Producing performance scores for the Tang Music Project from coded Japanese musical manuscripts – Versions and Variants –

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Abstract

A practical task—to produce for Chinese musicians a set of performing materials for ‘Tang Music’ from early Sino-Japanese musical notations—led at first to a very time-consuming, manual adjusting and re-writing of published transcriptions. Versions of pieces as noted in sources for different instruments and from different periods proved to be unsuitable in varying degrees for simultaneous performance. Subsequent drafting of an extensive Editorial Report nevertheless revealed the systematic nature of the sources, some evidently edited already at the time of their compilation. Computerized generation of matching performance parts allows the creation of a clinical full-score without violating diverse traditions encapsulated in the original part-books. However, at the other end of the early-music-performance spectrum, where ideally musicians process in performance internalized musical principles embodied in the notations, computerized extraction of ‘base-melodies’ may offer a possible first step. We shall demonstrate the range of difference among versions, not only in different manuscripts, but also as recorded in notated variants within single sources. Computerized generation of “matching parts” is used to (re-)create orchestral full-scores from these versions and variants.

1 Starting point

The possibility of recreating ‘Tang Music’ 唐樂 in performance seems to catch the imagination of almost anyone confronted by the idea. And the publication series Music from the Tang Court (Picken et al., 1980-), in which versions of Tang Music items from Sino-Japanese sources

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for different instruments and from different periods are set out, by way of comparison, one under the other in Western-style orchestral format, might give the impression that all that is required now is the actual playing. Not much more than a year ago, in fact, this was precisely the situation in which we found ourselves. Encouraged by the quasi-full-score layout of the first six volumes of *Music from the Tang Court*, Sarah Caldwell, the American Conductor and Opera Director but also associate of Laurence Picken, editor of the series, arranged for an experimental recording and filming session to take place in Cambridge, England. During this session the entire repertory of Tang Music published up until now would be played by Chinese musicians “as published”. We are talking therefore of all pieces in the mode-keys *Ichikotsu-cho* 十桐調 and *Sada-cho* 沙代調 – perhaps about a quarter of the titles in the early Tang Music repertory surviving in notation – and for most items as preserved in the two earliest mouth-organ sources, one, *Kofu/Hooshoo-fu ritsuukan/ryokan* 古譜／鳳箏譜律巻, (KF/HSF/RK) from the beginning of the 13th century (1201), the other, *Shinsen shoo-teki-fu* 新選箏譜, (SSSTF) from 100 years later (1303), and in Fujiwara no Moronaga’s 藤原師長 late twelfth-century (ca. 1180) sister sources for lute and zither, *Sango-yooroku* 三五要録 (SGYR) and *Jinchii-yooroku* 仁智要録 (JCYR), respectively1.

The multi-pronged rationale behind the plan was: in first place, to explore Sarah Caldwell’s idea of preparing for the non-specialist reader some sort of aural material eventually to accompany the series - to bring sound to the notes printed on the pages; secondly, to begin thinking about the inclusion of performing materials for future volumes of the series so that, as it has been put, “interested musicians worldwide may participate”; finally, for Laurence Picken, then already 90, to be able to spend extended time at home in Cambridge with expert musicians, listening to the texture of the music as notated in the relatively small body of Japanese sources used in the series so far. Laurence Picken himself has always had an interest in Tang Music performance and had been involved in several large scale performance ventures, perhaps most famously in an earlier experiment with musical texture with musicians in Taiwan in 1972, in 1990 with Professors Noël Nickson and Chen Yingshi and the Shanghai Conservatory, again with Professor Nickson in Taipei in the mid-90’s, this time joined by Professor Liu Fengshui and her dance company, and most recently on Western

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1 For the primary musical and textual sources for Tang Music used in *Music from the Tang Court*, see the lists included under ‘Abbreviations’ at the outset of each volume (from Volume 2 onwards). Further details for the four principal tablature-collections used so far are given in Volume 1 (Picken et al., 1980a, pp. 33-34). In his survey-account of the earliest sources for lute, Steven Nelson (2001) includes and describes more fully the lute-compendium, *Sango-yooroku*. 
instruments with the Philharminia Orchestra of Yekaterinburg, under the baton of Sarah Caldwell herself. Tantalizingly for the Cambridge experiment, there would also be some more casual Tang Music "jam-sessions". As preparation, all that was required of us was to mark places in the published quasi-full-scores where minimal adjustments for playing together appeared necessary. From there, a music consultant in America could feed the whole into the Sibelius music-processor. Sibelius would then regurgitate individual parts for the performers - as they had specifically requested - and perhaps play the pieces through for Laurence Picken on his computer in Cambridge so that he might fix some tempo directions before the musicians arrived. So - a straightforward, practical, and presumably manual task.

2 A ladder of uneven steps

As I shall now outline as steps, however, from starting out with the anticipated, manual alterations to the main versions of pieces, and by then working through the intricate, systematic recording of variants from diverse traditions by the original medieval Japanese editors of the sources, I became unhappy about disturbing the integrity of the primary musical versions - whether by adjusting intuitively or by choosing to accept variants. Although variants may "fit", they are often even named as taken from other traditions for the instrument in question.

An extension of Rembrandt's rule-based extraction of "base-melodies" from coded sources (Wolpert, 1995a,b) to create synthetic ensemble-part - synthetic in that they imitate the natural product - offered a solution that avoids violation of disparate traditions encapsulated in the original sources while at the same time remaining true to their lingua. In following this option, the basis is also laid for formulating re-write rules for musicians wanting to explore further than playing off from written-out parts by trying to assume early performance practice. It appears that instrumentalists of the time operated with a base-melody, probably together with a sung memory-aid (Markham, 1995; Wolpert, 1995a), and processed in performance internalized musical principles from the same fund on which the computer now draws.

2.1 Step 1: Kaibairaku/Huibeiyue and "near perfect" compatibility among original versions?

The notion that versions of Tang Music that may not belong together, whether in date or in performance tradition, can be played together as they are is of course arguable. But with our purpose in mind - that of working with the sources that have actually survived and aiming at
a synthetic base-edition for eventual, more daring, interpretative materials - for the Ha 磔, 'Broaching', movement from an original suite of drinking music, Kaibairaku 倒杯茶, 'The Eddying Cup', the four original versions (Fig. 1, p. 5) represent what I came to regard as “near perfect” coordination, “near perfect” compatibility, perhaps. By this I mean that, if we ignore the dashing key-signatures pending Endoo Tooru’s study (2001) of bimodality in the mode-key under which Kaibairaku is classified\(^2\), then, based on our experience of the stylistic character of each source, the four co-exist as idiomatic versions of the same base-melody. Possible adjustments for performance might include replacing a note-with-appoggiatura by a single melody-note, for instance in the place marked in the lute-part. This change would correspond with a variant included as a gloss to the main notation by the original editor. For consistency, reduction of appoggiaturas in a couple of other similar places, unglossed in the originals, might be followed through.

Since even this level of tinkering loses something of the delicacy in modal implications of the full lute-part, however, and although at the starting-out stage of manual adjustment I took this level of agreement as a guide, I would still term it “near perfect” only. For the mouth-organ, for instance, we still don’t know how mordents and the notes shown as grace notes would have been performed. Come the day though, then divergent systems of modal ornamentation will need to be reconciled and systematized through the ensemble too\(^3\).

\(^2\)Presented following afternoon-tea break the same day.
\(^3\)Both Endoo Tooru (2001) and Allan Marrett (2001) address modal ornamentation in quite some detail.
Step 1: Kaibairaku/Huibeiyue and "near perfect" compatibility among original versions

Figure 1: Kaibairaku/Huibeiyue (Picken et al., 1985, pp. 49-50) and "near perfect" compatibility among original versions?
2.2 Step 2: Roosooraku/Nongqiang yue as a “switchboard” of variants

Making minimal adjustments - always with an eye to available variants as guides - achieved this level of agreement among the various instrumental versions for a good number of items. For pieces like Roosooraku/Nongqiang yue, however, for which both string versions are particularly heavily glossed with variants (Picken et al., 1997, pp. 52-4), even

Step 2a: Roosooraku/ Nongqiang yue as a "switchboard" of variants

![Base Melody](image)

Figure 2: “Imperfect” compatibility among base-melodies and privileging one version over another

...after manual adjustments and with variants plugged in and out switchboard-fashion, there still remain places where the underlying base-melodies themselves are at odds. By having to make a choice for the prospective performer, one base-melody is privileged over another. An example from ‘Spear Play’ may demonstrate what I mean (Fig. 2, p. 6).

Again everything is in miniscule. But the very fact that such minute
details are recorded as variants in the originals surely indicates that they are of significance, that they are to be seen as differences, and that if we iron them out to match another version, we may have a loss for our potential performer rather than a solution.

For the two beats shown in Figure 2, mouth-organs (on the top two staves) and strings (on the lower two black staves) disagree about d and c (or c2) right down to their respective base-melodies. Variants recorded as glosses in both string sources (and shown in red in Figure 2), if accepted, would agree—in respect of the base-melody—with the first mouth-organ, on the uppermost stave. But we would still have the difference in the second, quite distinctive version for mouth-organ, next stave down. Furthermore, we would have privileged a primary mouth-organ version over the primary string-versions.

And even when the base-melody is indisputably shared among all versions, as in Figure 3 (p. 8) for the descent from g to d over the opening four beats in both measures, variants in the string-parts, recording a seemingly minute difference in their realization of this base-melody, may actually provide a window onto an alternative modal interpretation of the melody. Even if subtle and perhaps almost incidental to us now, this interpretation probably would have been quite conscious for the performer, and likely to have become embedded in the musical memory through singing different syllables or syllable-combinations of the mnemonic aid to the two occurrences of the same notes in the base-melody, when first learning the piece, from then as memory-reinforcement, and perhaps also, as nowadays, for cohesion in ensemble-rehearsal (Markham, 1995).

First time round in Figure 3, the underlying four-note descent from g to d in the base-melody (best seen in plain form for mouth-organ on the top stave) leads on to e; second time round, to the fifth, a. Both times in the other versions, an appoggiatura f#-e over the third beat in the descent prepares the d that follows, on beat four. However, as the string variants (in red) for the first statement show, this e (beat three of the base-melody) may itself receive full weighting by being given at least a full beat's duration, rather than functioning with appoggiatura as a lead-in to d. Should the variant for the zither-part and the lower variant for the lute imply that the preceding g-f# appoggiatura (second half of beat two) of the main versions be retained, this adds even more weight to e: modally it is then interpreted as upstaging the final already here rather than two beats later. (Second time round, of course, d (on beat four) reinforced by appoggiatura f#-e (over beat three) reinforces, in turn, a strong mid-measure landing on the fifth, a.)

In this sort of instance, it seems to me a pity to exclude the options for such delicate modal variance from performance possibilities today by sticking in principle to the primary versions.
Step 2b: Roosooraku/Nongqiang yue as a "switchboard" of variants

![Musical Notation](notation.png)

Figure 3: Exclusion of alternative modal interpretation of shared base-melody
2.3 Step 3: Ittokuen and incompatibility among modally diverse primary versions → computer-generation of "matching" parts

Rembrandt’s dissection-extraction-resynthesis programs - dissection of encoded notations, extraction of base-melodies, and then re-synthesis back to full versions (Wolpert, 1995a, b, 1997, 2000) - now appeared as options for creating sets of "matching" ensemble parts that for a given item would represent systematic realizations of one single base-melody chosen from any of the four original versions, but that at the same time would follow the internal rules for each individual instrumental tablature. If wanted, the re-write rules involved could also be extended to provide full-scores that accommodate through the ensemble the sort of fine modal weighting we have just seen recorded as variants in string-idiom.

The piece Ittokuen 壹徳譜, 'Introit to "Perfect Virtue"', along with two others, the closely related Anrakuen 安楽譜, 'Introit to "Peace Music"', and Shingachoo 求河鳴, “Birds of the the Qin River”, clump together as a distinctive little group of Sada-choo-pieces (Markham, prep) so ostensibly in a heptatonic Lydian gong-mode⁴ on D. However, the primary versions laid-out together in quasi-full-score in Music from the Tang Court turn out to harbor at least two separate, presumably diachronically differentiated, modal versions. As published in transnotation these three pieces can't be played in ensemble unless modally modified throughout, one strand to fit the other or vice versa. Computer-generated sets of matching parts for each independent strand, seemed a solution. But first, an example from Ittokuen (Fig. 4, p. 10) may demonstrate how involved the innocent-looking quasi-full-scores in Music from the Tang Court turned out to be.

⁴Chinese nomenclature is included here in keeping with usage in so much scholarly argument about the Tang modal system and its transference to Japan. But see also the other papers on Tang Music presented at the PNC Conference (Wolpert, 2001; Maret, 2001; Ng, 2001; Endoo, 2001; Nelson, 2001; Terauchi, 2001) and Chen (1999).
Step 3: Ittokuen/Yide yan and incompatibility among modally diverse primary versions

Figure 4: *Ittokuen/Yide yan* from quasi-full-score in *Music from the Tang Court* (Picken et al., 1997, pp. 70-72)

As is clear already in the opening two measures, the earlier mouth-organ version (top stave) is emphatically *Sada-choo* - Lydian gong-heptatonic on D - with both g and c (in addition to f, of course). The second mouth-organ (next stave down) matches here by and large - and definitely further on - but the c - b on beat 7 of the first measure is such a distinctive feature in *Shingachoo*, and indeed throughout the repertory on D where momentary switches to a Lydian flavour occur, that caution warns against ironing it out in deference to another version. It is the zither (one stave up from bottom) - sadly the Cinderella in *Music from the Tang Court* so far - that presents us with the surprise, second, independent strand - a 123.56 gong-pentatonic version with auxiliaries c and g used only in mordents, which are perfectly distributed copy-book-style for *Sada-choo* mode-key, on the first and fifth degrees, d and a. (Hayashi, 1969; Marett, 1977; Endoo, 2001; Markham, prep). We have, therefore, two distinct versions: a heptatonic Lydian version and a presumably archaic 123.56 pentatonic version, with possible further modal variance implied by the second mouth-organ. The lute-version (right on the bottom) is solidly heptatonic and Lydian, but still in need of a little titivation if required to conform with one or other version (Markham, prep).

To nevertheless enable a version for ensemble-performance, colour-boxes (a) to (i) in Figure 5 (p. 12) mark the places where changes to this
pentatonic zither-part would be needed to convert it to a heptatonic Lydian melody that would match the older mouth-organ melody (Fig. 6, p. 13): essentially what is needed in the colour-boxes is replacement of one or other repeated note (on final or fifth, d or a) by one or other auxiliary, c♯ or g♯.
29 Ittokuen

Figure 5: Ittokuen from Jinchi-yoroku (primary version)
Figure 6: Ittokuen from Kofu/Hooshoo-fu ryokan
Now, the editor himself of the original zither-source has glossed his primary, pentatonic zither-version for Ittokuen with five miniscule variants in flute-tablature, apparently to provide guides for just such a conversion (Fig. 7, p. 14): that is to say, regardless of whether or not the flute glosses are drawn from an actual heptatonic version for flute, they identify places in the pentatonic version for zither where the base-melody itself must be altered to achieve just such a conversion.

Figure 7: Ittokuen: primary version for zither from Jinchi-yooroku with variants as glosses in flute-tablature
Each coincides with one of the colour boxes and if applied - that is realized in zither-idiom - in these five spots, and then reactivated appropriately in the remaining colour boxes, they enable a Lydian gong-heptatonic zither-part (Fig. 8, p. 16) compatible with that for the older mouth-organ version. With regard to the thorny question of modal ornamentation, it is perhaps worth noting that the flute glosses indicate the mordent-like ornament yuri only on the fifth degree of the mode-key - that is only on a - as, in fact, does the older mouth-organ version\(^5\). For the time being, however, in the reconstructed Lydian zither-version, mordents are retained on d as well.

\(^5\)Transnotations and a fuller discussion of the flute-glosses in the Jinchi-jooroku versions of Ittokuen are included in Markham (prep).
Figure 8: *Ittokuen*: conversion of 123.56 gong-pentatonic zither-version to Lydian gong-heptatonic condition via “application” of flute-glosses

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3 Enter the computer

Having such a conversion apparently authorized in an original source provides an ideal opportunity to test the computer's generation of matching versions by giving it the same conversion-task. As indicated earlier, this option has been developed from Rembrandt Wolpert's initial working with base-melodies and a grammar of lute-dialect.

Taking the base-melody of the older mouth-organ version for Ittokuen and activating the grammar of lute-dialect and a still preliminary grammar of zither-dialect, the computer can produce the heptatonic Lydian version for zither shown in Figure 9 (p. 18), a version that if produced by a learner might not have found too much criticism among seasoned musicians at Court in the late 12th century, perhaps? A more refined grammar will allow the typical dotted rhythm in string parts and eventually a systematic application of mordents.
Figure 9: Ittokuen: Lydian gong-heptatonic version for zither, computer-generated from base-melody for mouth-organ from Kofu/hooshoo ritsu/ryokan
And working in the other direction, the computer extracts a base-melody from the pentatonic zither-version and - this time calling up the dialects for mouth-organ and lute - produces the mini-full-score for an ensemble pentatonic rendition shown in Figure 10 (p. 20).
Figure 10: Ittokuen: “mini-full-score” for pentatonic rendition, computer-generated from base-melody of primary version for zither in Jinchi yoozoku
3.1 Summing up and outlook

To move from here to flute-dialect and double-reed dialect, whether backwards or forwards time-wise and in terms of style, would be, I understand from Rembrandt, more a matter of time and input from those working on these idioms than a matter of "how to".

Here, of course, I have only pulled out the vertical dimension of mutual agreement or disagreement through the ensemble for versions of measured items, and only for pieces in mode-keys on D. Unmeasured items - Jo 序, 'Preludes', and sections of movements in Daikyouku 大曲, 'Large Pieces' - are often also horizontally out of sync. But when manually adjusting on this level and faced with a problem, there has been an intuitive musicological tendency anyway to privilege one version, and to metrically expand or contract the others to fit. The so-called conflations of unmeasured movements in Music from the Tang Court are witness to this - as too a pre-edition of a full-performance-score for the Large Suite, Oodai hajinraku 黄帝破陣樂 , 'The Emporer Destroys the Formations' (Nickson and Picken, 1995). Again, computer-generation of sets of parts from each metrically differentiated version would provide systematically co-ordinated base-editions from which to choose, before setting out on interpretative- or other performance-editions.

Returning to our initial task and context - performing materials to be or not to be included in Music from the Tang Court - it seems clear that there may be at least two types of potential consumer. There may be the curious Western-trained musician needing to be able play Tang Music straight off from Western staff notation, perhaps even on Western instruments, and needing to be able to recognize the performing materials as related to the transnotations of the original sources in Music from the Tang Court itself. And there may be the scholar or East Asian musician willing to try to assume early performance practice, able to absorb the musical grammar of the repertory and then, in performance, to apply to a base-melody the sort of principles that yield musical versions of the type preserved in the surviving notations and transnotated in Music from the Tang Court. While, in preparing performing materials that attempt to reach back to "Music of Tang", much more daring approaches might be taken, and indeed have been taken by colleagues present, the mandate this time to remain as close

6In the Tang Music "jam-sessions" perhaps a first step was taken also towards realizing base-melodies in performance. The musicians had grasped some principles but were not happy with their playing of syncopated versions of pieces noted with much note-repetition in the original 12th-century sources for lute and zither. Computer-extracted then syncopated base-melodies "piped-in" by the flautist first time round but not thereafter helped enormously. A recording of a fun, syncopated, high-speed version of Kate no ha 贅殿破, the 'Broaching' movement from the suite "The Palace of Congratulations" from such a "jam-session" was played for the conference audience.
as possible to the versions notated in these later Japanese sources - actually to their published transnotations - threw up as a side-product almost, one possible way of first arriving at consistent base-editions from which other experimental and interpretative versions might then be systematically derived.
References


