6: m2, other	11: M3, other
2: m2, P4	7: m2, M3, other	12: --
3: m2, M3	8: m2, M3, A4, other, (P5)	13: M2
4: m2, M3, A4	9v: m2, M3	14: --
5: M3	10: --	15: m2, other

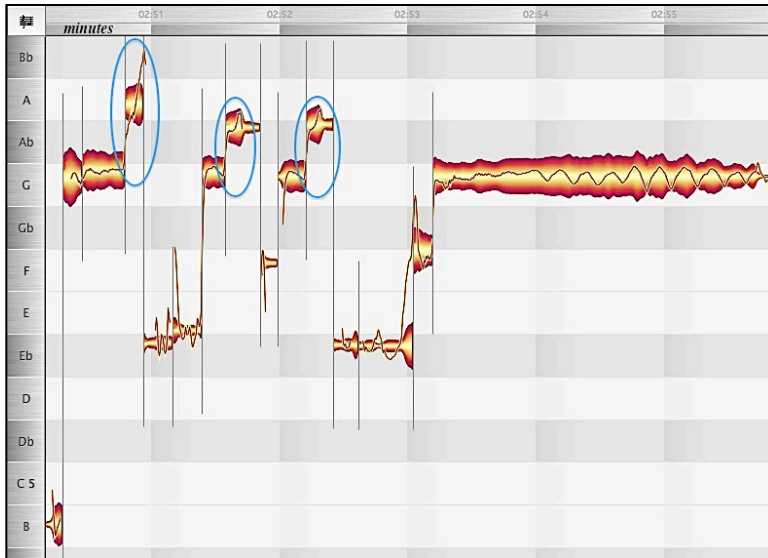
Examples of rising bends connecting the two notes of descending principal intervals (m2, M3, P4) in the Aoki and Yamaguchi recordings of *Sokaku Reibo* are abundant. A single image of each possible embellished interval from one or the other recording appears below in Example 15.2; corresponding notation excerpts are given for the Aoki examples.

P4: G-D  
 M3: G-E $\flat$ , C-A $\flat$ , D-B $\flat$   
 m2: E $\flat$ -D, B $\flat$ -A

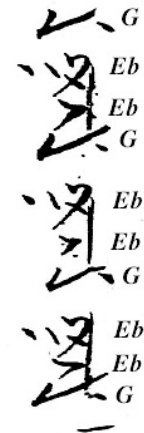
**EXAMPLE 15.2 a.** Upward bend at the end of G2 in first breath of *dan 1*, cell #1. Melodyne analysis of Yamaguchi recording



**b.** Upward bend at the end of G2 in *dan 2*, cell #4dm/de. Melodyne analysis of Aoki recording, corresponding to m.24 in transcription

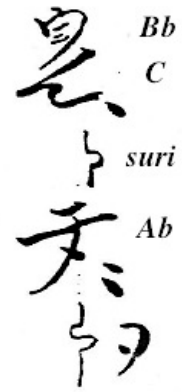
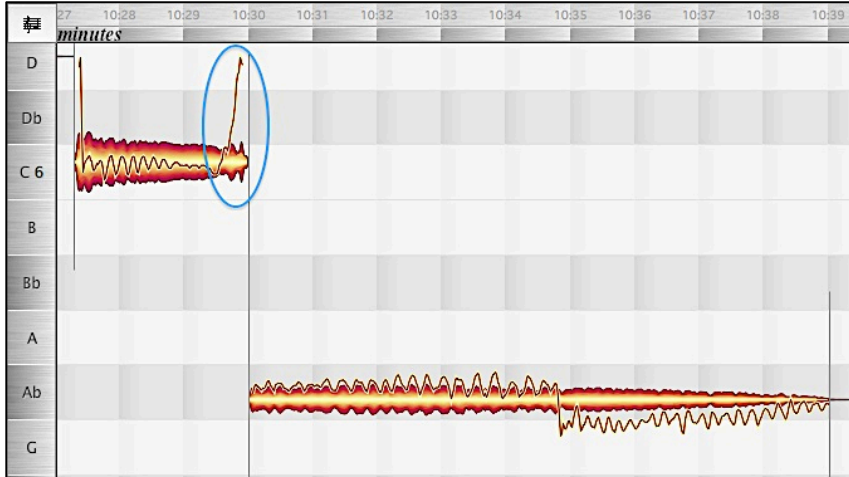


**c.** Aoki's notation of G-E $\flat$  interval corresponding to Example b. No bend is indicated in the score.

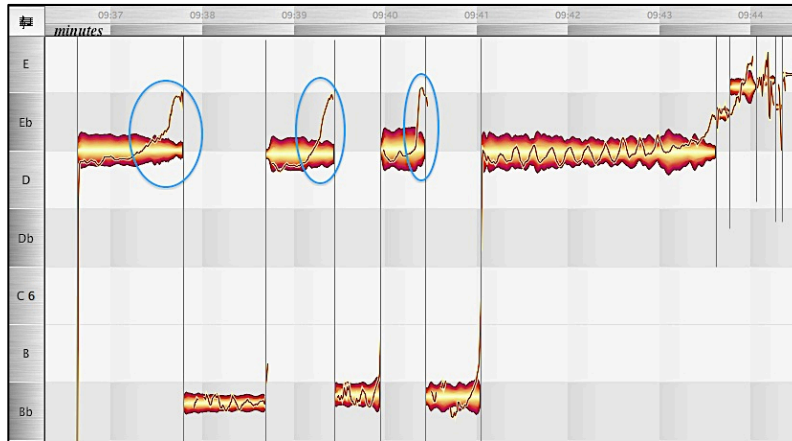


d. Upward bend at the end of C3 in *dan 9*, cell #5de. Melodyne analysis of Aoki recording, corresponding to m.83 in transcription

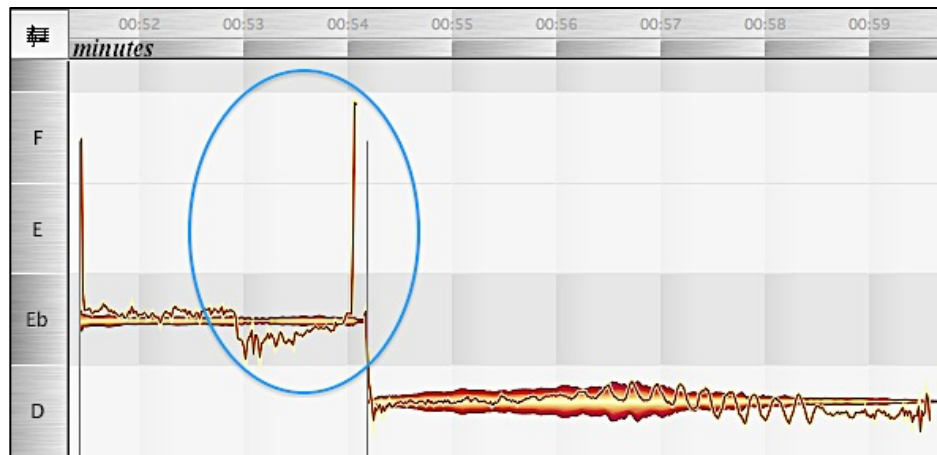
e. Aoki's notation of C-A $\flat$  interval corresponding to Example d. The *suri* bend is indicated in the score.



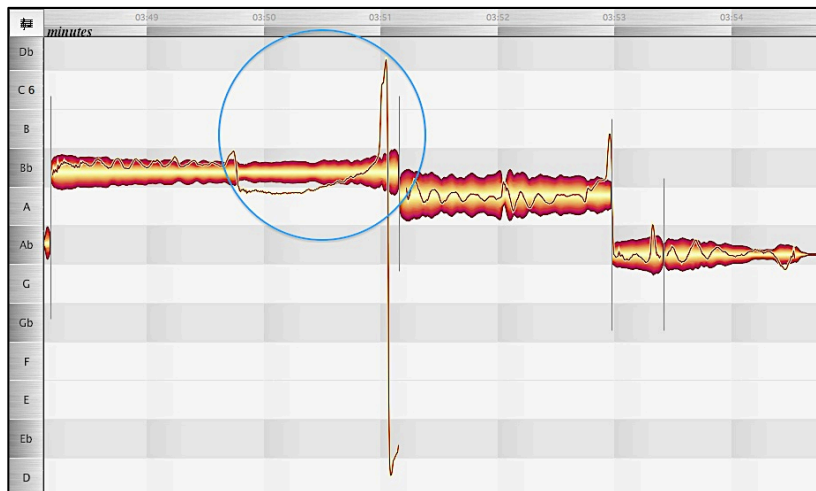
f. Upward bend at the end of D3 in *dan 10*, cell #3.2. Melodyne analysis of Yamaguchi recording, corresponding to m.65 in transcription



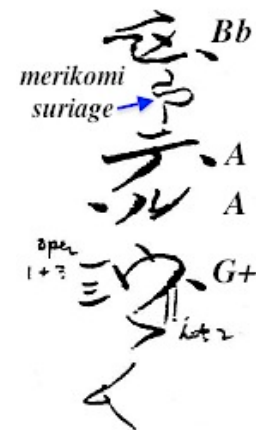
g. Upward bend at the end of E $\flat$  2 in *dan* 1, cell #2am. Melodyne analysis of Yamaguchi recording, corresponding to m.7 in transcription



h. Upward bend at the end of B $\flat$  2 in *dan* 2, cell #6. Melodyne analysis of Aoki recording, corresponding to m.30 in transcription



i. Aoki's notation of B $\flat$ -A interval corresponding to Example h. *Meri-komi suri-age* bend is indicated in the score.

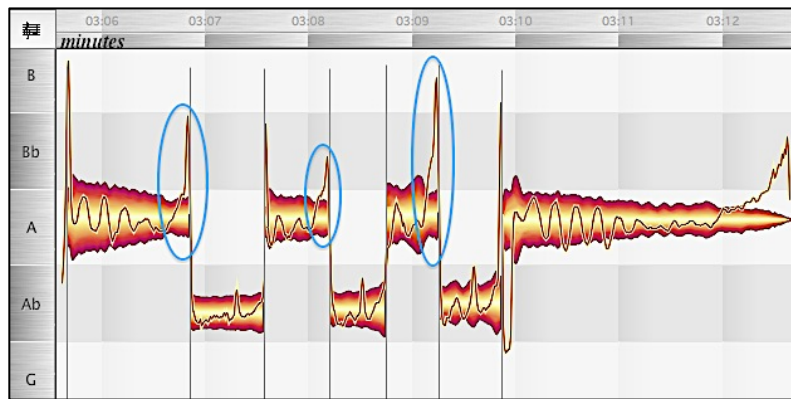


The rising bends in the above examples range from less than a semitone in ambitus (Example a) to greater than a tone (Examples b, h). Whereas the contour of most of the bends is one-directional, i.e., rising, the bends in Examples g and h first involve a lowering of pitch. Aoki notates this bend as a *meri-komi suri-age* between B $\flat$  and A (Example i) and also notates the rising *suri* bend in Example d between C

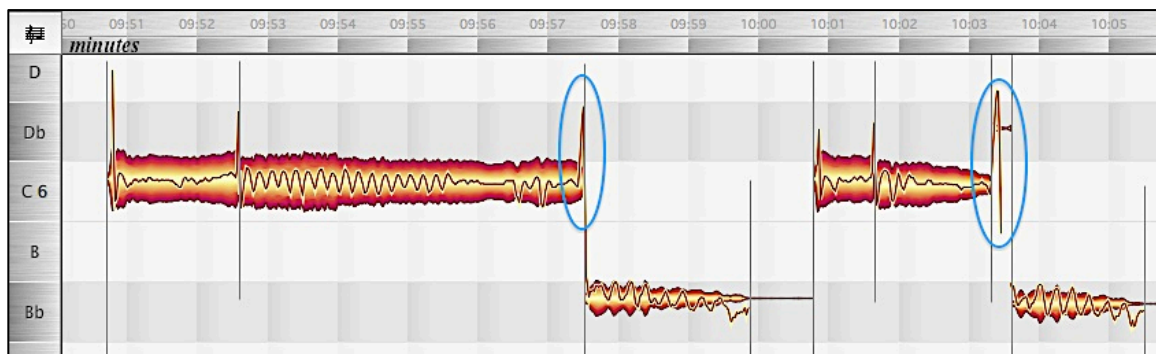
and A $\flat$ ; however, in his score, he leaves out the bend that he performs between G and E $\flat$  in Example b.

Additional examples of rising pitch bends within descending intervals follow. The bends in these examples precede the G+ non-trichord tone, thus enlarging the interval (Example 15.3a), or bridge two *miyakobushi* trichords (Examples b and c). In Example c, the pitch of the A2 is lowered before it is raised, disguising the A4 interval that it forms with the E $\flat$  2 that follows.

**EXAMPLE 15.3 a.** Upward bend between A2 and G+2 in *dan 2*, cell #6db'. Melodyne analysis of Yamaguchi recording corresponding to m.22 in transcription



b. Upward bend between C3 and B $\flat$  2 in *dan 9*, cell #13. Melodyne analysis of Aoki recording corresponding to mm.79-80 in transcription. No bend is notated in Aoki's score.





c. Upward bend between A2 and E $\flat$ 2 in *dan 2*, cell #4. Melodyne analysis of Aoki recording corresponding to m.21 in transcription. No bend is notated in Aoki's score.



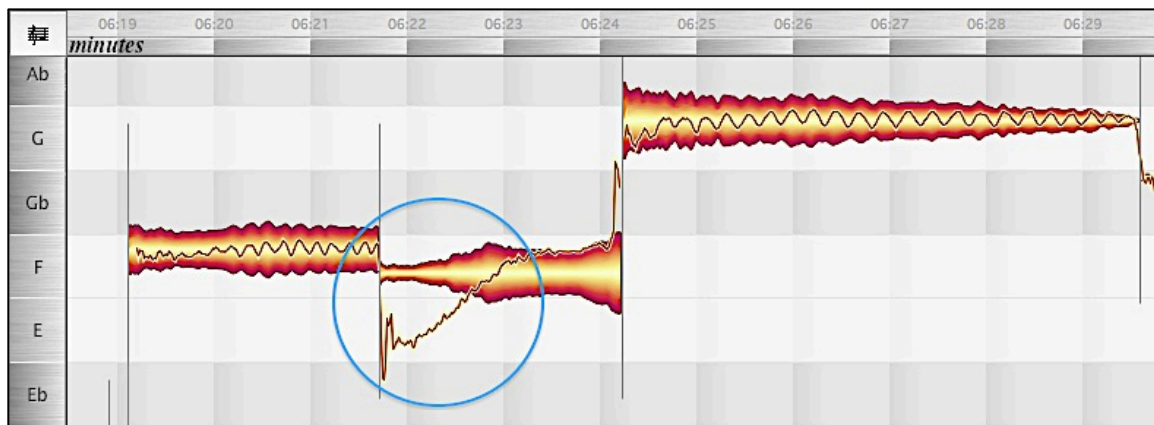
### 15.1.2 Falling-then-rising bends within ascending melodic motion

In *Sokaku Reibo*, the pitch can also be raised between two notes within ascending melodic motion. Although such bends are fewer than embellishing bends within descending intervals, they are nonetheless heard prominently when performed in the recordings by Aoki and Yamaguchi. However, the rising motion connecting the two notes is not necessarily a simple slide from one note to the next. In the examples that follow, the pitch is first bent downward before being slid back up. In Examples 15.4a and b—the M2 F2-G2 interval and the m3 A2-C3 interval—the pitch is returned to its original level and sustained before the second note is played. In the A-C example, the pitch is then slid above the C, with finger articulation sounding approximately a D3 directly before the C. In the F-G example, the pitch is raised only very slightly before the G is articulated. Aoki notates a *meri-komi* downward bend in both cases but adds the note “slight suri” in English next to the

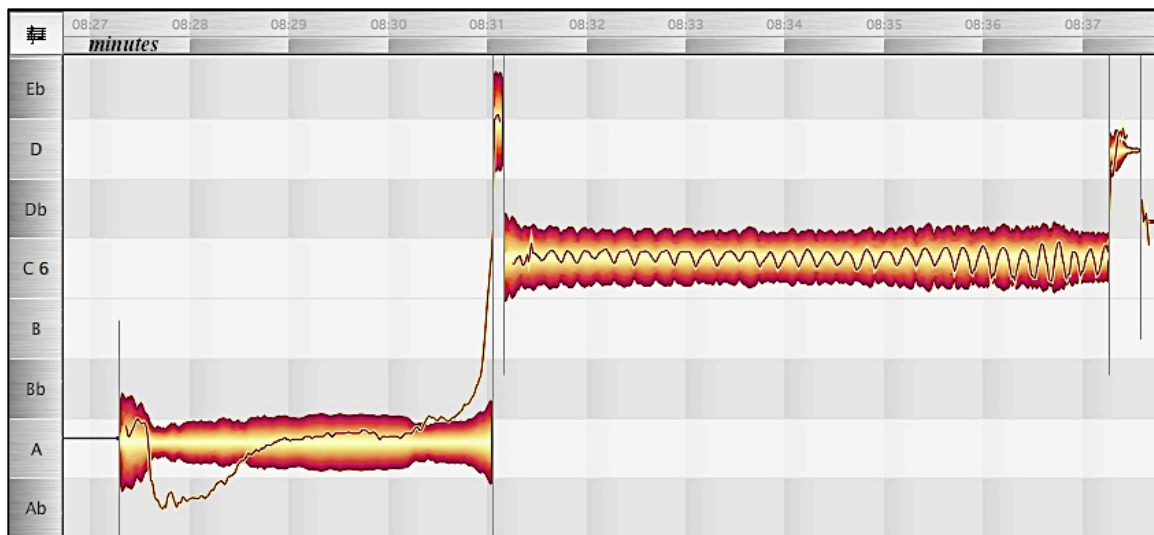
tablature for C in the A-C notation (Example 15.4d); he also includes instructions on finger articulation for both intervals.

In Example 15.4e, the D-B $\flat$  descending interval discussed in the previous section with regard to rising slides sounds in retrograde: B $\flat$ -D. In this case the B $\flat$  is treated with a downward bend, followed by a gradual rising slide to D. Unlike the previous two examples, the B $\flat$  is not sustained before the second note is played.

**EXAMPLE 15.4** a. Downward bend then rising slide between F2 and G2 in *dan* 5, cell #10. Melodyne analysis of Aoki recording corresponding to m.47 in transcription



b. Downward bend then rising slide between A2 and C3 in *dan* 7, cell #12. Melodyne analysis of Aoki recording corresponding to m.66 in transcription



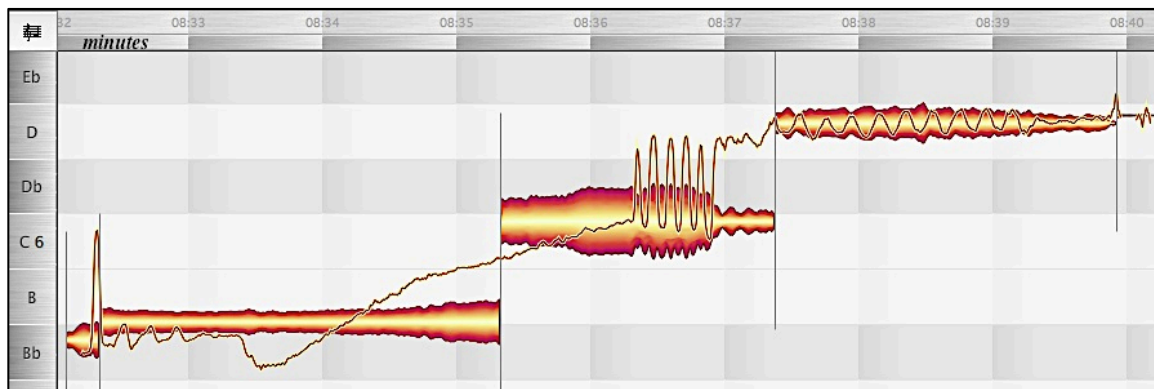
c. Notation of cell #10, *dan 5*, Aoki score



d. Notation of cell #12, *dan 7*, Aoki score

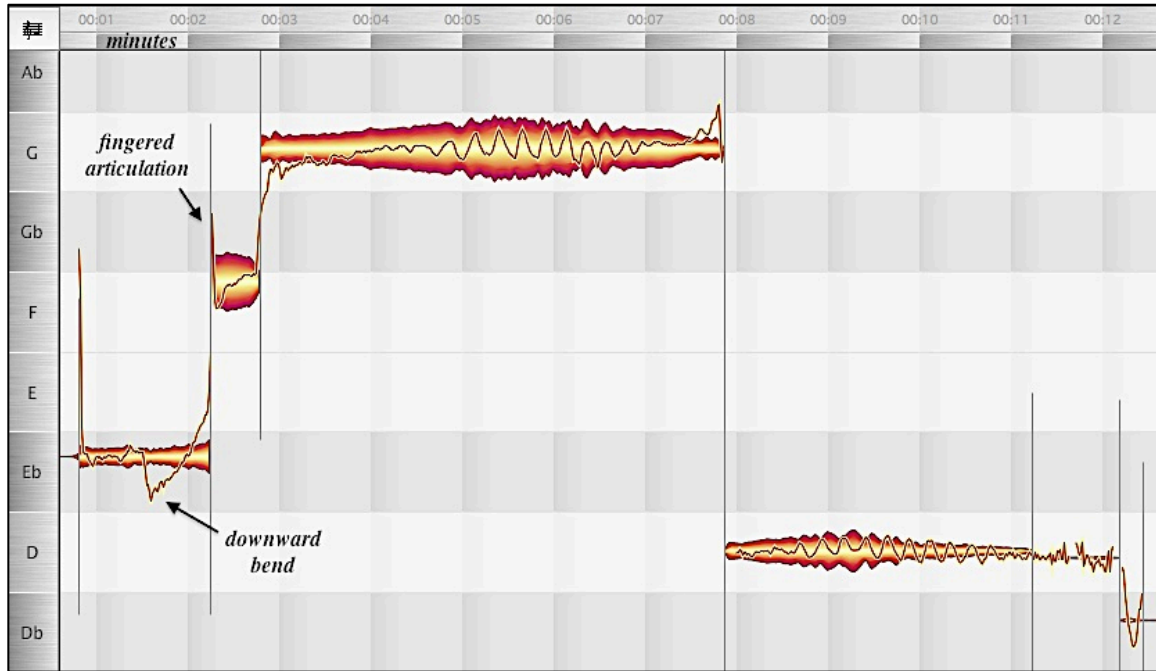


e. Downward bend then rising slide between B $\flat$ 2 and D3 in *dan 10*, cell #3.2 retrograde. Melodyne analysis of Yamaguchi recording corresponding to m.58 in transcription

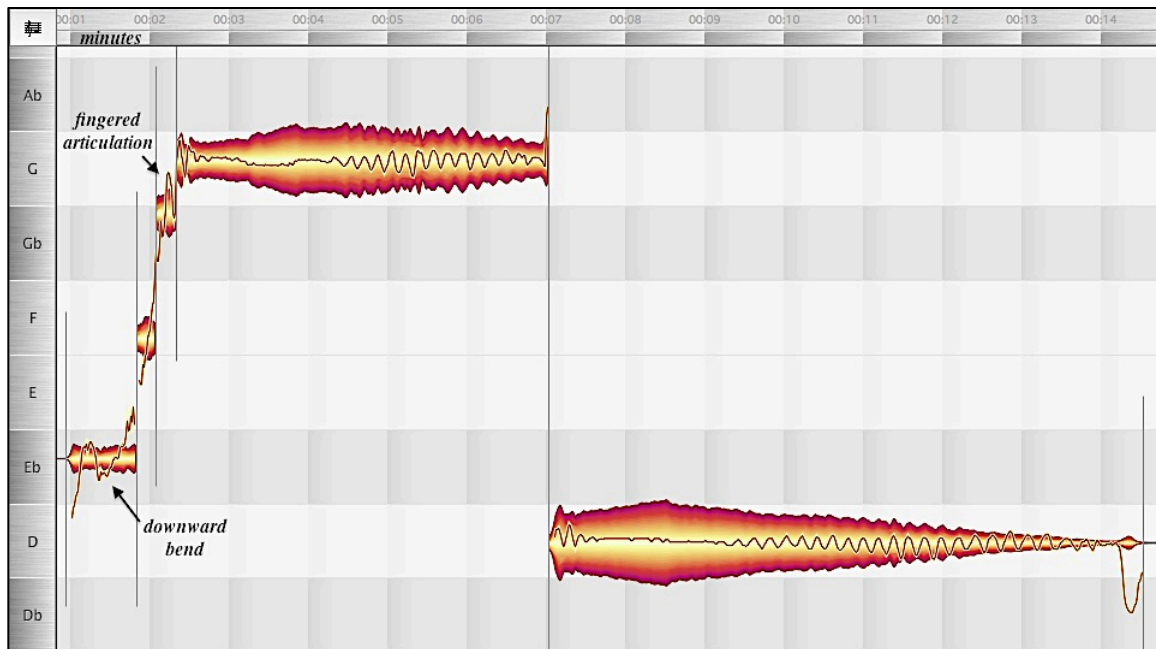


In the case of the first interval of the first cell of the piece, E $\flat$ -G-D, Yamaguchi and Aoki also both perform a downward bend on the E $\flat$  before sliding the pitch up to G. However, they further explore this M3 interval by stopping partway up. Yamaguchi articulates the note with a finger pop at approximately F, pausing on that note briefly before continuing up; Aoki does likewise but at a pitch closer to the target G. Therefore, this M3 interval that opens the piece is treated with a downward bend, an upward slide with a pause, and finger articulation. Aoki simply notates  $\surd$  *suri*; Kurahashi notates *hiku* for the downward bend, *2 dai suri* (slide off hole 2) for the upward slide, and  $<$  for the finger articulation.

**EXAMPLE 15.5 a.** Downward bend then upward slide between E $\flat$  2 and G2 in *dan* 1, cell #1. Melodyne analysis of Yamaguchi recording corresponding to m.1 in transcription



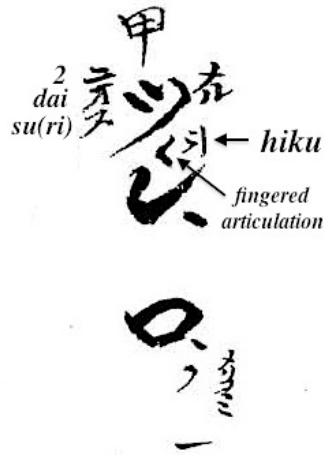
**b.** Downward bend then upward slide between E $\flat$  2 and G2 in *dan* 1, cell #1. Melodyne analysis of Aoki recording corresponding to m.1 in transcription



c. Notation of first cell of *Sokaku Reibo*, Aoki score



d. Notation of first cell of *Sokaku Reibo*, Kurahashi score



### 15.1.3 Slides and melodic movement in similar motion<sup>5</sup>

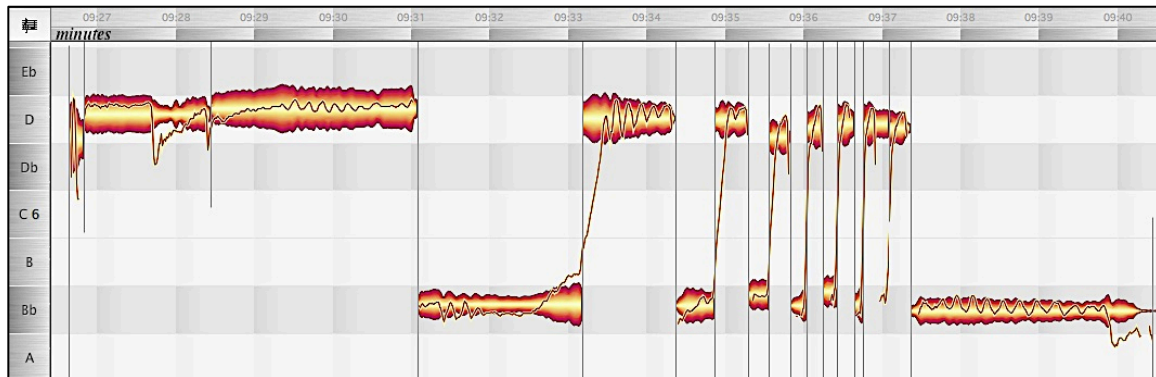
Although many of the embellishing bends and slides between tones occur in contrary motion to the melodic direction, slides that continue the motion of the line are also heard in the recordings by Aoki and Yamaguchi. One such case was mentioned in Section 14.2: the trill figure in Example 14.7 is preceded directly by an upward slide from C3 to the trill on D3 in the Yamaguchi recording.

Also treated with an upward slide is the M3 B $\flat$ -D interval. Cell #3.2 (D-B $\flat$ ) is reiterated eight times in *dan 7* in the Aoki version of the piece. Each iteration is connected with a rising slide from B $\flat$ 2 back up to D3. The pitch is not bent downward first (see Example 15.6).

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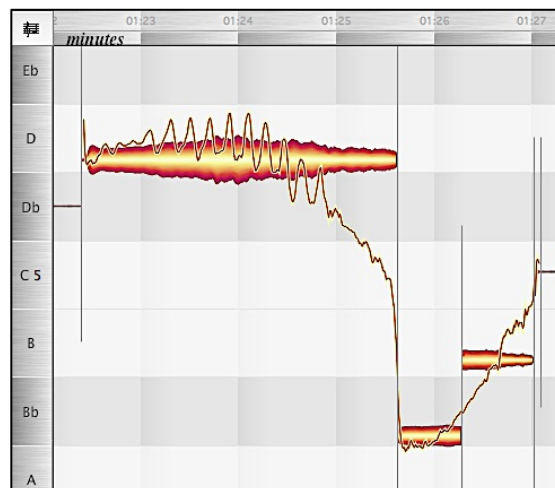
<sup>5</sup> The term “similar motion” is not to be confused with similar motion in European counterpoint theory.

**EXAMPLE 15.6** Upward slide between B $\flat$  2 and D3 in *dan* 7, cell #3.2. Melodyne analysis of Aoki recording corresponding to m.77 in transcription

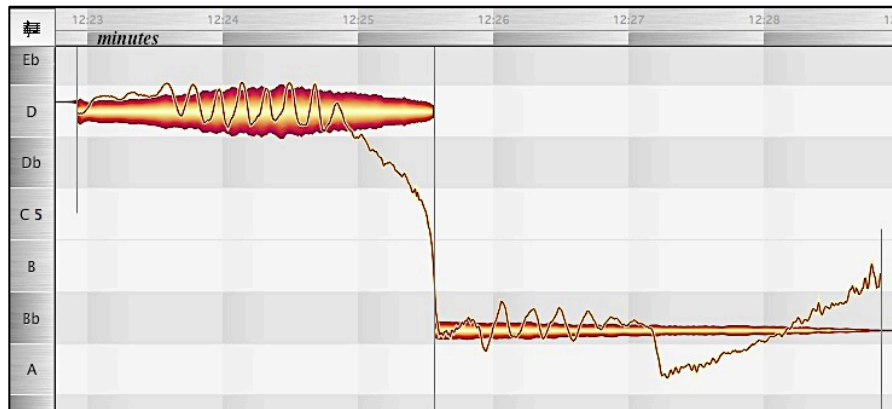


Yamaguchi embellishes this same interval (D-B $\flat$ ), an octave lower, with a downward slide near the beginning and end of the piece, in *dan* 1 and 12. He slides the pitch gradually downward without break, articulation, or preceding rise in pitch until the B $\flat$  is reached. This target tone is then further embellished with falling and rising bends (see Example 15.7). In contrast, Aoki treats this interval with a rising slide combined with *tamane* flutter tonguing on the D in *dan* 1 and 12 (see Example 14.8).

**EXAMPLE 15.7 a.** Downward slide between D2 and B $\flat$  1 in *dan* 1, cell #3. Melodyne analysis of Yamaguchi recording corresponding to m.10 in transcription



b. Downward slide between D2 and B $\flat$  1 in *dan* 12, cell #3.2. Melodyne analysis of Yamaguchi recording corresponding to m.86 in transcription



#### 15.1.4 Bends and slides as connectors

As discussed in Section 15.1.1, the principal intervals of *Sokaku Reibo*—m2, M3, P4—are treated with rising pitch bends between the two tones when the melodic direction is descending. One particular manifestation of the M3 interval—D-B $\flat$  or its retrograde—is also embellished with a falling slide (*dan* 1 and 12 of the Yamaguchi recording; see Section 15.1.3), a rising slide (*dan* 7 of the Aoki recording; Section 15.1.3), and a falling bend followed by a rising slide (*dan* 10; Section 15.1.2). In most cases, however, particular intervals or cell fragments are treated in one consistent manner. For example, the A2-G+2 cell fragment is embellished with a rising bend at the end of the A before the step down to G+, thereby enlarging the interval; likewise the A2-E $\flat$  2 descending A4 interval that bridges trichords on A and D is disguised with a rising bend at the end of the A. And with further respect to contrary motion, the E $\flat$  2-G2 M3 interval heard in the first and last *dan* is embellished with complex movement of pitch bending and sliding that first involves a lowering of the pitch away from E $\flat$  before the rise to G. The D-B $\flat$  melodic

progression offers a few exceptions to consistency in that it is embellished in each of the manners discussed in this section (i.e., 15.1), rather than in a single manner throughout the piece.

## 15.2 Two summary examples of pitch bends and slides in *Sokaku Reibo*

Frequently, the pitch cells in *Sokaku Reibo* comprise more than one interval embellished with a bend or slide. The performance of some cells in the Aoki and Yamaguchi recordings is in fact quite complex. Example 15.8 shows one such case from each recording.

The Aoki example (15.8a-b) of cell #9ae''' (C-D-D-E $\flat$ -G-E $\flat$ -E $\flat$ -D [initial C-D not shown below]) begins with a *nayashi* rising slide to a D2 that is reiterated after a breath. The cell continues with the tones E $\flat$ -G-E $\flat$ -E $\flat$ -D, a combination of M3 and m2 intervals. The E $\flat$ -G interval is treated as discussed in Section 15.1.2, with a falling bend on the E $\flat$  before the pitch is slid up a M3 to G, pausing midway and articulated with the fingers at approximately F. After the G is reached and briefly sustained, the pitch is bent upward in preparation for a leap back down to E $\flat$ . This E $\flat$  is re-articulated with the fingers before being bent downward then up, thereby embellishing a descending m2 step to D. This final-tone D is then sustained and the loudness decreased until the sound fades away. Then, after a space, the pitch is lowered from D in a phrase-ending downward bend.

The Yamaguchi example (15.8c-d) of cell #11.1db/se (D-B $\flat$ -D-C-A-G+-G+-E $\flat$ ) also shows several pitch bends and slides but includes embellishment of non-principal intervals and the non-trichord tone G+. The cell begins with the M3 D3-

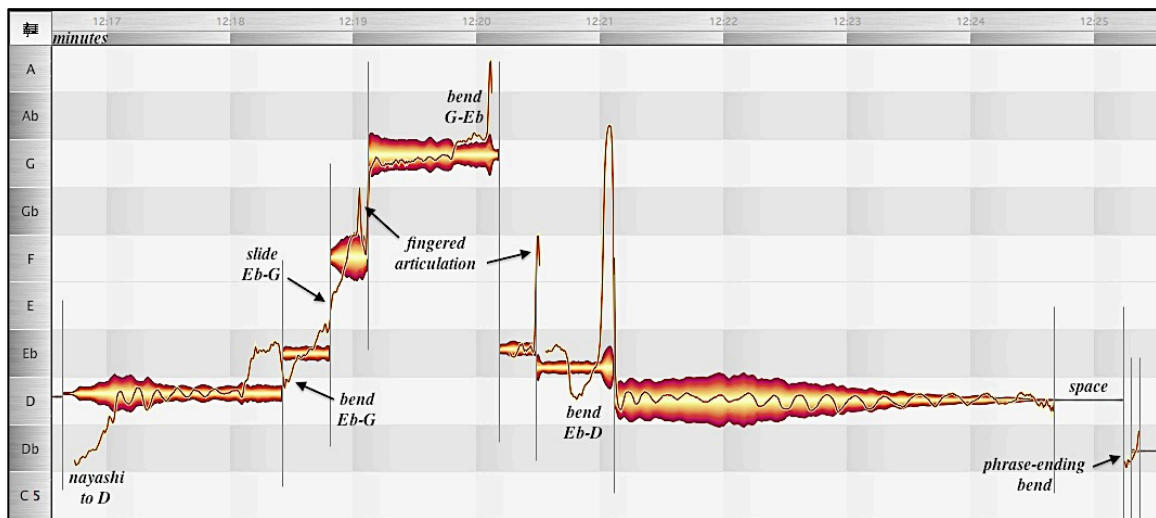


B $\flat$  2 then return to D3, with the B $\flat$  introduced by a rising bend at the end of the first D and followed by a slide back up to D. A descending m3 interval from C3-A2 is treated likewise, with a rising bend at the end of the first tone enlarging the interval, and as was discussed in Section 15.1.1, when the A is followed by the non-trichord tone G+, the step downward is similarly enlarged with a rising bend; such is the case in this example. Although G+ is usually followed by a return to A, in this particular cell, E $\flat$  substitutes for A. This leap downward is also embellished with a rising bend before the descent. Finally, the last tone of the cell (E $\flat$ ) is sustained through a decrease in loudness until the pitch is suddenly dropped then gradually returned in a phrase-ending bend of the *meri-komi* type.

EXAMPLE 15.8 a. Transcription of Aoki recording, m.97, *dan* 12



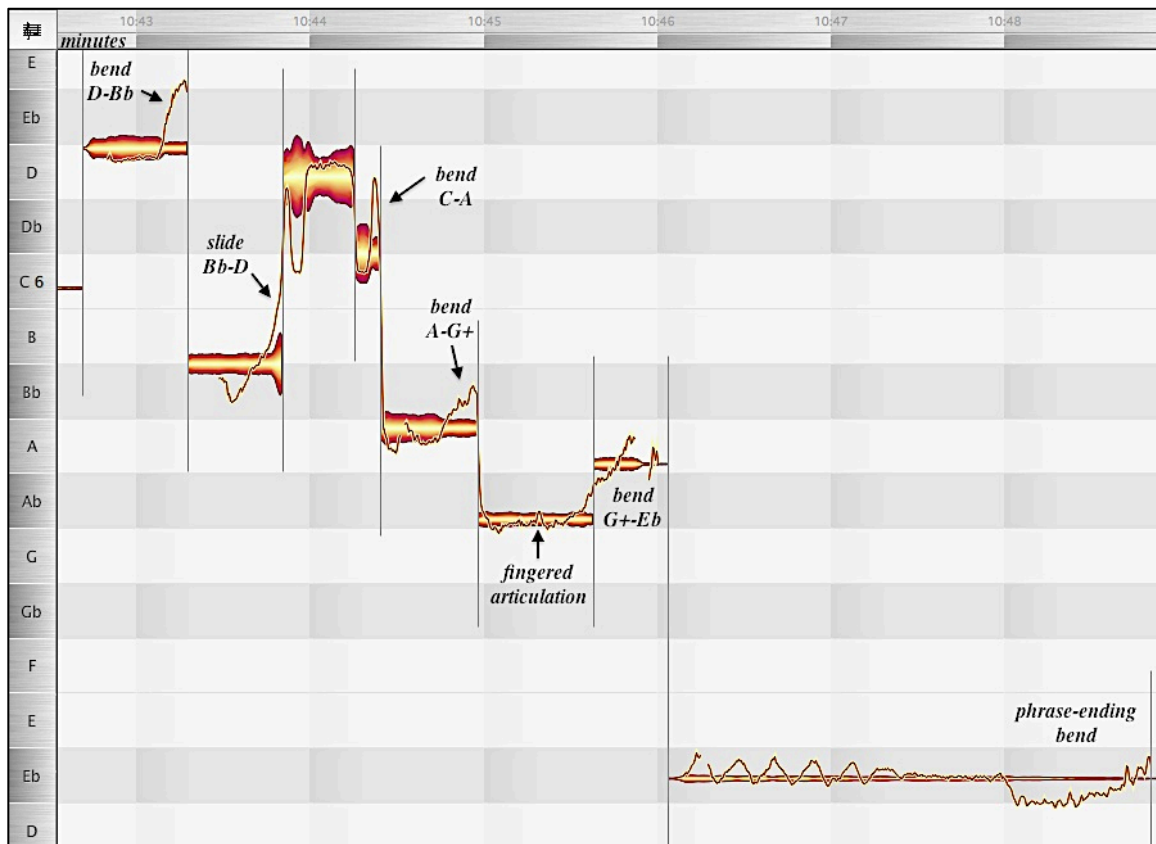
b. Melodyne analysis of Aoki recording, corresponding to m.97



c. Transcription of Yamaguchi recording, m.74, *dan* 12



d. Melodyne analysis of Yamaguchi recording, corresponding to m.74



These two examples summarize the types of pitch bends and slides heard throughout *Sokaku Reibo* on recordings by Yamaguchi and Aoki: bends on reiterated tones, phrase-ending bends, and bends and slides that connect intervals (primarily the principal ones) and *miyakobushi* trichords within cells. The examples in this chapter, and in particular those in Example 15.8, demonstrate that a study of

tablature scores alone is insufficient for gaining an understanding of performance practice in *honkyoku*. What is notated on the page is an outline of the piece, but certainly not the full picture.

## Chapter 16: Wind techniques in *Sokaku Reibo*—Further techniques and conclusion

In Chapters 12 through 15, I explored timbral and pitch-bending and -sliding techniques in *Sokaku Reibo*. In this chapter, I discuss further performance techniques of the *shakuhachi* that appear in *Sokaku Reibo*, two of them pitch-based techniques, and one involving articulation: microtonality, *yuri* vibrato, and *atari* finger articulation. Additional techniques, including pulsating breath as well as noise techniques, can be found in other pieces of the *honkyoku* repertoire, but in this study I discuss only those used in the piece at hand.

### 16.1 Structural microtonality in *Sokaku Reibo*

In Section 11.2.3, I referred to the tone  $G^+/A^b-2$  as an “exceptional” tone. It does not fit into any of the three *miyakobushi* trichords on D, G, or A, yet it is played next to A<sub>2</sub> in cells #6, 7, 8, 15 and variants of #11 as a sort of lower neighbour (in the patterns A-A-G+-G+ and A-G+-G+-A). Because of its regular appearance, it cannot be disregarded with respect to the tone vocabulary of *Sokaku Reibo*. The tones of the three trichords, combined, provide the principal tone resources: D, E<sup>b</sup>, G, A<sup>b</sup>, A, B<sup>b</sup>, C. However, a rare F<sub>2</sub> appears in cell #10 (*dan* 5), the *koro-koro* tremolo effect is heard at approximately D<sup>b</sup><sub>2</sub>, and the tone I have labeled G<sup>+</sup> falls between G<sub>2</sub> and A<sup>b</sup><sub>2</sub>. Each of these three tones has its own distinct fingering, and thus cannot be explained away as an altered or embellished tone of the trichord. The *koro-koro* on approximately D<sup>b</sup> and the G<sup>+</sup> in particular form regular patterns within cells: G<sup>+</sup> always follows A, and D<sup>b</sup> always begins a cell that ends on D<sup>♯</sup>. Therefore, although trichord theory can account for much of the tone vocabulary of *Sokaku Reibo*, it does

not provide a complete analysis of the piece as it is performed. The G+ in particular points to another aspect of *shakuhachi* performance practice: microtonality.

Linder considers *suri-age* and *meri-komi* to be microtonal ornaments,<sup>1</sup> i.e., bending and sliding techniques alter the main tone microtonally. In contrast, the G+ discussed in this chapter is an example of structural microtonality, for G+ always forms intervals with the tones that precede or succeed it that cannot be measured in semitones. The G+ is not an altered tone, but a regular member of the tone vocabulary of the piece.

As I stated in Section 11.2.3, Aoki and Yamaguchi both play *ichi san no u/u dai meri* (G+/A $\flat$ -) closer to A $\flat$  than G, usually between 25 and 50 cents below A $\flat$ . This tone is always preceded by A2 (𠮟 *chi*) in *Sokaku Reibo*, and typically followed by A2 as well. Aoki and Yamaguchi perform these A2s about 25-35 cents high (especially in the latter half of the piece), or with a rising pitch bend at the end of the initial A2, resulting in a melodic interval that falls between a m2 and a M2, i.e., approximately 150-185 cents. The first occurrence of this A2 to G+/A $\flat$ -2 microtonal interval in both recordings, within cell #6, appears below in transcription and Melodyne analysis.

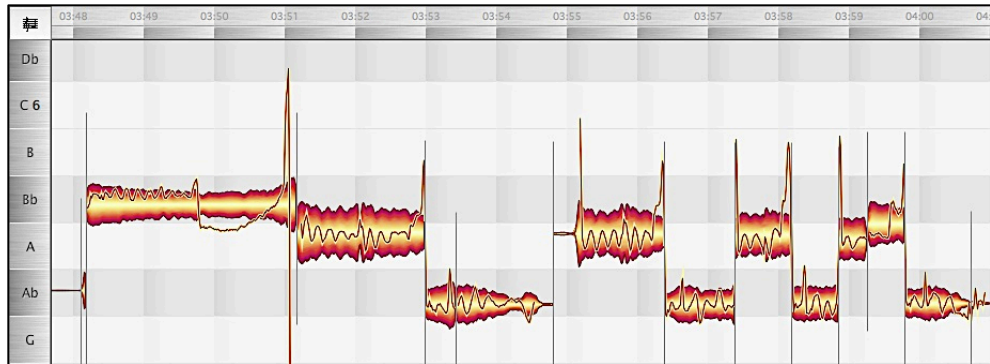
**EXAMPLE 16.1** a. Microtonal interval from A2 to G+/A $\flat$ 2, cell #6 then 6db, *dan 2*, Aoki transcription mm.30-31

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<sup>1</sup> Linder, *Notes*, 70.



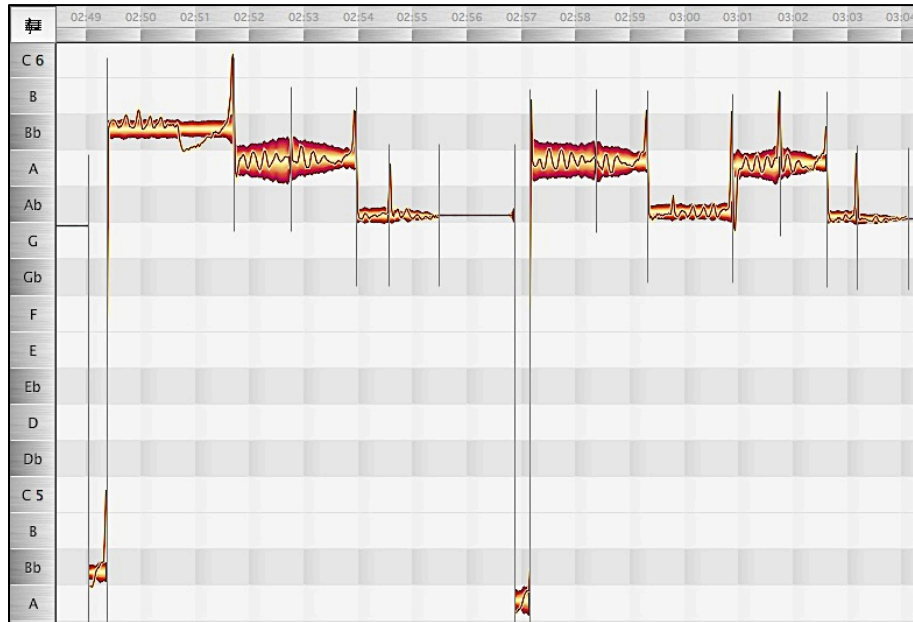
b. Microtonal interval from A2 to G+/A $\flat$ 2, cell #6 then 6db, dan 2, Melodyne analysis of Aoki recording



c. Microtonal interval from A2 to G+/A $\flat$ 2, cell #6 and 6db, dan 2, Yamaguchi transcription mm.20-21



d. Microtonal interval from A2 to G+/A♭2, cell #6 and 6db, *dan 2*, Melodyne analysis of Aoki recording



According to Lee, different schools of *shakuhachi* place more or less importance on standardizing the size of intervals in performance as a result of historical factors such as instrument design and the monophonic nature of the repertoire.<sup>2</sup> However, he states that Yamaguchi and Aoki II are among those masters of the *Kinko-ryū* who “perform *honkyoku* within a framework of fairly consistent pitch intervals.”<sup>3</sup> Despite this consistency, however, “the intervals themselves do not always agree with the standardized intervals found in the western music tradition.”<sup>4</sup>

Indeed, Aoki tends to perform E♭2 about 20 cents high in the recording I have consulted for *Sokaku Reibo*, resulting in reduced or enlarged intervals with the tones that come before or after. Example 16.2 shows my transcription of mm.13-14

<sup>2</sup> Lee, “Yearning,” 281.

<sup>3</sup> *Ibid.*

<sup>4</sup> *Ibid.*

of Aoki's recording. In m.13, cell #2am', Aoki plays the E $\flat$  high, creating an enlarged m2 with the D that follows; in m.14, cell #2am'', the M3 interval to G is reduced. Although Aoki plays the E $\flat$  in cell #1 of *dan* 1 at a comparatively standard pitch level, further instances of this tone tend to be high. In contrast, although Yamaguchi performs the first two E $\flat$  of the piece high, he maintains a level that corresponds to equal temperament for the remainder of the piece.

**EXAMPLE 16.2** Transcription of mm.13-14, cells #2am' & 2am'', Aoki recording



Tones that are performed low include the G1 in the final measure of the piece in both recordings (reducing the P4 to D1 by about an eighth tone in both recordings), and the A2 within Yamaguchi's version. Yamaguchi treats the A2 differently in different contexts. Within the A2 to G+/A $\flat$ -2 interval, he plays the A high; however, when A2 is followed by E $\flat$  2 in *dan* 2, he plays the A low and bends the pitch briefly downward before leaping down to E $\flat$ . In further *dan*, he likewise lowers the pitch before the E $\flat$ .

Other than the E $\flat$  2 and A2 discussed above, tones that are performed high are C3 and D3 in both recordings, and G2 in the Aoki version. Aoki raises the G2 in cells #4, 8, and their variants (*dan* 2, 4, and 5), cells in which the G is followed by a non-raised A2. Regarding the C3 and D3 in both recordings, the high pitch may be the result of acoustic factors in overblowing to the third register of the instrument.



Nonetheless, the raised pitch affects the size of the intervals formed with surrounding tones. Examples of the raised D3 follow below.

EXAMPLE 16.3 a. Transcription of m.68, *dan 7*, Aoki recording



b. Transcription of m.65, *dan 10*, Yamaguchi recording



Microtonality in *shakuhachi honkyoku* can be understood in a couple of ways. First, since pitch is extensively explored through slides and bends, tones can be construed as pitch regions rather than fixed points. Second, microtonality is also structural in *Sokaku Reibo* in that tones are either played consistently at levels that do not fit within an equally tempered scale (e.g. G<sup>+</sup>/A<sup>b-</sup>), or raised or lowered from standard pitch levels and thus depart from the principal intervals of the piece.



## 16.2 Yuri vibrato in *Sokaku Reibo*

In the context of this study, I consider vibrato an extended technique because it is performed on *shakuhachi* in a non-Western manner—by movement of the head in various directions (circular, diagonal, horizontal, vertical) rather than through diaphragm or throat manipulation of the air stream (as is done in Western flute practice) or vertical jaw movement (as is done on saxophone). Vibrato techniques,

called *yuri* (ユリ), are also sometimes notated in *honkyoku* to prescribe the specific type appropriate to a passage.

In *A Guide to Playing Classical Shakuhachi Honkyoku*, Takashi Tokuyama classifies *yuri* as “chin techniques” and lists four types: *tate yuri*, *yoko yuri*, *mawashi yuri*, and *kari yuri*.<sup>5</sup> Linder also describes four types but counts *tsuki yuri* among these, rather than *kari yuri*.<sup>6</sup> *Yuri* types and their notation and execution can differ from school to school, as with all performance techniques. According to Linder, *yoko yuri*, produced with horizontal movement of the head, is “the most commonly used vibrato.”<sup>7</sup> Further types are listed below in Figure 16.1, along with Tokuyama’s graphic notation of three. Aoki, Kurahashi and Sato do not notate vibrato of any type in their *Sokaku Reibo* scores; however, Yokuyama Katsuya does specify particular *yuri* in his *Tsuru no Sugomori* score. Two such instances are shown in Example 16.4. The notation differs from Tokuyama’s.

FIGURE 16.1 *Yuri* types


Type	Notation by Tokuyama <sup>8</sup>	Movement	Notes	Reference
<i>yoko yuri</i>		horizontal; side to side	relatively stable pitch	Linder, <i>Notes</i> , 81; Tokuyama, <i>Guide</i> , 4
<i>tate yuri</i>		vertical; down and up	begins with deep <i>meri</i> , ends with more shallow pitch change	Linder, <i>Notes</i> , 82; Tokuyama, <i>Guide</i> , 4

<sup>5</sup> Tokuyama, *A Guide to Playing*, 4.

<sup>6</sup> Linder, *Notes*, 81-82.

<sup>7</sup> *Ibid.*, 81.

<sup>8</sup> Tokuyama Takashi, *A Guide to Playing Classical Shakuhachi Honkyoku* (n.d.).

<i>mawashi yuri</i>		circular or diagonal		Linder, <i>Notes</i> , 82
<i>kari yuri</i>		up and down	rare	Tokuyama, <i>Guide</i> , 4
<i>tsuki yuri</i>		down and up	<i>shakuhachi</i> is moved instead of head; slight vibrato	Linder, <i>Notes</i> , 82

**EXAMPLE 16.4** a. *Yuri* notation in Yokoyama's *Tsuru no Sugomori* score, line 1, *dan* 1

b. *Yuri* notation in Yokoyama's *Tsuru no Sugomori* score, line 2, *dan* 1

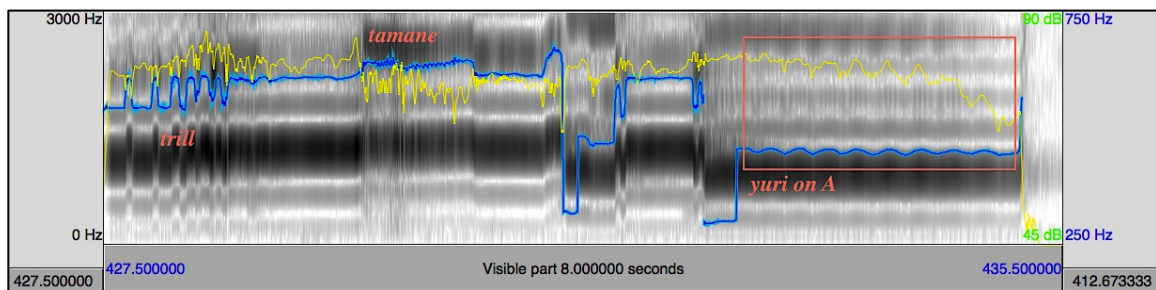


Although Aoki, Kurahashi, and Sato do not notate *yuri* in *Sokaku Reibo*, vibrato of varying widths is clearly discernible throughout the recordings and visible in the pitch lines produced by Praat and other software. In this section I show examples of *yuri* vibrato in the Aoki and Yamaguchi recordings using Praat software, which allows the simultaneous graphing of pitch, intensity and sound spectrum.

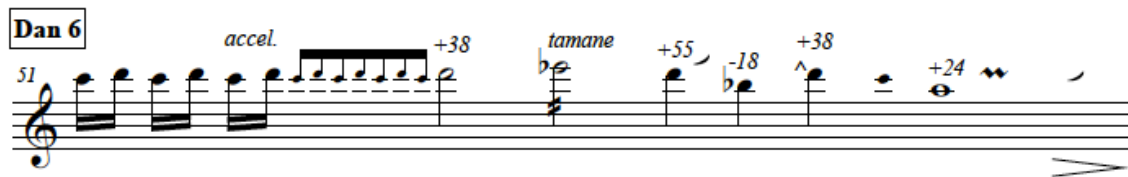
*Yuri* is performed in *Sokaku Reibo* on sustained tones. Since most sustained tones occur at the ends of breath phrases, this is where most *yuri* is found. All of the tones of the piece are treated with vibrato at some point, with the exceptions of G+,

which is never sustained, and  $D\flat$ , which occurs only as a result of the *koro-koro* tremolo technique—a technique not subject to vibrato. Example 16.5 shows pitch (in blue), intensity (in yellow), and spectral analysis of cell #11 from the first breath phrase of *dan 6* in the Aoki recording. The A2 at the end of this cell is sustained and thus subject to vibrato. The *yuri* in this example and those that follow are enclosed in red rectangles. Towards the end of the final tone, the intensity, marked by the yellow line, gradually lowers, pointing to a decrease in loudness at the end of the phrase; the vibrato wave, shown in blue, likewise narrows slightly.

EXAMPLE 16.5 a. *Yuri* at end of cell #11, *dan 6*, Praat analysis of Aoki recording, corresponding to m.51 in transcription



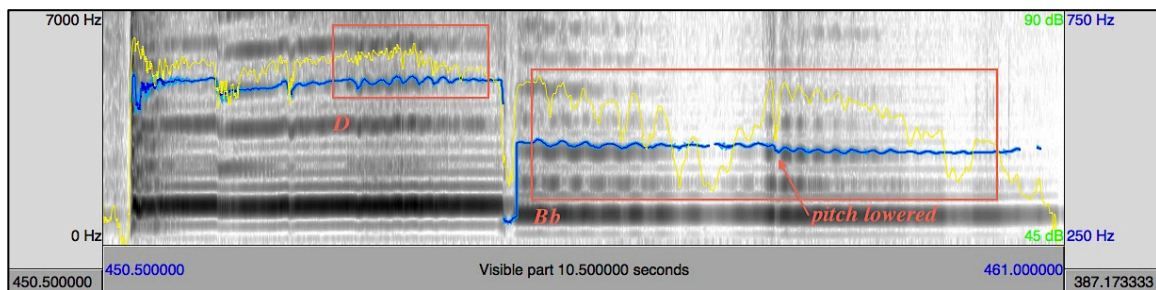
b. Transcription of m.51, cell #11, *dan 6*, Aoki recording



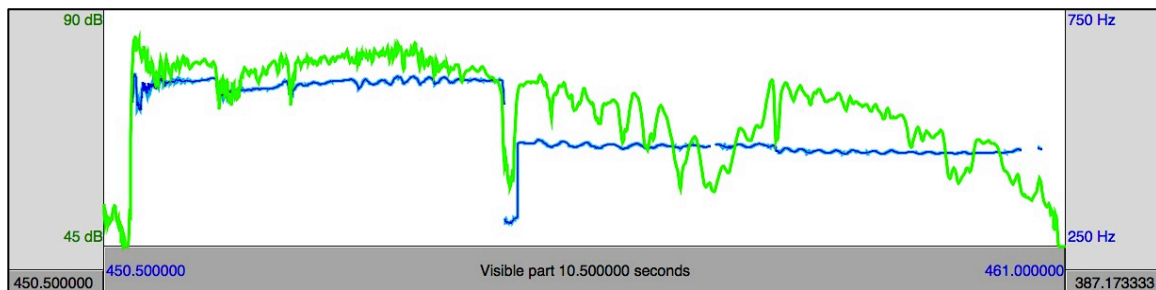
A second example (16.6) from the Aoki recording shows changes in intensity during sustained *yuri* tones directly preceding a change or bend in pitch. In this iteration of cell #3.2 ( $D-B\flat$ ) from *dan 6* (m.56), both tones are sustained and therefore treated with *yuri*. The vibrato on the D is not begun until after the pitch is bent down and then returned. At the end of the vibrato portion, the intensity is

decreased slightly and the overtones also weakened before the melodic line moves to B $\flat$ . Vibrato is begun immediately on the B $\flat$ , but the intensity makes a large drop in preparation for a downward *meri-komi*-type bend in the pitch. Immediately after the pitch is dropped, the intensity is raised, only to fall gradually as the vibrato narrows throughout the remainder of the breath.

**EXAMPLE 16.6 a.** *Yuri* on D3 and B $\flat$  2 cell #3.2, *dan* 6, Praat analysis of Aoki recording, corresponding to m.56 in transcription (Intensity more visible in Example b)



b. Copy of above example (a) with spectrum removed. Pitch in blue; intensity in green



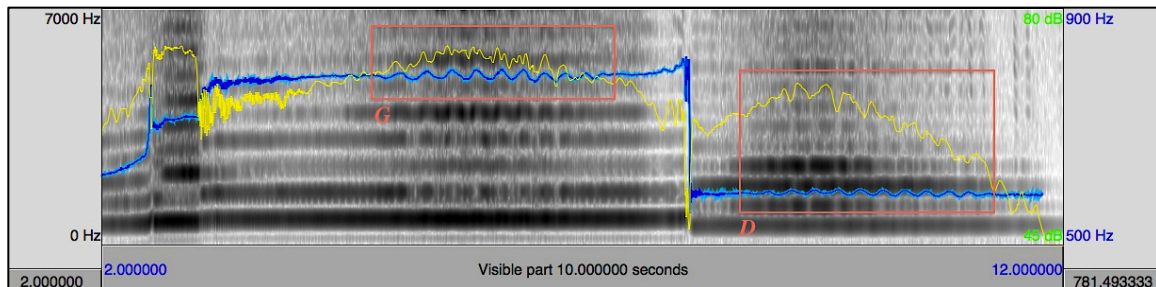
c. Transcription of m.56, cell #3.2, *dan* 6, Aoki recording



Changes in intensity also coincide with pitch alteration in the Yamaguchi recording. I give three examples below (16.7-9) that also show that although *yuri*

does usually occur at the ends of phrases, it can be heard elsewhere. The first instance of vibrato in Yamaguchi's recording is offered in the first cell and breath of the piece: E<sup>b</sup>-G-D (Example 16.7). Yamaguchi performs *yuri* on both G2 and D2, each sustained. He begins the initial *yuri* in the middle of the G, increasing the intensity at the same time. As the *yuri* narrows, so the intensity decreases. A slight rising pitch bend at the end of the G then leads into the D. The intensity line of the sound during the D likewise plots an arc shape, but with a longer, more gradual descent to the end of the phrase. Regarding the spectrum of the D, three strong overtones coincide with the increase in intensity at the height of the arc; the first and third overtones fade with the lowering of intensity, thereby affecting the timbre as well.

**EXAMPLE 16.7** a. *Yuri* on G2 and D2 cell #1, *dan* 1, Praat analysis of Yamaguchi recording, corresponding to m.1 in transcription



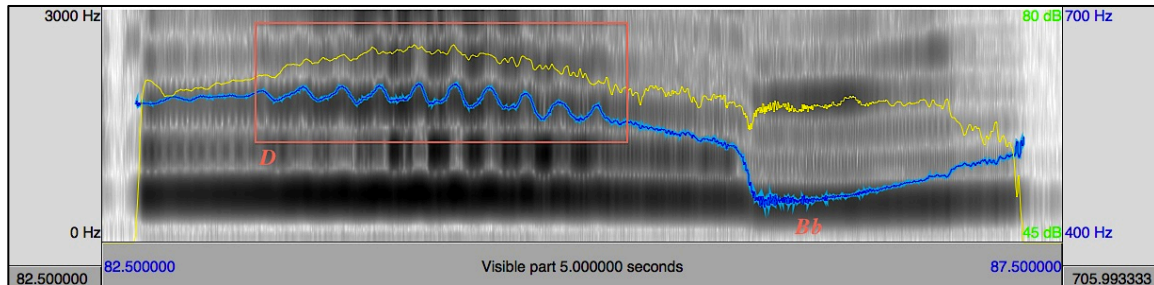
b. Transcription of m.1, cell #1, *dan* 1, Yamaguchi recording



In the second example from Yamaguchi's recording (16.8), *yuri* does not occur at the end of the phrase. Instead, it occurs on the sustained D2 at the beginning of cell #3 (*dan* 1) that is slid down to B<sup>b</sup>. The *yuri* is added near the

beginning of the D and continues partway through the sliding descent. The intensity of the sound likewise decreases with the lowering of pitch. The final part of the slide is executed without vibrato.

**EXAMPLE 16.8** a. *Yuri* on D2 cell #3 (1<sup>st</sup> half), *dan 1*, Praat analysis of Yamaguchi recording, corresponding to m.10 in transcription

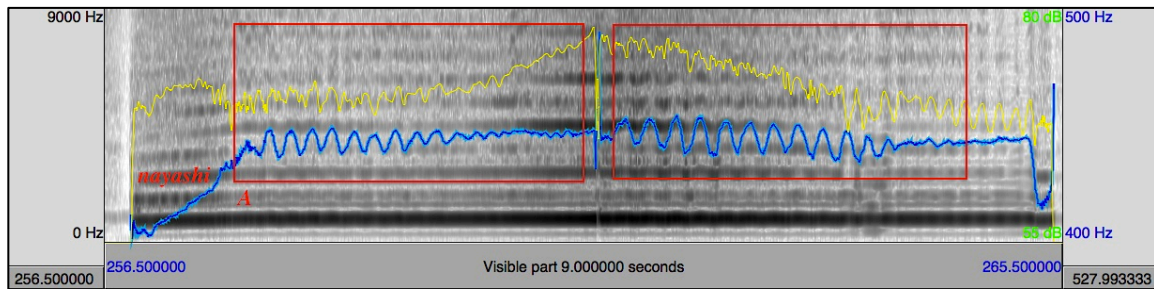


b. Transcription of m.10, cell #3 (1<sup>st</sup> half), *dan 1*, Yamaguchi recording

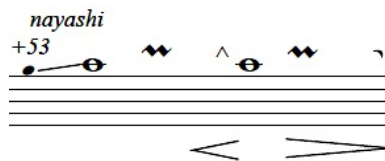


A final example (16.9) of *yuri* is taken from a cell that also includes a *nayashi* slide and finger articulation. In m.30, Yamaguchi performs a relatively wide vibrato immediately after the A2 pitch is reached from the rising slide. Mid-way through the tone, the vibrato narrows, coinciding with an increase in intensity leading into the re-articulation of the A with the fingers. The second A begins as did the first, with yet wider vibrato. This time, the intensity decreases as the tone is sustained, the vibrato gradually narrows, and the pitch is stabilized. Whereas the *yuri* patterns of the two A2 could be superimposed, the intensity pattern forms more of a mirror image. Regarding timbral characteristics, the spectrum is richer in overtones in this example when the intensity is increased.

**EXAMPLE 16.9** a. *Yuri* on A2 in *nayashi* cell, *dan 3*, Praat analysis of Yamaguchi recording, corresponding to m.30 in transcription



b. Transcription of m.30, *nayashi* cell, *dan 3*, Yamaguchi recording



Although not all phrases in *Sokaku Reibo* end with sustained tones and vibrato, many do. Without notation of *yuri* in the Aoki score, or video recordings of the Aoki and Yamaguchi versions, the type of *yuri* performed in each instance is not verifiable. However, it is possible to note that the use of *yuri* tends to coincide with changes in intensity and the presence of added overtones in the spectrum. The width of *yuri* is not consistent but does tend to narrow as a tone is sustained, especially when the phrase is coming to an end, or when pitch-altering bends and slides, or finger articulation approach.

### 16.3 Finger articulation in *Sokaku Reibo*

In traditional Japanese flute and reed performance practice, tones are articulated not with the tongue, but with the fingers, as discussed with regard to *hichiriki* and *ryūteki* in Chapter 7. The same is true in *shakuhachi honkyoku* practice.



In the *Kinko-ryū*, the generic term for “attack,” i.e., articulation, is *atari*.<sup>9</sup> Although attacks can also be executed with the breath or the chin (as in a sudden shift from a *meri* to a *kari* head position), the fingers give the clearest beginning to a tone.<sup>10</sup> The two main types of *atari* are *oshi* and *uchi*, and they differ according to whether a tone hole is either opened or closed to achieve the articulation. Linder defines *oshi* as “an instantaneous opening and closing of an originally closed finger-hole,” and *uchi* as “an instantaneous closing and opening of an originally opened finger-hole.”<sup>11</sup> There is a standard fingering for *atari* associated with each tone on the instrument, but alternates are sometimes notated in the scores or taught in lessons. A third type of *atari*, called *ru*, is a particular *uchi* articulation performed on hole 1, the lowest hole of the instrument.

FIGURE 16.2 Basic *atari* types

Term	Notation	Fingering	Melodic result
<i>oshi</i> (“push”)	押し or 押	open then close hole	up-down
<i>uchi</i> (“hit”)	打ち or 打	close then open hole	down-up
<i>ru</i>	ル	close then open hole 1	down-up

*Atari* finger articulation could also be described as pitched finger percussion, similar to *tataku* in *gagaku* practice. Although each finger articulation in *honkyoku* is pitched, Tsukitani claims the “pitch is hardly noticeable.”<sup>12</sup> Nonetheless, in my transcriptions I have notated approximate pitch with stem-less noteheads when the pitch of the articulation is clearly audible. Additional subtler instances of finger articulation in the recordings may be possible but are not transcribed. In my

<sup>9</sup> Linder, *Notes*, 57.

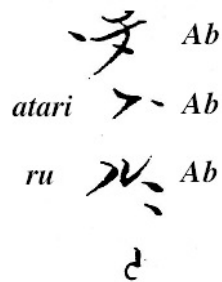
<sup>10</sup> *Ibid.*

<sup>11</sup> *Ibid.*, 59.

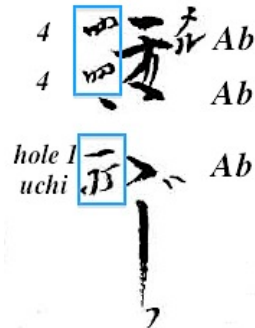
<sup>12</sup> Tsukitani, “The *Shakuhachi*,” 166.

transnotation of scores by Aoki and Kurahashi, I have indicated numbers 1-5 above notes where the score specifies the hole for the *atari*. *Atari* are indicated in the two scores in a few ways: with the *kanji* character for the number, placed next to the tablature; with the number plus either 押 (“push”) or 打 (“hit”), or the character alone; with ル *ru* (in the main line of tablature) for a hit on hole 1; or simply with the generic symbol for *atari*: > (again, in the main line of tablature). Notation examples from the Aoki and Kurahashi scores follow.

**EXAMPLE 16.10 a.** *Atari* and *ru* finger articulation excerpt from cell #5 (3RC), *dan 2*, annotated Aoki score



**b.** Finger articulation excerpt from cell #5 (3RC), *dan 2*, annotated Kurahashi score



**c.** Two-finger *oshi* articulation on repeated C3, *dan 10*, annotated Aoki score [English instructions read: “hit 1 & 2 at the same time”]



**d.** Finger articulation in 2RC, *dan 5*, annotated Kurahashi score

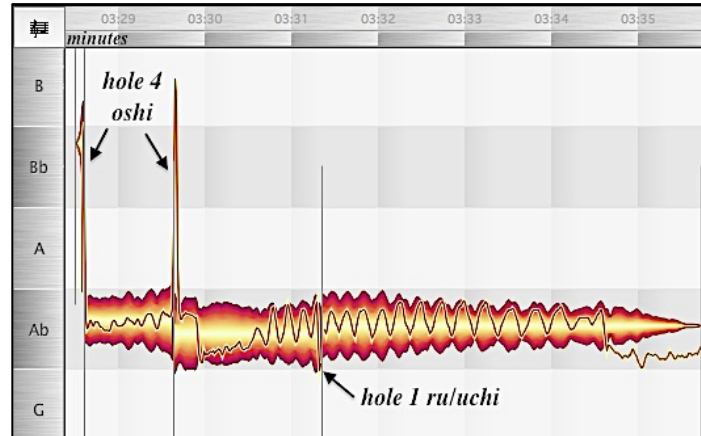


The first two examples (16.10a and b) are of the same phrase in the same *dan*, but from different scores. In this and the following phrase, Aoki notates the non-specific *atari* symbol (>) for the second note of the 3RC on A $\flat$ , and  $\text{ru}$  (i.e., hit hole 1) for the third, whereas Kurahashi indicates an *atari* on hole 4 to begin the initial and second A $\flat$ , but “1 *uchi*” (i.e., hit hole 1) for the third. These two different forms of notation in fact provide the same information, since the standard *atari* hole for *chi meri* (A $\flat$ ) is 4 (the uppermost hole on the front),<sup>13</sup> and “*ru*” and “1 *uchi*” both mean hit hole 1. The sound of the articulation on the second and third A $\flat$  will differ since the second note requires opening and then closing a hole (*oshi*), whereas the prescription for the third note is the opposite (*uchi* or *ru*). In the corresponding measure in his recording, Aoki also articulates the beginning of the first tone; the pitch of the articulation for these first two tones sounds approximately B. The third articulation does not affect the pitch of the main tone to such a degree (see Example 16.11a). Thus, a 3RC is not a simple 3-note repeated pattern—each tone is begun in its own way in the Aoki recording, a subtle effect but detectable nonetheless. In contrast, Yamaguchi performs this cell by sounding a brief A $\flat$  an octave below the first tone before the initial *oshi* upper *atari*. The third tone is treated in the same way as the second, with an *oshi* articulation that sounds approximately B $\flat$ , rather than an *uchi/ru* lower hit.

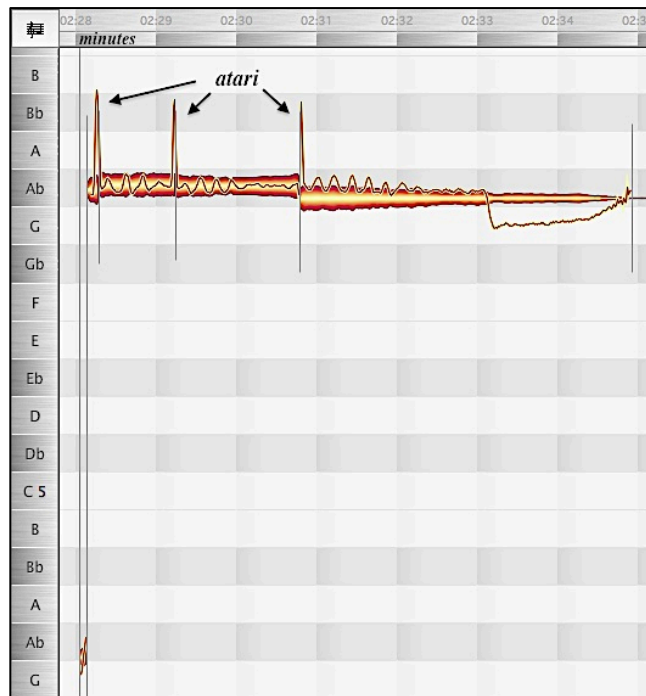
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<sup>13</sup> Linder, *Notes*, 214.

EXAMPLE 16.11 a. *Atari* in cell #5, *dan 2*, Melodyne analysis of Aoki recording, corresponding to m.28



b. *Atari* in cell #5, *dan 2*, Melodyne analysis of Yamaguchi recording, corresponding to m.18



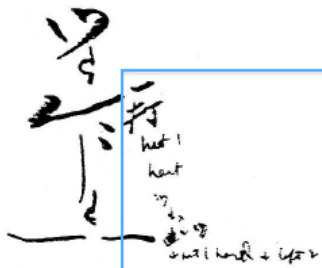
*Atari* serve to articulate immediately-reiterated tones throughout *Sokaku Reibo*. However, this is not their only function. They also articulate the beginnings of breath phrases as well as tones mid-phrase. For example, Aoki calls for an *uchi* hit on hole 1 on  $\searrow$  *re* (G) after a downward pitch bend on  $\swarrow$  *tsu* (F) at the beginning of

*dan* 5 (cell #10). In his recorded performance, Aoki adds an *atari* on the initial F. These two articulated moments have the highest level of intensity and densest sound spectrum in the performance of the whole cell, as shown in the Praat analysis in Example 16.12b. In the recording, added breathiness and increased loudness are clearly audible. As Linder states:

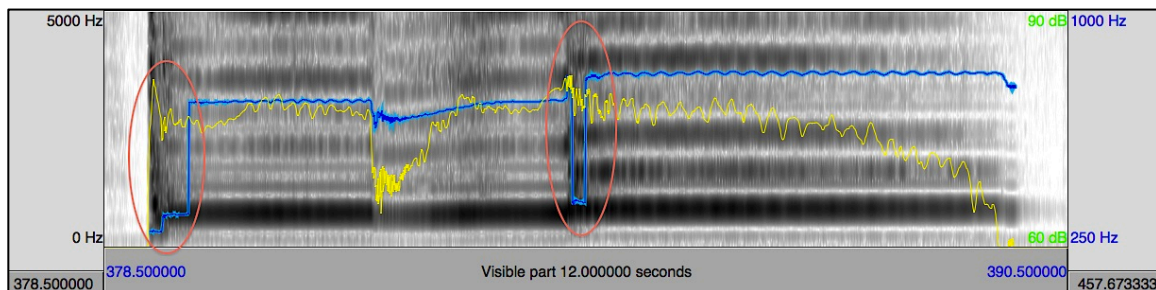
the intensity, colour, and texture of the sound will be different depending on which [*atari*] technique is employed. The sound may also be altered by increasing or reducing breath, changing the embouchure, etc., which further widens the available palette of sounds.<sup>14</sup>

I refer the reader to Chapter 1, Part 3, of Linder's text<sup>15</sup> for further details on *atari* performance practice in *Kinko-ryū shakuhachi honkyoku* and *gaikyoku* (ensemble music).

**EXAMPLE 16.12** a. Notation of *uchi* hit on  $\checkmark$  *re* in cell #10, *dan* 5, Aoki score



b. *Atari* on *tsu* (F) and *re* (G), circled, in cell #10, *dan* 5, Praat analysis of Aoki recording



<sup>14</sup> Linder, *Notes*, 59.

<sup>15</sup> *Notes on Kinko-ryū Shakuhachi Honkyoku: Performance Techniques: Analysis, Classification, Explanation* (Lidingö, Sweden: nipponicom.com, 2010).

#### 16.4 Performance techniques in *Sokaku Reibo*: Conclusion

The melodic content of *Sokaku Reibo* is characterized by three principal intervals: m2, M3, P4. These three intervals both stand alone throughout the piece and work together to form the *miyakobushi* trichord (m2+M3=P4) whether this trichord is realized upward from D, G, or A (D-E $\flat$ -G; G-A $\flat$ -C; A-B $\flat$ -D): e.g., a m2 interval appears as D-E $\flat$  but not as E-F. These intervals as well as trichords are essential to the makeup of the 15 pitch cells I have labeled in the piece and their variants. With respect to rhythmic patterns within cells, both two- and three-note rhythm cells (2RC, 3RC) are reiterated throughout *Sokaku Reibo*. On a larger scale, breath rhythm dictates the phrase lengths in performance of the piece, as in all *honkyoku*.

Despite the ubiquity of the above modal and rhythmic elements in the piece, departure from the trichordal modality is also characteristic of the structure and of performance practice. For example, a tone that consistently falls between G and A $\flat$ , i.e., G+/A $\flat$ -, cannot be accounted for within trichordal theory, but rather through structural microtonality. Further, substantial pitch manipulation resulting from vibrato and sliding and bending techniques is heard in every breath of the piece in recorded performances by Aoki and Yamaguchi. Techniques based in pitch, timbre, and articulation extend performance beyond the tablature notated in the scores. A summary of these techniques appears in Figure 16.3.

FIGURE 16.3 Summary of performance techniques in *Sokaku Reibo*

Category	Technique	Cells & variants (v) subject to embellishment	Embellished tones	Embellished intervals	Dan where embellishment occurs in AR/YG recording(s) or AR/KY score(s)	Location and/or function of technique
timbre	<i>tamane</i>	3/3.2; 7/7v; 8; 9ae; 11/11v	D2, B $\flat$ 2, E $\flat$ 3	m2, M3	1, 3, 4, 6, 7, 9, 10, 12	usually beginning of cell or near beginning; sustained
timbre	<i>koro-koro</i>	2/2v; 4v	D $\flat$ 2	A1 (cf. m2), M2	1, 12	beginning of cell; cell ends on D
timbre	<i>koro-koro</i> trill	3.2; 7.1.1&v; 15v; 9v	B $\flat$ 2, D3	m2, M3, P4	10, 11	beginning of cell
timbre	<i>meri-kari</i> & timbral or non-basic fingerings	all but 10, 12	D2 ( <i>ro, a, shi go no ha</i> ), E $\flat$ 2 ( <i>tsu meri</i> ), G+2 ( <i>u dai meri, ichi san no u</i> ), A $\flat$ ( <i>chi meri</i> ), B $\flat$ 2 ( <i>san no u, hi meri</i> ), D3 ( <i>i, a, go no hi, go no ha</i> )	n/a	all	throughout
timbre	breathiness	all	sustained or initial tones of phrases especially (this excludes G+)	n/a	all	to begin phrase or new tone; middle of sustained tones; combined with other techniques ( <i>nayashi, koro-koro</i> )
pitch	<i>nayashi</i> slide	unison 3RC, 2RC (augmented)	D2, G2, A2	P1	1-7, 10, 12	rising slide from below embellishes reiterated tone; acts as terminal pattern with RC that follows
pitch	bend—downward at end of phrase	1, 2v, 3/3v, 5/5v, 7, 8, 9/9v, 10, 11v, 13, 15	D2 especially; also E $\flat$ 2, G2, A $\flat$ 2, A2, B $\flat$ 2, D3	n/a	all	end of phrase
pitch	bend—downward after unison RC	2RC, 3RC, 4RC	G2, A $\flat$ 2, A2	P1	2-7, 10, 12	end of phrase

Category	Technique	Cells & variants (v) subject to embellishment	Embellished tones	Embellished intervals	Dan where embellishment occurs in AR/YG recording(s) or AR/KY score(s)	Location and/or function of technique
pitch	bend—downward after <i>nayashi</i> phrase	3RC	G2, A2	P1	2-7	end of phrase
pitch	<i>tome</i> downward bend	1db'	D1	P4	12	notated at the end of final tone of piece; preceded by space in recordings
pitch	bend—upward at end of phrase	AR*: 3, 4v, 9v, 11/11v YG: 3v, 9/9v, 11, 15v, 3RC	AR: D2, G+2, A2, C3 YG: A2, B $\flat$ 2, D3	n/a	AR: 1, 5, 6, 10, 12 YG: 2, 6, 8, 10, 12	rare instances; downward bend is more common at phrase end
pitch	bend—rising	all except 10, 12, 14	D2, E $\flat$ 2, G2, A2, B $\flat$ 2, C3, D3	descending m2, M3, P4, M2, A4, other (A-G+)	all	within cell, before leap/step down
pitch	bend—falling-then-rising	1, 2v, 3v, 10, 12	E $\flat$ 2, F2, A2, B $\flat$ 2	M2, m3, M3	1, 5, 7, 10, 12	within ascending melodic motion
pitch	slide—similar motion	rising: 3v, 15 falling: 3v	rising: B $\flat$ 2, C3 falling: D2	rising: M2, M3 falling: M3	rising: 7, 11 falling: 1, 12	rising slide in ascending motion or falling in descending motion
pitch	structural microtonality—non-trichord tones	D $\flat$ : 2 G+: 6, 7, 8, 11v, 15	D $\flat$ 2, G+2	D $\flat$ : ~A1, ~M2 G+: between m2 & M2	D $\flat$ : 1, 12 G+: all but 1, 5	G+ follows A; D $\flat$ results from <i>koro-koro</i>
pitch	<i>yuri</i> vibrato	all recorded cells (i.e., all but #14)	all but G+, D $\flat$	n/a	all	sustained notes, typically end of phrase
articulation	<i>atari</i> finger articulation	all, incl. 2RC, 3RC, 4RC	all	P1, m2, M2, m3, M3, P4	all	tone reiteration; phrase beginning; tone-to-tone movement

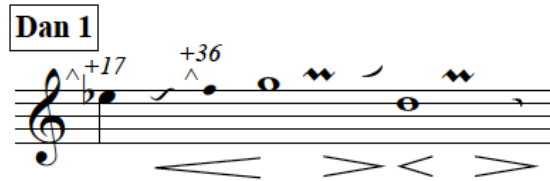


Performance techniques do not appear in isolation in *Sokaku Reibo*; instead, a single cell may be subject to several embellishments in one or more of the categories of pitch, timbral, or articulation techniques. For example, the first cell of the piece is simply E $\flat$ 2-G2-D2 in terms of its basic tone outline. However, as shown in my transcription of Aoki's and Yamaguchi's recordings of the first sounding of this cell in *dan 1* (Example 16.13a-b), rising and falling pitch bends, *yuri* vibrato, and *atari* finger articulation are part of the piece's performance practice. SPEAR analysis of these excerpts (Examples c-d) shows that both performers also manipulate the timbre on the G and D with respect to the fluctuating presence and absence of overtones in the tone, though each performer in his own way.

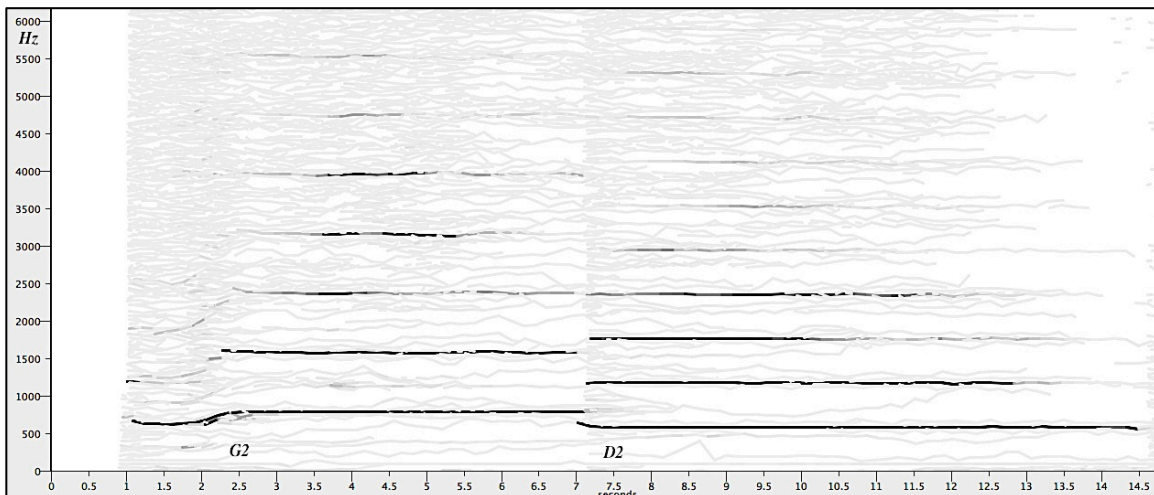
EXAMPLE 16.13 a. Cell 1, first breath phrase, transcription of Aoki recording



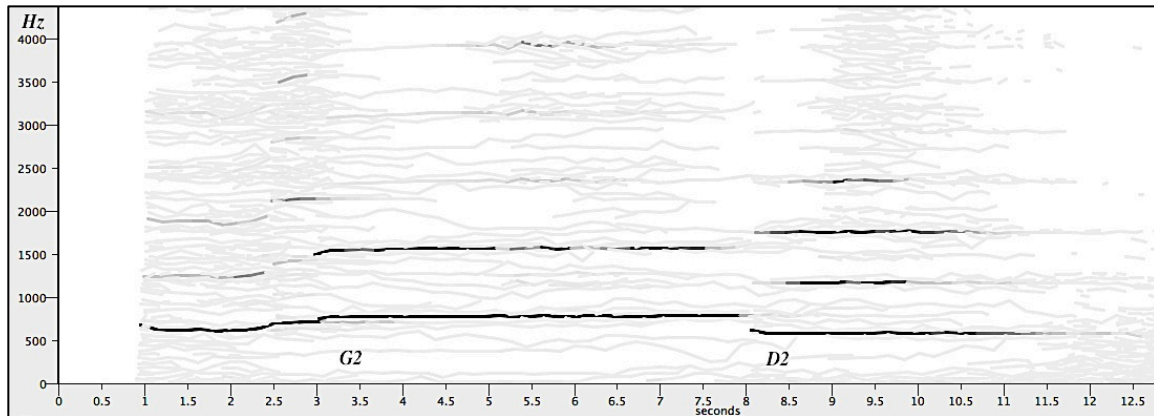
b. Cell 1, first breath phrase, transcription of Yamaguchi recording



c. Cell 1, first breath phrase, SPEAR analysis of Aoki recording



d. Cell 1, first breath phrase, SPEAR analysis of Yamaguchi recording



In *Sokaku Reibo*, certain tones, intervals, cells (pitch and rhythm), and locations within phrases are more frequently subject to the performance techniques listed in Figure 16.3 than others. For example, the main tones D2 and B $\flat$ 2 are both frequently embellished with *tamane* flutter tonguing, the *koro-koro* trill (not the full *koro-koro*), timbral fingerings (*ro*, *a*, and *shi go no ha* in the case of D2; *san no u* and *hi meri* for B $\flat$ 2), breathiness added to the tone, various pitch-bending and -sliding techniques, *yuri* vibrato, and *atari* finger articulation—indeed, most of the techniques listed in Figure 16.3 with the exceptions of the full *koro-koro* (playable only on D $\flat$ ), certain types of bends, and the structural microtonality that results from non-trichord tones. In contrast, whereas G2 and A2 are both subject to *atari* and pitch bending, the only timbral technique applied to both is breathiness on sustained tones.

The principal intervals of the piece (m2, M3, P4) are also typically highlighted with performance techniques from each category, as shown in Figure 16.4. Certain techniques are not applicable to intervallic relationships, as in phrase-

ending bends and *yuri* vibrato; however, of those that are, the primary intervals are the intervals most frequently embellished. A notable exception occurs with respect to the P1 interval, i.e., rhythm cells that recur on a single tone.

FIGURE 16.4 Summary of performance techniques that embellish principal intervals

	<b>m2</b>	<b>M3</b>	<b>P4</b>
<b>timbre</b>	<i>tamane</i>	<i>tamane</i>	
	<i>koro-koro</i> (as A1)		
	<i>koro-koro</i> trill	<i>koro-koro</i> trill	<i>koro-koro</i> trill
<b>pitch</b>			<i>tome</i> end-of-piece bend
	rising bend before step down	rising bend before leap down	rising bend before leap down
	falling-then-rising bend	falling-then-rising bend	
		slide in similar motion	
<b>articulation</b>	<i>atari</i>	<i>atari</i>	<i>atari</i>

Rhythm cells recur throughout *Sokaku Reibo* in the form of two- and three-note patterns (and exceptionally, a four-note pattern), labeled 2RC and 3RC. Frequently, these rhythm cells sound on a single tone, separated by forms of *atari* finger articulation that create brief tones above or below the main tone. They are further embellished with various types of pitch bends, whether immediately after an *atari*, or at the end of the final RC of the phrase. *Nayashi* pitch slides, which begin from below the second tone of a unison three-note repeated pattern, also highlight an augmented form of the 3RC. Thus, in *Sokaku Reibo*, repeated tones are not simply repeated, but coloured with various pitch techniques.

Another cell typically subject to a variety of embellishing techniques is cell #3.2: D-B $\flat$  or its retrograde, whether in the upper or lower register of the *shakuhachi*. Although many cells are consistently embellished throughout the piece, cell #3.2 (or 3v) appears prominently in Figure 16.3 whenever the M3 interval is listed. In the category of timbre, the D-B $\flat$  interval is coloured with *tamane*, the *koro-koro* trill, alternate fingerings, and breathiness—everything but the full *koro-koro* tremolo; with respect to pitch, it is subject to all forms of bends and slides, with the exceptions of *tome* (on P4 only) and those that apply only to unison reiterations; and since all intervals are articulated with *atari* of the fingers, cell #3.2 is among them. Although not all cells are treated with such a variety of performance techniques in the Aoki and Yamaguchi recordings, none is left wholly unembellished.

A final point of summary with regard to performance techniques in *Sokaku Reibo* has to do with the location of the techniques within the breath phrase. Certain techniques are associated with the beginnings of phrases, others with the ends; some occur on reiterated tones, others within melodic motion from tone to tone. For example, the *koro-koro* multiphonic tremolo always begins a cell and *tamane* flutter tonguing is played only at the beginning or near the beginning of the breath. Breathiness is also frequently heard to introduce a breath, although it also colours the timbre of sustained tones. Most timbral techniques tend to coincide with phrase beginnings.

In contrast, pitch-bending techniques are heard in the middle or at the end of the phrase, but rarely at the beginning. As shown in Figure 14.4, all *dan* in the Aoki

recording and all but one in the Yamaguchi recording end in a downward bend; the one exceptional *dan* ends in an upward bend. None has a neutral-pitch ending in the recorded performances. The final downward bend of the piece is even given a special name: *tome*. As for mid-phrase bends, the most prominent types are the rising bend that prepares a downward step or leap and the *nayashi* rising slide on sustained reiterated tones. In fact, *nayashi* patterns exhibit additional techniques that accompany the slide: *atari* finger articulation, breathiness or overtones added to the sustained tones, and a downward bend at the end of the phrase.

Clearly, then, a single tone, interval, or cell is not necessarily subject to a single embellishing technique. Rather, timbral, pitch, and articulation techniques act in concert within each phrase to create a performance of *honkyoku*. Many of the techniques presented in this study are not notated in the *Sokaku Reibo* scores; therefore, a simple playing of the tablature would not represent the piece as it is traditionally performed. In short, the techniques presented in this study, while considered “extended” in the performance practice of Western music, are essential to the realization of the traditional *shakuhachi* repertoire.

## Chapter 17: Conclusion

### 17.1 Introduction

Whereas woodwind musicians in the West did not begin to use “extended techniques” in common practice until after their instruments had been gradually transformed with keywork and modifications to the bore and tone holes, musicians throughout Asia developed their advanced techniques independently of major alterations or “advances” in instrument design. Traditional woodwind instruments continue to be played today in Japan and the diaspora relatively unaltered from their ancient forms, most notably, without the addition of keywork. However, in Europe, changes in musical needs (i.e., “projection, volume and versatility”<sup>1</sup>) in the orchestra went hand in hand with changes in construction. As new designs were accepted and adopted, older ones were gradually abandoned.<sup>2</sup> As Adam Carse observed several decades ago:

It was the lack of the first chromatic semitone in the primary scale which led to the introduction of the first chromatic key on wood-wind instruments during the course of the 17<sup>th</sup> century, and it was the imperfect intonation and poorer quality of the forked sounds which subsequently brought about the addition of the remaining chromatic keys at the end of the 18<sup>th</sup> and early in the 19<sup>th</sup> century.<sup>3</sup>

In contrast, in Japan when attempts were made to add keys to the *shakuhachi* in the 1930s, the aesthetic of the music was affected. Tsukitani, Seyama and Simura write:

The appeal of the 5-hole *shakuhachi* is that the dynamics and timbre of each individual tone are not uniform. By losing this, the *shakuhachi* becomes little

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<sup>1</sup> Robert Barclay, “The Development of Musical Instruments: National Trends and Musical Implications,” in *The Cambridge Companion to the Orchestra*, ed. Colin Lawson (Cambridge: Cambridge University Press, 2003), 33.

<sup>2</sup> That is until recently, with the revival of period instruments.

<sup>3</sup> Adam Carse, *Musical Wind Instruments* (1939; repr., New York: Dover, 2002), 28.

more than an imitation of the Western flute, and the reason for its existence becomes weak.<sup>4</sup>

In *shakuhachi* tradition, value is placed on having to work around challenges, and on the timbral qualities of the single tone. Zachary Wallmark quotes his *shakuhachi* teacher, Bill Shozan Schultz, as explaining that “sonic qualities result from a dynamic process of material negotiation through which players overcome the ‘deliberate instrument-based inconveniences’ of shakuhachi design.”<sup>5</sup> Rather than be held back by challenges inherent in their instruments, traditional Japanese musicians developed techniques that would become characteristic of the repertoire and integral to its performance. As Elliott Weisgarber writes, “in Japanese music... the more natural and simple the instrument, the more difficult and subtle the technique.”<sup>6</sup> It follows that an investigation of the performance of these subtle techniques should be included in analyses of the repertoire.

Therefore, the purpose of this study has been, 1) to show that woodwind techniques considered “extended” and relatively “new” in Western classical music appear in traditional repertoires in Japan, and 2) to show that these techniques do not function as merely ornamental or virtuosic devices, but are instead structurally significant. I have approached these two objectives through case studies of *gagaku kangen* (*Etenraku*) and *shakuhachi honkyoku* (*Sokaku Reibo*). Whereas previous studies have disregarded the role of performance techniques in their analyses of form and mode, I have investigated how performance techniques confirm,

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<sup>4</sup> “The *Shakuhachi*: The Instrument and its Music, Change and Diversification.” Translated by Riley Kelly Lee. *Contemporary Music Review* 8.2 (1994): 108.

<sup>5</sup> Wallmark, “Sacred Abjection,” 3.

<sup>6</sup> Weisgarber, “The Honkyoku of the Kinko-Ryū,” 316.

emphasize, and even outline the formal and modal structure of the case-study pieces.

In this chapter, I synthesize the findings of my analyses of *Etenraku* and *Sokaku Reibo*. I then discuss the implications and limitations of this study, and point to possibilities for future research.

## 17.2 Findings: Structural significance of performance techniques

In terms of formal structure, *Etenraku* is quadratic on several levels (four-beat measures, four-pulse sub-phrases, four-measure phrases, and four-phrase sections), whereas *Sokaku Reibo* is divided into 12 *dan* (sections, many of which can be omitted) consisting of phrases that differ in length, depending on the breath of the performer. Despite this difference in organization, performance techniques emphasize the form in both pieces.

On the *Etenraku* recordings I consulted, a two-beat pulse is heard throughout. As stated in Section 7.4, pulses on beats 1 and 3 are accentuated by the winds in each measure in one of the following ways:

- 1) a change of note in the melodic line,
- 2) a reiteration of the tone on beat three after a one-beat rest,
- 3) a breath pulse on a sustained tone (one of the three principal tones: E, A, B),
- 4) a finger tap to the first open tone hole below the notated fingering to re-articulate a sustained tone,
- 5) a preceding *embai* (microtonal bend) embellishment in the *hichiriki* part, or
- 6) a preparatory broadening of tempo and end-of-measure pitch bend on the beat preceding the seventh measure of each section (the *taiko* drum is struck on the downbeat of the seventh measure).

Breath pulses that affect pitch, finger percussion, and pitch bends—techniques used in methods 3-6 above—are considered extended techniques in Western woodwind



performance practice. The first five methods were also discernible in Sasamoto's sung *shōga* recordings, thereby confirming their significance in the performance practice of the *hichiriki* and *ryūteki*.

The quadratic structure of *Etenraku* is also outlined by pitch bends at the level of the four-measure phrase. In the ensemble recordings, 70 per cent of the phrases begin with an initial rising pitch bend in at least one of the two instruments. In the first half of the piece, the ratio increases to 100 per cent of phrases; bends become more difficult to execute and hear as the tempo increases.

In contrast, phrases in *Sokaku Reibo* frequently end with pitch bends, rather than begin, and typically in falling bends as the sound fades. With regard to larger formal sections—the 12 *dan* of the piece—each ends with a pitch bend in the Aoki and Yamaguchi recordings. Aoki closes each *dan* with a falling bend; Yamaguchi does likewise but with one exceptional rising terminal bend. Sometimes, falling bends at phrase ends are preceded by a brief pause in the sound before the bend is played. This is especially so on the final bend of the piece, the closing *tome*. Terminal patterns (at the ends of *dan*) in *Sokaku Reibo* also include *nayashi* pitch slides, used in emphasizing reiterated sustained tones, followed by quick three-note rhythmic cells (3RC).

With respect to modal structure, although *Etenraku* is played in the *hyō-jō* mode (E-F#-G-A-B-C#-D-E) and *Sokaku Reibo* comprises pitch cells analyzed in terms of *miyakobushi* trichords (m2+M3=P4) or intervallic relationships (m2, M3, P4), in each of the two pieces three principal tones are emphasized: E-A-B in

*Etenraku*, D-G-A in *Sokaku Reibo*, the second and third tones a P4 and P5 above the first. And in both cases, there is deviation from the modal or trichordal vocabulary.

In *Etenraku*, the principal tones of the mode (E, A, B) are frequently sustained and are subject to breath pulses (heard only on these three tones and approximately two thirds of the time on the “tonic” E), pitch bends and slides, and finger articulation. In *Sokaku Reibo*, the principal tones (D, G, A) are also sustained and emphasized with *yuri* vibrato, various types of pitch bends and slides, finger articulation, and added breathiness. The lowest note of the initial trichord of the piece, D, is also emphasized with *tamane* flutter tonguing and timbral fingerings. In *Sokaku Reibo*, not only individual tones, but in particular, intervallic relationships, are emphasized with extended performance techniques. *Tamane* embellishes the m2 and M3 intervals, as do rising bends, falling-then-rising bends, pitch slides, finger articulation, and a special *koro-koro* trill fingering.

Non-trichord tones in *Sokaku Reibo*—D $\flat$  and G+—are played repeatedly within specific pitch cells and are thus not to be dismissed as merely exceptional. The D $\flat$  2 results from the unique *koro-koro* tremolo technique that produces multiphonic effects; the G+2 is played always after A2 and falls between G and A $\flat$ , creating a microtonal interval with the preceding and succeeding tones. In *Etenraku*, deviations from the mode occur on the second and sixth degrees. The F $\sharp$  (2<sup>nd</sup>) and C $\sharp$  (6<sup>th</sup>) are frequently lowered in practice as much as a semitone to F and C, or replaced by *ei* (sharpened) exchange tones, G and D. Pitch bends and slides within the F-F $\sharp$  and C-C $\sharp$  pitch areas emphasize the departure from the *hyō-jō* mode.

Performance techniques considered “extended” in Western woodwind practice, therefore, not only appear as traditional techniques in Japanese wind repertoire, but also serve the pieces by emphasizing the formal and modal structure, as well as deviations from the structure (modal structure in particular). These techniques include pitch bending and sliding (e.g., *embai*), breath pulses (*osu*), and finger articulation (*tataku*) in *gagaku kangen*, and pitch bending and sliding (e.g., *nayashi, suri, tome*), structural microtonality, timbral alteration (e.g., *meri-kari*, breathiness), flutter tonguing (*tamane*), multiphonic tremolo effects (*koro-koro*), finger articulation (*atari*), and vibrato patterns (*yuri*) in *shakuhachi honkyoku*. For more detailed concluding comments on the structural and other roles of performance techniques in each individual genre (*kangen* and *honkyoku*), see Sections 7.4 for *Etenraku* and 16.4 for *Sokaku Reibo*.

### **17.3 Implications of the present study**

The above discussion demonstrates that all elements of a performance should be considered in analysis. An analysis that considers only the basic melodic line of a piece risks discarding elements that could inform and confirm the results. In the case of *Etenraku* and *Sokaku Reibo*, my investigation of performance techniques has led to a discovery of their structural significance. Had I ignored either the techniques themselves in a formal analysis, or the broader form and mode for the sake of simply studying the techniques as isolated events, I would have missed the significant connection between performance techniques and structure. I have come across no similar study in the *gagaku* or *shakuhachi* literature that

approaches repertoire analysis from the perspective of such a role for “extended” performance techniques.

#### 17.4 Future research

This approach could be applied in future studies of performance practice and repertoire analysis. Worthy of future investigation would be a case study of the *nohkan* flute of Japanese *noh* drama, or additional *shakuhachi* repertoire. For example, in the *shakuhachi* piece *Daha*, a pulsating breath technique is played throughout, connecting the instrument and musician to the Zen aesthetic of the breath while providing a rhythmic element to the piece. Specialists in other kinds of instrumental performance might examine the traditions of Japanese string and percussion instruments.

Extended techniques also appear in wind performance practice beyond the borders of Japan, and thus warrant investigation as to their roles in their respective repertoires. In non-European-derived music genres, many of these techniques have long been part of the traditional aesthetic. For example, circular breathing is integral to Australian Aborigine didjeridu performance,<sup>7</sup> West African Fulani flutists vocalize as they play, creating timbral and multiphonic effects,<sup>8</sup> and in Indian Carnatic and Hindustani classical music, microtonal intervals are essential to the execution of *rāgas*.<sup>9</sup>

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<sup>7</sup> Steven Knopoff, "Didjeridu," in *Grove Music Online*, Oxford University Press, accessed May 24, 2014, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/07750>.

<sup>8</sup> "La flûte," *Fulé, Site dédié au maître flutiste: Kikala Oularé*, accessed May 24, 2014, [http://fule.free.fr/?page\\_id=19](http://fule.free.fr/?page_id=19).

<sup>9</sup> Richard Widdess, "Theoretical Terms and Concepts in the Hindustani Raga Tradition," in *Garland Encyclopedia of World Music, Vol. 5, South Asia: The Indian Subcontinent*, ed. Alison Arnold (New York, London: Garland Publishing, 2000), 67.

Other questions for further research involve traditional versus modern repertoire. For example, how are traditional performance techniques used in modern repertoire for the *shakuhachi*, *hichiriki*, and *ryūteki*?<sup>10</sup> And when composers write music for Western instruments that draws on Japanese aesthetic values, do the extended techniques they call for emphasize structure, or are they used merely as imitative effects?<sup>11</sup>

Tracing the origins and global history of techniques considered extended in Western practice would be an immense undertaking. Much more valuable, I believe, would be further studies that seek to acknowledge and broaden awareness and understanding of non-Western sources of supposed “new” elements in music and their roles as much more than ornamentation in the pieces.

### **17.5 Limitations of the present study**

This study has been limited by space and time to investigating the roles of performance techniques used in only two pieces of traditional Japanese music, in only two genres. Nevertheless, these pieces are representative and, I believe, provide sufficient evidence as to the significance of the techniques in performance practice. Also limiting was the number of available recordings of these pieces; however, the recordings that I did consult were produced by well-known *shakuhachi* masters and *gagaku* ensembles.

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<sup>10</sup> Linder claims: “The shakuhachi music of today, in Japan and outside its borders, is almost entirely based on what is referred to as ‘traditional’ repertoires and performance techniques, regardless of whether the music performed is ‘traditional’ or ‘modern.’” (“Deconstructing *Tradition*,” 34.)

<sup>11</sup> For example, in Ryo Noda’s pieces for solo saxophone, inspired by the *shakuhachi*: *Improvisation I, II, & III*.

With regard to methodology, I found transcription to be useful because my starting point was relating Japanese traditional techniques to Western extended techniques; however, transcription is restricted with respect to notating pitch bends, timbral effects, and structural microtonality, for example. Supplementing transcription with spectral analyses of recorded performance has helped enormously in resolving these problems. Likewise, studying the *shakuhachi* with an instructor contributed to my ability to identify techniques and their complementary effects by ear. I was unable to similarly learn to play the *gagaku* winds; all the same, I was able to apply my understanding of Japanese wind performance practice and aesthetics gained from the *shakuhachi* to the *hichiriki* and *ryūteki*.

## **17.6 Conclusion**

Through case studies in *gagaku kangen* and *shakuhachi honkyoku*, I have shown that performance techniques considered “extended” in Western woodwind practice are in fact traditional techniques in Japanese music. However, of greater significance is the realization that these techniques have structural roles in performance, emphasizing both form and mode. I began this study with the objective of locating extended techniques in Japanese wind practice, in part to broaden my own view beyond the Western music I was trained in. However, my analysis not only fulfilled this objective, but also uncovered the importance of performance techniques to two genres in particular, something I had not anticipated.

In an era preoccupied with the task of preservation, collection and revival, seeking a broad view of aesthetics and performance practice is relevant.

Recognizing the history of musical elements present in a genre, whether old or new, can help the musician and the audience to develop an empathetic approach to music-making and a cross-cultural understanding, while opening one's ears to wider cultural values. More specifically, recognizing and analyzing the broad use of extended techniques in wind instruments can lead musicians to new paths in interpretation and music making.

## **Appendix A**

### ***Etenraku* recordings**

#### **1. Kyoto recording:**

Available online at Alexander Street or Naxos Music Library with subscription or for purchase through iTunes.

Track 2, “Etenraku (Music of Divinity)”

Kyoto Imperial Court Music Orchestra. 2006. *Gagaku: The Imperial Court Music of Japan*. Lyrichord 7126, compact disc. Recorded 1960.

#### **2. IHA recording:**

Available online at Alexander Street with subscription or for purchase through iTunes.

Track 5, “Gagaku: Etenraku”

*Japanese Traditional Music: Gagaku & Buddhist Chant*. 2009. Kokusai Bunka Shinkokai. Qualiton - World Arbiter, compact disc. Recorded 1941. Gagaku performed by Music Section, Imperial Household Agency.

#### **3. ICE recording:**

Available for purchase through iTunes.

Track 2, “Etenraku, Nokorigaku Sanben (Hyojo)”

Imperial Court Ensemble. 2008. *Gagaku: Ancient Japanese Court and Dance Music*. Essential Media Group, compact disc. Released 1994.

#### **4. Garfias recording:**

Available online at <https://eee.uci.edu/programs/rgarfias/sound-recordings/japan.html>. (No. 4 of “Very Old Gagaku Recordings”)



## 5. Sasamoto recordings:

Sasamoto, Takeshi (笹本武志). *Hajimete no Gagaku* はじめての雅楽 (Beginner's Guide to Gagaku), with compact disc. Japan: Shōrin Takashi 松林孝至, 2003.

## Appendix B

### Transcriptions of *Etenraku* recordings

Transcriptions in staff notation for the three main recordings of *Etenraku* in *hyō-jō* used in this study follow (Transcriptions 1-3). In addition, Transcriptions 4-5 compare sections of the recordings from the three main recordings to Sasamoto Takeshi's sung *shōga* and instrumental performance (from the *Hajimete no Gagaku* compact disc).

#### TRANSCRIPTION 1

*Etenraku* (*Hyō-jō*), as performed by the Kyoto Imperial Court Orchestra, *ryūteki* and *hichiriki* parts. Full transcription.

A=430Hz

Standard Form: AABBCCAABB

#### TRANSCRIPTION 2

*Etenraku* (*Hyō-jō*), as performed by the Imperial Household Agency, *ryūteki* and *hichiriki* parts. A1 & A2 sections only.

A=440Hz

Short Form: AABB

#### TRANSCRIPTION 3

*Etenraku* (*Hyō-jō*), as performed by the Imperial Court Ensemble, *ryūteki* and *hichiriki* parts. A1 section only.

A=435Hz (exception: mm.1-2 at A=440Hz)

Nokorigaku Form: AABBCCAABBCCAABB

#### TRANSCRIPTION 4

*Etenraku*: Comparison of *ryūteki* parts in a) Sasamoto's sung *shōga*, b) Sasamoto's solo instrumental performance, c) the Kyoto recording, d) the ICE recording, and e) the IHA recording.

#### TRANSCRIPTION 5

*Etenraku*: Comparison of *hichiriki* parts in a) Sasamoto's sung *shōga*, b) Sasamoto's solo instrumental performance, c) the Kyoto recording, d) the ICE recording, and e) the IHA recording.

## *Etenraku* transcription legend

	<p>Pitch on recording is microtonally lower/higher than notated. The +/- value is measured in cents. Variations &lt;12 cents are not recorded. Note that frequencies can differ within a tone; values are therefore approximations.</p>
	<p>Form of articulation, gives metric pulse through breath accent—changes in air pressure and embouchure result in brief rise or fall in pitch.  <i>Osu</i> = pulse on strong beat (1 or 3)  <i>Ateru</i> = pulse on weak beat<sup>1</sup></p>
	<p>Indicates stronger breath accent on metric pulse than usual</p>
	<p>Tone is approached from below, commonly used to begin a phrase; arc of bend varies</p>
	<p>Tone is approached from above; arc of bend varies</p>
	<p>Various shapes show approximate direction of pitch bends</p>
	<p>Slide from tone to tone</p>
	<p>Grace notes indicate quick finger articulation.  <i>Tataku</i> = lower grace note, grace note is accented  <i>Ugoku</i> = upper note, accent falls on returning tone—not used in <i>Etenraku</i> transcription)<sup>2</sup></p>
	<p>Slurred phrases are begun with diaphragmatic onset, without tongued articulation as in Western practice. (Tongued articulation is not used in <i>gagaku</i> performance practice.)</p>

Further notes on terminology for pitch bends and slides:

- a) On the *hichiriki*, lowering the pitch by moving the reed gradually out of the mouth is called *enbai* (or *embai*).<sup>3</sup> The opposite is also possible.
- b) Ascending pitch slides that are quickly followed by a lower pitch (produced with the fingers

<sup>1</sup> Miki, *Composing*, 19; Kapuściński and Rose, “Orchestration: Ryūteki.”

<sup>2</sup> Miki, *Composing*, 21.

<sup>3</sup> *Ibid.*, 57-58.

- or reed position) are called *mawasu*.<sup>4</sup>
- c) On the flute, *fukikomi* means “to breathe into” and is the “initial upward glide of a pitch with the use of full breath force.”<sup>5</sup>
  - d) A sliding effect is produced on *ryūteki* when the finger closest to the blowhole is gradually slid off its hole and then returned; this is called *ugoku*.
  - e) A *yuru* on *ryūteki* is a slight downward bend that then returns to pitch.<sup>6</sup>

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<sup>4</sup> Kapuściński and Rose, “Orchestration: Hichiriki.”

<sup>5</sup> Miki, *Composing*, 20.

<sup>6</sup> *Ibid.*, 21.

TRANSCRIPTION 1

A=430Hz  
Form: AABBBCCAABB

Etenraku (Hyojo)

transcribed by  
Amy Simon  
2012

As performed by the Kyoto Imperial Court Orchestra  
Ryuteki & Hichiriki parts

The score is divided into four systems, each with a Ryuteki part (top staff) and a Hichiriki part (bottom staff).  
**System 1 (A1):** Ryuteki starts at 0.1 sec. Hichiriki starts at 34.5 sec. Ryuteki markings: -71 to -54\*, -31, -24, -37, -18, -24. Hichiriki markings: -20, -26, -20.  
**System 2 (A2):** Ryuteki starts at 71.9 sec. Hichiriki starts at 106.7 sec. Ryuteki markings: -25, +31, -64 to -40. Hichiriki markings: +57, -34, -35.  
**System 3 (B1):** Ryuteki starts at 138.4 sec. Hichiriki starts at 138.4 sec. Ryuteki marking: -85. Hichiriki marking: (very soft).

\* +/- cents (variation >12 cents recorded)  
Note that frequencies can vary within a note; values are therefore approximations.

Kyoto Imperial Court Music Orchestra. *Gagaku: The Imperial Court Music of Japan*. Lyrichord 7126, 2006, compact disc.  
Recorded 1960.

Etenraku (Hyo-jo)

168.5 sec

(very soft)

**B2**

195.4 sec

(very soft)

220.9 sec

(soft)

**C1**

244.5 sec

(soft)

266.2 sec

Etenraku (Hyo-jo)

C2  
41  
286.5 sec

+45 to  
+57

45  
306.7 sec

A3  
49  
325.3 sec

53  
343.7 sec

+20 +50 -35 +45 +20 +30 +30 +30

A4  
57  
362.1 sec

+24 +24 +13

Etenraku (Hyo-jo)

379.7 sec

61

+24 +62 +24 +30 +30 +30 +20

396.7 sec

**B3**

65

+55

414.0 sec

69

+57 +50 +36 +30 +24

-39

431.2 sec

**B4**

73

+43 +36 to +19

448.0 sec

77

+45 +39 +20

*much slower* \*\* \*\*\*

\*\* 474.6 sec: winds fade  
 \*\*\*482.7 sec: strings fade



TRANSCRIPTION 2

A=440Hz  
Form: AABB

Etenraku (Hyôjô)

transcribed by  
Amy Simon  
2012

As performed by the Imperial Household Agency, 1941  
Ryuteki & Hichiriki parts, A section only

A1

Ryuteki

0.4 sec

5

Ryuteki

22.5 sec

Hichiriki

A2

9

46.2 sec

unstable pitch

13

70.5 sec

\*\*

\* +/- cents (variation >12 cents recorded)  
Note that frequencies can vary within a note; values are therefore approximations.

\*\* measure ends:  
93.4 sec

*Japanese Traditional Music: Gagaku & Buddhist Chant.* Kokusai Bunka Shinkokai. Qualiton - World Arbiter, 2009, compact disc. Recorded 1941. Gagaku performed by Music Section, Imperial Household Agency.

TRANSCRIPTION 3

A=435Hz  
 Form: Nokorigaku version:  
 AABBBCCAABBCCAABB

Etenraku Nokorigaku Sanben (Hyojo)

As performed by the Imperial Court Ensemble  
 Ryuteki & Hichiriki parts, A section only

transcribed by  
 Amy Simon  
 2012

A1

Ryuteki

Hichiriki

0.5 sec

5

35.7 sec

\*\*

\* +/- cents (variation >12 cents recorded)  
 Note that frequencies can vary within a note; values are therefore approximations.

\*\* measure ends:  
 66.4 sec

Imperial Court Ensemble. *Gagaku: Ancient Japanese Court and Dance Music*. Essential Media Group, 2008, compact disc.  
 Released 1994.

**TRANSCRIPTION 4 Etenraku:** Comparison of *ryūteki* parts in a) Sasamoto's sung *shōga*, b) Sasamoto's solo instrumental performance, c) the Kyoto recording, d) the ICE recording, and e) the IHA recording.

**A(1)**

Sung shōga  
A=430Hz

Sasamoto Takeshi  
A=430Hz

Kyoto  
A=430Hz

ICE  
A=435Hz  
mm. 1-2 only: A=440Hz

IHA  
A=440Hz

Sung

Sasamoto

Kyoto

ICE

IHA

\* +/- cents (variation >12 cents recorded)  
Note that frequencies can vary within a note; values are therefore approximations.

2 B(1)

9

Sung

Sasamoto

Kyoto

13

Sung

Sasamoto

Kyoto

C(1)

17

Sung

Sasamoto

Kyoto

21

Sung

Sasamoto

Kyoto

**TRANSCRIPTION 5 Etenraku:** Comparison of *hichiriki* parts in a) Sasamoto's sung *shōga*, b) Sasamoto's solo instrumental performance, c) the Kyoto recording, d) the ICE recording, and e) the IHA recording.

**A**

Sung *shōga*  
A=440Hz

Sasamoto Takeshi  
A=430Hz

Kyoto  
A=430Hz

ICE  
A=435Hz

IHA  
A=440Hz

unstable pitch

Sung

Sasamoto

Kyoto

ICE

IHA

\* +/- cents (variation >12 cents recorded)

Note that frequencies can vary within a note; values are therefore approximations.

2 B1

Sung

Sasamoto

Kyoto

(very soft)

13

Sung

Sasamoto

Kyoto

-22 -22+34

(very soft)

C1

17

Sung

Sasamoto

Kyoto

21

Sung

Sasamoto

Kyoto

## **Appendix C**

### ***Sokaku Reibo* recordings**

#### **1. Aoki Reibo recording:**

Track 1, “Sokaku-Reibo (Honkyoku)”

Aoki Reibo. 2006. *Living National Treasures: Shakuhachi (Kinko Ryu)*. Columbia COCJ-33975, compact disc.

#### **2. Yamaguchi Gorō recording:**

Available for purchase through iTunes.

Track 1, “The Cranes In Their Nests”

Yamaguchi Gorō. 2007. *A Bell Ringing in the Empty Sky*. Nonesuch H-720025, compact disc. Originally released 1969.

## **Appendix D**

### ***Sokaku Reibo*: Transnotation of scores by Kurahashi Yodo I and Aoki Reibo II**

Transnotation into staff notation from tablature scores by Kurahashi and Aoki follow.

#### **Kurahashi score:**

*Jin Nyodō Honkyoku: Notation by Kurahashi Yodo. n.d.*

#### **Aoki score:**



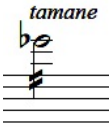

Unpublished hand-written score.

#### **Postscript:**

“Sheet music for use at Boulder, Colorado, USA World Shakuhachi Festival ’98 (7/5-7/11) (written) 4/8/’98, (signed) Aoki Reibo.” (Postscript translation by David Wheeler in email communication.)



## Sokaku Reibo transnotation legend

L/R	<i>Ura-ma/omote-ma</i> metric dots; given only for 1 <sup>st</sup> note of breath phrase.
,	End of breath phrase.
^	<i>Atari</i> (finger articulation), using standard fingering.
1,2,3,4,5	<i>Atari</i> (hit/push) indicated hole (hole 1 is at the lower end, hole 5 is on the back); <i>ru</i> is a special articulation fingering.
tablature	Given above the note for tones with more than one fingering (e.g., ア <i>a</i> for D2). If not indicated, the basic fingering is assumed (e.g., □ <i>ro</i> for D2). <i>Simile</i> refers to tablature.
	Pitch bends and slides are shown graphically. <i>Nayashi</i> and <i>hiku</i> types are specifically indicated above the note. (All D3 <i>a</i> ア fingerings in the Kurahashi score are accompanied by a <i>hiku</i> symbol; these cases are not indicated in the transnotation.)
	<i>Koro-koro</i> multiphonic tremolo effect. D $\flat$ represents the approximate average pitch of the tremolo. D $\flat$ is notated rather than C $\sharp$ because the “ <i>ro</i> ” of <i>koro-koro</i> refers to D.
	Flutter tonguing; notated as <i>tamane</i> or <i>tam.</i> , depending on space.
<i>fukikomi</i>	“Strong breath,” i.e. no diminuendo.
#/b	Accidentals are effective until the end of a breath phrase.
	Note values are approximate and loosely relative. Rhythmic groupings show emphasis (e.g., a dynamic or agogic accent on the first of three beamed eighth notes).

# Sokaku Reibo

Transnotation by  
Amy Simon

Transnotation of scores by

Kurahashi Yodo I\* & Aoki Reibo II\*\*

## Dan 1

*(simile slides not notated)*

*hiku*

Kurahashi Yodo I

Aoki Reibo II

(no L/R given)

KY

AR

*hiku*

*nayashi*

L (no value given)

KY

AR

R

R

R

KY

AR

*fukikomi*

R

R

\* *Jin Nyodo Honkyoku: Notation by Kurahashi Yodo, n.d.*

\*\* dated April 8, 1998

KY *ア ア ア ア*

AR

R

KY *4*

AR *tam. tam.*

R

**Dan 2**

KY

AR

L

KY *nayashi*

AR *nayashi*

R

KY *hole 5 slide*

AR *ru*

L R L

KY

KY

AR

L

**Dan 4**

KY

AR

R

*tamane*

KY

AR

L R R

*nayashi*

**Dan 5**

KY

AR

L R R L

KY

AR

L L L R

*hole 5*  
*slide*  
*hiku*



KY

AR

KY

AR

KY

AR

**Dan 7**

KY

AR

KY

AR

KY

AR

R

*simile*

*nayashi*

KY

AR

R

*simile*

ru

L

**Dan 9**

KY

AR

L

R

R

R

R

optional tam.

or

tam.

**Dan 10**

KY

AR

R

R

*double hit 1 + 2*

*timbral trill on korokoro*

KY

AR

R

R

L

R

*simile*

*timbral trill on korokoro*

*hole 2 slide*



timbral trill  
on korokoro

tamane tamane

KY

L R R R

AR

hole 4  
slide

tamane

tamane

KY

L L R

AR

tamane

KY

L R

AR

KY

L R

AR

nayashi

KY

R R

AR

**Dan 12**

KY  
AR

*tamane*

八音

R L

KY  
AR

R

KY  
AR

R L

KY  
AR

*nayashi*

*nayashi*

*nayashi*

R R

KY  
AR

L L

KY

AR

L L L L

KY

AR

L L L L R

*tamane* *tamane*

KY

AR

R R R R

*nayashi* *only hole 2 open for G*

*only hole 2 open for G*

## Appendix E

### ***Sokaku Reibo*: Transcriptions of *Sokaku Reibo* recordings by Aoki Reibo II and Yamaguchi Gorō**

Transcriptions into staff notation recordings by Aoki (Transcription 6) and Yamaguchi (Transcription 7) follow.

#### **TRANSCRIPTION 6**

*Sokaku Reibo*, as performed by Aoki Reibo II on *Living National Treasures: Shaku-hachi (Kinko Ryu)*, Columbia COCJ-33975, 2006, compact disc.

#### **TRANSCRIPTION 7**

*Sokaku Reibo*, as performed by Yamaguchi Gorō on *A Bell Ringing in the Empty Sky*, Nonesuch H-720025, originally released 1969, re-released 2007, compact disc.

### ***Sokaku Reibo* transcription legend**


---

barline	End of breath phrase.
---------	-----------------------


---

^	<i>Atari</i> (finger articulation), regardless of fingering.
---	--

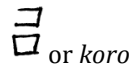
---

	Pitch bends and slides are shown graphically.
---	---

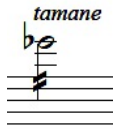
---

<i>nayashi</i> 	<i>Nayashi</i> pitch slides from approximately a semitone below main tone.
---	--

---

 or <i>koro</i>	<i>Koro-koro</i> multiphonic tremolo effect. D $\flat$ represents approximate average pitch of tremolo. D $\flat$ is notated rather than C $\sharp$ because the “ro” of <i>koro-koro</i> refers to D.
---	---

---



Flutter tonguing.

---

#/b

Accidentals are effective until the end of a breath phrase.

---



Note values are approximate and loosely relative. Rhythmic groupings show emphasis (e.g., a dynamic or agogic accent on the first of three beamed eighth notes).

---

+/-

Microtones in cents (+/-10 not indicated). *Simile* indication refers to microtonal alteration.

---



*Yuri* (vibrato); type, depth, etc. not shown.

---



Noteheads without stems used for passing tones or some finger percussion or release notes (not usually notated). Pitch is approximate.

---

Timbral changes not notated.

---

TRANSCRIPTION 6

Sokaku Reibo

Kinko Honkyoku  
transcribed by A. Simon

as performed by Aoki Reibo II on

Living National Treasures: Shakuhachi (Kynko Ryu), 2006

**Dan 1**

0:00

4 *accel.*

0:32

5 +48\*

0:40

10

1:22

13 +20 +14 +20 +20 +20 +31 +14 +20

1:45

17 +20 +8 +20 *tamane* +20 *tamane* -42 +25 +20

1:58

20 *tamane* -17 -25 +25 +20 +14 +14 -15 +25 +14 +20 +14

2:21 *accel.* *rit.*

**Dan 2**

21 +20 +25 +20 +25 +20 +20 (^) +20 +14 +14 +17

2:33

\* cents (relative to A=442Hz); +/- 10 cents not recorded.

2:45

2:56

3:36

3:47

4:01

4:16

**Dan 3** 4:27

4:47

4:55 <sup>38</sup> *nayashi*

5:07 <sup>+19-36</sup>

**Dan 4**

5:17 <sup>41</sup> *tamane* <sup>+30</sup> <sup>-30</sup> <sup>+36</sup> <sup>+38</sup> <sup>+48</sup> <sup>+25</sup> <sup>+25</sup> <sup>+25</sup>

5:29 <sup>42</sup> <sup>+30</sup> <sup>+20</sup> <sup>+14</sup> <sup>+30</sup>

5:36 <sup>43</sup> <sup>+30</sup> <sup>+20</sup> <sup>+19</sup> *simile* <sup>+30</sup>

5:45 <sup>44</sup> *nayashi* <sup>+30</sup> <sup>+30</sup> <sup>+30-36</sup> *accel.* *rit.*

**Dan 5**

6:06 <sup>46</sup> <sup>+25</sup> <sup>+25</sup> <sup>+30</sup> <sup>+21</sup> <sup>+30</sup> <sup>+14</sup> <sup>+25</sup> <sup>+30</sup>

6:40 <sup>49</sup> *simile* *nayashi*



6:55 <sup>+30-42</sup> *rit.*

**Dan 6**

7:07 *accel.* <sup>+38</sup> *tamane* <sup>+55</sup> <sup>-18</sup> <sup>+38</sup> <sup>+24</sup>

7:15 *simile* *tamane*

7:25 <sup>+27</sup> <sup>-18</sup>

7:42

7:49 <sup>+19</sup> <sup>-35</sup> <sup>+19</sup> *simile*

8:03 <sup>-41</sup> *nayashi*

8:17

**Dan 7**

8:27 <sup>66</sup>  $\hat{\sim}+30$

8:44 <sup>68</sup>  $+32$  *tam.*  $+38$   $+30$   $-35$   $+19$

8:55 <sup>70</sup>

9:04 <sup>72</sup>  $+24$   $-30$   $+19$   $+24$   $-24$   $+19$  *simile*  $-35$

9:14 <sup>75</sup> *simile* *nayashi*

9:26 <sup>77</sup>  $+27$  *accel.*

9:41 <sup>78</sup>  $+19-24$  *accel.* *rit.*

**Dan 9**

9:50 <sup>79</sup>  $+21$   $+21-33$   $+39$  *simile*

10:15 82 +15

10:40 84

10:49 85 +15 tamane +27 +24 -52 +13

**Dan 10**

11:00 86 accel. rit. with undertone

11:10 88 +21-55 (vibrato) accel. +15 +27 +15 +21 rit.

**Dan 12**

11:18 89 accel. +21 tamane

11:29 90 +21-38 +27 +27+30 -47

11:44 92 -41 -58

11:51 <sup>94</sup> <sup>-52</sup> <sup>-64</sup> <sup>-52</sup>

12:10 <sup>96</sup> *nayashi*

12:26 <sup>98</sup>

12:37 <sup>100</sup>

12:51 <sup>103</sup> *tamane* -----

13:12 <sup>105</sup> *tamane* -----

13:34 <sup>107</sup> <sup>-25</sup>

TRANSCRIPTION 7

Sokaku Reibo

Kinko Honkyoku  
transcribed by A.Simon

"The Cranes in Their Nests"

as performed by Yamaguchi Goro on *A Bell Ringing in the Empty Sky*

**Dan 1**

0:01 

0:27 

0:51 

1:12 

**Dan 2**

1:34 

1:46 

2:02 

2:28 

\* cents (relative to A=440Hz); +/-10 cents not indicated

2

Sokaku Reibo

2:49

3:05

3:22

**Dan 3**

3:37

3:58

4:09

4:26

**Dan 4**

4:39

Sokaku Reibo

3

34 <sup>-17 +16</sup> 4:53

36 <sup>-45 +42</sup> 5:12 *nayashi*

38 <sup>+15-25</sup> 5:27 *accel.* *rit.*

**Dan 6** 39 5:39

40 5:48 <sup>-40</sup> <sup>+35</sup> <sup>-30</sup>

42 6:02 <sup>+25</sup> <sup>+40</sup> *accel.* *rit.*

44 6:22 <sup>-35-30</sup> <sup>-30-24</sup> <sup>-41-30</sup> <sup>-24-12</sup> <sup>-12</sup>

46 <sup>+28</sup> *nayashi* **Dan 8** 6:36

4 Sokaku Reibo

6:55 48  $+48$   $+46$   $+49$   $+49$   $+46$   $+46$   $+41$   $+41-36$  *rit.*

7:20 50  $+18$   $+18$   $+48$   $+40$   $+12$   $+48$   $+48$

7:37 52  $+43-49$   $+49$   $+55$   $+61$   $+66$   $+61$   $+55$

7:48 53  $+43$   $-41$   $-35$   $+35$

8:05 55  $+25$   $+22$   $+22$  *accel.* *rit.*

**Dan 10**  
8:23 57  $+20$   $+30$   $-11$   $+11$   $-39$   $+29$

8:40 59 *rit.*  $+44$   $+39$

9:01 61  $+26$   $+26$   $+43$   $+43$  *accel.*  $+20$   $+26$   $+15$   $+20$  *rit.*

\*\* Timbral trill fingering using *korokoro* tremolo fingering (alternating opening holes 1 and 2); with low register multiphonic at beginning.



Sokaku Reibo

5

63 9:20 +39 +39 \*\* +39 +35 \*\*

65 9:36 +35 +26 +44 +35 \*\* +43 +16-35

**Dan 11** 67 9:50 +15 +16 -35 +16

68 9:56 \*\* +16 -11 +16 +16 \*\*

**Dan 12** 69 10:04 \*\* +25 +34 rit. +20 +20

71 10:18 +44

72 10:29 +48 +17 -41 +30 -30

74 10:42 +26 -39 +25 -21 -39

6

Sokaku Reibo

11:00 *nayashi*  
 76 +6 +19 +33 +28 +33 +19 +10 +28 +38 +38 +52  
 rit. > < > < >

11:24 *nayashi*  
 79 +24 +28 +33 +38 +33 +33 +33 +19 +42 +33 +28 +33

11:46 *nayashi*  
 82 +37 +42 +33 +38 +34 +19 +24 *koro* +24 *koro* +24 *koro* +36 +36

12:04 *koro*  
 84 +33 +19 *koro*

12:14 *koro*  
 85 +18 -45 (^) +18 +24 *koro*

12:38 (^)  
 88 +19-28 -32 +8-17

## Appendix F

### ***Sokaku Reibo*: Identification of cells and their variants**

#### **Versions:**

KY = score by Kurahashi Yodo I (*Jin Nyodō Honkyoku*)

AR = score by Aoki Reibo II (variations in AR recording indicated in parentheses)

YG = recording by Yamaguchi Gorō

SS = score by Sato Seibi

#### **Variations:**

db = deleted beginning

dm = deleted middle

de = deleted end

ab = added beginning

am = added middle


ae = added end



sb = substituted beginning


se = substituted end

' = varied a second time in this way

" = varied a third time in this way

2RC = two-note rhythm cell on given note: 

3RC = three-note rhythm cell on given note:  or 

4RC = four-note rhythm cell on given note: 

#### **Repetitions** (across all 12 *dan*):

***immediate/iterative***

***non-immediate/recursive***

#### **Notes:**

Not distinguishing between different fingerings for same tone

Db\* = *koro-koro* multiphonic tremolo effect

G+\*\* = tone between G and Ab (occurs only after A; followed by A with one exception in *Dan 12*, where it is followed by Eb)

kan = upper octave (*Dan 6-8*)

otsu = lower octave (*Dan 6-8*)

[ ] = preparatory tone

(koro) = trill using *koro-koro* fingering in lower hand (distinct from *korokoro* technique)

## Dan 1

### Pitch cells

- 1: Eb-G-D
- 1.1: Eb-D
- 2: Db\*-D
- 3: D-Bb-Eb-Eb-D

KY	1 <b><i>Eb-G-D</i></b> x9	1dm = 1.1 <b><i>Eb-D</i></b> x3	1 <b><i>Eb-G-D</i></b>	1db <b><i>D</i></b>
AR	1 <b><i>Eb-G-D</i></b> x12 (13)			
YG	1 <b><i>Eb-G-D</i></b> x10			
SS	1 <b><i>Eb-G-D</i></b> x19			

KY	2 <b><i>Db*-D</i></b> x9				2db <b><i>D</i></b>		
AR	2am <b><i>Db*-Eb-D</i></b>	2 <b><i>Db*-D</i></b> x5	2db <b><i>D</i></b>	2 <b><i>Db*-D</i></b> x3	2db <b><i>D</i></b>		
YG	2am <b><i>Db*-Eb-D</i></b>			2 <b><i>Db*-D</i></b> x3	2db <b><i>D</i></b>		
SS	2am <b><i>Db*-Eb-D</i></b> x9	2 <b><i>Db*-D</i></b> x12	2db <b><i>D</i></b>	2 <b><i>Db*-D</i></b> x3	2db <b><i>D</i></b>	2 <b><i>Db*-D</i></b> x3	2db <b><i>D</i></b>

KY	2 <b><i>Db*-D</i></b> x3	2am' <b><i>Db*-Eb-Eb-Eb-D</i></b>	2am'' <b><i>Db*-Eb-G-D</i></b>	2am' <b><i>Db*-Eb-Eb-Eb-D</i></b>	2am'' <b><i>Db*-Eb-G-D</i></b>	
AR	2 <b><i>Db*-D</i></b> x3	2am' <b><i>Db*-Eb-Eb-Eb-D</i></b>	2am'' <b><i>Db*-Eb-G-D</i></b>	2am' <b><i>Db*-Eb-Eb-Eb-D</i></b>	(2am'') <b><i>(Db*-Eb-G-D)</i></b>	(2am') <b><i>(Db*-Eb-Eb-Eb-D)</i></b>
YG			2am'' <b><i>Db*-Eb-G-D</i></b>	2am' <b><i>Db*-Eb-Eb-Eb-D</i></b>		
SS	2 <b><i>Db*-D</i></b> x3	2am' <b><i>Db*-Eb-Eb-Eb-D</i></b> x3	2am'' <b><i>Db*-Eb-G-D</i></b>	2am' <b><i>Db*-Eb-Eb-Eb-D</i></b> x3		

KY	3 <b><i>D-Bb-Eb-Eb-D</i></b> x2	3db <b><i>Eb-Eb-D</i></b> x5
AR	3 <b><i>D-Bb-Eb-Eb-D</i></b> x2 (3)	3db <b><i>Eb-Eb-D</i></b> x7
YG	3 <b><i>D-Bb-Eb-Eb-D</i></b>	
SS	3 <b><i>D-Bb-Eb-Eb-D</i></b> x3	3db <b><i>Eb-Eb-D</i></b> x7

**Dan 2**

**Pitch cells**

4: Eb-Eb-D-Eb-Eb-G-A-Eb-Eb-Eb-D

4.2: G-A-Eb-Eb-Eb

5: C-Ab-Ab-Ab

6: Bb-A-A-G+\*-G+\*

3RC

392

KY	4 <b>Eb-Eb-D-Eb- Eb-G-A-Eb-Eb- Eb-D</b>	4sb Db*-D-Eb-Eb- G-A-Eb-Eb-Eb- D	4 Eb-Eb-D-Eb- Eb-G-A-Eb-Eb- Eb-D	4sb/de Db*-D-Eb-Eb- G-A-Eb-Eb-Eb	4db/de = 4.2 <b>G-A-Eb-Eb-Eb</b>	4.2dm/de <b>G-Eb-Eb</b> x3	4.2de & 3RC <b>G-G-G</b> x6
AR	4 <b>Eb-Eb-D-Eb- Eb-G-A-Eb-Eb- Eb-D</b> x2 (1)	4sb Db*-D-Eb-Eb- G-A-Eb-Eb-Eb- D		4de Eb-Eb-D-Eb- Eb-G-A-Eb-Eb- Eb	4db/de = 4.2 <b>G-A-Eb-Eb-Eb</b> x2 (1)	4.2dm/de <b>G-Eb-Eb</b> x3	4.2de & 3RC <b>G-G-G</b> x6
YG	4 Eb-Eb-D-Eb- Eb-G-A-Eb-Eb- Eb-D			4de Eb-Eb-D-Eb- Eb-G-A-Eb-Eb- Eb	4db/de = 4.2 <b>G-A-Eb-Eb-Eb</b> x2	4.2dm/de <b>G-Eb-Eb</b> x3	4.2de & 3RC <b>G-G-G</b> x6
SS	4 <b>Eb-Eb-D-Eb- Eb-G-A-Eb-Eb- Eb-D</b> x3	4sb <b>Db*-D-Eb-Eb- G-A-Eb-Eb-Eb- D</b> x3	4 <b>Eb-Eb-D-Eb- Eb-G-A-Eb-Eb- Eb-D</b> x2	4de Eb-Eb-D-Eb- Eb-G-A-Eb-Eb- Eb	4db/de = 4.2 <b>G-A-Eb-Eb-Eb</b> x3	4.2dm/de <b>G-Eb-Eb</b> x3	4.2de & 3RC <b>G-G-G</b> x6

KY	5 C-Ab-Ab-Ab	5db & 3RC <b>Ab-Ab-Ab</b> x3	G+*
AR	5 [Bb]-C-Ab-Ab- Ab	5db & 3RC <b>Ab-Ab-Ab</b> x9	
YG	5 [Bb]-C-Ab-Ab- Ab	5db & 3RC <b>Ab-Ab-Ab</b> x7	
SS	5 C-Ab-Ab-Ab	5db & 3RC <b>Ab-Ab-Ab</b> x9	

KY				
AR	6 Bb-A-A-G+*-G+*	6db <b>A-A-G+*-G+*</b> x3	6db' <b>A-G+*-G+*</b> x3	3RC <b>A-A-A</b> x8
YG	6 Bb-A-A-G+*-G+*	6db <b>A-A-G+*-G+*</b> x2	6db' <b>A-G+*-G+*</b> x3	3RC <b>A-A-A</b> x8
SS	6 Bb-A-A-G+*-G+*	6db <b>A-A-G+*-G+*</b> x3	6db' <b>A-G+*-G+*</b> x3	3RC <b>A-A-A</b> x8

### Dan 3

#### Pitch cells

7: Bb-Bb-A-G+\*-G+\*-A-Bb (similar to 6)

7.1: Bb-Bb-A-G+\*-G+\*-A

7.1.1: Bb-A-G+\*-G+\*-A

3RC

AR	7 <b>Bb-Bb-A-G+*-G+*-A-Bb</b> x2	7de = 7.1 Bb-Bb-A-G+*-G+*-A	7db/de = 7.1.1 Bb-A-G+*-G+*-A	7db/de' Bb-A-G+*-G+*	7db'/de' <b>A-G+*-G+*</b> x4	3RC <b>A-A-A</b> x8
YG	7 <b>Bb-Bb-A-G+*-G+*-A-Bb</b> x2	7de = 7.1 Bb-Bb-A-G+*-G+*-A	7db/de = 7.1.1 Bb-A-G+*-G+*-A	7db/de' Bb-A-G+*-G+*	7db'/de' <b>A-G+*-G+*</b> x4	3RC <b>A-A-A</b> x8
SS	7 <b>Bb-Bb-A-G+*-G+*-A-Bb</b> x3	7de = 7.1 Bb-Bb-A-G+*-G+*-A	7db/de = 7.1.1 <b>Bb-A-G+*-G+*-A</b> x2	7db/de' Bb-A-G+*-G+*	7db'/de' <b>A-G+*-G+*</b> x4	3RC <b>A-A-A</b> x8

## Dan 4

### Pitch cells

4.2: G-A-Eb-Eb-Eb

8: Bb-Bb-A-G+\*-G+\*-A-D-G-A-Eb-Eb-Eb-G (= 7.1ae + 4.2ae)

8.1: C-Ab-Ab-G-A-Eb-Eb-Eb-G

3RC

AR	8 Bb-Bb-A-G+*- G+*-A-D-G-A-Eb- Eb-Eb-G	8sb (or 5de + 4.2ae) = 8.1 <b>C-Ab-Ab-G-A- Eb-Eb-Eb-G</b>	8sb/de <b>C-Ab-Ab-G-A- Eb-Eb-Eb</b>	8db/de or 4.2 G-A-Eb-Eb-Eb	4.2dm/de <b>G-Eb-Eb</b> x3	3RC <b>G-G-G</b> x8
YG	8 Bb-Bb-A-G+*- G+*-A-D-G-A-Eb- Eb-Eb-G		8sb/de C-Ab-Ab-Ab-G- A-Eb-Eb-Eb	8db/de or 4.2 <b>G-A-Eb-Eb-Eb</b> x2	4.2dm/de <b>G-Eb-Eb</b> x3	3RC <b>G-G-G</b> x7
SS	8 Bb-Bb-A-G+*- G+*-A-[C]-D-G- A-Eb-Eb-Eb-G	8sb (or 5de + 4.2ae) = 8.1 <b>C-Ab-Ab-G-A-Eb- Eb-Eb-G</b> x2	8sb/de <b>C-Ab-Ab-G-A- Eb-Eb-Eb</b>	8db/de or 4.2 <b>G-A-Eb-Eb-Eb</b> x3	4.2dm/de <b>G-Eb-Eb</b> x3	3RC <b>G-G-G</b> x8



## Dan 5

### Pitch cells

1.1: Eb-D

4.2: G-A-Eb-Eb-Eb

5: C-Ab-Ab-Ab

8.1: C-Ab-Ab-G-A-Eb-Eb-Eb-G

9: C-D

10: F-G

2RC, 3RC

	9	1de	8sb/de = 8.1							8.1de or 5de C-Ab
KY	C-D	Eb-G	<b>C-Ab-Ab-G-A- Eb-Eb-Eb-G x2</b>							
AR	9 <b>C-D</b>	10 F-G (F-F-G)	8sb/de = 8.1 C-Ab-Ab(-Ab)- G-A-Eb-Eb-Eb- G	8sb/de C-Ab-Ab-G-A- Eb-Eb-Eb	8db/de or 4.2 <b>G-A-Eb-Eb-Eb</b> x2 (1)	4.2de (G-A)	4.2de' <b>(G-A-Eb-Eb x2)</b>	4.2dm/de <b>G-Eb-Eb x3</b> (absent)	3RC <b>G-G-G x8</b>	
SS	9 <b>C-D</b>	10 F-G	8sb/de = 8.1 <b>C-Ab-Ab-G-A- Eb-Eb-Eb-G x2</b>	8sb/de C-Ab-Ab-G-A- Eb-Eb-Eb	8db/de or 4.2 <b>G-A-Eb-Eb-Eb</b> x3			4.2dm/de <b>G-Eb-Eb x3</b>	3RC <b>G-G-G x8</b>	
KY	9ae C-D-Eb	2RC <b>Eb-Eb x6</b>	9db <b>D</b>	2RC <b>Eb-Eb x7</b>	1.1 3RC <b>Eb-Eb-Eb-D- D-D x2</b>	1.1 2RC <b>Eb-Eb-D-D</b> x3	9db <b>D</b>	2RC <b>D-D x6</b>	9db <b>D</b>	

**Dan 6****Pitch cells**

3.2: D-Bb

7: Bb-Bb-A-G+\*-G+\*-A-Bb

7.1: Bb-Bb-A-G+\*-G+\*-A

11: C-D-Eb-D-Bb-D-C-A

2RC, 3RC

KY	11 C-D-Eb-D-Bb- D-C-A	11ae C-D-Eb-D-Bb- D-C-A-G+*- G+*-A	3.2db Bb	2RC <b>Bb-Bb</b> x7	3.2ae <b>[Bb-]D-Bb- [Bb-]Bb</b> x2	3db = 3.2 <b>[Bb-]D-Bb</b> x2	3.2ae [Bb-]D-Bb- [Bb-]Bb	2RC <b>Bb-Bb</b> x7 kan, x7 otsu, x7 kan
AR	11 C-D-Eb-D-Bb- D-C-A	11ae C-D-Eb-D-Bb- D-C-A-G+*- G+*-A	7.1ab <b>D-Bb-Bb-A- G+*-G+*-A</b> x3			3db = 3.2 <b>D-Bb</b>		2RC <b>Bb-Bb</b> x7 kan, x7 otsu, x7 kan (B-Bb)
YG	11 C-D-Eb-D-Bb- D-C-A	11ae C-D-Eb-D-Bb- D-C-A-G+*- G+*-A	7.1ab D-Bb-Bb-A- G+*-G+*-A			3db = 3.2 D-Bb		3.2db <b>Bb</b> x6
SS	11 <b>C-D-Eb-D-Bb- D-C-A</b> x2	11ae C-D-Eb-D-Bb- D-C-A-G+*- G+*-A	7.1ab <b>D-Bb-Bb-A- G+*-G+*-A</b> x3			3db = 3.2 <b>D-Bb</b> x3		2RC <b>Bb-Bb</b> x7 kan, x7 otsu, x7 kan

KY	7.1db <b>A-G+*-G+*-A</b> x2	7db'/de' <b>A-G+*-G+*</b> x3	3RC <b>A-A-A</b> x6
AR	7.1db <b>A-G+*-G+*-A</b> x2	7db'/de' <b>A-G+*-G+*</b> x6	3RC <b>A-A-A</b> x8
YG	7.1db <b>A-G+*-G+*-A</b> x2	7db'/de' <b>A-G+*-G+*</b> x3	3RC A-A-A
SS	7.1db <b>A-G+*-G+*-A</b> x2	7db'/de' <b>A-G+*-G+*</b> x6	3RC <b>A-A-A</b> x8

## Dan 7

### Pitch cells

3.2: D-Bb

5: C-Ab-Ab-Ab

7: Bb-Bb-A-G+\*-G+\*-A-Bb

7.1: Bb-Bb-A-G+\*-G+\*-A

11: C-D-Eb-D-Bb-D-C-A

12: A-C

2RC, 3RC

AR	12 A-C	5de <b>C-Ab</b> x2	11ae' <b>C-D-Eb-D-Bb-D- C-A-G+*-G+*-A- Bb</b>	2RC <b>Bb-Bb</b> x7 kan, x7 otsu, x7 kan
SS	12 A-C	5de <b>C-Ab</b> x2	11ae' <b>C-D-Eb-D-Bb-D- C-A-G+*-G+*-A- Bb</b>	2RC <b>Bb-Bb</b> x7 kan, x7 otsu, x7 kan, x7 otsu, x7 kan

AR	7.1db <b>A-G+*-G+*-A</b> x2	7db'/de' <b>A-G+*-G+*</b> x6	3RC <b>A-A-A</b>	3.2 <b>D-Bb</b> x8	3RC <b>A-A-A</b> x7 (8x interrupted by D-Bb)
SS	7.1db <b>A-G+*-G+*-A</b> x2	7db'/de' <b>A-G+*-G+*</b> x6	3RC <b>A-A-A</b> x8		

## Dan 8

### Pitch cells

1.1: Eb-D

3.2: D-Bb

5: C-Ab-Ab-Ab

7: Bb-Bb-A-G+\*-G+\*-A-Bb

7.1: Bb-Bb-A-G+\*-G+\*-A

9: C-D

11: C-D-Eb-D-Bb-D-C-A

2RC, 3RC

SS	9ae C-D-Eb	2RC <b>Eb-Eb</b> x7	9db <b>D</b>	2RC <b>D-D</b> x7	9db <b>D</b>	1.1 3RC <b>Eb-Eb-Eb-</b> <b>D-D-D</b> x3	1.1 2RC <b>Eb-Eb-D-D</b> x3	2RC <b>D-D</b> x7	9db <b>D</b>
YG	9ae C-D-Eb	2RC <b>Eb-Eb</b> x6	9db <b>D</b>	9db <b>D</b> x7			1.1 2RC Eb-Eb-D-D	1.1 <b>Eb-D</b> x2	9db <b>D</b> x7

SS	11ae' <b>C-D-Eb-D-Bb-D-C-</b> <b>A-G+*-G+*-A-Bb</b>								
YG	11ae'	9	5de	[2RC including finger articulation]					
	C-D-Eb-D-Bb-D-C-	C-D	[Bb-]C-Ab	<b>Ab</b> x7					
	A-G+*-G+*-A-Bb								

SS	2RC <b>Bb-Bb</b> x7	3RC D-D-D	2RC <b>Bb-Bb</b> x7 kan, x7 otsu, x7 kan	3.2ab/ae' Bb-D-Bb- Bb-Bb	2RC <b>Bb-Bb</b> x7	3.2 <b>D-Bb</b> x8	2RC <b>Bb-Bb</b> x7 kan, x7 otsu, x7 kan
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SS	7.1db <b>A-G+*-G+*-A</b> x2	7db'/de' <b>A-G+*-G+*-A</b> x6	3RC <b>A-A-A</b> x8
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**Dan 9**

**Pitch cells**

- 3.2: D-Bb
- 5: C-Ab-Ab-Ab
- 7: Bb-Bb-A-G+\*-G+\*-A-Bb
- 7.1: Bb-Bb-A-G+\*-G+\*-A
- 9: C-D
- 11: C-D-Eb-D-Bb-D-C-A
- 13: C-C-Bb
- 2RC, 3RC

AR	13 <b>C-C-Bb</b> x2 (3)		9 C-D	5de C-Ab	5db' & 2RC <b>Ab-Ab</b> x7
SS	13 <b>C-C-Bb</b> x3	2RC <b>Bb-Bb</b> x21	9 C-D	5de [Bb-]C-Ab	5db' & 2RC <b>Ab-Ab</b> x7

AR			11ae' C-D-Eb-D-Bb-D- C-A-G+*-G+*-A- Bb			
SS	13 <b>C-C-Bb</b> x3	2RC <b>Bb-Bb</b> x7	11ae' C-D-Eb-D-Bb-D- C-A-G+*-G+*-A- Bb	2RC <b>Bb-Bb</b> x7	3.2ab/ae' <b>Bb-D-Bb-Bb-Bb</b> x3	2RC <b>Bb-Bb</b> x7

AR						
SS	7de = 7.1 <b>Bb-Bb-A-G+*- G+*-A</b> x3	7de' & 2RC <b>Bb-Bb</b> x7	3.2 <b>D-Bb</b> x8	7.1db <b>A-G+*-G+*-A</b> x2	7db'/de' <b>A-G+*-G+*</b> x6	3RC <b>A-A-A</b> x8

## Dan 10

### Pitch cells

3.2: D-Bb

4.2: G-A- Eb-Eb-Eb

7: Bb-Bb-A-G+\*-G+\*-A-Bb

7.1: Bb-Bb-A-G+\*-G+\*-A

7.1.1: Bb-A-G+\*-G+\*-A

8: Bb-Bb-A-G+\*-G+\*-A-D-G-A-Eb-Eb-Eb-G

8.1: C-Ab-Ab-G-A-Eb-Eb-Eb-G

9: C-D

3RC, 4RC

400

KY					
AR				9de C x10 (8)	9db D (koro)
YG	7.1.1 Bb (koro)-A- G+*-G+*-A	7.1.1 Bb-A-G+*-G+*-A	3.2 retrograde Bb-D	9de C x8	9db D (koro)
SS	7.1.1 Bb (koro)-A- G+*-G+*-A	7db Bb-A-G+*-G+*-A- Bb	3de = 3.2 D-Bb x3	9de C x8	9db D x8

KY	3.2 D-Bb x3			
AR	3.2 & 4RC D-D-D-D-Bb-Bb- Bb-Bb x3			
YG	3.2 & 4RC D-D-D-D-C-C-C-C x2 [C=Bb?]	3.2 D (koro)-Bb (koro) x2	3.2 D-Bb x3	3db' D
SS	3.2 & 4RC D-D-D-D-Bb-Bb- Bb-Bb x3	3.2 D (koro)-Bb (koro) x3	3.2 D-Bb x3	3db' D

KY	7.1.1 Bb (koro)-A- G+*-G+*-A	7.1.1 <b>Bb-A-G+*-G+*-A</b>	7.1.1sb D (koro)-A-G+*- G+*-A	7.1.1 <b>Bb-A-G+*-G+*-A</b>		
AR						
YG	7.1.1 <b>Bb (koro)-A- G+*-G+*-A</b>					
SS	7.1.1 <b>Bb (koro)-A- G+*-G+*-A</b>	7.1.1 <b>Bb-A-G+*-G+*-A</b> x5		7.1.1ae Bb (koro)-A- G+*-G+*-A-G+*- G+*	7db'/de' <b>A-G+*-G+*</b> x3	3RC <b>A-A-A</b> x7

KY	7de'' <b>Bb</b>	7.1 Bb-Bb-A-G+*- G+*-A	7.1.1 Bb-A-G+*- G+*-A	7de'' Bb	7.1ae <b>Bb-Bb-A-G+*- G+*-A-D-G-A</b>	8db <b>Eb-Eb-Eb-G</b>	7.1ae Bb-Bb-A-G+*- G+*-A-D-G-A	8db Eb-Eb-Eb-G
----	--------------------	------------------------------	-----------------------------	-------------	--	--------------------------	--------------------------------------	-------------------

KY	8.1 C-Ab-Ab-G-A- Eb-Eb-Eb-G	8.1de C-Ab-Ab-G-A- Eb-Eb-Eb	8db/de or 4.2 <b>G-A-Eb-Eb-Eb</b> x2	4.2dm/de <b>G-Eb-Eb</b> x2	3RC <b>G-G-G</b> x2
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## Dan 11

### Pitch cells

1.1: Eb-D

3.2: D-Bb

7.1.1: Bb-A-G+\*-G+\*-A

9: C-D

14: C-Ab-C-D-Eb

15: C-D-Bb-A-G+\*-G+\*-A-Bb-A

2RC

YG							
SS	2RC <b>Eb-Eb</b> x7	1.1db <b>D</b>	14 = 5de + 9.2 C-Ab-C-D-Eb	2RC <b>Eb-Eb</b> x7	1.1db <b>D</b>	2RC <b>Eb-Eb</b> x7	1.1db D

YG	15 C-D-Bb-A-G+*- G+*-A-Bb-A	15sb or 7.1.1ae' Bb (koro)-A- G+*-G+*-A-Bb-A	15sb' <b>D (koro)-A-G+*-</b> <b>G+*-A-Bb-A</b> x3	7.1.1 Bb (koro)-A- G+*-G+*-A	7db or 15db/de Bb-A-G+*-G+*-A- Bb
SS	15 C-D-Bb-A-G+*- G+*-A-Bb-A	15sb or 7.1.1ae' Bb (koro)-A- G+*-G+*-A-Bb-A	15sb' <b>D (koro)-A-G+*-</b> <b>G+*-A-Bb-A</b> x3	7.1.1 Bb (koro)-A- G+*-G+*-A	7db or 15db/de Bb-A-G+*-G+*-A- Bb

YG	
SS	3.2 <b>D-Bb</b> x3
	9de <b>C</b> x8



## Dan 12

### Pitch cells

- 1: Eb-G-D
- 2: Db\*-D
- 3: D-Bb-Eb-Eb-D
- 4.2: G-A-Eb-Eb-Eb
- 9: C-D
- 11: C-D-Eb-D-Bb-D-C-A
- 11.1: C-D-Eb-D-Bb-D-C-A-G+\*-G+\*-A
- 15: C-D-Bb-A-G+\*-G+\*-A-Bb-A
- 2RC

KY			
AR	9ae C-D-Eb	2RC <b>Eb-Eb</b> x7	9db <b>D</b>
YG	9ae C-D-Eb	2RC <b>Eb-Eb</b> x6	9db <b>D</b>
SS	9ae C-D-Eb	2RC <b>Eb-Eb</b> x7	9db <b>D</b>

KY									
AR	15de C-D-Bb-A- G+*-G+*-A	11.1db D-Bb-D-C-A- G+*-G+*-A	11.1db/se D-Bb-D-C-A- G+*-G+*-Eb	11.1db'/se or 7.1db/se <b>A-G+*-G+*- Eb</b> x3	2RC <b>Eb-Eb</b> x7				9db D
YG	15de C-D-Bb-A- G+*-G+*-A	11.1db D-Bb-D-C-A- G+*-G+*-A	11.1db/se D-Bb-D-C-A- G+*-G+*-Eb	11.1db'/se or 7.1db/se <b>A-G+*-G+*- Eb</b> x2	2RC <b>Eb-Eb</b> x7	4.2dm/de <b>G-Eb-Eb</b> x3	2RC G-G	2RC <b>Eb-Eb</b> x7	9db D
SS	15de C-D-Bb-A- G+*-G+*-A	11.1db D-Bb-D-C-A- G+*-G+*-A x2	11.1db/se D-Bb-D-C-A- G+*-G+*-Eb	11.1db'/se or 7.1db/se <b>A-G+*-G+*- Eb</b> x3	2RC <b>Eb-Eb</b> x7	4.2dm/de <b>G-Eb-Eb</b> x3	2RC G-G	2RC <b>Eb-Eb</b> x7	9db D

KY	9ae'' C-D-D-Eb-Eb-D	9ae''' C-D-D-Eb-G-Eb-Eb-D
AR		9ae''' C-D-D-Eb-G-Eb-Eb-D
YG	9ae'' C-D-D-Eb-Eb-D	9ae''' C-D-D-Eb-G-Eb-Eb-D
SS	9ae'' C-D-D-Eb-Eb-D	9ae''' <b>C-D-D-Eb-G-Eb-Eb-D</b> x3

KY	2 <b>Db*-D</b> x3	2db <b>D</b>	2 <b>Db*-D</b> x3	2db <b>D</b>			
AR	2 <b>Db*-D</b> x3	2db D				2 <b>Db*-D</b> x3	
YG	2 <b>Db*-D</b> x3	2db D					
SS	2 <b>Db*-D</b> x3	2db <b>D</b>	2 <b>Db*-D</b> x3	2db <b>D</b>	2 <b>Db*-D</b> x3	2db D	2 <b>Db*-D</b> x3

KY	2am' <b>Db*-Eb-Eb-Eb-D</b>	2am'' <b>Db*-Eb-G-D</b>	2am' Db*-Eb-Eb-Eb-D	2am'' Db*-Eb-G-D			
AR	2am' <b>Db*-Eb-Eb-Eb-D</b>	2am'' <b>Db*-Eb-G-D</b>	2am' Db*-Eb-Eb-Eb-D	2am'' Db*-Eb-G-D (omitted)			
YG	2am' <b>Db*-Eb-Eb-Eb-D</b>	2am'' Db*-Eb-G-D	2am' Db*-Eb-Eb-Eb-D				
SS	2am' <b>Db*-Eb-Eb-Eb-D</b>	2am'' <b>Db*-Eb-G-D</b>	2am' <b>Db*-Eb-Eb-Eb-D</b>	2am'' <b>Db*-Eb-G-D</b>	2am' <b>Db*-Eb-Eb-Eb-D</b>	2am'' Db*-Eb-G-D	2am' Db*-Eb-Eb-Eb-D

KY	3 <b>D-Bb-Eb-Eb-D</b> x2	3db <b>Eb-Eb-D</b> x3	3.2 D-Bb	2am Db*-Eb-D	2db <b>D</b> x2	1db' G-D
AR	3 D-Bb-Eb-Eb-D		3.2 D-Bb	2am Db*-Eb-D		1db' G-D
YG	3 D-Bb-Eb-Eb-D		3.2 D-Bb	2am Db*-Eb-D		1db' G-D
SS	3 <b>D-Bb-Eb-Eb-D</b> x3		3.2 D-Bb	2am Db*-Eb-D		1db' G-D

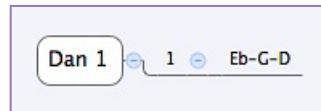
## Appendix G

### Summary of cells by *dan*

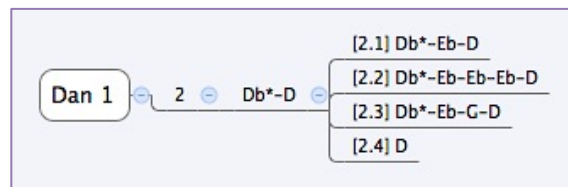
#### Rubric:

Appendix G is a one-page summary of Appendix F. Pitch cells are given for each of the 12 possible *dan* in *Sokaku Reibo*, based on all consulted scores and recordings.

To the immediate right of the *dan* number is the pitch cell number. For example, the first cell in *Dan 1* is Eb-G-D:



Branches that extend from the main cell are contractions or expansions of the main cell. Those that are referred to in other appendices or within chapters are labeled numerically with reference to the main cell. For example:



Labels such as 5de (5 deleted ending) and 11ae' (11 added ending, 2<sup>nd</sup> variation in this way) are explained in Appendix F.

D<sub>b</sub>\* indicates the *koro-koro* tremolo effect.

G+\* indicates a tone between G and A<sub>b</sub>.

Sokaku Reibo



## Appendix H

### *Sokaku Reibo*: Pitch cell analysis

For each *dan*, all occurring pitch cells are given. They are aligned vertically to match intervallic/pitch patterns wherever possible.

Versions in which cells appear are given in the second column from the right:

KY = Kurahashi Yodo I score

AR = Aoki Reibo II score & recording

YG = Yamaguchi Gorō recording

SS = Sato Seibi score

all = all of the above

The far right column shows corresponding m2-M3 (*miyakobushi*) trichords on D, G, or A. (NT = non-trichord tone, [ ] = absent notes)

The note C is an NT when it is a preparatory or passing tone (notated as either a sixteenth-note preparation to D or a grace note).

Db\* = *koro-koro* tremolo effect on approximately Db

G+\* = A tone played between G and Ab, using the fingering *ichi san no u* (AR) or *u dai meri* (KY)

Pitch cells	cf. <i>dan</i>	Versions	m2-M3 trichord
<b>Dan 1</b>			
Eb G D		all	D-Eb-G
Db* D		all	D-[Eb-G] (NT: Db*)
D		all	D-[Eb-G]
Db* Eb D		all	D-Eb-[G] (NT: Db*)
Db* Eb G D		all	D-Eb-G (NT: Db*)
D Bb Eb D		all	[A]-Bb-D/ D-Eb-[G]
Eb D		KY, AR, SS	D-Eb-[G]

Dan 2											
	Eb	D	Eb	G	A	Eb	D			all	D-Eb-G/ A-[Bb]-D
Db*		D	Eb	G	A	Eb	D			KY, AR, SS	D-Eb-G/ A-[Bb]-D (NT: Db*)
				G	A	Eb				all	[D]-Eb-G/ A-[Bb-D]
				G		Eb				all	[D]-Eb-G
				G						all	[D-Eb]-G
					C	Ab				all	[G]-Ab-C
						Ab				all	[G]-Ab-[C]
						Bb	A	G+*		AR, YG, SS	A-Bb-[D] (NT: G+*)
							A	G+*		AR, YG, SS	A-[Bb-D] (NT: G+*)
							A			AR, YG, SS	A-[Bb-D]

Dan 3											
				Bb	A	G+*	A	Bb	2	AR, YG, SS	A-Bb-[D]
				Bb	A	G+*	A			AR, YG, SS	(NT: G+*)
				Bb	A	G+*				AR, YG, SS	
					A	G+*				AR, YG, SS	A-[Bb-D] (NT: G+*)
					A					AR, YG, SS	A-[Bb-D]

Dan 4															
				Bb	A	G+*	A	D	G	A	Eb	G	2, 3	AR, YG, SS	A-Bb-D/D-Eb-G (NT: G+*)
									G	A	Eb	G		AR, SS	G-Ab-C/
									G	A	Eb			AR, YG, SS	[D]-Eb-G/ A-[Bb-D]
									G	A	Eb		2	AR, YG, SS	[D]-Eb-G/ A-[Bb-D]
									G		Eb			AR, YG, SS	[D]-Eb-G
									G					AR, YG, SS	[D-Eb]-G

Dan 5															
														KY, AR, SS	D-[Eb-G] (NT:C)
														KY, AR, SS	[D]-Eb-G (NT:F)
									G	A	Eb	G	2, 4	KY, AR, SS	G-Ab-C/
									G	A	Eb			AR, SS	[D]-Eb-G/ A-[Bb-D]
														KY	[G]-Ab-C
									G	A	Eb		2	AR, SS	[D]-Eb-G/ A-[Bb-D]
									G		Eb			AR, SS	[D]-Eb-G
									G					AR, SS	[D-Eb]-G
														KY	D-Eb-[G] (NT:C)
														KY	D-Eb-[G]
														KY	D-[Eb-G]



Dan 6													
C	D		Eb	D	Bb	D	C	A				all	D-Eb-[G]/ A-Bb-D (NT:C)
C	D		Eb	D	Bb	D	C	A	G+*	A		all	D-Eb-[G]/ A-Bb-D (NT:C, G+*)
				D	Bb			A	G+*	A		AR, YG, SS	A-Bb-D (NT:G+*)
				D	Bb							all	[A]-Bb-D
					Bb							all	[A]-Bb-[D]
								A	G+*	A		all	A-Bb-[D]
								A	G+*			all	(NT:G+*)
								A				all	A-[Bb-D]

Dan 7													
							A	C				AR, SS	[G-Ab]-C/ A-[Bb-D]
								C	Ab		2	AR, SS	[G]-Ab-C
C	D		Eb	D	Bb	D	C	A	G+*	A Bb	6	AR, SS	D-Eb-[G]/ A-Bb-D (NT:C, G+*)
					Bb							AR, SS	[A]-Bb-[D] (NT:G+*)
								A	G+*	A		AR, SS	A-[Bb-D]
								A	G+*			AR, SS	(NT:G+*)
								A				AR, SS	A-[Bb-D]
				D	Bb							AR	[A]-Bb-D

Dan 8																
C	D		Eb							5	YG, SS	D-Eb-[G] (NT:C)				
			Eb								YG, SS	[D]-Eb-[G]				
			Eb	D							YG, SS	D-Eb-[G]				
				D							YG, SS	D-[Eb-G]				
C	D		Eb	D	Bb	D	C	A	G+*	A	Bb	6	YG, SS	D-Eb-[G]/ A-Bb-D (NT:G+*, C)		
C	D												YG	D-[Eb-G] (NT:C)		
											Bb	C	Ab	YG	[G]-Ab-C/ [A]-Bb-[D]	
													Ab	YG	[G]-Ab-[C]	
											Bb			SS	[A]-Bb-[D]	
											D	Bb		6	SS	[A]-Bb-D
															SS	A-[Bb-D]
															SS	(NT:G+*)
															SS	A-[Bb-D]

Dan 9																	
C									Bb						AR, SS	[G-Ab]-C/ [A]-Bb-[D]	
									Bb						SS	[A]-Bb-[D]	
C	D														AR, SS	[A-Bb]-D (NT:C)	
															2	AR, SS	[G]-Ab-C
																AR, SS	[G]-Ab-[C]
C	D		Eb	D	Bb	D	C	A	G+*	A	Bb				6	AR, SS	D-Eb-[G]/ A-Bb-D (NT:C, G+*)
																SS	[A]-Bb-[D]
																SS	[A]-Bb-D
																SS	A-Bb-[D]

									(NT:G+*)
			A	G+*	A			SS	A-[Bb-D]
			A	G+*				SS	(NT:G+*)
			A					SS	A-[Bb-D]

Dan 10										
			Bb	A	G+*	A		6	KY, YG, SS	A-Bb-[D]
			Bb	A	G+*	A	Bb		SS	(NT:G+*)
		D	Bb						all	[A]-Bb-D
			Bb	D					YG	
				D	A	G+*	A		KY	A-[Bb]-D (NT:G+*)
	C								AR, YG, SS	[G-Ab]-C
		D							AR, YG, SS	[A-Bb]-D
			Bb	A	G+*	A	G+*		SS	A-Bb-[D] (NT:G+*)
				A	G+*				SS	A-[Bb-D] (NT:G+*)
				A					SS	A-[Bb-D]
			Bb	A	G+*	A	D G A		KY	A-Bb-D/ D-[Eb]-G (NT:G+*)
	Eb	G							KY	[D]-Eb-G
				C	Ab		G A Eb G	2, 4	KY	G-Ab-C/ [D]-Eb-G/ A-[Bb-D]
							G A Eb		KY	[D]-Eb-G (NT:A)
							G Eb		KY	[D]-Eb-G
							G		KY	[D-Eb]-G

Dan 11												
										SS	[D]-Eb-[G]	
										SS	D-[Eb-G]	
										2, 5	SS	[G]-Ab-C/ D-Eb-[G]
										2, 10	YG, SS	A-Bb-D (NT:C, G+*)
											YG, SS	A-Bb-[D] (NT:G+*)
											YG, SS	A-Bb-D (NT:G+*)
											YG, SS	A-Bb-[D]
											YG, SS	(NT:G+*)
										6	SS	[A]-Bb-D
											SS	[G-Ab]-C

Dan 12														
C	D			Eb						5, 6	AR, SS	D-Eb-[G] (NT:C)		
				Eb							AR, YG, SS	[D]-Eb-[G]		
				D							all	D-[Eb-G]		
C	D				Bb		A	G+*	A	2, 10, 11	AR, YG, SS	A-Bb-D (NT:C, G+*)		
				D	Bb	D	C	A	G+*	A		AR, YG, SS		
				D	Bb	D	C	A	G+*		Eb		AR, YG, SS	A-Bb-D/ D-Eb-[G] (NT:G+*, C)
								A	G+*		Eb		AR, YG, SS	A-[Bb-D]/ [D]-Eb-[G] (NT:G+*)
				G				Eb					YG, SS	[D]-Eb-G
				G									YG, SS	[D-Eb]-G
C	D	Eb						D				5, 6	KY, YG, SS	D-Eb-[G] (NT:C)
C	D	Eb	G		Eb			D					all	D-Eb-G (NT:C)
		Db*						D				1	all	D-[Eb-G] (NT:Db*)
		Db*	Eb					D					all	D-Eb-[G] (NT:Db*)
		Db*	Eb	G				D					all	D-Eb-G (NT:Db*)
D	Bb		Eb					D				1	all	[A]-Bb-D/ D-Eb-[G]
D	Bb												all	[A]-Bb-D
				G				D					all	D-[Eb]-G

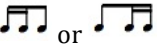
## Appendix I


### Prevalent pitch cell variants and rhythm cells

#### Rubric:

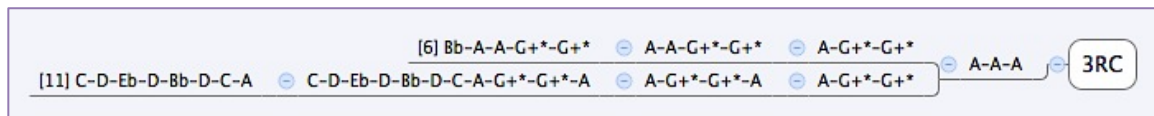
Appendix I lists examples of frequently-recurring pitch and rhythm cells in *Sokaku Reibo*. The rhythm cells are:

2RC: 

3RC: 

4RC: 

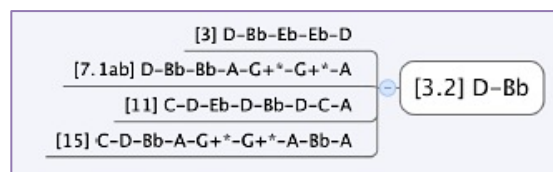
Branches indicate from left to right how a rhythm cell emerges step-by-step from one or multiple pitch cells. For example:



Prevalent pitch cell variants are:

- D
- [1.1] Eb-D
- [3.2] D-Bb
- [4.2] G-A-Eb-Eb-Eb
- [5de] C-Ab
- [7.2.1] Bb-A-G+\*-G+\*-A

Branches indicate from left to right how a recurring pitch cell variant emerges step-by-step from other cells. For example:



D<sub>b</sub>\* indicates the *koro-koro* tremolo effect.

G+\* indicates a tone between G and A<sub>b</sub>.



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