Response to "Global Notation as a Tool for Cross-Cultural and Comparative Music Analysis"

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ALTHOUGH (many years ago) I received a minor in ethnomusicology, and have a keen interest in cross-cultural and comparative music analysis, I am likely not the target audience for Andrew Killick's "Global Notation as a Tool for Cross-Cultural and Comparative Music Analysis." I note with pleasure the expanded application of music analytic techniques to new areas, genres and audiences, but remain at heart a relatively traditional analyst who works primarily with contemporary art music. Yet for precisely that reason, I may be able to offer a sympathetic reading of Killick's method, given that my steadfast reliance on the "chronic solution" of traditional staff notation has wavered when faced with not only cross-cultural analysis but also examples of recent music whose sonic reach outstrips the ability of staff notation to register its most salient and structurally important elements.

Killick's "global notation" is the culmination of many years of work, and represents an efficient yet comprehensive attempt to craft a universal notation system for the transcription and analysis of all musical sounds. The essay lays out a brief history of those attempts which informed Killick's model, and notes the pros and cons of various other systems employed, various adaptations of conventional Western staff notation among them. Jason Stanyek calls transcription "a very specific mode of performance," a performance informed by thirteen perspectives on transcription—from the renunciation of perfection to sensitivity to context— that have become axiomatic for modern scholars (Stanyek et al. 2014, 101–103).[1] In Killick's view, most ethnomusicologists still follow Otto Abraham and Erich M. von Hornbostel's 110-year-old guide to adapting such notation. Were Abraham and Hornbostel to have attempted a universal notation system rather than urged such compromise, posits Killick, we might have something similar to the Sachs-Hornbostel system of instrument classification, a system capacious enough to contain new and evolving instruments. Killick surveys the Hipkins, Seeger and Laban "solutions," all of which seem to meet particular needs, although Killick's system appears to have been most inspired by the more universal aspects of Laban.[2] As he notes, the various systems designed for specific traditions risk suggesting that the music they describe is "incommensurable," not amenable to comparison or contrast (more on that point below).

Killick credits inertia as stifling the lack of notation alternatives, but the task remains daunting. What would it mean to build a musical equivalent of the International Phonetic

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1. These are derived from the "monument" constituted by four transcriptions of the same musical text published in an early volume of *Ethnomusicology*, the "Symposium on Transcription and Analysis: A Hukwe Song with Musical Bow" (England 1964).
2. These three systems are briefly discussed in Grupe (2005).

Alphabet for speech? One sensitive to any sonic information, but capable of honing in on that information most pertinent to the analytic task at hand? Such a notation should be consistent and not too difficult to learn. This may mean an extreme specificity in some parameters (say pitch or timbre), while others such as duration may be left unspecified, represented with proportional values. Hence "global notation" allows different degrees of granularity and potential uses beyond transcription, as a possible guide to composition and performance in cross-cultural situations. The present article argues only for the efficacy of global notation with respect to music analysis, with the analyst in the role of listener (identified with the semiotic aesthesic level), although Killick acknowledges the "poïetic" function of notation written from the viewpoint of the composer/performer. Global notation combines scientific measures of pitch and tempo with empirical translation of pitch and duration on an annotated grid. It thus can respond, as Agawu notes, to quantitative or qualitative "economies of expression" (2006, 12).

Killick demonstrates global notation's reach with an analysis of the Adagietto from Mahler's Fifth Symphony—a phenomenological portrait of the score, divested of any foreshadowing regarding tonality or meter—and a pitch and duration graph of the subject of a Bach fugue, one that requires the listener to shift metric interpretation as voices are added. These examples respond to specific analytic prompts: the listener's experience of ambiguous tonality in Mahler and shifting meter in Bach. Yet the heart of Killick's project is its promise as an analytic technique allowing true cross-cultural work, such as that engaged in by Michael Tenzer, in defiance of those who question whether cross-cultural comparison is valid for any dimension of music (Fox 2020, 35).

As proof of concept Killick renotates examples from Michael Tenzer's comparative analysis of temporal augmentation in Baroque, Karnatak, and Balinese music before extending his discussion with a demonstration of how Seeger and Hipkins Solutions combined with global notation might influence the analysis of South Indian vocal music. While it makes perfect sense to adopt a value-neutral (with caveats) approach to notation intended to compare and contrast works from different traditions, Killick's transnotated version of Tenzer's Bach fugue ends up looking somewhat like one of Stephen Malinowski's animated graphical scores (although it must be said that Malinowski's version of this score takes a more fanciful approach than most of his fugal animations).[3] Killick avers that global notation's focus on relative pitch and temporal unfolding over time often obscures the identity of functional harmonies (a topic discussed further on his website). The temporal structure, layered melodies and fixed tuning of Balinese gamelan make it a natural fit for global notation, but still tend to obscure the background scale structure. In the case of the *varnam Jalajaksha*, global notation greatly simplifies the relations of diminutional variations with the original melody.

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3. Malinowski's score of Bach's Prelude and Fugue in C minor, Well-Tempered Clavier Book II (BWV 871): https://www.youtube.com/watch?v=TKP79yTmiQg&list=PL81D26D4A47388279&index=213&t=0s.

Killick's examples suggest that it is fairly easy to assess the pros and cons of global notation versus some kind of augmented staff notation. As Tenzer notes (cited by Killick), for many the familiarity of Western staff notation compensates for its faults, and asserts the value "of notational literacy as a potent means of imagining, knowing, comparing, and emulating sounds and sound-structures" (Tenzer 2006, 4). Kofi Agawu (1995, 392–93) acknowledges the political dimension of Tenzer's argument when he considers the institutional power accorded to African (or—by extension—any music) encoded in Western notation. The long tradition of staff notation rests on implicit assumptions and epistemologies of music, which both obscure or marginalize many aspects of composition and performance (spectral information, articulation, non-standard durational units, et al). Yet the same notation illuminates the history and deep structural hierarchies of the music it was built to express and enable. Killick's straightforward assertion that "global notation seeks . . . the ability to make and understand, as easily as possible, statements equivalent to 'The organization of these sounds is this'" rather than "The organization of these sounds is *like* this, but different in these ways'" (2020, 000) belies the way every transcription rests on implicit assumptions regarding the relation of graphic to sonic symbols. Even the extremes of Seeger notation afforded by machine transcription are typically driven by algorithms shaped by commercial, cultural and task-dependent criteria.[4]

Killick cites Nicholas Cook, who notes that "the pattern of what is determined by notation and what isn't, what is to be taken as given and what is a matter of performance interpretation, is one of the things that defines a musical culture" (Cook 1998, 63). *Analytical Studies in World Music*, edited by Tenzer, is a test case in this regard. In his review of the book, Kofi Agawu (2008, 415) sees as crucial the question of whether a given transcription attempts to preserve a specific performance or a work in general. In that volume, a great number of authors combine various forms of existing notational traditions, whether indigenous or as modified forms of Western traditions that have become central compositional and performance tenets in the musical tradition under review. At one end are specific notational features imported from outside the tradition which cannot be separated from it, as when Stephen Blum (2006, 43) essays a musical genre of Northeastern Iran, Nava'i, which relies on a system of quantitative rhythmic syllables derived from those used by Arabic prosodists. In the middle are traditions which encompass various forms of notational and theoretical literacy, as noted in the chapters on flamenco and horo. In analyzing one flamenco *cantes*, Peter Manuel (2006, 117) must contend with inherited flamenco traditions bound up with conventions that vary by instrument, ethnicity, class, and training. Donna A. Buchanan and Stuart Folse (2006, 61–63, 84) specifically investigate the way modern fluency in music notation affected the structure and content of Bulgarian *hora*, even in their improvised forms.

The authors noted above attempt to give the reader a general sense of each tradition as it stands now, yet the vast distance that separates indigenous notation from the vagaries of its

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4. See the recent advances outlined in Mor, Wolf, Polyak, and Taigman (2018) and Sturm, Santos, Ben-Tal, and Korshunova (2016).

realization often determines the form of a transcription. Killick cites Agawu's characterization of such oral traditions and meta-musical discourses as a "supplement" that analysts habitually attempt to resist or eliminate by employing "descriptive notation" (Agawu 1995, 390). In Agawu's view, such thick description is inherently prescriptive by nature, and demotes the creative role of performers or interpreters. Yet were we to follow the Derridean logic of supplementarity, we would approach the question of thick description differently. Rather than propose transcription as a pale record of the original, only fully realized by appending its attendant oral tradition, such a logic would flip that relationship. Descriptive notation would function as the initial supplement, as a written supplement that both augments and alienates the knowledge contained in the "missing" oral tradition. From this vantage point the written attempt to substitute for a missing originary knowledge does not hasten its loss but suggests instead the necessary co-dependency of written and oral forms.[5]

We can see this logic at work in those *Analytical Studies in World Music* chapters on Javanese and South Indian music. The cipher notation used in Javanese Gamelan music—more abstract than Western staff notation—serves merely as an aide-mémoire to the full realization of a work. Similarly, a slightly more detailed but by no means notationally accurate indigenous notation aids the South Indian improvisor. This gulf between written theory and the full expression of a work leads R. Anderson Sutton and Roger R. Vetter (writing on Javanese Gamelan) and Robert Morris (on South Indian Classical music) to attempt a Western staff-based transcription of but one particular performance of a specific work (Sutton and Vetter 2006; Morris 2006).[6] We might follow the logic of the supplement further by noting that both Javanese Gamelan and South Indian music have an extensive metatheoretical literature that relates pre-compositional theory to performance, an analytic reception history that cannot help but inform transcriptions within these traditions, and against which global notation or some variant would form a further supplement.

Killick's final analysis is based on a further example of Classical Indian vocal music in the Karnatak tradition. He proposes to replace the step or note representation of pitch melodies with lines, referencing the AUTRIM project to analyze 86 North Indian ragas accompanied by computer-generated pitch-time graphs (representing the so-called "Seeger Solution"). The Praat software developed for linguistic transcription captures the structural embellishments and continuous flow of such a melody—here *Jalajaksha* as performed by Mysore Nagamani Srinath—in a more nuanced way. The embellishments (*gamaka*) that are central to the tradition are addressed specifically by the Hipkins Solution, which annotates the underlying *sargam* syllables in *Jalakjaksha*. As Laban notation locates the body in space, so further annotation shows the relation of anticipatory gamakas to both their arrival pitch (it

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5. Stanyek proposes that its overdetermined nature marks transcription as a form of allegory (Stanyek et al. 2014, 108).

6. This is the strategy pursued by Martin Scherzinger, who notes the paradox that Western staff notation—in a purely visual sense—is more suited to Shona Mbira than to Western music because of its apparently equal interval structure. Yet this correlation—as with Javanese cipher notation and the Karnatak Varnam—represents but "a fleeting aspect" of the music as played (Scherzinger 2001, 51).

should be noted that embellishment in Balinese gamelan works in a similar fashion), and where gamakas merely imply an underlying "structural" pitch. A Laban Solution forms the fourth branch of Killick's "Composite Solution," in which global notation operates as a kind of background layer from which the analyst might select elements that are further structured by melographs/spectrograms, the incorporation of traditional score or performance notation, and annotation distinct to the spatial disposition of both the score and its accompanying instruments or singers.

As a pluralist, I welcome any and all attempts at expanding the analytic tools at our disposal, while acknowledging that all methods of transcription and translation have ethical impacts, as outlined by Muriel Swijghuisen Reigersberg (2014). Killick fully appreciates that notational reform along the lines he proposes would be long-term and likely sporadic, and would be greatly aided by a computer graphic program conceived for such a purpose.[7] Scholars must be sensitive to the implications of both verbal and graphic descriptions, and careful about the conclusions they draw from analyses of music outside of their cultural purview. I see possibilities for global notation beyond the analysis of traditional music, but am skeptical about wider adoption, given the wide variety of ad hoc solutions that populate the pages of this journal.[8] I hope that analysts visit Andrew Killick's interactive site and add comments and experience from the field. I will be avidly following their progress.

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7. Although its inner complexity and comparative difficulty to master place Lasse Thoreson's work at odds with the goals of global notation, I would have liked to see a consideration of Thoreson's Aural Sonology, as detailed on his website (http://www.auralsonology.com/), and in writings such as Thoreson and Hedman (2007; 2015). Programs for the explicit purpose of analyzing electroacoustic music such as Pierre Couprie's Eanalyse also offer a suggestive example (http://logiciels.pierrecouprie.fr/?page_id=402).

8. And beyond: Mark Hiljeh, in *Towards a Global Music Theory*, declines to deal with the thorny issue of "which symbolic and conceptual language might be most appropriate for presenting a global music theory," defaulting to Western notation for convenience (2016, 10).

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