

From Staff to Global: A Response to Killick

Richard Widdess

ANDREW Killick's initiative in proposing Global Notation (henceforth GN) deserves a warm welcome. The article represents an important and timely intervention in the field of world music analysis. It re-ignites debate around a central methodological issue that has for too long been considered intractable. The perception, whether justified or not, that transcription and analysis entail the application of culture-specific Western values, embodied in Western music notation, to music of other cultures, must bear much of the blame for the uncertain status of music analysis in ethnomusicology. A cogent initiative to remedy this perception promotes the development of an ethnomusicological approach to world music analysis.

While issues of notation and transcription were keenly debated in earlier phases of ethnomusicology, they must be periodically revisited as we live in a constantly changing world. Technological advances offer new approaches to automatic or semi-automatic visualization and transcription, and the current impetus to de-colonize knowledge production surely strengthens the argument in favor of a culture-neutral notation system. Some ethnomusicologists may feel a sinking of the heart at revisiting such a well-worn debate, or dismiss it as irrelevant to (post-post-)modern concerns. But I wonder how many ethnomusicologists have, like me, privately scratched their heads over the seeming intractability of the problem of notating music in a universally applicable, acceptable, and intelligible manner; perhaps going as far as experimenting with alternative methods, only to succumb to a sense of dissatisfaction, and finally go back to staff notation (henceforth SN) and patch up some of its shortcomings in an ad hoc manner, *faute de mieux*.

In contrast with such casual experiments, Killick's proposal is an elaborately worked out system, based on coherent principles and objectives, set out with admirable clarity and copious examples in his Global Notation website (globalnotation.org.uk). This should make it easy for anyone to learn and put into practice the system proposed, without needing to know SN or any other system first. Of itself this does not guarantee the usefulness of the system, or its universal popularity, but a key characteristic of GN is its flexibility and openness to alternative implementations, at varying levels of detail, to cater for the special characteristics of particular music, or the specific objectives of the analyst. This flexibility allows for different flavours of GN to develop for different purposes without compromising its basic principles, and increases the possibility that in some form or forms it may come to replace SN as the descriptive notation system of choice for transcription and analysis of world music. Whether or not GN achieves that goal, the website and the present article are a timely stimulus to reflection on the objectives of notation, the constraints that follow from them, and the alternative means available.

STAFF NOTATION AND GLOBAL NOTATION: SYMBOLIC AND ICONIC REPRESENTATION

Although Killick is critical of SN as a global notation, the fact that it has evolved over the course of more than a millennium, has been adapted to a wide variety of different musical styles over the course of that history, and can be learned to a high degree of reading fluency and notational efficiency, means that it might offer optimal solutions to some general notation issues, which should not be rejected just because they are part of SN. Hence the metaphorical mapping of relative pitch frequency and temporal succession onto orthogonal axes, one of the core features of SN, is also central to GN; the SN conventions of directionality (low–high for pitch, left–right for time) could be reversed, or the pitch and time axes rotated in GN if appropriate. Similarly, the assumption in SN that music employs schemas of fixed pitches and proportional durations is retained in GN, though like everything else in GN, it is dispensable when not appropriate.

One difference between SN and GN is that in the main, they are respectively symbolic and iconic sign-systems. One advantage of SN's high dependence on symbolic representation, where signs refer *by convention* to features of a given musical system that the reader is presumed to know, is an economy of space, both vertical and horizontal. Dating from a time of expensive writing materials—a consideration that may become relevant again—this economy has a bearing on fluency of reading. A compact staff of five lines and intervening spaces allows rapid visual location of pitches in a pitch space of an octave and a fourth (including the spaces at top and bottom of the staff): in GN, where only lines, not spaces, represent pitches, one would need eleven lines to denote the same pitch space, a considerably greater challenge to the eye. But despite this advantage, symbolic representation depending on a specific known musical system is clearly inappropriate for a universal notation.

GN is therefore committed to representation of “what the listener actually hears,” as far as possible iconically, that is, through *visual resemblance* of signs to their referents. Thus the length of the line representing a pitch of specified length is directly proportional to its duration in time, and spacing of pitch lines is proportional to intervallic distances. It is hard to argue in principle with this basic tenet. Nevertheless one may ask who this imagined listener is, since what any listener “actually hears” is conditioned by their musical experience. A grid representing fixed pitches, for music sung or played on instruments of flexible pitch, requires an act of categorical perception on the transcriber's part, based either on the piece in question alone, or more likely on a wider knowledge of the musical system. Metrical notation often requires similar categorical perception, and system knowledge beyond that of a naïve listener. In practice, then, GN is not a culture-neutral iconic representation of the soundwave, as a computer-produced spectrogram may be, but aims to represent a “culturally informed” hearing of the music, as Killick (2020, 265) argues. This is as it should be, and allows, for example, for input from the performers as to their perceptions, as a check on the transcriber's cultural preconceptions (Widdess 1994).

The iconic approach also entails some practical difficulties when applied in particular

musical contexts. One is the cognitive challenge of reading pitch signs on a grid of many lines, as just mentioned. This problem is increased when multiple melodic lines occupy the grid at the same time, especially if they overlap. It remains to be seen whether familiarity, as Killick claims, or modifications to aid “chunking,” can overcome such problems.

TESTING THE SYSTEM

The proof of puddings being generally in the eating, there is a need for examples of the application of GN to different world music styles, by different transcribers. Figure 1 is a first attempt to re-notate in GN a 13-second excerpt from an example of North Indian vocal improvisation. The vocal line transcribed in GN is loosely aligned for comparison with a transcription in modified SN, made jointly by myself and the singer, and with the spectrogram that is also included in that transcription (Sanyal and Widdess 2004, 329–45). Additional information given in the 2004 publication, including a “Hipkins solution” Indic letter-notation and features highlighted by the singer, are omitted here for the sake of clarity. The extract illustrates two particular notational problems: (a) how to represent the rhythmic aspects of music apparently without clear pulse; and (b) how to combine scalar pitch-categories and their intervallic relationships, with nuances of pitch “between the notes” (Seeger 1958), which latter are a highly important feature of the musical style.

The GN transcription in Figure 1 adheres as closely as possible to the conventions of the notation-system. The quarter-note pulse in the SN transcription, somewhat hypothetical but based on information from the singer (Sanyal and Widdess 2004, 177–80), is reflected in the

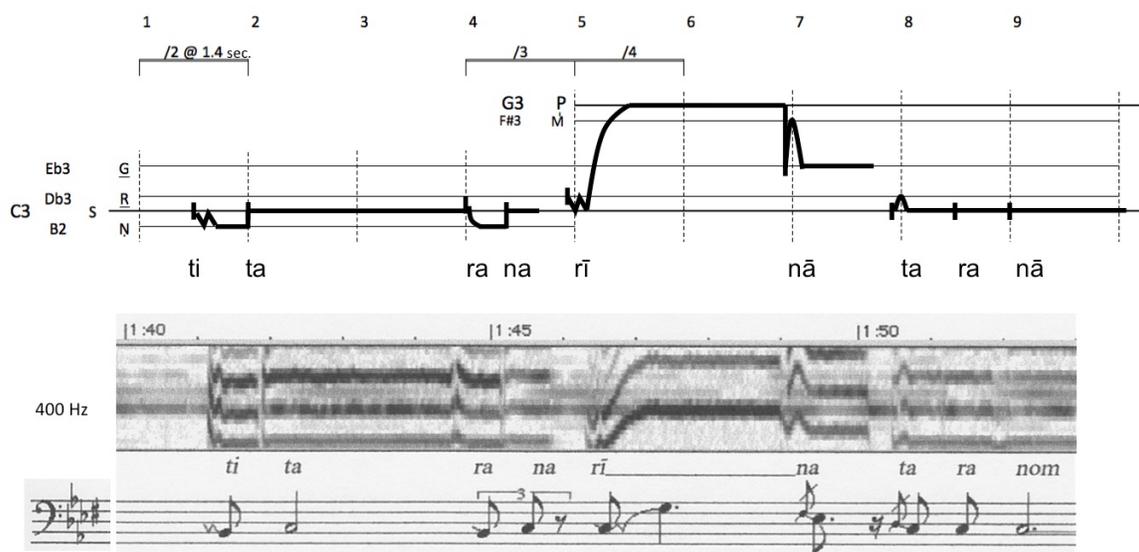


Figure 1. Extract from *ālāp* in Rāg Multānī sung by Ritwik Sanyal. Click [here](#) for an audio recording. For the complete transcription and discussion, see Sanyal and Widdess (2004, 329–64; 176–80). This extract occurs at 1:40–1:55 (331).

vertical “beat” lines of the GN, numbered for reference, which are perhaps a more meaningful guide to durations than the timescale in seconds included in the spectrogram; but a timescale could be used to address problem (a), in cases where no potential pulse can be identified.

For problem (b), I have employed a grid of horizontal pitch lines, spanning a region from the tonic (Sā, abbreviated S, and equated for convenience with SN pitch C) upwards to the fifth scale-degree (Pa = P = G). The lines for these two pitches, which are structurally important in the *rāga* and are included in the accompanying drone,¹ are made heavier for greater salience. A sixth pitch line is added in beats 1 to 4, for low Ni = Ṇ = B, but is then omitted when no longer needed. Similarly, the lines for Ma = Ṁ = F# and Pa are omitted until required from beat 5, as these pitches have not previously been heard in the *ālāp*, and so are not “present” to the listener until now. In a longer transcription, lower and higher pitches would come into use; this would call for periodic re-configuration, and at times enlargement, of the grid. But minimizing the number of horizontal grid-lines in play at any one time conveniently saves space and assists legibility, as well as representing musical experience in accordance with Killick’s “aesthetic” approach.

All the pitch lines are vertically spaced in proportion to the intervals between them. Cents could have been used to specify the pitches—or to quantify the intervening intervals, as Indian music is a relative-pitch system—but here the pitch lines are identified with the pitches used to transcribe them in the SN, to assist comparison. The actual pitch is about a semitone higher than shown in the SN; transposition to tonic = C, common in SN transcriptions of Indian music to enable comparison between examples, is happily unnecessary in the relative-pitch world of GN.

Pitch glides and ornaments in the vocal melody are more precisely rendered in the GN than in the SN. This is because the pitch grid-lines in GN are proportionally spaced. Thus the small pitch movements around the tonic in beats 1 to 4 and 8 contrast strikingly with the much larger melodic intervals in beats 5 to 7. This is not as obvious to the eye in the SN, where for example the scale steps F#-E_b and D_b-C occupy the same amount of vertical space. This clearly demonstrates how GN is iconic of what the listener hears—in this case, intervals of different sizes—whereas SN is symbolic of the musical system—in this case, scale degrees.

Killick’s (2020, 268n6) comment on my use of SN with glide lines for pitch-nuances (following Kuckertz 1970), that such indications cannot specify exact intervals because the staff lines are not proportionally spaced, is correct in principle. In practice, however, this is rarely a problem, because most points in a glide are not heard as specific pitches. Any such point that is sufficiently stable to be heard as a precise pitch will normally be one of the scale-degrees in use in the *rāga*, and can therefore be inferred: if necessary the transcriber can clarify such points as grace-notes or stemless noteheads, as in beats 7 and 8 of Figure 1 (SN). A question that I will leave open is whether the reader of the GN in Figure 1 will understand that the F#

1. In the spectrogram, the Pa string of the *tambūrā* can be seen as a continuous dark line at 400 Hz.

and D_b , falling on beats 7 and 8, respectively, represented only as peaks in the vocal melismas, are essential components of the melody at these points, as the grace notes in the SN clarify. If not, some equivalent of grace notes, meaning significant melodic pitches of virtually zero duration, may be needed in GN.

The GN effectively captures in a single notation most of the information contained separately in the SN and the spectrogram. It represents rhythmic durations according to an emically derived pulse (“inscribing insider knowledge”), with the option of an etically derived timescale instead, or in addition. It also captures both the intervallic relationships between pitch categories, and nuances of pitch between “the notes” (*svara*), thus avoiding the Scylla and Charybdis of assuming either that music consists only of “notes,” or that it does not contain “notes” at all.

Nevertheless, there is at least one aspect of GN that deserves further consideration. A thick black line, superimposed on the pitch–time grid of thinner lines, denotes at least four different things:

1. A pitched sound of defined pitch and duration (the horizontal component of a “rotated T”).
2. Pitch nuance (“what happens between the notes”: angled and curved lines).
3. The marked onset of a pitched sound (the vertical cross-bar of a “rotated T”).
4. Connection between the end of one pitched sound and the beginning of the next (the vertical lines connecting notes “articulated in a distinct but legato manner”).

One wonders whether this is too much for a single sign (black line, in horizontal, vertical, and other orientations) to denote, especially as these different meanings can interfere with each other. In Figure 1, vertical bars (meaning 3) and connecting lines (meaning 4) can obscure the onset of pitch nuances (meaning 2) at the start of the following note (see especially the beginning of the syllable “*nā*” at beat 7). Since only the first two meanings define audible sounds, it might be sensible to adopt a different kind of line (thinner?) for meanings 3 and 4. This might then reduce the rather cluttered and angular appearance of examples like Killick’s (2020, 251) Figure 7a, where what the listener experiences is primarily a succession of “horizontal” pitched sounds. Thinner (or grey?) lines distinguishing glides and ornaments from scalar pitches might also denote better the cognitive distinction between categories and nuance.

CONCLUSION

Let me zoom out again from these details to some fundamental features of the GN system. First, it is primarily a descriptive system, intended to represent aspects of a specific performance, not a prescriptive blueprint for performers to play from (though it could serve that purpose, too; Seeger 1958). Second, it is an iconic system, with some symbolic aspects: it represents, not the sound wave alone, but the sound wave as perceived by a culturally

informed listener. Third, the structural aspects of the musical system and granularity of detail represented are variable according to the characteristics of the musical style and the aims of the transcriber. Thus pitch nuance can be represented in addition to basic pitch categories if this is an important feature of style. The same could be true of rhythmic nuance, although below the beat level, durational categories are not directly represented in GN (enumerating beat subdivisions above the grid may not work well for complex polyrhythmic or polymetric textures).

Fourth, GN represents the listener's experience. Killick's incorporation of the sound wave in GN, in combination with standard notation of pitch categories, ingeniously represents both acoustic and cognitive aspects of "what the listener actually hears"—both categories and nuance (Killick's [2020, 269] Figure 12b). One should be aware, however, that a spectrogram may include more detail than is audible—a criticism also of some Kuckertz-style notations transcribed from slow-speed playback—and may not always support one's cognitive understanding of the performer's intention. In Figure 1, for example, the rapid ornaments (*kampit*) in beat 1 and at the beginning of beat 5 are shown as the singer and I initially notated them. The spectrogram was made later and tells a slightly different story, but our initial transcription is not therefore "incorrect." Hearing informed by an awareness of musical grammar and style is more likely to capture the informed listener's experience, and the singer's intention, than is a spectrogram in such cases. As Killick's discussion of the Karnatak vocal example shows, even more complex issues of this kind can arise. But, as always, GN gives one the flexibility to use the most appropriate representation for the task in hand.

For the descriptive transcription of Indian music, I am persuaded that GN offers a promising alternative to those hitherto available (and its application to *tablā* and other percussion music remains an intriguing area to explore). Indian musicians sometimes lament what they see as the lack of a satisfactory notation for their music; whether they will find GN suitable for their largely prescriptive purposes remains to be seen, but its internal logic, not dependent on any colonial musical system, and its adaptability will surely appeal. Meanwhile I look forward to an efflorescence of GN varieties developed for different musical systems and analytical purposes, all of which will hopefully remain cross-culturally comparable through their adherence to the basic principles of the system. The "Killick solution" is a strong candidate for addressing what is perhaps the longest-standing problem in ethnomusicology.

REFERENCES

- Killick, Andrew. 2020. "Global Notation as a Tool for Cross-Cultural and Comparative Music Analysis." *Analytical Approaches to World Music* 8(2): 235–79.
- Kuckertz, Josef. 1970. *Form und Melodiebildung der karnatischen Music Süd-Indiens*. Wiesbaden: Otto Harrassowitz.
- Sanyal, Ritwik, and Richard Widdess. 2004. *Dhrupad: Tradition and Performance in Indian Music*. SOAS Musicology Series. Aldershot, UK: Ashgate.

Seeger, Charles. 1958. "Prescriptive and Descriptive Music-Writing." *The Musical Quarterly* 44(2): 184–95. <https://doi.org/10.1093/mq/XLIV.2.184>.

Widdess, Richard. 1994. "Involving the Performers in Transcription and Analysis: A Collaborative Approach to *Dhrupad*." *Ethnomusicology* 38(1): 59–79. <https://doi.org/10.2307/852268>.

© 2021 by the author. Users may read, download, copy, distribute, print, search, or link to the full texts of this article without requesting permission. When distributing, (1) the author of the article and the name, volume, issue, and year of the journal must be identified clearly; (2) no portion of the article, including audio, video, or other accompanying media, may be used for commercial purposes; and (3) no portion of the article or any of its accompanying media may be modified, transformed, built upon, sampled, remixed, or separated from the rest of the article.