

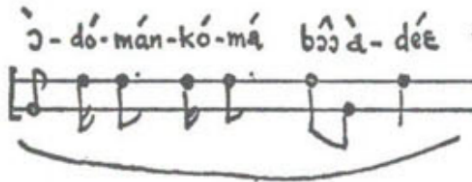
## Akan tone encoding across surrogate modalities

Musical surrogates of African tone languages almost universally base this surrogacy on tone (James 2021). Crosslinguistic work has revealed interesting differences in the levels at which tone is encoded (McPherson 2018, Akinbo 2021, Struthers-Young 2021, among others). However, fewer studies have compared tone encoding across multiple surrogate forms in a single language. This talk aims to fill this gap by comparing tone encoding strategies in three Akan speech surrogates: barrel drums (*atumpan*), horns (*ntahera* and *mmentia*), and a lute (*seperewa*). Though all three traditions have been previously described, most of this work is ethnomusicological, and questions of tonal encoding have not been approached systematically either within a tradition or looking across all three.

Akan contrasts High and Low tone (Dolphyne 1988, Abakah 2000, Genzel 2013, etc.), with tone playing a considerable role in both lexical and grammatical distinctions. In addition, downstep can arise both lexically and grammatically. The goal of this research is to determine to what extent lexical, post-lexical, and grammatical tone are encoded on the three instruments, and to determine how each instrument deals with downstep.

*Atumpan* consist of two barrel drums, with two distinct pitches. Nketia (1963, 1971) describes the speech mode of *atumpan* drumming as encoding the two base tones of Akan (H and L) through the two drum pitches in a one-to-one manner. With only two pitch levels available, downstepped H is played simply as H, as shown in the following example from Nketia (1963):

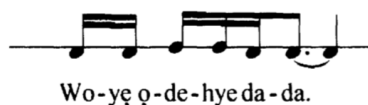
- (1) òdómánkómá bôò à-dée ‘the creator created things’



H tones are all played on the higher note, while L tones (including as part of the falling contour tone) are played on the lower note. The final H tone, which is pronounced with automatic downstep in speech, is encoded at the same level as all other H tones.

The *abentia*, one of two types of Asante ivory trumpets, likewise produces two pitches, which we would expect to map to H and L tones like the *atumpan*. However, examples drawn from Kaminski (2008) show interesting divergences between tones and trumpet notes, as shown in the following:

- (2) wóyè òdéhyè dàdà ‘you are of ancient royal blood’



The bold-faced syllables show misalignment of tone and music; such mismatches are bidirectional (initial H tone played low, and a later L tone played high).

Finally, the *seperewa* lute demonstrates surrogate abilities, though it is not the primary function of the instrument. Interestingly, even though the instrument has a heptatonic tuning (Nketia 1994), it uses only two for surrogacy. Preliminary data suggest that its tone mapping is closer to that of the *atumpan* than the *abentia*, perhaps using two strings to imitate the two talking drums.

In this talk, we discuss the results of a study designed to systematically test tone encoding across surrogate modalities, with the same set of proverbs recorded on all three instruments. These results allow us to tease apart the effects of organology and cultural usage on how musicians encode their speech tones in musical form.

## References

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