Abstract: Historically, Ethiopian sacred Christian chant may offer unparalleled insight into the human progression of oral to written cultures. Additionally, it has the potential to offer scientists a new perspective on the structure of memory and the needs of a culture for both music and a method for communicating it. In addition to expanding our knowledge of eastern Africa, it has far-reaching repercussions in the fields of music, epic poetry, medieval history and human memory.

The musical notation of Ethiopian sacred Christian chant, of both antiquity and modernity, offer unparalleled insight into the human progression of oral to written cultures. There is much to be explored in the history and structure of the long-neglected study of Ethiopian chant, and in addition to expanding our knowledge of eastern Africa, it also has far-reaching repercussions in the fields of music, epic poetry, medieval history and human memory.

Historians have reached a broad consensus that oral and written traditions complemented one other to varying degrees from the ninth through the twelfth centuries. Written document supported or reinforced ongoing oral traditions without replacing them, and oral communication played a central role even in literate communities (Boynton 2003:99).

Even in its contemporary use, it is in this space of understanding that Ethiopian chant notation exists—as a supporting text for highly trained musicians to refer to, as a bridge between memory and performance.

Functionality & Usage
Ethiopian musical notation is not notation as most of the contemporary western world thinks of it. Even in it’s currently used form (as studied by Shelemay, et al. 1993), it does not define pitch or even a melodic landscape as one trained in reading European music would expect. The notation functions instead as a roadmap through the existing fragments of memory already present in the mental
vocabulary of musicians. In this system a portion of the verse intended to be sung (doğgwa) is assigned a molokkət, or a sign, notated above the text. These signs consist of one or more fidel of the Ethiopic syllabary. Molokkət are the “minimal structural unit” of the notation and are associated with small portions of music that are learned in a musicians training (Shelemay, et al. 1993:62). As the singer goes through the text, these small links are strung together to form a chain of more complex melodies. There are also yefidel qərs’ that are placed above or below the text. The ten yefidel qərs’ are a set of non-fidel symbols that notate aspects of performance.

Yefidel Qərs’

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Fig 1 (Shelemay, et al. 1993:64)

Even in contemporary western music, most musicians make notes about form and contour (fig. 2) that can be “meaningless for those who know little about… techniques” (Miyakawa 2007:85). However it is important to note that unlike a personal notation system, the Ethiopian system contains a proven “shared core of notational and performance practice that transcends individual knowledge and schools of training” (Shelemay, et al. 1993:62) and from most studies seems to show a remarkable consistency from approximately the sixteenth century to the present time. It is the not the shorthand of an individual, but a longstanding system of a culture.

The 558 notational signs in Shelemay’s study of modern usage are divided into three modes; sōlt, zema, and eraray. There are an additional 115 bet that are sometimes placed in the margins of a text, these are fidel-based signs that refer to the family of the melody within the mode. There are several other aspects of the notation system that are present in its modern form, such as medgam which signal other performative aspects like instrumental accompaniment.

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Individual musicians notation

In order to study the evolution of such a system “we must try to think ourselves outside of our own habits of musical thought and practice” (Treitler 1974:132). The musician using this notation is trained not in “reading” musical notation note by note, but in knowing small fragments of music, which are associated with symbols. Much like full-word recognition in a language, with enough study these music fragments are committed to long term memory and serve as puzzle pieces that are freely available for assemblage into longer compositions according to a framework of rules.

Unfortunately having only resided in the learned memory of the musicians, much of the pitch and contour information of the music of antiquity is lost to time. Like European nuemes of the middle ages, “The oral tradition would complete the information in the manuscript” (Boynton 2003:107). However, studies of contemporary use of the notation can provide valuable clues as to the practical use, and in some cases the sound, of Medieval Ethiopian chant.

Shelemay’s study of twentieth century chant tradition in Addis Ababa is particularly encouraging. While issues of continuity must be acknowledged and care taken to clearly differentiate the system, modes, and musical pieces in use today with those of antiquity there are some clear correlations that can be made. Shelemay acknowledges issues of continuity; “the twentieth-century transmission of the chant tradition in Addis Ababa has served both to standardise and to normalise surviving oral tradition, while encouraging increasing notational detail” (1993:117) but one can still “witness many of the same processes of oral and written transmission as were or may have been active in medieval Europe” (1993:55).
Fig. 3: In this example (Psalter: 98rb), from approximately the seventeenth century, we can see the use of notational symbols above the text as well as a selection of yɛfidɛl qərs marks (some highlighted).

If we are to assume a progression similar to that of European chant and notation, it is likely that the Ethiopian system of notation has become more complex over time, possibly with more symbols and more segments of music available to the practitioner. It is also likely that a wide regional variance may have become more standardised over the ages. In a cursory examination of the yɛfidɛl qərs in the seventeenth century “Wǝddase Maryam with musical notation, arranged for the days of the week” (Fig. 3, Psalter:98rb) there seemed to be a common use of yozat, with occasional use of dafat, rəkrək, & deret, and qonat in it’s ‘S’ shaped form. enbor and qərt’ were absent, while dərs was difficult to differentiate from the mələkkət notation due to the age and style of the manuscript. There were also a small selection of margin notes that were likewise inconclusive, though the placement seemed to match that of Shelemay’s bet modes. Much more study into this area is needed to form any serious conclusions as to the evolution, progression, and possible phrasings assigned to different texts using the mələkkət and yɛfidɛl qərs notation.

Extensive research has made it possible to follow the progression of European notation in fairly clear steps from the standardisation of Christian liturgies following the crowning of Charlemagne in 800 to the codification of the present western notation by the end of the seventeenth century (Apel 1961). Complicating matters of analysis is the scribal replication process used in Ethiopian texts (as in many hand written texts). It is likely that while a manuscript may be physically dated to a certain era, the content may have been copied several times from earlier versions without intentional changes. It’s important to note that by the time of the writing (or copying) of the above-referenced manuscript—and the vast majority of similar notated manuscripts
available—European notation had nearly reached its standardised mensural notation form. Considering it’s importance in the codification of church documents, the European notational style had no doubt reached Ethiopia in some form throughout its evolution. The fact that European notation was specifically not adopted at any point suggests a strong utilitarian, cultural and perhaps religious connection to malakkat notation.

Oral History & Memory Models
Musical practice of this sort, at any point in history, plays on a memory model called “chunking.” Chunking, in it’s simplest form, explains that the human brain finds small groups of things more easily memorable than many individual items. It’s the reason we may instinctually phrase phone numbers into groups of three or four, or break up sixteen digit credit card numbers into groups of four. Any sequence longer than seven digits is less likely to “stick” in human memory. Chunking is applicable to items stored in short and long term memory, but is highly useful when converting items from Short Term Memory (STM) to Long Term Memory (LTM) (Berz 1995:356). Long term memory is usually a string of chunked smaller items, that are combined according to rules that are similarly chunked in small sequences. “To overcome the limitations of STM capacity, a listener presumably would have to chunk information or use some other type of LTM strategy. The listener must draw on previously learned material or on syntactical rules presumably held in LTM” (Berz 1995:356). W. J. Dowling noted that like numbers, chunking also happens in memory for short tone sequences (1973:39). As trained musicians have a variety of experiences with different short musical sequences, they have more long term chunks of information to draw on, which creates an exponential use of smaller-to-larger bits of information “allowing more efficient LTM strategies to be applied in order to chunk information so that storage can be increased” (Berz 1995:357). A 1977 study showed that trained musicians had improved memory for short melodies. This is attributed to the ability of musicians to reference richer musical examples from long term memory (Long:272). Following on that, those trained in music have been shown to be better at chunking musical elements than those who are untrained suggesting that those who are musically trained “are calling on LTM strategies developed through training” (Stoffer 1985:212).

However, there are limitation to sequencing both in long and short term memory. This is true in general memory as well as in performance memory (Palmer 2005:248). To overcome this memory limit, rules can be applied to short bits of information. Orally transferred music, like spoken language, can be assembled according to fixed rules that will structure it in a way that makes sense, if not reconstructing longer pieces verbatim.

As our scholarly habits have been conditioned by the study of texts, our recourse in their absence has been the concept of memory as a medium of storage comparable to a score: things are committed to
memory whole, and there they lie fixed and lifeless until they are retrieved whole. We say that the singer has memorized a melody as though we might be saying that he had swallowed a score. Modern psychology tells us that this is an unrealistic view of the process of remembering. In a classic of the field Frederic C. Bartlett has written that remembering is a process not of reproduction but of reconstruction. (Treitler 1974:344)

Orally transmitted, or minimally notated works of music then can be seen not as fully memorised pieces but an almost mathematically structured improvisation in which two plus two always equals four, providing the person reciting it is trained to do the calculation. Using this framework we can see the potential for application in the analysis of medieval Ethiopian musical texts, as it clearly uses chunks of musical information that have been committed to long term memory. Like Homeric oral poetry,

They fall into smaller groups of phrases which have between them a likeness of idea and words, and these in turn fall into groups which have a larger pattern in common, until the whole diction is schematized in such a way that the poet, habituated to the scheme, hits without effort, as he composes, upon the type of formula and the particular formula which, at any point in his poem, he needs to carry on his verse and his sentence. (Parry 1932:6)

Ethiopian chant then, can be said to be formed and recollected in repeated and phrased musical tones in the same manner as Homeric poetry may have been formed with repeated and phrased words. “If the singer has accumulated a repertory of standard formulas, each serves him when his knowledge of theme and formulaic system calls for a phrase of its characteristics” (Treitler 1974:356). Parry suggests the Homeric bards would “impart a set of formulaic rules and constraints that allowed the bard–any bard–to reconstruct the poem each time he recited it” (Foer 2011:128). While it would require a significant amount of additional scholarship, it is entirely plausible that early Ethiopian liturgical chant may have been structured in the same manner.

In what has come to be known as the Parry-Lord formula, Milman Parry and Albert Lord defined a structure for oral narrative applicable to Homeric poetry which has been applied to, among other subjects, oral traditions in Africa (Finnegan 1970; Opland 1975), forms of music such as jazz, blues and hip hop (Gillespie 1991; Pihel 1996), Balkan oral poetry (Parry 1933) and Jewish recitation of the Torah (Foer 2011:142). Kebede (1980) notably theorises a link between the Ethiopian Jewish (Falasha) canting tradition and the methods of Ethiopian Christian chant and notation which have yet to be fully explored. Analysing Ethiopian chant in relation to a Parry-Lord formula may likewise provide interesting insights into the chant structure and memory models used to construct it.
Making Comparisons

It is worthwhile to note some of the similarities and differences between Ethiopian and Roman chant notation in particular. A vast amount of research has been done on the subject of Gregorian and Roman Chant from the early to Middle Ages. Current scholarship on eleventh-century European chant shows marked parallels with Ethiopian chant in organisation of the music-text relationship. In an expanded example of the Ethiopian style, individual melodies were used for several different portions of text, often the replication occurs with texts that are different in form but share similar meter or liturgical positions. In some instances only one of these similar texts is accompanied by musical notation, because it was assumed that the musician would know where to overlay the music in practice (Boynton 2003:105).

For example, an individual melody might be associated with Matins by being sung with four or five different Matins texts, with virgin martyrs because it was sung with texts for feasts of several different saints in that category, or with several different texts in iambic or sapphic meter... A trained singer would have internalized the principles by which to associate these melodies with other texts. (Boynton 2003:105-106)

Eleventh century European manuscripts tend to contain frequent text-melody overlap so that “a relatively small corpus of melodies” (Boynton 2003:107) applied to the performance of a much more varied text tradition. As the chant tradition moved into the twelfth century the music-text pairs grew so that eventually each melody had fewer applicable text matches, sometimes even progressing past a text-melody balance so that some texts actually had more than one melody that was applicable to its performance (Boynton 2003:107).

In 1974, Michal Huglo proposed looking at European chant history in three stages: “the epoch of pure oral tradition based on ‘memorization,’ a mixed stage in which memorization is supported by neumatic notation, and the epoch of the written tradition in which diastematic notation made possible an independence from the oral traditional.” Scholars of medieval music history may find this an oversimplification, as with most historical changes the process occurred in a gradient that defies a pure definition of time or location (Treitler 1974:371). However, Huglo’s stage definitions give us a convenient starting point for looking at the ways in which Ethiopian chant styles may have progressed through the centuries. As Shelemay stresses, we have “only scraped the surface of Ethiopic chant, which is in almost every way a subject as vast as Gregorian chant.” (1993:113) While solutions may differ, the limits and structures of the human memory are common the world over; as we look further into the chant history of Ethiopia and it’s methods and rules of notation it will no doubt shed additional light on aspects of all three of Huglo’s stages of European chant as well.
There are several frameworks for examining such a complex subject, each with its highlights and potential pitfalls. As with any cultural comparison of innovation, one must be careful in making assumptions about “origins” or “best” practices. Each population relies on and innovates the practice appropriate only to itself and that practice is likely to change over both time and space. It is worth noting that Shelemay’s study highlights the observation that the contemporary styles and methods of written and oral transmission of Ethiopian chant notation are not the same as either medieval Europe or even the Ethiopia of previous centuries. It would be an unfortunate Eurocentric error to see any African practice as either “frozen in time” or specifically influenced by European practices at all. As Shelemay notes, it must be seen “in a specifically Ethiopian context and reflects particularly Ethiopian values concerning orality, flexibility and authority” (1993:117).

However, there are also multiple examples of stylistic cross-cultural exchange throughout history, especially in the realm of Christian art and practice, both to and from the Ethiopian church to other parts of the medieval world. One can see this overlap perhaps more readily in the art world, in cases such as the adoption of the Santa Maria Maggiore style of painting, said to have originated from an Italian engraving copied from an icon in Rome's Basilica of Santa Maria Maggiore and introduced by Jesuit missionaries to Ethiopia early in the 17th century (Vansina 1984:116). It was then adapted and interpreted in a uniquely Ethiopian Christian style and has become its own icon of Ethiopian Christianity. Keeping cross-cultural exchange of this kind in mind, it will be equally important in the future study of both European and Ethiopian plainchant to promote a non-siloed view of each culture as a practicing separately and distinctly from all others. In contrast, but equally worthy of acknowledgment, there is something to be said for the theory of concurrence, in which human innovation occurs in different places at relatively the same time, in very similar ways. Readily documented in more recent instances (Gleick 2011:169) but probably occurring throughout human history, a concurrence view could tell historians and scientists much about the structure of memory and the needs of a culture for both music and a method for communicating it.

“The value of Ethiopian chant to comparative studies may lie in the portrait it provides of a highly constrained, notated, literate, yet orally transmitted repertory” (Shelemay, et al. 1993:117) It is likely we will never know the complete evolution or full historical use of Ethiopian liturgical musical notation, but we can be certain that there is still much to be learned which will have impacts in many different areas, both inside and outside of Ethiopian history.

References


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