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4th International Conference on new Music Concepts

(ICNMC 2017)

Michele Della Ventura
Editor

Preface

Welcome to the proceedings of the Fourth International Conference on New Music Concepts (ICNMC2017) held from March 16 to 17, 2017 at Palazzo Rinaldi, Treviso, Italy. International Conference on New Music Concepts is the annual conference organized by the Music Academy "Studio Musica" of Treviso (Italy) that is affiliated with Conservatorio di Musica “Benedetto Marcello” of Venice.

The goals of the Conference are to foster international research collaborations in the fields of theoretical, experimental and applied Music Studies as well as to provide a forum to present current research results in the forms of technical sessions, round table discussions during the conference period in a relax and enjoyable atmosphere.

47 papers from 21 countries were received. All the submissions were reviewed on the basis of their significance, novelty, technical quality, and practical impact. After careful reviews by at least three experts in the relevant areas for each paper, 12 papers from 9 countries were accepted for presentation or poster display at the conference. These papers are from countries including Belgium, Egypt, Italy, Portugal, Romania, Thailand, Turkey, UK, USA. They are classified into 7 parts in the proceedings which are e-Learning and Music, Ethnomusicology, Mathematical Models in Music, Music Cognition, Music Education, Music Perception, Signal Processing.

Besides the regular paper presentations, the program of the conference included two interesting and insightful keynotes addressed by Prof. Luca A. Ludovico (Università degli Studi di Milano, Italy), and Prof. Steven Jan (University of Huddersfield, UK). We would like to express my special thanks to these two keynote speakers.

The conference also provides a suitable environment for discussions and exchanges of research ideas among participants during its well-organized post conference. Al-though we will present our research results in technical sessions, participate in round table discussions during the conference period, we will have extra and fruitful occa-sions to exchange research ideas with colleagues in this relaxed and enjoyable atmo-sphere.

I want to take this opportunity to thank all participants who have worked hard to make this conference a success. Thanks are also due to the staff at ABEditore (Milan -Italy) for their help with producing the proceedings. I am also grateful to all members of Organizing Committee, Local Arrangement Committee and Program Committee as well as all participants who have worked hard to make this conference a success.

Finally I want to appreciate all authors for their excellent papers to this conference.

I wish you all a fruitful conference and hope you will enjoy ICN2017.

March 2017 Michele Della Ventura

Conference Chair

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Embodied Music Making in Dagbon Society

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Abstract. The paper focuses on corporal articulations and embodied expressions in the music making in *Dagbon* society, and how the traditional idiom interacts with the urban idiom of music making. The research draws a special attention to the role of embodiment in cultural transformation processes that change the *Dagbon* society. Among the key elements of embodied music interaction are: the lyrical use of proverbs and how the associated narrative is enacted through the structural aspects of music related to tone, timbre, syncopated rhythms, dances and body movements, phraseology and speech rhythms. Embodiment music interaction is also linked with the African Hemiola Style and "multidimensionality" in African rhythms.

Keywords. Embodied music interaction, transformational processes, Hiplife, The African Hemiola style.

1 Introduction

To illustration our theoretical perspective, we describes the time line of *Dagbon* musical interaction and cultural transformation processes from pre-colonial times to the current local development of a *Dagbon* 'Hiplife Zone', and the emergence of an urban district Dagbani form of Hiplife (a local Ghanaian techno – pop) in the global age. We show how traditional African idioms of music making creatively blend with cross-cultural and cross-musical components that stem from African, Afro-American, Bollywoodisch and Western inspired idioms of music making. Special attention is given to the use of symbols in interaction with music-dance, their relationship to body language, and drum language and how these phenomena are interacting with each other by means of the mental grids/filters of musicians living in particular contexts.

2 Theoretical Discourse on Embodied Music Making

The theoretical concept of embodied music interaction on the music and dance in *Dagbon* we studied assumes that the musical stimulus and the auditory perception of music are ambiguous and that this music is cyclic and has a strong improvisational

character. The theory assumes that the musical stimulus contains both “ternary-duple” and “binary – triple” meter components which are diachronic, meaning that both metric structures can be simultaneously available for embodied music perception.

Meter is regarded as a matrix of beats of different durations and positions within an isochronous time span that recycles repeatedly during performances. Beats flow as steady tempo, shaping musical time into equidurational units that are available to listeners and performers (Locke, 2010).

By moving to music, such as hand-clapping, work movement, or dance the listener can select a binary our ternary pattern in the matrix and listens by means of an auditory filter our “grid”. Gerald Kubik states that there is and “elementary pulsation” in the “grid” our matrix of the performers (Kubik, 2010:31). Kofi Agawu, argued in his late book “The African Imagination in Music”, that some ethnomusicologists and African scholars denies an elementary pulsation our “one” in African music and that they claim that performers and players relay not on the intellect but on “bodily knowledge” (Agawu, 2016: 156). In the *gonje* transcriptions of the field recording in the songbook of Fiddling in West Africa, Djedje Jacqueline presents her transcriptions of Salisu Mahama Gonje with an “oneness” and in a larger section. David Locke, a scholar and expert on Dagomba drumming, speaks of “simultaneously multidimensionality” to captures the complexity of African rhythms whiles Nketia asserts the idea of ‘regulative beat’ (Nketia, 1963, 64) and timeline (1974).

Simultaneously multidimensionality names a condition in which music is coherent from several perspectives at the same time. The perceptual conditions that enable the mind-body cognitive condition are particularly likely to arise in ternary time with music whose phrase are structured within a 3:2 temporal framework. In quaternary time, simultaneously multidimensionality arises from de dualisms between onbeat and upbeats, shifts in status, constant accentuation, changing perception of phrase shape (Locke, 2010). It is just this changing of perception of music that is important for this research and what we refer to as embodiment.

Embodiment music interaction applied to West African music and dance is a phenomenon that meter as a matrix, changing the figures-ground relationship between notes in a sounded phrase and an implicit “grid of beats” has been noted in the 60s by ethnomusicologist Rose Brandel. She named this rhythmical phenomenon the "The African hemiola style” (Brandel, 1961:15), (Nketia,1974: 128), (Stone, 1983:39) (Locke: 2010) The African hemiola style refers to the rearrangement or regrouping of rhythmical patterns based on the play of two and three. It is a combination of two equal sections of duple and triple. It is accomplished without any durational change in

the basic pulse unit our micro timing so that two groups of three can become three groups of two within a “regular spacing”.

The performers/ listeners uses a musical filter that to al large extend is culturally bound, as culture phenomena are learned and involves a mental code which here results in practicing and performed in there local community.

Figure 1. The African hemiola style.

3 The African Hemiola Style

In her book the music of Central Africa, an Ethnomusicological Study, Rose Brandel distinguished two types of African hemiola style, the horizontal and vertical hemiola. The” horizontal” hemiola involves the two-three exchange within larger rhythmical patterns. The change from “ternary-duple” and “binary – triple” meter groupings is accomplished within the grid involving any number of units. The pacing of these binary – triple changes can be of two kinds*, immediate* and *sectional*. The *immediate* type of meter change, occurring within the grid.

3.1 Compound duple meter and triple meter in hemiola style

To explain the African hemiola style, we give examples coming from our own fieldwork. *Nyakboli,* meaning “bad cow” in *Bamaaya* dance is a very good example how embodiment in music performances relates to music and dance in *Dagbon*.

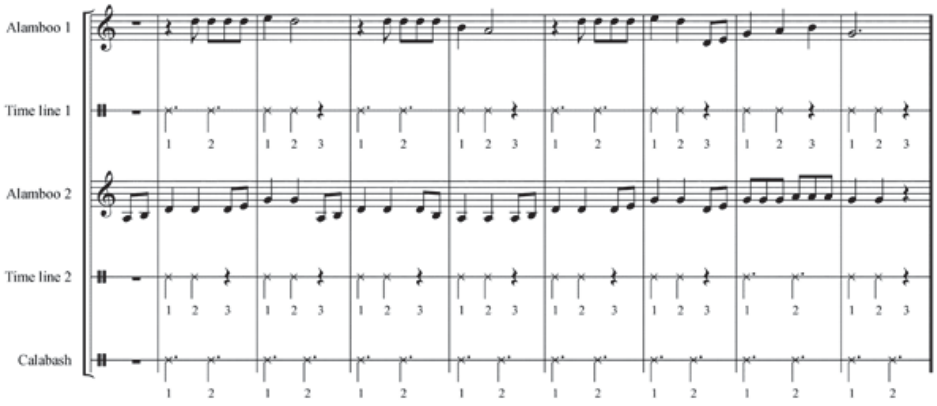

Figure 2. Is showing the multidimensionality of two *Alamboo* melodic ostinato patterns.

Figure 2 shows the multilinear rhythmical organization of two *Alamboo* melodies and the rhythmical simultaneous multidimensionality of these melodic patterns. The first *Alamboo* is notated in a compound duple meter whiles the second *Alamboo* is notated in singular triple meter. The calabash rattle plays a steady timeline pattern and holds the two melodic patterns together by its steady beat. During these performances shifting from one meter to the other occurred in the grid, which is social cultural determent.

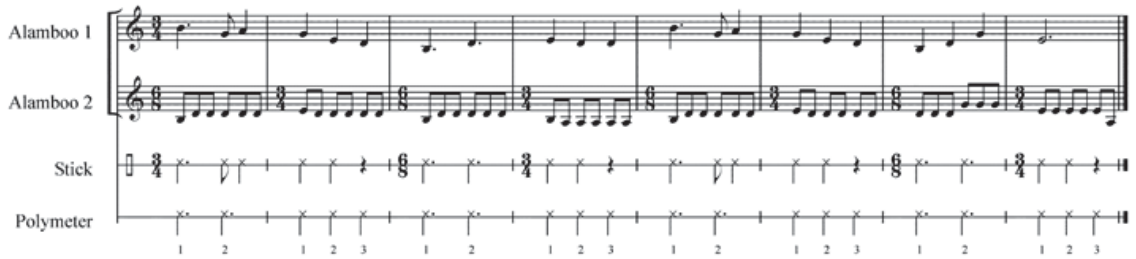

Figure 3. An example of a sectional hemiola style.

The structured of the first melodic *Alamboo* pattern is a combination of two meters, singular triple meter followed by a compound triple meter. The meter of the second *Alamboo* melodic pattern is constant changing from a compound duple meter to a singular triple meter. Normally these kind of melodic patterns are notated within a singular meter. It is given here as an example. The stick plays a sectional hemiola style in a polymetric notation of a compound duple meter and singular triple meter.

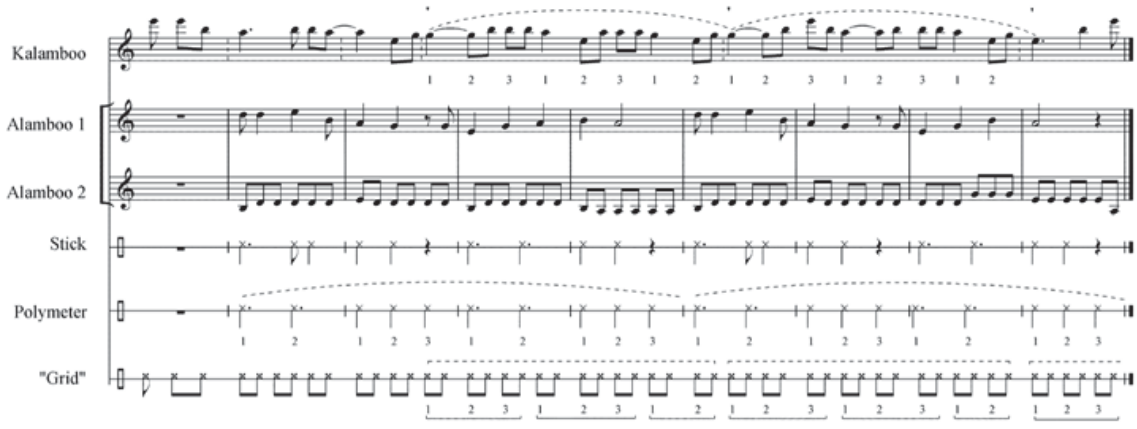

Figure 4. Is showing a combination of an immediate and sectional hemiola style in a Bamaaya *kalamboo* flute melody.

What Rose Brandel names the *immediate* hemiola style is named by the Ghanaian ethnomusicologist and composer Kwabena Nketia as an *additive* rhythm.

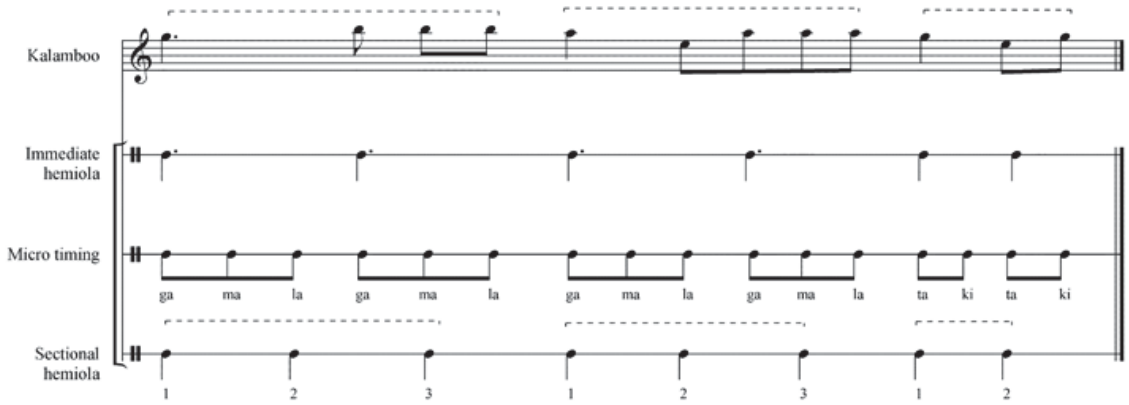

Figure 5. Shows polyrhythmic organization of a ternary-duple meter grouping of a *Bamaaya* melody.

The "vertical" hemiola results from the combination of several parts or lines, each line exhibiting its own particular 2-3 grouping. This vertical polyrhythmic patterns are complex, depending upon the number of vertical lines. Vertical hemiola are found in instrumental, vocal –instrumental and pure vocal combinations (Brandel 1961:16).

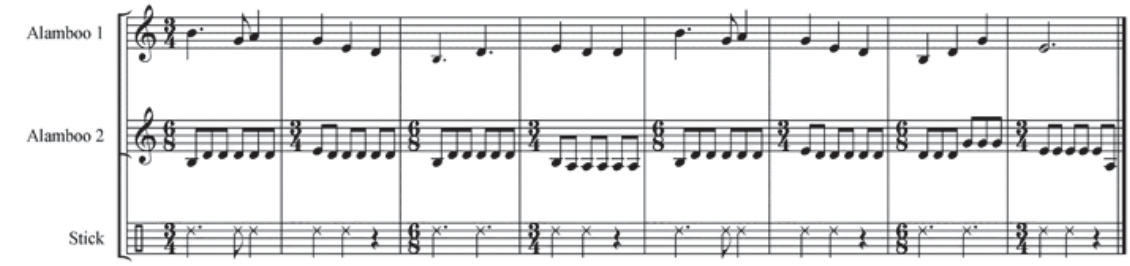

Figure 6. African hemiola style and polymetric structure of the *alamboo* accompaniment.

Figure 6: Is a fragment of a piece using the "African Hemiola Style" with a poly meter notations. The music example shows a score notation of a polymeric peace and how "embodiment music interaction" or "the African hemiola style" takes place in the notation and perception of music. The pattern played by the first *Alamboo* is clearly in a simple triple meter 3/4, whiles the accompaniment of the second *Alamboo* is in a combination of a compound double meter 6/8 and a simple triple meter. The accompaniment of the stick fallows mainly the meter of the first *alamboo*.

An essential part of the African hemiola style is the concept of additive rhythm allowing for measures and meters of odd dimensions. However in African Music it is not done. This practice has been criticized by Gerald Kubik and other musicologists as Kwabena Nketia, DdjeDje Jaqueline and Kofi Agawu because African performers

"think in larger entities". Rose Brandel also advocates a meter signature representing larger, rather than smaller groupings to avoid a constant changing of meter within the implications that the performer does the same (Brandel, 1961:17).

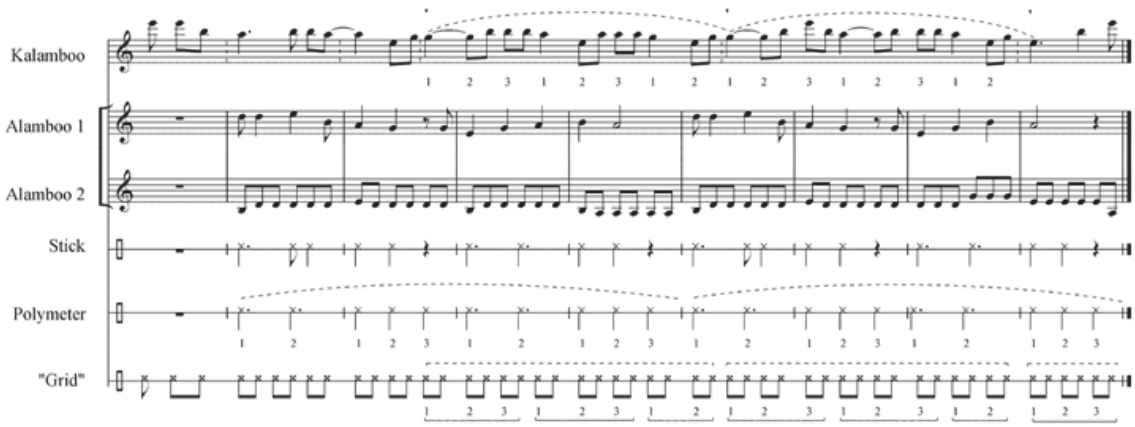

Figure 7. Shows a fragment of a piece using polymeric meter whiles the melody of the *kalamboo* is transcribed in a larger time span. Rhythmically, the shaping of a *nyakboli* time span into twelve-pulse units 6 + 6 followed by a four-pulse unit (Locke, 2010). The *kalamboo* melody is a typical *Bamaaya nyakboli* melody. The number 1 indicates the onbeat for this melody but is a different onbeat than the onbeat for the *two alamboo* and the stick. Every eight measures the various onbeats of the four instruments falls together in a common "one" and creates a common "downbeat" or an arrival.

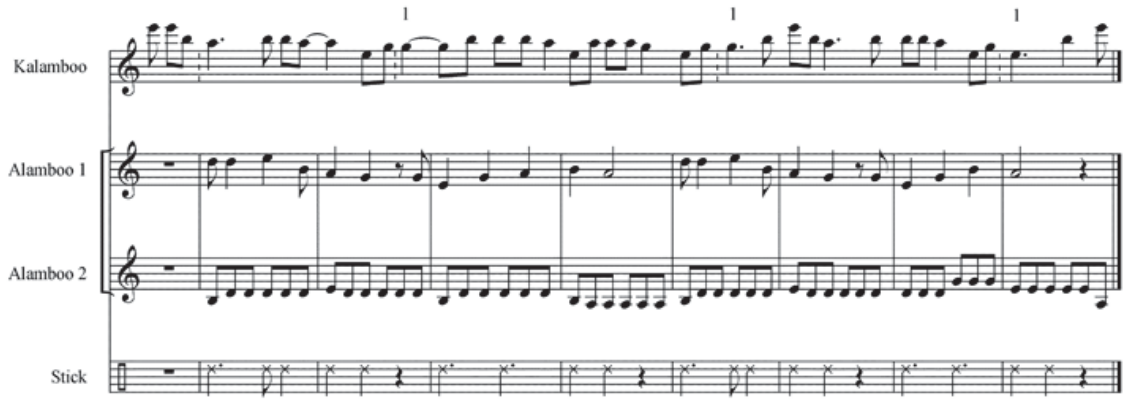

Figure 8. *Kalamboo* transient individual downbeat and polymetric accompaniment of the *alamboo*.

The *kalamboo* onebeat is displacement and shifted from the onebeat position of the *alamboo* to the several off beats time points within the rhythmical patterns of the *alamboo* accompaniment. The onebeat in the *kalamboo* section connotes a feeling of arrival and temporary stasis that justifies the label 'downbeat'. This polyrhythmic tension between de different musical layers creates and produces dynamics in the expressivity of the music making and has a direct influence on the movement and the actions in the other rhythmical sections. While the alamboo and the stick performs have a common beat, the *kalamboo* player creates his owe temporal or transient indi-

vidual beat. This temporally abandonment of the kalamboo player of his internal common beat may influence the dancers our other players to change their beat reference.

With these polyrhythmic structures we mean an accumulation of different rhythms above each other which exhibit the same tempo which coincide as far as to the patterns on a one. By the fact that the basic rhythm plays a fixed rhythm and remains constant, there arise rhythmic patterns which are known as the 3:2 (three in the time of two) and 3:4 (three in the time of four). One should know that music making in *Dagbon* has a polyrhythmic structures and are not created by mathematical computations but through the transfer of their oral musical tradition and practice that is bound and has a master-student relationship. Such polyrhythmic patterns are mostly transformations of spoken word and sung lyrics that are transformed by the musicians too the musical instrument (drum, rattle, stick, stone ...) creating polyrhythmic patterns emerge that we experienced as complex, but for one member of the group often are very transparent.

Due to the fact that the players understand the tone language that is being played, they have a global view of what's going on rhythmically and are responsible both a binary and ternary applying a filter while playing music. Listening with both filters during the musicianship allows them responsible as necessary to switch from one polymetric structure to another. In the music and dance in *Dagbon* the beat is hardly objectified acoustically. The performers and the dancers are aware of it, without thinking of is explicitly. These phenomena of embodiment music interaction have posed a difficult problem for musicologist.

Such an auditory filter is obviously bound and culture created by the way musicians perform and play there music. It's not just social welfare and rhythmic accents that play a role, but also the way in which one deals with the micro timing associated with the timeline of the dance and dance song. The traditional idiom of music making in *Dagbon* is characterized by narratives, which structure the embodied interaction with music.

4 Embodiment in the traditional idiom of music making

Embodied music interaction is a theoretical concept that assumes that the musical stimulus is ambiguous. She assumes that this stimulus contains both binary and ternary components which are diachronic. By moving to music, the listener can select a binary our ternary pattern and listens by means of a filter which one perceives the music.

The traditional idiom of music making in *Dagbon* is characterized by narratives, which structure the embodied interaction with music. Below, we give two examples that illustrate this important concept.

4.1 The embodiment of narratives in the music and dance

Bamaaya, (a fertility ceremonial dance), is an anticlockwise circular male multi sectional rain dance performed by a group of men dressed in *mokuru*, (a woman skirt), wearing *tipara,* (earrings), *gmandugu*, (a black hat made of baboon skin), a waste belt and *chagla,* (ankle rattles). In the traditional idiom the dance is performed during annual festivals funerals and occasions of entertainment for the local chiefs. A *Bamaaya* dance consists of different sections, usually three to four, which are merged into a medley. Each section relates to a particular proverb and dance movement. A standard *Bamaaya* dance medley can start with a pure *Bamaaya*, followed with *Tubankpuli* and *Kanton* and always ends with a *Nyakboli*. *Tuubankpuli*, is a local proverb and means: "as long as you're not satisfied [eating food], you cannot join the dance". *Nyakboli* (meaning: "bad cow") is always the last section in the *Bamaaya* dance, because it is a fast dance that demands a lot of physical energy not only from the dancers but also from the drummers and the *kalamboo* players (a side blown flute).

Photo 1. *Bamaaya* group performing *Nyakboli* dance Ying, 13.03.2001. Photo 2: *Bamaaya* group performing *Nyakboli* dance, Kumbungu 11.08. 2008.

According to testimonies, (personal communication with Adam Vogu, a *Bamaaya dana*, on the history and performing practice of *Bamaaya* dance), *Bamaaya* dance originated from the daily life in the villages among the local farmers. The way the young shepherds push and pull to the cows is performed in the *Nyakboli* dance by the physical embodiment of the different complex for - or backwards movements of the feet but also the sideways movements of the dancers and the shaking of the whole body. In addition, performers make use of body language, mimics and shouts. The use

of different head movements, the shaking of the body in synchronization with the *lunga* drumbeats and the *kalamboo* flute hochetus playing technique, the beating and stamping of the bare feet to the ground that produces a rattling sound (by the *chaglas* - a pair of metal ankle rattles) - a secondary cross rhythm.

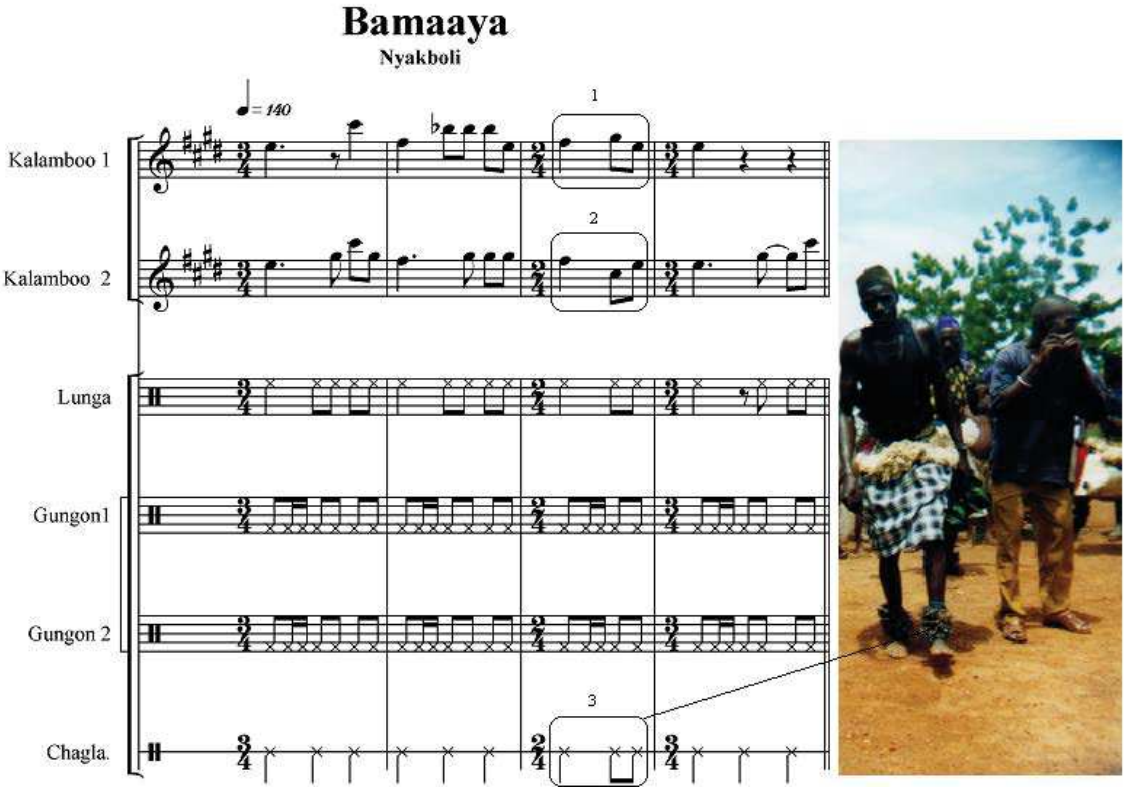

Figure 9: Left: The score (based on transcription) shows the rhythmical interaction between two *kalamboo* flutes, the supporting drums and the *nyakboli* dancer during a performance. Right: A *Bamaaya* dancer in action during a *nyakboli* dance, and a *kalamboo* flute player supporting the movements of dancer. The annotation (3) is showing the rhythmical patterns of the ankle rattles *chagla* during the performance. They are in synchronization and interaction with de *kalamboo* flutes (1, 2), and the *lunga* supporting drums.

The ululations of the female group members and responses to audience activate the performance of the dance. These aspects of embodiment are always present and they can be clearly identified. They occur in interaction with the accompaniment of the drummers, the *lunga* master drummer with tone language, the supporting drums, and the *kalamboo* flute players. In addition, the audience acts as a resonator for the musical performances and embodiment of the dances. Without the audience, there would simply be no *Bamaaya* music-dance performance.

The drumming is characterized by a selective use of rhythms and tone patterns both of which are used in recurring sequences that generate a regularity of pulse, often supported by other instruments. The beats of the accompanying rattles, handclaps, and

the melodically and rhythmical phrases of the *kalamboo* flutes provide a common point of reference for the drummers.

Photo 2. *Bamaaya* dancer interacting with the *lunsi* drum ensemble, showing *Nagboli* movements during a performance in Tali, July 2004.

4.2 The embodiment of proverbs and linguistic structure in the music and dance

The use of narrative and proverbs in *Dagbon* has a direct influence on the creation of dance grooves and performances of these dances.

The proverb of *Na Gariba* is: "*Ashanti kotoko. O kuw a pim a pim baba, Na Gariba"* (The porcupine warriors of the Ashanti, kill a thousand warriors, and a thousand more will come, Chief Gariba). Proverbs can be conceived as reflecting the *Dagbon* community's philosophy about life (Lange, 2006: vii – viii). Proverbs are the condensed nuggets of wisdom used by the local chiefs and elders, at the local courts in given judgment and settling disputes as well as in daily interaction of all kinds like singing and poetry. They belong to the public domain in *Dagbon*.

Narrative of Na Gariba

During the slave trade, the *Ashantehene* and the *Ya Na* had an agreement, that the *Dagbon* should supply slaves in exchange for firearms. During the reign of *Na* Gariba, he told the Ashanti chief that *Dagbon* was no longer going to supply slaves. As a result, the Ashanti chief sent warriors to go and kidnap *Na* Gariba and bring him to

Kumasi. They came with palanquin, and *Na* Gariba was carried away to Kumasi. During the journey, the carriers of the palanquin died one after the other. In the face of this, they send an informant to the *Ashantehene* to inform him of the mysterious deaths of the carriers of the *Ya Na*, and to tell him that it was impossible to bring *Na* Gariba to Kumasi. It was at that moment that the *Ashantihene* said to *Na* Gariba that should he kill a thousand of his warriors, a thousand will come. For this reason, it was not possible to carry the *Ya Na* to Kumasi.

We recorded the dynastical praise song "*Ashanti kotoko*" which narrates the story of *Na* Gariba (Chief Gariba), using the local proverb of *Na* Gariba (Figure 10). The praise song belongs to the traditional idiom of music making in *Dagbon* and can be performed on the *gonje* (a one string fiddle), the dynastical praise song is part of the oral *gonje*-repertoire. It can also be performed on other court instruments such as the *lunga* (a closed double skinned hourglass shaped pressure drums), *timpana* (a pair of talking drums), the *kikaa* (a side blown horn), and the *aligaita* (a double reed hobo).

The Dagomba fiddle, or *gonje*, is a court instrument performed by professionals who belong to the royal family clan, the *Yamba Na Yili*, which is part of the *Ya Na's* or king's royal family clan. Dagomba fiddlers are highly valued and have a high social status because the instrument they perform symbolizes political authority (DjeDje, 2008:168). In 2001 "*Ashanti kotoko"* was sung by Salisu Mahama, aka Salisu Gonje, *Yamba Na* of the *Andani Yili* during recording sessions, and at the *sambani lunga* festival at the court in Yendi, and at the court in Nakpali-Kworli.

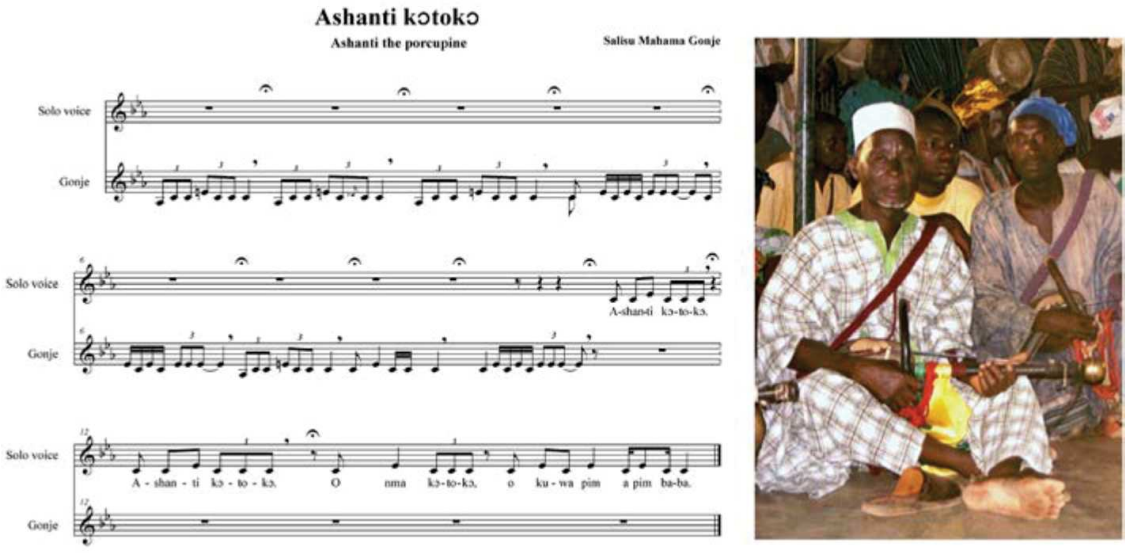

Figure 10. The *gonje* is a one string fiddle with calabash resonator. The *gonje* player sings and plays the story of *Na* Gariba in an Akan language, related with the *Twi* language, a bi- tonal language which is reflected in the melodic structure of both the *gonje* and the singer (Top-left).

Figure 11. The *akarima* at the *Na Gbewaa* palace in Yendi playing on the *timpani* drums the narrative *Na* Gariba, Yendi 04.03.2001. Bottom-right, *kikaa* player demonstrating the *kikaa* playing technique during a performance of *N*a Gariba on the *kikaa* transversal horn, Tamale 13.09.2004. For more information on the field recordings of the praise song, please see the website: http://music.africamuseum.be/english/detailrec.php?id=MR.2002.3.33-4

Of particular interest is the use of a bi-tonal language that is reflected in the melodic structure of the praise song. Consider how the narrative of *Na Gariba* can be performed by the *Akarima* on the *timpani* drums at the court of the *Ya Na* in Yendi. The *akarima* is the state drummer at the palace in Yendi and at the different local courts in *Dagbon*. At the courts in *Dagbon*, a special pair of *timpani* drums is used, one as signal drum and another one as speech drum. The speech mode of drumming is characterised by a steady flow of beats, often lacking regularity of phrasing, but using a two tone framework that is based on the bi-tonal language.
The rhythms are played in groups that are separated from each other by pauses of long durations. In speech mode drumming, narration is the ultimate goal (Nketia, 1957:29).

The *timpani* drums are introduced to *Dagbon* by the Ashanti's warriors (Figure 11). The drum playing uses a bi-tonal intonation based on an old type of *Twi*, an Akan language of the region where the warriors came from. *Dagbani* is a bi-tonal language with a middle tone intonation. The transformation thus takes place here at the level of a tonal language. The story is still performed by the royal drummers in a language they do no longer speak, but it is memorised by the *akarima* according to the oral traditional institutionalised idiom of music making, controlled by the traditional council of chiefs and elders.

The same narrative of *Na* Gariba is also played on the *kikaa* at the court in Yendi (Figure 11). The *kikaa* is a side blown horn made of *yomanvaa* wood (*Grewia venusta*) with a thumb whole and is used at the court in Yendi to annunciate the coming and the presence of the *Ya Na*. The *kikaa* is also used as a signal instrument on the battle field when the Paramount chief is around. During our field work, we could record it on tape and observe the cultural transformation that took place. The *kikaa* is an adopted musical instrument coming from the Ashanti land. It was introduced in

Dagbon in pre-colonial time. The language that was used at the time for communication was also an old type of *Twi*, an Akan language.

To sum up, influences of the old *Twi* language and the use of the Akan proverbs are still present in the different performances of the narrative of *Na* Gariba. Elements such as the lyrical use of the proverbs, which are tied to rhythmical phraseology and expressive components such as timbre and melodic contour of the *ambitus* of the melodies, are transformed in a cultural idiom of music making in *Dagbon*. The above examples illustrate clearly in which way the embodied interaction with music is based on movements that mimic narratives, and on linguistic structures (inherent to those narratives) that influence the musical structure. However, this culture is now under pressure by developments related to globalisation.

5 Embodiment in the Urban idiom of music making

There are many reasons why cultures are changing and transforming (Polanyi, 1944). In particular in *Dagbon*, during the twelve years of field research in the area, we noticed the advent of products from all parts of the world. What we claim here is that this cultural change can be understood in relation to embodied interactions with music. Of particular importance is the impact that the digital revolution had on the local music production and reproduction of traditional and urban music/dance.
The cultural change in *Dagbon*, due to globalization, implies a shift from collectivism to individualism. According to (Hofstede, 2008:19) culture is "the collective mental programming that distinguishes the members of one group or category of people from those of others". Most of the Dagombas grew up in extended family clans, where they were bound and tied for life in exchange for loyalty, social security and community respect. In fact, most West African countries like Ghana and Burkina Faso rank high in collectivism, while most Western-inspired countries score high on individualism. However, current cross-cultural transformation processes, such as in the city of Tamale in *Dagbon,* and the "Hiplife Zone" in particular, can be seen as changing towards more individualism. This applies especially to the musicians and the way they live, the way they promote their music. Basically they are leaving the extended collectivist family unit and move towards a more individualist family unit, with more individual freedom and privacy.

Dagbon is a good example of an area in cultural transition. Music here appears as an expression of the musician's daily activities. The change from traditional to urban culture is reflected in various parameters of the musical idiom. For example, local drums and traditional drumming are replaced with drum samplers and electronic drum machines, and rhythms and melodies, the lyrical use of proverbs, the organization of the dance performances, the time and location of these dance performances, aesthetical values of the music and dance performances, and the cultural expectations of the local people are all affected by this change of idiom.

It is somehow self-evident that timbres or sound colors, associated with the traditional idiom will change in the urban idiom, especially when electronic instruments are used, or when sounds from traditional instruments get electronically manipulated. However, a particular timbre has a remarkable constancy over traditional and urban idiom. We call it "The Sahelian Factor". It is a sound, which is characterized by a nasal timbre. It comes from the traditional way of singing, and the use of traditional instruments. Examples are the *jinjelin,* (a one string musical bow with calabash resonator), the *moglo*, (a three string harp lute), the *lunga*, (a closed hourglass-shaped pressure drum), the *alamboo*, (a lammellophone with box resonator), the *yuwa*, (a notched flute) and the *gonje* fiddle singing style. The timbre of these local musical instruments is somehow also reflected in the timbre of the singing voice.

A remarkable change is observed in the meter. The music and dance in *Dagbon* has a strong binary meter and timeline, except for the female semicircle dance *luwa* and *luwa yila* (*luwa* songs) which are in the meter 3/4 and the music and dance of the *tendana*. For example the ritual music and the trance dance for *Djakbo* (the lesser god and custodian of Tolon) which is a circle trance dance-music form the *tendana*, the fetish priest, the custodian of the land. The music and dance belonging to the earth priest and his kin and has a 3/4 meter in combination with a 6/8 timeline. In all the other occasions the music and dance in the traditional idiom of music making in *Dagbon* (that we so far have looked at), has a binary structure and timeline. Now, in the "Hiplife Zone", music and dances that have a binary meter in the traditional idiom are sometimes transformed into a ternary meter once they inter the sound studio. This phenomenon can be explained as follows: many recordings of Hiplife music, (a form of Ghanaian techno-pop), and contemporary Highlife music, (an acculturated hybrid popular dance-music style which combines historical styles with new innovations in contemporary music), (Collins, 1989, Emielu, 2010), are done in the southern parts of Ghana, in Kumasi and in Accra. The programming of the rhythms and the rhymes in the studio is done by sound engineers and producers that originate from the Akan musical tradition idiom of music making. However, many of the traditional Akan dance music that we recorded during our fieldwork, like the *Adowa* funeral dances with a combination of 3/4 and 6/8 timeline, and the *Nnwomkoro* songs, are based on a ternary meter, and combinations of ternary grooves. Influences of rhythmical Akan patterns are now getting transformed into the urban popular music of *Dagbon* that originally had a binary structure and micro timing. As a result, the melody would be sung with a binary micro timing, while the drum groove would have a ternary micro timing coming from the Akan idiom of music making. Yet what is constant is the tight connection between music and dance, as well as the fact that musical rhythms are based on typical language and dance syncopations. The latter are characteristic for the Savannah Region of Northern Ghana, Savannah Syncopaters, contain research results on African antecedents in the blues from the north-western parts of Africa (Oliver, 1970).

A good example of the latter is *kuraya kuraya*, (blow, blow) a song based on a play game of stones played by boys. The beating of the stones to the ground is reflected in the accompaniment and the melodic ostinato pattern of the song. *Kuraya kuraya* is sung in call and responds style, with a lead singer and a group that answers. In all the

recording occasions' *kuraya kuraya* was performed in the traditional idiom using a singular binary meter.

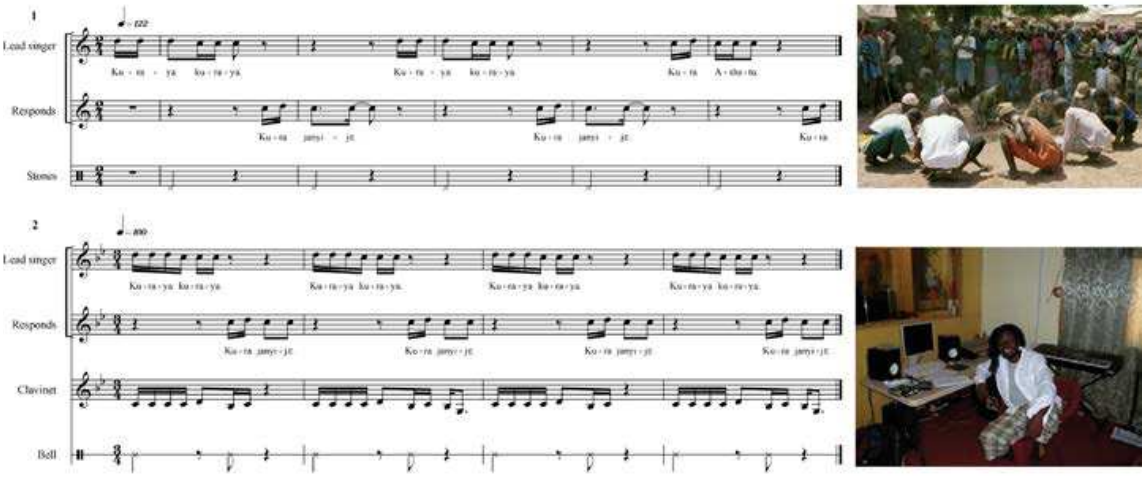

Figure 12. Above: 1 *Kuraya kuraya* performance recorded in the village of Tarikpaa 13.03.2001. The above transcription shows the binary structure of the boy's play game *kuraya kuraya* in call and responds singing style. The call is with an anacrusis to the upbeat, whiles the responds is with a syncopated rhythm that we call a Savannah syncopated rhythm. Below: 12 Transcription of the transformed studio version of *kuraya kuraya* in a ternary Afro-beat. The melodic ostinato figure of the clavinet is the cement between the vocals and the rhythm section.

However, the version of Sheriff Ghale (Mohammed Sheriff Yamusah) is transformed and arranged in an Akan groove with a ternary Afro-beat meter. Note that the use of the double bell indicates the Akan influence, with a ternary Akan timeline. The song is also sung in *Dagbani* in a call and response style. The transformation into a ternary meter, in combination with the arrangement of electronically manipulated sounds and timbers gives the song a more reggae character and Afro-beat feel. This transformation process is a common phenomenon in the local urban music of *Dagbon* and is a characteristic musical component in "The Hiplife Zone".

Sound colour and meter are two typical parameters that are subject to change. Other aspects include the use of local proverbs in song texts, syncopated dance rhythms, and musical instruments. However, note that the urban idiom is also characterized by influences coming from other African musical cultures, such as from Ashanti land (*kambon waa*, *akarima* and *kate waa*), Hausa land (the *aligaita*) a double reed hobo, (the *lunsi*), the royal drum ensemble, and Gurma land (*gonje,* a one string fiddle), and other continents, such as Bollywood film music and Afro–American hip-hop and Jamaican reggae.

6 Conclusion

In this paper, we showed how embodied interaction with music plays a central role in our understanding of cultural transformational processes. Our data suggests that different types of embodied interactions (e.g. based on linguistic structures, timbre, narratives), and different types of transformational processes (e.g. based on the traditional music idiom, or musical styles from other cultures), should be taken into account. The outcome, so far, is a preliminary model that connects embodied interactions with cultural transformation processes (summarized in Table 1). This model needs refinement. However, we believe that the integration of music-anthropology with an approach that focuses on embodied interactions has a huge potential for understanding cultural transformations. Cultural elements such as the use as the lyrical use of proverbs which are tied to rhythmical phraseology and expressive components such as timbre and melodic contour of the ambitus are transformed in a cultural idiom of music making in *Dagbon* which has adopted this musical styles of performing to their own traditional idiom of music making.

TABLE 1. Model of cultural transformation processes

Cultural Change/ Embodied interaction	**Local transformation processes**	**Regional cultural transformation processes**	**Global transformation processes (foreign music)**
Dance and body movements	Dances coming from the traditional idiom of music making.	Dances coming from other parts of Africa.	Foreign dances, urban dances.
	e.g. *Bamaaya, Jinjelin waa, Simpa, Tora, Nyndogu, Jera. Kate waa.*	*Akan* inspired dances, e.g. *Kambon waa, kate waa*. *Takay* dance found as a variant in Ivory Coast and Mali.	Hip-hop and urban identities in music clips. Reggae dances and Western inspired dances.
	Traditional dance choreography in local Dagbani movies and local music clips.	Nollywoodish and Ghallywoodish dance choreography in music clips.	Nollywoodish dance choreography in music clips.
Savannah syncopated rhythms	Large/small drum ensembles.	The use of a rhythm section mixed with programmed drum patterns.	Rhythm section and programmed drum patterns.
	Life performances.	Life performances mixed with playback and DJ.	Mainly playback performances with DJ and radio presenters. Occasional live concerts.

	Syncopated rhythms and polyrhythmic patterns, e.g. *Tora, Bamaaya, Jera, Jinjelin*. The African hemiola style, e.g. *Bamaaya, Jera, Ziem, Nyndogu.*.	Polyrhythmic patterns. Akan double bell rhythms. Hiplife-, rumba- and highlife grooves, Palm-wine and highlife guitar picking ostinato patterns, e.g. *Amilia by* Kawastone.	Rhythmical ostinato patterns. Hip-hop, rap, reggae grooves.
Tonal organisation	Tone language, pentatonic and hexatone scale, melodic ostinato patterns.	Tone language, pentatonic and hexatone scale. Modal chord system based on multipart melodic patterns.	Tone language, melodic ostinato patterns. Western inspired tone systems and harmonisation in combination with modal chords progressions.
Lyrical use of proverbs	Dagbani proverbs in the traditional idiom of music making.	Proverbs coming from other African cultures.	Local Dagbani proverbs in highlife and hiplife lyrics.
	The lyrical use of Dagbani proverbs in contemporary music.	Akan proverbs in contemporary highlife - and hiplife songs Akan proverbs, e.g. *Ashanti kotoko, kikaa* and *akarima* court music. Hausa and Gurma proverbs in *gonje* and *lunsi* music.	Local Dagbani proverbs translated into English mixed with Pidgin English, Creolisation and jabber talk, e.g. *Sharatu*. Rap and hip-hop rhymes, e.g. *Gala Gala.*
Timbres and musical instruments	Local instruments used in de traditional idiom of music making.	Musical instrument coming from other parts of Africa e.g. *dala* long drums.	Digital idiom of music making mixed with local - and regional instruments.
	Large/small drum ensembles, e.g. *gungon-, dala- and lunga* drums, *dawule bell, chaglas.*	Rhythm section mixed with digital drum samples, e.g. highlife guitar style.	Traditional instruments mixed with drum samples and rhythm section.
	Melodic instruments, e.g. *Jinjelin, yuwa,, biegu*, *moglo, alamboo, kalamboo*.	Adopted musical instruments, e.g. *gonje, lunga, kate, alamboo.*	The use of electronics, voice vocoders, drum samplers, digital timbre manipulation.
	The "Sahelian Factor" in music making.	The "Sahelian Factor" in music making.	The "Sahelian Factor" in music making.
Phraseology, timeline, speech rhythms	Call and responds singing style.	Call and responds singing style.	Call and responds singing style.
	African hemiola style, e.g. *Bamaaya.*	African hemiola style, e.g. *Kambon waa.*	African hemiola style, e.g. *Nmantambu*.
	Timeline and polymetric meter.	Timeline and polymetric meter.	Meter change, e.g. *Kuraya kuraya.*
	Syncopated rhythms, e.g. *Simdi Nyaanga.*	Syncopated rhythms, e.g. *Amilia*.	Syncopated rhythms, e.g. *Simdi Nyaanga.*
	Drum riddles and drum language.	Akan-, Hausa- and Gurma proverbs in *gonje* and *lunsi* music.	Rap and hip-hop phraseology, e.g. *Gala Gala, Sharatu.*

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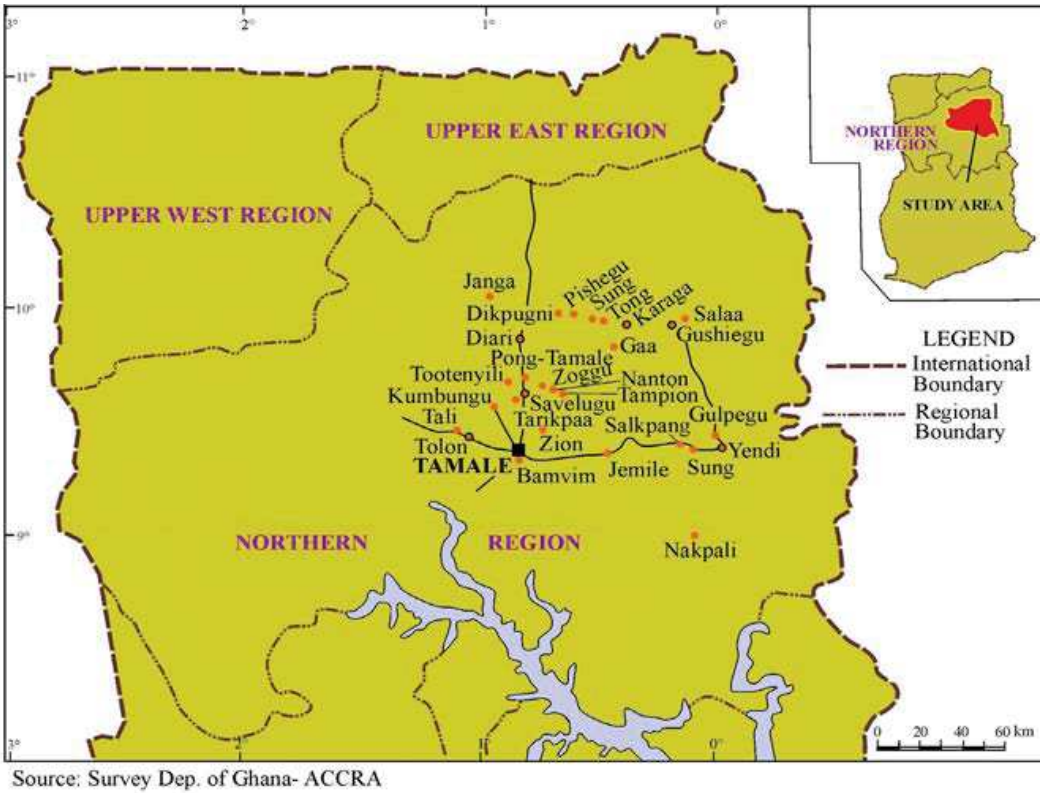
Appendix: Background *Dagbon*

This project started as a fieldwork project (1999 – 2010) that aimed at documenting an endangered traditional music-dance culture in *Dagbon*. However, this project resulted in a comparative study of how the traditional African idiom of music making transforms into 'The Hiplife Zone', the urban idiom of music making in today's *Dagbon* society.



Source: Survey Dep. of Ghana- ACCRA

Map 1. Map of Northern Ghana showing *Dagbon* and the geographical scope the research area.

Dagbon refers to the traditional region inside modern Ghana, where the Dagomba people reside. The administrative centre is Tamale, whereas the traditional cultural capital is Yendi, the city where the king, (or *Ya Na)* reigns over *Dagbon*. The language spoken is *Dagbani*, which is a Gur - language. *Dagbon* was a feudal state

and the society was subdivided in “The Royals” (the aristocracy or chiefs with their offspring, the *na bihi*; “The Commoners” (or local people, called *tarimba* or *Dagbanbabba*); end “The *Tindanas”* (the original inhabitants of the Northern territory, the custodians of the land) “. Due to urbanization and associated developments in Tamale, we could identify a new group of people that we call “the *urban class*” (or urban townspeople). Some of these townspeople live in traditional homes within the city centre, but some live in more Western-inspired house types that lie outside the city centre. In short, this was the setting for our fieldwork and it is the background for our understanding of cultural transformation processes in the light of embodied interactions with music.

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